Town of Manlius
Planning Board Agenda
June 8th, 2020
6:30PM

1. Pledge Of Allegiance

2. Approval Of Minutes - May 11, 2020

   Documents:

   MAY 11, 2020.PDF

3. Craig Nichols - Green Lakes Lanes, 7930 East Genesse Street, Fayetteville, NY 13066, Initial Presentation - Site Plan - Ice Cream Window - 7930 East Genesee Street, Fayetteville, NY 13066 Tax Map # 090.-01-04.0

   Documents:

   7930 EAST GENESEE STREET - SITE PLAN - ICE CREAM WINDOW.PDF

4. Taft Solar, LLC - Andrew Day - 41 West Elm Street, Greenwich, CT 06830 - Initial Presentation Site Plan - Solar Array - 6787 Taft Road, East Syracuse, NY 13057 - Tax Map # 034.-01-20.1

   Documents:

   6966 EAST TAFT ROAD - SITE PLAN - CONCEPT.PDF
   6966 EAST TAFT ROAD - SITE PLAN - EAF SUBMITTAL COMPILED 2-6-20.PDF
   6966 EAST TAFT ROAD - SITE PLAN - GML RETURN.PDF
   6966 EAST TAFT ROAD - SITE PLAN - LOI MANLIUS TOWN BOARD.PDF
   6966 EAST TAFT ROAD - SITE PLAN - SEQR PACKET.PDF
   6966 EAST TAFT ROAD - SITE PLAN - TAFT ROAD SOLAR CIVIL PLANS 03-11-2020.PDF
   6966 EAST TAFT ROAD - SITE PLAN -APPLICATIONTAFT.PDF
   6966 EAST TAFT ROAD - SPECIAL PERMIT APPLICATION.PDF
   6966 EAST TAFT ROAD - SPECIAL PERMIT GML RETURN.PDF

5. Falck Renewables - Solar Array - 5062 North Eagle Village Road , Manlius, NY 13104 - Initial Presentation - Recommendation For Special Permit - Solar Array Tax Map # 098.-01-15.0

   Documents:

   5062 NORTH EAGLE SPECIAL PERMIT APPLICATION COMPILED 04142020.PDF

6. Falck Renewables - Solar Array - 8507 Green Lakes Road, Fayetteville, NY 13066 - Initial Presentation - Recommendation For Special Permit - Solar Array - Tax Map # 082.-02-15.1

   Documents:

   8507 GREEN LAKES SPECIAL PERMIT APPLICATION COMPILED 04142020.PDF

7. Other Business

8. Adjournment

TOWN OF MANLIUS
PLANNING BOARD MINUTES
May 11, 2020

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The Town of Manlius Planning Board convened with the members live streaming from their homes and in accordance with the Executive Order of the Governor to assure compliance with the Open meetings Law. Chairperson Joseph Lupia presided and the following Members were present: Fred Gilbert, Mike LeRoy, Frank Mento, Arnold Poltenson and Richard Rossetti. Also, present were Attorney Jamie Sutphen and Town Engineer Douglas Miller.

Absent: Member Kelly

Other persons attending the virtual meeting: Brandon Jacobson, Tom Oot, Chris Danaher, Scott Dumas and Scott Freeman.

Chairperson Lupia explained the procedures that would be followed for the live stream meeting. The Pledge of Allegiance was recited.

Chairperson Lupia introduced new Planning Board Member Rich Rossetti.

Minutes
Member LeRoy made a motion, seconded by Member Mento and carried unanimously to approve the minutes of March 9, 2020. Members Rossetti, Poltenson and Gilbert abstained.

Brolex Properties – 5912 North Burdick Street, East Syracuse, NY 13057
Initial Presentation - Recommendation for Zone Change – Freeman Estates – 7430 Highbridge Road, Fayetteville, NY 13066
Tax Map # 101.-02-02.1

The applicant, Brandon Jacobson, stated the intent of the Board as to this site. He stated that they would like to build a Townhome community on the property. They would like to build using the Cluster plan. R-3 Zoning would assist with density, they had originally requested a change to R-5 Zoning.

Chairman Lupia asked how many acres the property is. Mr. Jacobson said 23 acres is the whole property, they are looking to use roughly 4.5 acres. There are wetland issues with all but about the 4.5 acres proposed.

Member Rossetti asked how many feet from the roadway back to the start of development is. Mr. Jacobson said approximately 800 feet at the farthest point. There is a sharp topography change where it goes into the floodplain, with a 25-foot drop that is pretty sharp. The developer intends to have walking trails on the property.

Member Gilbert asked about the current Freeman house that is on the property. Mr. Jacobson said that it will have to be removed.

Member Rossetti asked why the Board was considering an 850-foot zone change in the flood plain if the Town Code says that you cannot build in the flood plain. Mr. Jacobson said that they can build on it, they need a Letter of Map Revision (LOMA) from FEMA, but they are choosing not to build in the flood plain. Member Rossetti asked Engineer Miller if the code states that you cannot build within 25-feet of a flood plain. Engineer Miller believes that is what the code says, he will look into it. He believes that it is under the design standards for lots.

Chairman Lupia asked Engineer Miller, is it fair to say that the Board does not have sufficient information to know whether or not the cluster development is totally appropriate as proposed? Engineer Miller said yes, it is a fair assessment.

Attorney Sutphen asked the Board to consider whether the entire site is appropriate for the zoning classification that is being proposed by the Applicants. Member Rossetti said that is the question he is asking as well.

Conversation ensued regarding cluster planning and what is allowed in the current zones within the Town of Manlius.

Member Mento asked if the property already has a natural divide to it. Mr. Oot said yes.

Chairman Lupia asked Attorney Sutphen if she had drawn up a resolution regarding this project? Attorney Sutphen asked the Board if they had the chance to review the proposed resolution which had been provided to the Board in advance, and they answered in the affirmative. The resolution could be adopted as long as the Board agree that the resolution is acceptable.

Members Poltenson and LeRoy are ok with the Zone Change they are both concerned with bigger problems down the road, such as sewers, stormwater and traffic. The Board is in general agreement that the zone change requested is appropriate, but the issue of cluster subdivision is one that needs to go through another procedure separately. A zone change would be a first step. Attorney Sutphen read that resolution aloud and it is stated below.

Member Mento made a motion, seconded by Member Rossetti and carried unanimously to recommend to the Town Board that the Zone Change application of Brolex Properties for a Zone Change for the property at 7430 Highbridge Road from R-A to R-3 is appropriate for the property, and this Board recommends that the Zone change should be approved by the Town Board. The type of structures and uses that are allowed in an R-3 zone is consistent with the uses in and character of this busy corridor. The presence of significant flood plain areas on this site further makes the R-3 a suitable use for the usable areas of this property, closest to a heavily trafficked street. It is specifically noted that this Board has not reviewed the details of an apparent proposed

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"cluster" development that appears on the plan presented to this Board. There is more information required and the suitability of a cluster development is not determined by the Board at this time and this Board does not recommend application of 278 Cluster development for this site at this time.

5538 North Burdick Street, LLC. – 125 E. Jefferson St., Syracuse, NY 13202
Initial Presentation- Recommendation for Zone Change
5538 North Burdick Street, Fayetteville, NY 13066
Tax Map # 086.-02-07.1

Scott Dumas, with Mike Barney Management, were present for the applicant and explained to the Board that there a group of young doctors that would like to build on this site for their practice. It is not a big national company. The land is currently under contract pending approvals. They would like to open in May 2021.They do not want to disturb the current grade and do not wish to add any more pavement than need be.10,000 to 12,000 square feet, single level medical practice.

Christian Danaher, Attorney with Hancock Estabrook, presented an online presentation and showed the site, the zoning in the area and related materials. The Applicants propose a Zone Change from RA to RM. There is a residence currently on the property that will be removed. Mr. Danaher stated that the clients would like to have the RM zoning for the property. He explained why he thought the zoning was appropriate for the area and this was discussed amongst the Board members.

Scott, Freeman, Keplinger Freeman Associates, spoke briefly about the Site Plan for the property. 4.25-acre parcel with natural evergreen buffers on either side of the property that will remain. No flood plain, floodway or endangered species on the property. The building will be facing North Burdick Street with parking in the front of the building. There has been a traffic study and the location of the proposed driveway has adequate site distance from both directions. There will be approximately 98 parking spaces. A lighting plan will be provided at a later date. There will be a monument sign on site. The applicant wants to have the building address the creek as a natural feature. This is a matter that would be addressed at site plan approval.

Attorney Sutphen asked Board members had the chance to review the proposed resolution which had been provided to the Board in advance, and they answered in the affirmative. The proposed resolution was read aloud and is set forth in the motion below.

Member Mento made a motion, seconded by Member LeRoy and carried unanimously to recommend to the Town Board that the Zone Change application of 5538 North Burdick St. LLC. for a zone Change for the property at 5538 North Burdick Street from R-A to R-M is appropriate for the property, and this Board recommends that the Zone change should be approved by the Town Board. The type of structures and uses that are allowed in an R-M and specifically the medical use proposed by the applicant is consistent with the uses in and character of this corridor. This recommendation is made with the understanding that this matter will return to the Planning Board for site plan

approval.

OTHER BUSINESS

With there being no further business, Member Rossetti made a motion, seconded by Member LeRoy and carried unanimously to adjourn the Regular Meeting at 7:43 pm.

Respectfully submitted,
Lisa Beeman, Clerk

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Expected Fee: $300

TOWN OF MANLIUS
PLANNING DEPARTMENT
INITIAL APPEARANCE APPLICATION

DATE: 5/11/2020

Name of Project: Green Lakes Lanes

Applicant must submit 12 copies of all site plans, surveys, and supporting data with the final application before a planning board meeting can be scheduled.

Location of Project: 7930 E Genesee St, Fayetteville

Type of Project:

○ Division of Land ○ Subdivision ○ Accessory Use ○ Zone Change ✓ Site Review ○ Other _____

Developer: _____ Phone: _____

Address: _____ Zip: _____

Tax Map Number(#)/s: _____

_____

Present Zoning: _____ Desired Zoning: _____

Total Acreage: _____ Total Number of Lots: _____

Property Owner/s: Craig Nichols, Brian Holmes Phone: 607-342-1789

Address: 7930 E Genesee St, Fayetteville Zip: 13066

Tax Map#(s): _____ Owner's Signature: David Craig Nichols

_____ Printed Name: David Craig Nichols

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____ Owner's Signature: _____

_____ Printed Name: _____

Use next page for additional known property owners' information

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Planning Board Meeting Date Assignment: _____

_____

Fee: _____ Paid: _____ Per: ○ Credit/Debit Card ○ Check ○ Cash

617.20
Appendix B
Short Environmental Assessment Form

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: Green Lakes Lanes Ice Cream Window

Project Location (describe, and attach a location map): 7930 E Genesee St, Fayetteville, NY 13066

Brief Description of Proposed Action: New ice cream window in existing building

Name of Applicant or Sponsor:	Telephone: 607-342-1789
Craig Nichols	E-Mail: greenlakesbowling@gmail.com
Address: 7930 E Genesee St	
City/PO: Fayetteville	State: NY / Zip Code: 13066

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? 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 governmental Agency? If Yes, list agency(s) name and permit or approval:	☑	☐

3.a. Total acreage of the site of the proposed action? 1.8 acres
b. Total acreage to be physically disturbed? 0 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 1.8 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☑ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____
☐ Parkland

	NO	YES	N/A
5. Is the proposed action, 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?	☐	☑	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☑	☐	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐	
b. Are public transportation service(s) available at or near the site of the proposed action?	☑	☐	
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	☑	☐	
9. Does the proposed action meet or exceed the state energy code requirements? 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? If No, describe method for providing potable water: _____	☐	☑	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	☐	☑	
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	☑	☐	
b. Is the proposed action located in an archeological sensitive area?	☑	☐	
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?	☑	☐	
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: _____	☑	☐	
14. Identify the typical habitat types that occur on, or are likely 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 Federal government as threatened or endangered?	☑	☐	
16. Is the project site located in the 100 year flood plain?	☑	☐	
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	☑	☐	
a. Will storm water discharges flow to adjacent properties? ☐ NO ☐ YES	☑	☐	
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☐ NO ☐ YES			

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☑	☐

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: David Craig Nichols Date: 5/13/2020

Signature: David Craig Nichols

STOP

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☐	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☐	☐
3. Will the proposed action impair the character or quality of the existing community?	☐	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☐	☐
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?	☐	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☐	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☐	☐
b. public / private wastewater treatment utilities?	☐	☐
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☐	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☐	☐

	No, or small impact may occur	Moderate to large impact may occur
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☐	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☐	☐

Part 3 - Determination of significance. The Lead Agency is responsible for the completion of Part 3. For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Name of Lead Agency	Date
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

PRINT

TOWN OF MANLIUS

DISCLOSURE AFFIDAVIT

This affidavit is a part of and must be completed and attached to every application, petition, request submitted for a *site plan, variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license* or *permit.*

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

I. David Nichols, being duly sworn, deposes and says that (s) he is:

Member/Owner of Green Lakes Lanes

(applicant, petitioner, corporation officer, property owner, *etc.)*

II. That deponent has read and is familiar with the provisions of the General Municipal Law, Section 809 which states:

A. Every application, petition or request submitted for a site plan, variance, amendment, change of zoning, approval of a plat, exemption from a plat or official map, license or permit, pursuant to the provisions or any ordinance, local law, rule or regulation constituting the zoning and planning regulations of a municipality shall state the name, residence and the nature and extent of the interest of any state officer or any officer or employee of such municipality is a part, in the person, partnership or association making such application, petition or request (hereinafter called the applicant) to the extent known to such applicant.

B. For the purpose of this action an officer or employee shall be deemed to have an interest in the applicant when (s)he, his/her spouse, or their brothers, sisters, parents, children, grandchildren, or the spouse of any of them:

1) is the applicant, or
2) is an officer, director, partner or employee of the applicant, or
3) legally or beneficially owns or controls stock of a corporate applicant or is a member of a partnership or association applicant, or
4) is a party to an agreement with such an applicant, express or implied, whereby (s) he may receive any payment or other benefit, whether or not for services rendered, or contingent upon the favorable approval of such application, petition or request.

C. Ownership of less than five percent (5%) of the stock of a corporation whose stock is listed on the New York or American Stock Exchanges shall not constitute an interest for the purposes of this section.

D. A person who knowingly and intentionally violates this section shall be guilty of a misdemeanor.

III. That no Town of Manlius officer, employee or a relative of either, as defined in Section 809 General Municipal Law has any interest in this application.

-OR-

If a Town of Manlius officer, employee or relative of either as defined in Section 809 General Municipal law has any interest in this application, the full particulars are provided on an attached sheet.

Date: May, 20 20.

David Craig Nichols
(Print Name)

David Craig Nichols
(Signature)

Green Lakes Lanes
(Entity Name)

By (Officer) (Title)

7930 E. Genesee St, 13066
(Mailing Address of Applicant)

607-342-1789
(Telephone Number)

Date: _____, 20_____.

(Print Name)

(Signature)

(Entity Name)

By (Officer) (Title)

(Mailing Address of Applicant)

(Telephone Number)

ACKNOWLEDGEMENTS

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

On this _____ day of _____ in the year 20_____, before me, the undersigned, a notary public in and for said state, personally appeared _____, _____, and _____ personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within Petition and acknowledged to me the he/she/they executed the same in his/her/their capacity, and that by his/her/their signature(s) on the Petition, the individual or the persons upon behalf of which the individual acted executed the instrument.

_____
Notary Public

CORPORATE ACKNOWLEDGEMENT

STATE OF NEW YORK)
) SS:
COUNTY OF ONONDAGA)

_____, being duly sworn, deposes and says the s(he) is the _____ of _____ corporation named in the within Application/Petition, that s(he) has read the foregoing affidavit and knows the contents thereof; that the same is true of s(he) own knowledge, except as to those matters therein stated to be alleged upon information and belief, and as to those matters s(he) believes it to be true.

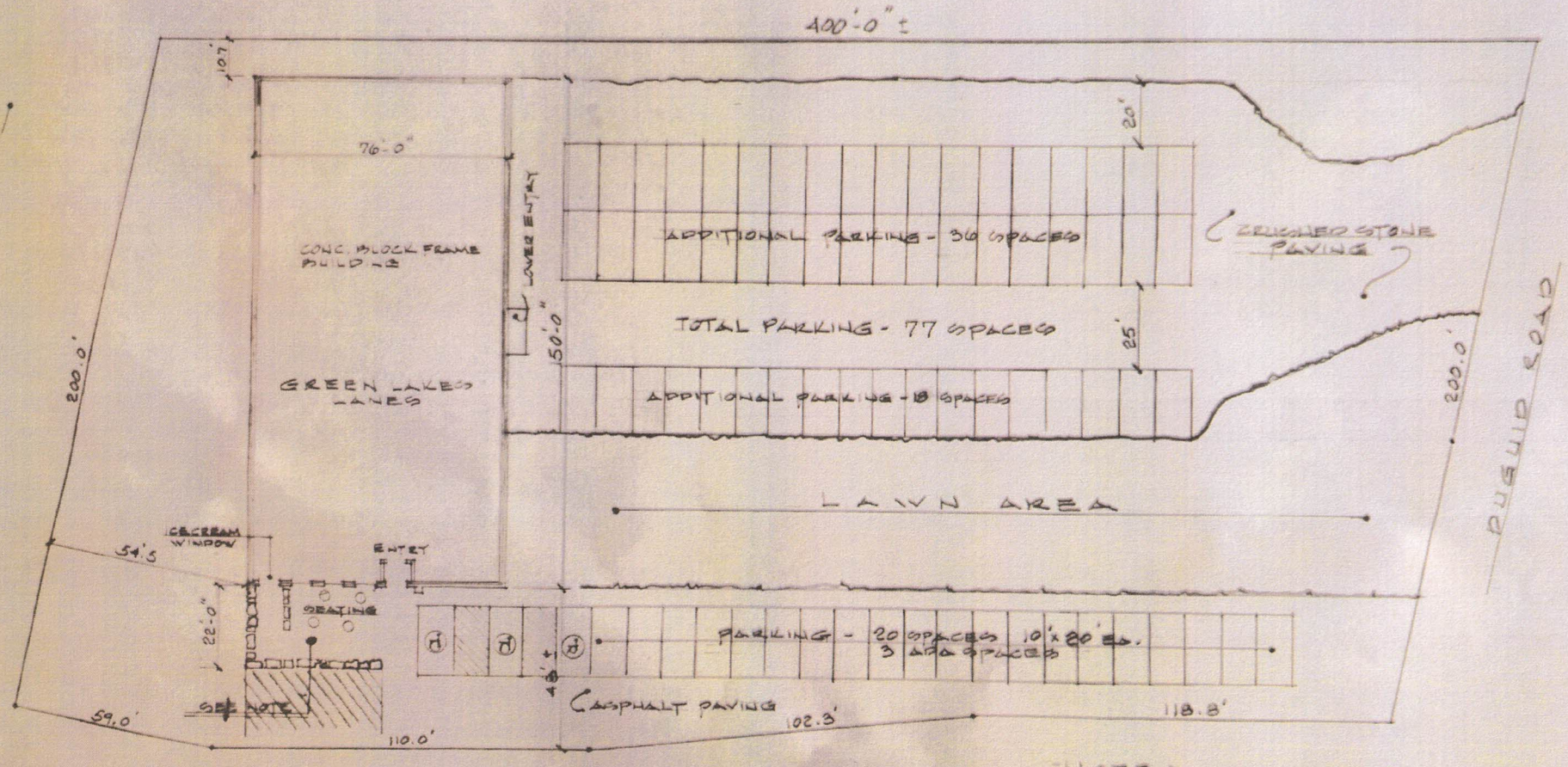
_____
Applicant Signature

Subscribed to me before this day
Of_____, 20_____

_____
Notary Public

06/29/16 LB

PROPOSED SITE PLAN	DRAWINGS BY:	SHEET NO.
BRIAN HOLMES 7930 E. GENESEE ST. FAYETTVILLE, N.Y.	GREG ADDO 4958 BELLEVUE AVE. SYRACUSE, N.Y. 13219	S-1 OF 1



7930 EAST GENESEE STREET (NEW YORK ROUTE #5)

SITE PLAN
SCALE: 1" = 30'-0"

NOTE:
ICE CREAM SEATING AREA (APPROX. 16)
W/ 2'x4'x18" W/DECORATIVE STONE
RETAINING/SEPARATION BARRIER



PARCEL INFORMATION

APPLICANT	SOURCE RENEWABLES LLC
PARCEL ADDRESS	6966 TAFT ROAD, EAST SYRACUSE, NY 13057
TAX NUMBER	034.000-1-20.1
PARCEL AREA	37.682 ACRES
PROJECT AREA	17.3 ACRES
EXISTING IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 0 SF GRAVEL 0 SF ASPHALT 0 SF TOTAL 0.00 AC
PROPOSED IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 910 SF GRAVEL 20,003 SF ASPHALT 0 SF TOTAL 0.48 AC
PANEL COVERAGE	6.35 ACRES
TOTAL DISTURBANCE AREA	**0.86 ACRES**

ZONING INFORMATION

	REQUIRED	PROPOSED
CLASSIFICATION	RESIDENTIAL - AGRICULTURAL DISTRICT (R-A)	
FRONT SETBACK	50 FT	±65 FT
SIDE SETBACK	50 FT	±51 FT
REAR SETBACK	50 FT	±72 FT

WETLAND INFORMATION

	EXISTING	PROPOSED
WETLANDS WITHIN PROPERTY	2.62 ACRES	2.62 ACRES

MODULE

MANUFACTURER	HANWHA Q-CELLS USA
MODULE MODEL	Q.PEAK DUO L-G5.3 395
MODULE OUTPUT	395W
MODULE COUNT	13,552
DC SYSTEM OUTPUT	5.35 MWDC
DESIGN TEMPERATURES	
EXTREME MINIMUM	-24°C

INVERTER

MANUFACTURER	SUNGROW
INVERTER NOMINAL OUTPUT POWER	
@50°C, PF=1	2500kVA
QUANTITY/TOTAL	2
AC SYSTEM OUTPUT NOM	3.4 MWAC

RACKING

MANUFACTURER	RBI OR APVD EQUAL
TILT	20°
PITCH	22.0 FT
FOUNDATION	PILE DRIVEN POSTS
CONFIGURATION	1-UP PORTRAIT
AZIMUTH	177°

PROJECT SITE

INTERCONNECTION VOLTAGE	13.2kV ASSUMED
AREA INSIDE FENCELINE	16.20 ACRES

WETLAND

100' WETLAND BUFFER ZONE

LaBella
Powered by partnership.

TAFT ROAD SOLAR, LLC

TOWN OF MANILIUS, ONONDAGA COUNTY

SCALE: 1"=100'

N

Source Renewables

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. 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; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Taft Solar Development			
Project Location (describe, and attach a general location map): Taft Road, Town of Manlius, Onondaga County, New York 13057 (tax parcel # 034.-01-20.1); see attached USGS map			
Brief Description of Proposed Action (include purpose or need): Source Renewables, LLC is developing plans for the installation of one 3.4 MW-AC solar array to be installed on vacant grassland located at Taft Road (Parcel ID: 034.-01-20.1), which is located in the Town of Manlius. The purpose of the project is to generate clean renewable energy for local residences and businesses. Activities include the installation of a ground-mounted solar energy system of approximately 13,552 freestanding modules/panels, new electrical equipment, including two transformers/inverters on concrete pads, and accessories including approximately 1,268 linear ft. of underground electrical line, unimproved and gravel access roads and a chain-link fence. The maximum depth of ground disturbance will not exceed 4 ft and the helix screws (or H-piles) of the solar tables will be installed at a depth of approximately 8-10 ft. New landscaping will be installed to screen the project site along Taft Road. There will be minimal vegetation removal, minimal grading, and minimal ground disturbance from solar module installation. The maximum extent of ground disturbance will be less than 1 acre. For additional details, see attached USGS location map and site drawings.			
Name of Applicant/Sponsor: Taft Solar, LLC (Mr. Andrew Day)		Telephone: 203-542-5651 E-Mail: aday@sourcerenew.com	
Address: 41 West Elm Street, Suite C			
City/PO: Greenwich		State: CT	Zip Code: 06830
Project Contact (if not same as sponsor; give name and title/role):		Telephone: E-Mail:	
Address:			
City/PO:		State:	Zip Code:
Property Owner (if not same as sponsor): Gratzer Family Trust	Site parcels are to be purchased by a subsidiary of Taft Solar, LLC prior to the start of construction.	Telephone: N/A E-Mail: N/A	
Address: 6787 Taft Road			
City/PO: East Syracuse		State: New York	Zip Code: 13057

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board - Special Use Permit	Pending
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Planning Board - Site Plan Approval	Pending
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	County IDA - PILOT Agreement	Pending
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSERDA- Funding; SHPO- Sign-off; NYSDEC- Wetland Permit	Pending
h. Federal agencies ☑Yes ☐No	USACE - Permit for culvert	Pending

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Restricted Agriculture, with Technical Development Overlay (TD/O) on northern portion of the parcel

b. Is the use permitted or allowed by a special or conditional use permit? Special Use Permit from Town Board ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? East Syracuse- Minoa

b. What police or other public protection forces serve the project site?
Town of Manlius Police Department

c. Which fire protection and emergency medical services serve the project site?
Town of Manlius Department

d. What parks serve the project site?
Cicero Swamp Wildlife Management Area, Central Park softball fields, Gateway Community Park, Maxwell Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
Commercial Solar Energy Facility Installation

b. a. Total acreage of the site of the proposed action? +/-17.3 acres
b. Total acreage to be physically disturbed? +/-0.8 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? +/-17.3 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: +/-6 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes, Note, we defined solar panels (modules) as structures.

i. Total number of structures +/-13,552 (modules/panels) and 2 transformers/inverters on concrete pads (approx. 900 sf. total).

ii. Dimensions (in feet) of largest proposed structure: +/-9 ft height; +/-6.5 ft width; and +/-3.5 length (applies to solar modules/ panels only)

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☑Yes ☐No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): A NYSDEC freshwater wetland (ID: SYE-3), Class C Stream, Federal freshwater pond and riverine wetland are located on the project parcel.

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:
The solar arrays will be constructed w/in the NYSDEC 100-ft. wetland buffer and an appropriate NYSDEC permit will be obtained. Additionally, a US Army Corps of Engineers permit will be obtained for the culvert installation.

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☑No
If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☑No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____
The site development plans are designed to minimize disturbance so that reclamation is not necessary.

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No
If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No
If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No
If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No
If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No
If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☑No

The proposed project will disturb approx. 0.8 acres of land.

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: Potentially 7 am - 9pm
- Saturday: Minimal if any
- Sunday: Minimal if any
- Holidays: Minimal if any

ii. During Operations:

- Monday - Friday: 24 hours per day
- Saturday: 24 hours per day
- Sunday: 24 hours per day
- Holidays: 24 hours per day

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Intermittent construction noise could exceed existing ambient noise levels for short periods of time during daytime construction activities. Once operational, noise levels exceeding the existing ambient noise levels are not anticipated.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Propane-fueled rental lights could be present on-site during construction activities and will be removed upon completion.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

The solar project site itself will not contain any bulk storage.

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: TBD tons per TBD (unit of time)
- Operation : N/A tons per N/A (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Construction debris of disposable wrapping and containers will be recycled when appropriate.
- Operation: N/A

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: The exact disposal method will be determined by the contractor and will follow all applicable NYSDEC guidelines and standards.
- Operation: N/A

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☑ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces (including gravel road)	0	+/-0.5	+0.5
• Forested (hedgerow)	+/-0.5	+/-0.2	-0.3
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	+/-14.1	+/-7.5	-6.6
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)	+/-0.1	+/-0.1	0
• Wetlands (freshwater or tidal)	+/-2.6	+/-2.6	0
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: Solar tables with grass underneath	0	+/-6.4	+6.4

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): Spill #0702926

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

NYSDEC Spill #0702926 is identified in the area under the power lines located on the northern portion of the project site. Per the NYSDEC Spill listing, hydraulic oil spilled to the soil in 2007. The spill has since been closed.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? +/- 6.6 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Niagara silt loam	+/-55 %
Hilton loam	+/-25 %
Appleton loam	+/-10 %

d. What is the average depth to the water table on the project site? Average: +/- 0.8 feet Varies from <1 ft. to +/- 2 ft.

e. Drainage status of project site soils:

☐ Well Drained:	% of site
☑ Moderately Well Drained:	+/-25 % of site
☑ Poorly Drained	+/-75 % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	100 % of site
☐ 10-15%:	% of site
☐ 15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 895-21 Classification C
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters & NYS Wetland Approximate Size +/-2.4 acres
- Wetland No. (if regulated by DEC) SYE-3

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑ Yes ☐ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____
Name: Ley Creek & Tributaries Pollutants: Pathogens, Nutrients, Ammonia, Other Inorganics Uses: Recreation, Public Bathing, Aquatic Life

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:
The project site will be fenced off but some typical suburban/rural species, such as squirrels, rabbits, raccoons, woodchucks, chipmunks, rodents, deer, foxes, coyote, songbirds, crows, raptors, frogs, and snakes may pass through.

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:
i. Species and listing (endangered or threatened): _____
In addition to the Indiana Bat identified by the NYSDEC EAF Mapper, U.S. Fish & Wildlife Service (USFWS) lists the Northern Long-eared Bat (NLEB), and the Eastern Massasauga (rattlesnake) as potential species of concern at the project site. Consultation with the NYSDEC and USFWS is ongoing.

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No
i. If Yes: acreage(s) on project site? Approximately 28 acres (+/-75% of the project area)
ii. Source(s) of soil rating(s): US U.S. Department of Agriculture - Natural Resource Conservation Service - Web Soil Survey (Groups 1-4)

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. 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 Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

See attached SHPO "No Effect" letter.

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. 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? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

See attached SHPO "No Effect" letter.

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

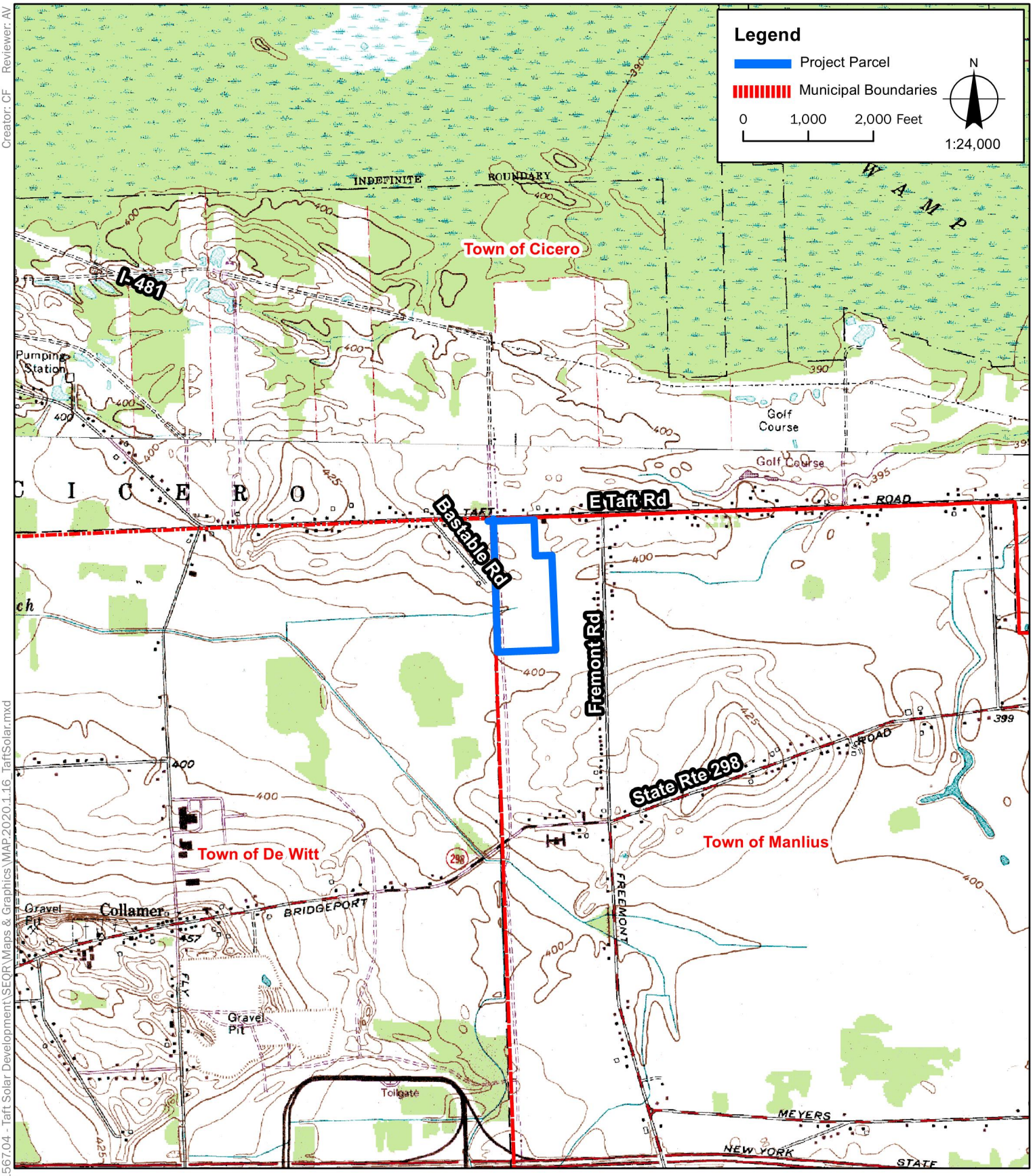
G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Taft Solar, LLC (Andrew Day) Date 02/06/2020

Signature _____ Title Civil Engineer for LaBella Associates
Acting Agent for Andrew Day

PRINT FORM



Creator: CF Reviewer: AV

Path: J:\Source Renewables\2191567.04 - Taft Solar Development\SEQR\Maps & Graphics\MAP 2020.1.16_TaftSolar.mxd

Sources:
1. USGS Map: ArcGIS basemap
2. Roads: TIGER 2010
3. Municipal Boundaries: NYS GIS Office 2018

LaBella
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TAFT SOLAR, LLC

TAFT ROAD SOLAR ARRAY

LaBella Project No: 2191567.04
Date: FEBRUARY 2020

USGS SITE LOCATION MAP

FIGURE 1

NEW YORK STATE

Services News Government Local Translate

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

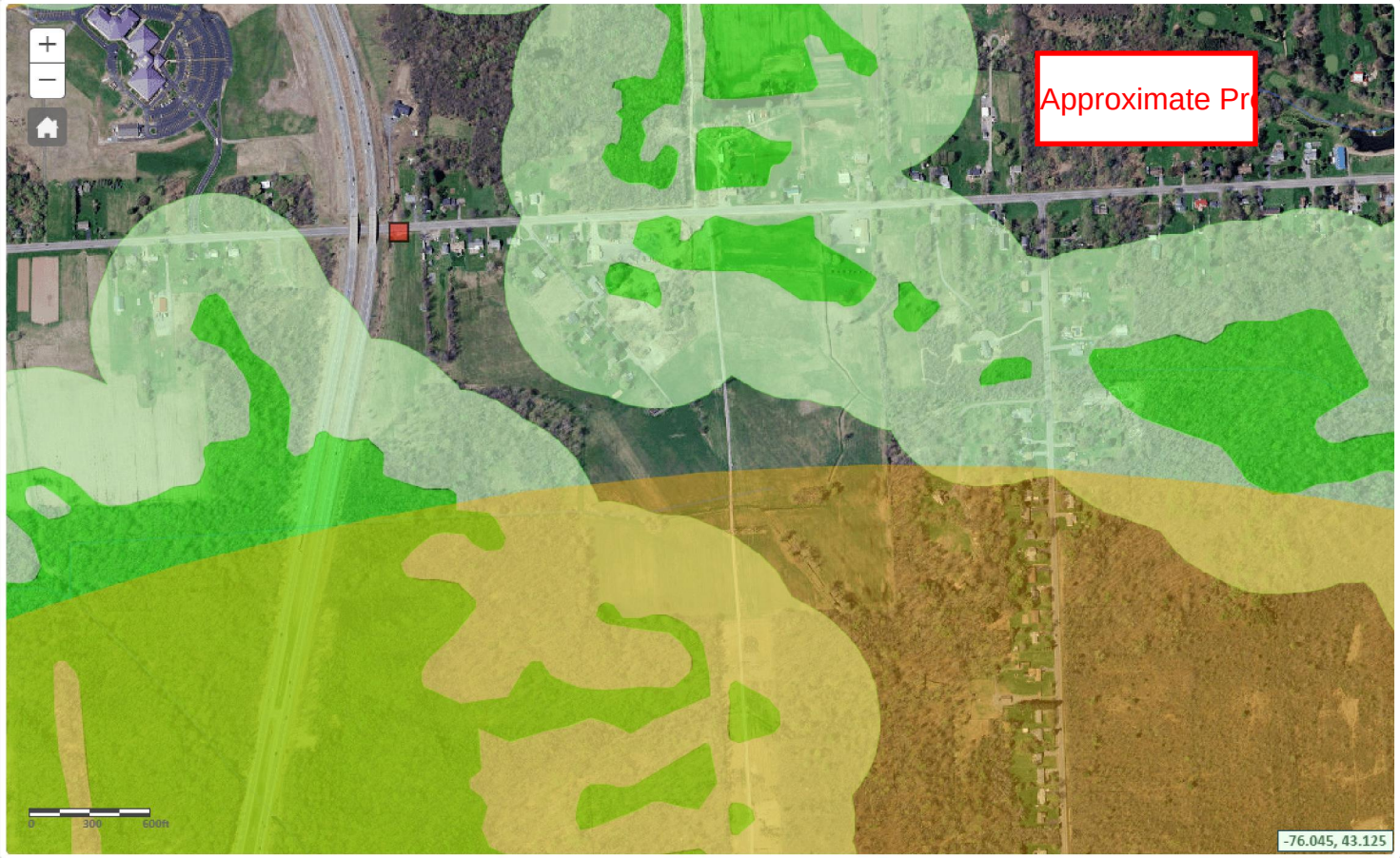
Environmental Resource Mapper

Base Map: NYS Aerial Using this map

Search
Tools
Layers and Legend

- All Layers
- Unique Geological Features
- Waterbody Classifications for Rivers/Streams
- Waterbody Classifications for Lakes
- State Regulated Freshwater Wetlands (Outside of the Adirondack Park)
  - State Regulated Wetland Checkzone
- Significant Natural Communities
  - Natural Communities Near This Location
- Rare Plants or Animals

Other Wetland Layers
Reference Layers
Tell Me More...
Need A Permit?
Contacts



NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

February 05, 2020

Alexandra Vitulano
Environmental Analyst
LaBella A
300 State St, Suite 201
Rochester, NY 14614

Re: NYSERDA
Taft Solar
Town of Manlius, Onondaga County, NY
20PR00799

Dear Alexandra Vitulano:

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

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

IPaC **U.S. Fish & Wildlife Service**

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.

NOT FOR CONSULTATION

Location

Onondaga County, New York



Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699

3817 Luker Road
Cortland, NY 13045-9385

http://www.fws.gov/northeast/nyfo/es/section7.htm

Endangered species

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 species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, 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

Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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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 below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

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 E-bird data mapping tool (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 below.

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.

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NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
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. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler Dendroica cerulea — Breeds Apr 20 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Snowy Owl Bubo scandiacus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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.

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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 (|)
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.



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Canada Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Cerulean Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Snowy Owl
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures 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. Additional measures and/or permits 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 migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) 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 Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets 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 (Eagle Act 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 AKN Phenology Tool.

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 Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

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, migrating or present year-round in my project 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 refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. 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 Birds of Conservation Concern (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 Eagle Act 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 Northeast Ocean Data Portal. 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 NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf 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 Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

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 Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

NOT FOR CONSULTATION

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.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge 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

Impacts to NWI wetlands 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.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

PFO1C
PFO1A

FRESHWATER POND

PUBHx

RIVERINE

R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

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.

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EAF Mapper Summary Report

Friday, January 31, 2020 11:50 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	895-21
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters, NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):30.6
E.2.h.iv [Surface Water Features - DEC Wetlands Number]	SYE-3
E.2.h.v [Impaired Water Bodies]	Yes

E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Ley Creek and tribs – Pathogens;Nutrients;Ammonia;Other Inorganics – Recreation;Public Bathing;Aquatic Life
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Indiana Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No



1 / C002 OVERALL SITE PLAN

SCALE: 1" = 100'

PROJECT DATA UNIT B

PARCEL INFORMATION

APPLICANT	SOURCE RENEWABLES LLC
PARCEL ADDRESS	6966 TAFT ROAD, EAST SYRACUSE, NY 13057
TAX NUMBER	034.000-1-20.1
PARCEL AREA	37.682 ACRES
PROJECT AREA	17.3 ACRES
EXISTING IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 0 SF GRAVEL 0 SF ASPHALT 0 SF TOTAL 0.00 AC
PROPOSED IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 910 SF GRAVEL 20,003 SF ASPHALT 0 SF TOTAL 0.48 AC
PANEL COVERAGE	6.35 ACRES
TOTAL DISTURBANCE AREA	**0.86 ACRES**

ZONING INFORMATION

	REQUIRED	PROPOSED
CLASSIFICATION	RESIDENTIAL - AGRICULTURAL DISTRICT (R-A)	
FRONT SETBACK	50 FT	±65 FT
SIDE SETBACK	50 FT	±51 FT
REAR SETBACK	50 FT	±72 FT

WETLAND INFORMATION

	EXISTING	PROPOSED
WETLANDS WITHIN PROPERTY	2.62 ACRES	2.62 ACRES

SYSTEM SUMMARY (UNIT B)

MODULE

MANUFACTURER	HANWHA Q-CELLS USA
MODULE MODEL	Q.PEAK DUO L-G5.3 395
MODULE OUTPUT	395W
MODULE COUNT	13,552
DC SYSTEM OUTPUT	5.35 MWDC
DESIGN TEMPERATURES	
EXTREME MINIMUM	-24°C

INVERTER

MANUFACTURER	SUNGROW
INVERTER NOMINAL OUTPUT POWER	
@50°C, PF=1	2500kVA
QUANTITY/TOTAL	2
AC SYSTEM OUTPUT NOM	4 MWAC ???

RACKING

MANUFACTURER	RBI OR APVD EQUAL
TILT	20°
PITCH	22.0 FT
FOUNDATION	PILE DRIVEN POSTS
CONFIGURATION	1-UP PORTRAIT
AZIMUTH	177°

PROJECT SITE

INTERCONNECTION VOLTAGE	13.2kV ASSUMED
AREA INSIDE FENCELINE	16.20 ACRES

WETLAND

100' WETLAND BUFFER ZONE

LaBella
Powered by partnership.
300 State Street, Suite 201
Rochester, NY 14614
585-454-6110
labellapc.com

NOT FOR CONSTRUCTION

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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SOURCE RENEWABLES, LLC
41 WEST ELM ST, SUITE C
GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: JANUARY 2020
DRAWING NAME:

PRELIMINARY SITE PLAN

DRAWING NUMBER:

C002

Date & Time: 1/29/2020 11:09 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C002 SITE PLAN.dwg

Onondaga County Planning Board

J.Ryan McMahon II
County Executive

RESOLUTION OF THE
ONONDAGA COUNTY PLANNING BOARD

Meeting Date: April 08, 2020

OCPB Case # Z-20-107

WHEREAS, the Onondaga County Planning Board, pursuant to General Municipal Law, Section 239 l, m and n, has considered and reviewed the referral for a SITE PLAN from the Town of Manlius Planning Board at the request of Taft Solar, LLC for the property located at East Taft Road; and

WHEREAS, General Municipal Law Section 239-m allows the County Planning Board to review approval of site plans and the site is located within 500 feet of East Taft Road (Route 18), a county highway, and the municipal boundaries between the Towns of Manlius, Cicero and DeWitt; and

WHEREAS, the applicant is proposing construction of a 3.45 MW-AC solar farm on 17.3 acres of a 37.682-acre parcel in a Restricted Agricultural (R-A) zoning district; and

WHEREAS, the Board recently reviewed a special permit referral (Z-20-86) associated with the proposed project; and

WHEREAS, the site is located in a rural area east of I-481 with surrounding residential land uses and large tracts of agricultural lands and wooded areas; aerial imagery shows the site has frontage on East Taft Road, a county road that also marks the boundary between the Towns of Manlius, DeWitt, and Cicero in this location, and contains vacant, undeveloped land; per aerial imagery, there are existing transmission towers and overhead utility lines along the western lot line, which are served by an existing gravel access road onto East Taft Road; per the local application, the site will be purchased by the applicant subject to approvals for the project; and

WHEREAS, the submitted application and plan indicate the solar farm will include installation of 263 solar tables with a total of 13,522 solar panels, each standing 9’ in height, with portions of the solar arrays occurring on either side of a drainage channel on the southern half of the site; the solar arrays will be enclosed by a 6’ high chain link fence with 3 strands of barbed wire affixed to the top; there will be two new equipment pads within the fence enclosure, each containing an inverter and battery storage; the plan shows a row of new landscaping at the front of the site to screen the view from East Taft Road; and

WHEREAS, per the plan, the solar farm will be served by a new 12’ wide gravel access roadway onto East Taft Road; the proposed road requires two new SICPP culverts, one 18” at the front of the site and one 24” to cross the drainage channel; ADVISORY NOTES: the proposed driveway onto East Taft Road requires highway access and work permits from the Onondaga County Department of Transportation and will be subject to the availability of sight distance; all existing or proposed driveways on a County road must meet Department requirements; and

WHEREAS, the project is intended for Community Solar purposes and the plan shows proposed utility poles and overhead electrical wiring at the front of the site to

connect the solar farm to the existing utility grid; the submitted Letter of Intent dated February 6, 2020 indicates the application for interconnection to the utility grid will be submitted with formal plans; per the submitted Environmental Assessment Form (EAF) dated February 6, 2020, the applicant is seeking a PILOT agreement with the Onondaga County Industrial Development Agency (OCIDA) for the project; and

WHEREAS, per the EAF, 0.8 acres of the site will be disturbed by the proposed project; the EAF notes that maximum depth of ground disturbance will not exceed 4 feet and the helix screws (or H-piles) of the solar tables will be installed at a depth of approximately 8-10 feet;
ADVISORY NOTE: per the Onondaga County Department of Transportation, additional stormwater runoff into the county's drainage system is prohibited; and

WHEREAS, the site does not have existing drinking water or wastewater services and is located outside of the Onondaga County Sanitary District; no drinking water or wastewater services are proposed as part of the project; and

WHEREAS, the Letter of Intent indicates a wetland delineation was completed in July 2019 and is subject to final determination by the US Army Corps of Engineers (USACOE); a wetland report will be produced under separate submittal once a final determination is made by the USACOE; the delineated wetland boundaries is not shown on the project plans; however, the letter notes that a wetland permit will be required from the NYS Department of Environmental Conservation and obtained for installation of the solar array within the 100' wetland buffer, and a USACOE permit will be required and obtained for the culvert installation within the existing drainage ditch; and

WHEREAS, the EAF notes that NYSDEC Spill #0702926 is identified in the area under the power lines located on the northern portion of the site; the NYSDEC Spill listing identifies this as a hydraulic oil spill to the soil, which occurred in 2007 and has since been closed; and

WHEREAS, the site may contain the Indiana bat, or its associated habitat, which has been listed by the state or federal government as a threatened or endangered animal species (per EAF Mapper); impacts to bat species are often associated with tree clearing and from the plans it appears that no trees will be removed as part of the proposed project; and

WHEREAS, the site or a portion of it is located in or adjacent to an area designated as sensitive for archaeological sites on the NYS Historic Preservation Office archaeological site inventory (per EAF Mapper); the referral materials includes a letter from the NYS Office of Parks, Recreation and Historic Preservation (OPRHP), dated February 5, 2020, that indicates the office reviewed the project and determined that no properties, including archaeological and/or historic resources, will be impacted by the project; and

WHEREAS, ADVISORY NOTE: per GML § 239-nn, the legislative body or other authorized body having jurisdiction in a municipality shall give notice to an adjacent municipality when a hearing is held by such body relating to a subdivision, site plan, special use permit, or a use variance on property that is within five hundred feet of an adjacent municipality; such notice shall be given by mail or electronic transmission to the clerk of the adjacent municipality at least ten days prior to

any such hearing; and

NOW THEREFORE BE IT RESOLVED, that the Onondaga County Planning Board recommends the following MODIFICATION(S) to the proposed action prior to local board approval of the proposed action:

The applicant must contact the Onondaga County Department of Transportation to coordinate requirements for the proposed driveway on East Taft Road, in order to satisfy commercial driveway standards, which will require paving the portion of the driveway in the right-of-way and aligning the driveway with the existing driveway on the north side of East Taft Road. To further meet Department requirements, the applicant must contact the Department to discuss any required drainage data for the proposed project. The municipality must ensure any mitigation as may be determined by the Department is reflected on the project plans prior to, or as a condition of, municipal approval.

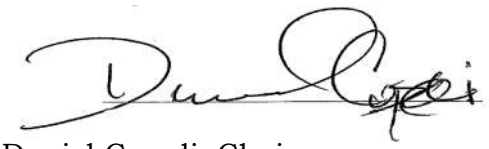
The Board also offers the following comments:

1. Additional landscape screening is encouraged to buffer the solar farm from the adjacent VFW property and nearby residential uses.

2. The applicant and Town are encouraged to further minimize encroachment into wetland areas, and/or provide high-quality mitigation to preserve these important and sensitive environmental areas to the extent possible. Best practices to consider related to wetland and habitat protection may include avoiding soil compaction during construction, avoiding drilled foundations, restoring or improving adjacent wetlands, buffering stream channels, planting of beneficial and diverse native species and pollinators and removing invasive species, and allowing small openings in fencing to allow for small wildlife movement.

3. For more information regarding the management of Battery Energy Solar System (BESS) development within solar projects, the Town is advised to coordinate with the CNY Regional Planning Development Board (RPDB) Energy Management office. The New York State Energy Research and Development Authority (NYSERDA) also offers a BESS model law, model permit, and full guidebook to help local governments manage such systems in their community.

4. The Town is advised to ensure battery storage systems meet applicable requirements for fire prevention and safety and handling of potentially hazardous materials.



Daniel Cupoli, Chairman
Onondaga County Planning Board
Transmittal Date: 04-08-2020

GML 239 Report of Final Action

NYS GML § 239-m.6. and n.6. require the referring body to file a report of the final action it has taken on a referred matter with the county planning agency within 30 days after the final action (separate from the minutes taken at the meeting). A referring body which acts contrary to a County Planning Board recommendation of MODIFICATION or DISAPPROVAL of a referred matter shall also set forth the reasons for the contrary action in such report.

This section to be completed by the Syracuse-Onondaga County Planning Agency

To: Onondaga County Planning Board **From:** Town of Manlius Planning Board

Fax: 435-2439 **Phone:** 435-2611

Re:

Applicant:	Taft Solar, LLC
Address:	at East Taft Road
Referral Type:	SITE PLAN
OCPB Date:	April 08, 2020
OCPB Action:	Modification
OCPB Case #:	Z-20-107

The local board took the following action regarding the above referenced referral (Check one box. If checking Other, please specify the final action taken. Use the space at the bottom of the report to identify reasons if acting contrary to the OCPB recommendation.):

☐ Approved the proposed action with regard to the OCPB's No Position or No Position with Comment.
☐ Approved the proposed action as modified by the OCPB.
☐ Approved the proposed action contrary to some of the modifications recommended by the OCPB.*
☐ Approved the proposed action contrary to all of the modifications recommended by the OCPB.*
☐ Approved the proposed action contrary to the disapproval recommended by the OCPB.*

☐ Disapproved the proposed action with regard to the OCPB's no position or no position with comment.
☐ Disapproved the proposed action with regard to the recommended modification(s) by the OCPB.
☐ Disapproved the proposed action as recommended and for reasons set forth by the OCPB.
☐ Disapproved the proposed action as recommended but for reasons other than those set forth by the OCPB. (Please list reasons below for local disapproval.)

☐ Other _____

Local Board Date: _____

*List reasons for acting contrary to the OCPB recommendation and include a copy of the local board resolution. Attach additional reasons on a separate sheet of paper as necessary.

_____

_____

_____

_____

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February 6, 2020

Town of Manlius Town Board
301 Brooklea Drive
Manlius, NY 13066

RE: Letter of Intent: Source Renewable – Taft Road, Manlius

Dear Town Board Members:

Source Renewables is proposing the construction of one 3.45 MW-AC Photovoltaic Array with battery storage on lands of now or formally Gratzer Family Trust (Tax Parcel 34.00-1-20.1, located on the south side of Taft Road just east of the Dewitt town line. Per Town Code, Section 155-27.2, Solar Photovoltaic Energy Systems, Source Renewable is required to proceed through a Special Permit process to be approved by the Town and Planning Board because the solar array will be the principal use of the parcel. We are requesting to appear before the next Town Board meeting on February 12th to present the project.

The subject properties are a combined 17.3 acre parcel, currently zoned Restricted Agricultural and is currently vacant meadow. The parcel is bounded to the north by Taft Road, to the south and east by vacant land and to west by powerlines and farmland.

The proposed Solar Energy System for the property includes the installation of battery storage and approximately 263 solar tables consisting or 221 full tables with 56 panels/table and 42 half tables with 28 panels per table. There are 13,552 solar panels each standing approximately 9'± in height, 42±"' in length and 6.5±' in width. The tables will be spaced at 24.7' intervals. The array will be surrounded by a 6' high chain-link fence with 3-strands of barbed wire affixed to the top for security purposes. For visual screening, a landscape buffer will be planted along the Taft Road frontage.

The electricity produced by the array will be converted from DC power to AC power via string inverters situated under the array panels. The AC power will be collected and transformed to medium voltage power, which will then be sent out via utility distribution. The on-site transformer will be approximately 6' long, 6' wide and stand approximately 5' in height. The on-site main switchgear will be approximately 10' long, 2' wide, and stand 6' in height. The distribution services for the array will utilize the existing utility lines. Therefore no additional roadside powerlines will be required.

A wetland delineation was completed on the subject property by LaBella Associates in July 2019 and is still subject to final determination by the US Army Corps of Engineers. A wetland report will be produced under separate submittal once a final determination has been established. A NYSDEC Wetland permit will be required and obtained for installation of the solar array within the 100' wetland buffer and a USACOE permit will be required and obtained for the culvert installation within the existing ditch. Coordination with the New York State Historic Preservation Office and Federal Aviation Administration has been initiated and is pending. A report will be produced under separate submittal once results have been received. The application for interconnection to the utility grid will be submitted with formal plans before the next meeting.

Source Renewables is proposing that the array is utilized for Community Solar purposes. The Community Solar program will allow local residences and businesses to purchase power from the

array at a discounted rate compared to the current electricity provider. Source Renewables is excited to pursue this project within the Town of Manlius and looks forward to providing an opportunity for clean, alternative energy to the Town and its residents.

We submit the following for your review and consideration:

- Letter of Intent (12 copies)
- Special Permit Application (12 copies)
- Full Environmental Assessment Form (12 copies)
- Presentation/Concept Plan (12 copies)
- Application Fee Check for $2,450

We look forward to presentation of the project at the February 12th meeting. If you have any questions or require any additional information, please do not hesitate to contact me at (585) 402-7005

Respectfully submitted,

LaBella Associates



Drazen Gasic, CPSWQ, CPESC
Civil Renewables Manager

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. 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; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Taft Solar Development			
Project Location (describe, and attach a general location map): Taft Road, Town of Manlius, Onondaga County, New York 13057 (tax parcel # 034.-01-20.1); see attached USGS map			
Brief Description of Proposed Action (include purpose or need): Source Renewables, LLC is developing plans for the installation of one 3.4 MW-AC solar array to be installed on vacant grassland located at Taft Road (Parcel ID: 034.-01-20.1), which is located in the Town of Manlius. The purpose of the project is to generate clean renewable energy for local residences and businesses. Activities include the installation of a ground-mounted solar energy system of approximately 13,552 freestanding modules/panels, new electrical equipment, including two transformers/inverters on concrete pads, and accessories including approximately 1,268 linear ft. of underground electrical line, unimproved and gravel access roads and a chain-link fence. The maximum depth of ground disturbance will not exceed 4 ft and the helix screws (or H-piles) of the solar tables will be installed at a depth of approximately 8-10 ft. New landscaping will be installed to screen the project site along Taft Road. There will be minimal vegetation removal, minimal grading, and minimal ground disturbance from solar module installation. The maximum extent of ground disturbance will be less than 1 acre. For additional details, see attached USGS location map and site drawings.			
Name of Applicant/Sponsor: Taft Solar, LLC (Mr. Andrew Day)		Telephone: 203-542-5651 E-Mail: aday@sourcerenew.com	
Address: 41 West Elm Street, Suite C			
City/PO: Greenwich		State: CT	Zip Code: 06830
Project Contact (if not same as sponsor; give name and title/role):		Telephone: E-Mail:	
Address:			
City/PO:		State:	Zip Code:
Property Owner (if not same as sponsor): Gratzer Family Trust	Site parcels are to be purchased by a subsidiary of Taft Solar, LLC prior to the start of construction.	Telephone: N/A E-Mail: N/A	
Address: 6787 Taft Road			
City/PO: East Syracuse		State: New York	Zip Code: 13057

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town Board - Special Use Permit	Pending
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Planning Board - Site Plan Approval	Pending
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☑Yes ☐No	County IDA - PILOT Agreement	Pending
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSERDA- Funding; SHPO- Sign-off; NYSDEC- Wetland Permit	Pending
h. Federal agencies ☑Yes ☐No	USACE - Permit for culvert	Pending

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Restricted Agriculture, with Technical Development Overlay (TD/O) on northern portion of the parcel

b. Is the use permitted or allowed by a special or conditional use permit? Special Use Permit from Town Board ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? East Syracuse- Minoa

b. What police or other public protection forces serve the project site?
Town of Manlius Police Department

c. Which fire protection and emergency medical services serve the project site?
Town of Manlius Department

d. What parks serve the project site?
Cicero Swamp Wildlife Management Area, Central Park softball fields, Gateway Community Park, Maxwell Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?
Commercial Solar Energy Facility Installation

b. a. Total acreage of the site of the proposed action? +/-17.3 acres
b. Total acreage to be physically disturbed? +/-0.8 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? +/-17.3 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
_____
ii. Is a cluster/conservation layout proposed? ☐ Yes ☐ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: +/-6 months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes, Note, we defined solar panels (modules) as structures.

i. Total number of structures +/-13,552 (modules/panels) and 2 transformers/inverters on concrete pads (approx. 900 sf. total).

ii. Dimensions (in feet) of largest proposed structure: +/-9 ft height; +/-6.5 ft width; and +/-3.5 length (applies to solar modules/ panels only)

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☐No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____ acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☑Yes ☐No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): A NYSDEC freshwater wetland (ID: SYE-3), Class C Stream, Federal freshwater pond and riverine wetland are located on the project parcel.

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:
The solar arrays will be constructed w/in the NYSDEC 100-ft. wetland buffer and an appropriate NYSDEC permit will be obtained. Additionally, a US Army Corps of Engineers permit will be obtained for the culvert installation.

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☑No
If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☑No
If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____
- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____
The site development plans are designed to minimize disturbance so that reclamation is not necessary.

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No
If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No
If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No
If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____
- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No
If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No
If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No
If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☐Yes ☑No

The proposed project will disturb approx. 0.8 acres of land.

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or _____ acres (impervious surface)

_____ Square feet or _____ acres (parcel size)

ii. Describe types of new point sources. _____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

- If to surface waters, identify receiving water bodies or wetlands: _____
- Will stormwater runoff flow to adjacent properties? ☐Yes ☐No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☐Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend
☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☐No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: Potentially 7 am - 9pm
- Saturday: Minimal if any
- Sunday: Minimal if any
- Holidays: Minimal if any

ii. During Operations:

- Monday - Friday: 24 hours per day
- Saturday: 24 hours per day
- Sunday: 24 hours per day
- Holidays: 24 hours per day

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☑ Yes ☐ No

If yes:

i. Provide details including sources, time of day and duration:

Intermittent construction noise could exceed existing ambient noise levels for short periods of time during daytime construction activities. Once operational, noise levels exceeding the existing ambient noise levels are not anticipated.

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☑ No

Describe: _____

n. Will the proposed action have outdoor lighting? ☑ Yes ☐ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

Propane-fueled rental lights could be present on-site during construction activities and will be removed upon completion.

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☑ No

Describe: _____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

The solar project site itself will not contain any bulk storage.

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities: _____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☑ Yes ☐ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: TBD tons per TBD (unit of time)
- Operation : N/A tons per N/A (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: Construction debris of disposable wrapping and containers will be recycled when appropriate.
- Operation: N/A

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: The exact disposal method will be determined by the contractor and will follow all applicable NYSDEC guidelines and standards.
- Operation: N/A

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☑ Industrial ☑ Commercial ☑ Residential (suburban) ☑ Rural (non-farm)
☑ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces (including gravel road)	0	+/-0.5	+0.5
• Forested (hedgerow)	+/-0.5	+/-0.2	-0.3
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	+/-14.1	+/-7.5	-6.6
• Agricultural (includes active orchards, field, greenhouse etc.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)	+/-0.1	+/-0.1	0
• Wetlands (freshwater or tidal)	+/-2.6	+/-2.6	0
• Non-vegetated (bare rock, earth or fill)			
• Other Describe: Solar tables with grass underneath	0	+/-6.4	+6.4

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☑ Yes ☐ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☑ Yes ☐ No

☑ Yes – Spills Incidents database — Provide DEC ID number(s): Spill #0702926

☐ Yes – Environmental Site Remediation database — Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures: _____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

NYSDEC Spill #0702926 is identified in the area under the power lines located on the northern portion of the project site. Per the NYSDEC Spill listing, hydraulic oil spilled to the soil in 2007. The spill has since been closed.

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☑ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? +/- 6.6 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____ %

c. Predominant soil type(s) present on project site:

Niagara silt loam	+/-55 %
Hilton loam	+/-25 %
Appleton loam	+/-10 %

d. What is the average depth to the water table on the project site? Average: +/- 0.8 feet Varies from <1 ft. to +/- 2 ft.

e. Drainage status of project site soils:

☐ Well Drained:	% of site
☑ Moderately Well Drained:	+/-25 % of site
☑ Poorly Drained	+/-75 % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	100 % of site
☐ 10-15%:	% of site
☐ 15% or greater:	% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name 895-21 Classification C
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters & NYS Wetland Approximate Size +/-2.4 acres
- Wetland No. (if regulated by DEC) SYE-3

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑ Yes ☐ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____
Name: Ley Creek & Tributaries Pollutants: Pathogens, Nutrients, Ammonia, Other Inorganics Uses: Recreation, Public Bathing, Aquatic Life

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:
The project site will be fenced off but some typical suburban/rural species, such as squirrels, rabbits, raccoons, woodchucks, chipmunks, rodents, deer, foxes, coyote, songbirds, crows, raptors, frogs, and snakes may pass through.

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No
If Yes:
i. Describe the habitat/community (composition, function, and basis for designation): _____
ii. Source(s) of description or evaluation: _____
iii. Extent of community/habitat:
- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:
i. Species and listing (endangered or threatened): _____
In addition to the Indiana Bat identified by the NYSDEC EAF Mapper, U.S. Fish & Wildlife Service (USFWS) lists the Northern Long-eared Bat (NLEB), and the Eastern Massasauga (rattlesnake) as potential species of concern at the project site. Consultation with the NYSDEC and USFWS is ongoing.

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:
i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No
If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☑ No
If Yes, provide county plus district name/number: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No
i. If Yes: acreage(s) on project site? Approximately 28 acres (+/-75% of the project area)
ii. Source(s) of soil rating(s): US U.S. Department of Agriculture - Natural Resource Conservation Service - Web Soil Survey (Groups 1-4)

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No
If Yes:
i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature
ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No
If Yes:
i. CEA name: _____
ii. Basis for designation: _____
iii. Designating agency and date: _____

e. 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 Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

See attached SHPO "No Effect" letter.

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. 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? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

See attached SHPO "No Effect" letter.

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☐ Yes ☑ No

If Yes:

i. Identify resource: _____

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____

iii. Distance between project and resource: _____ miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

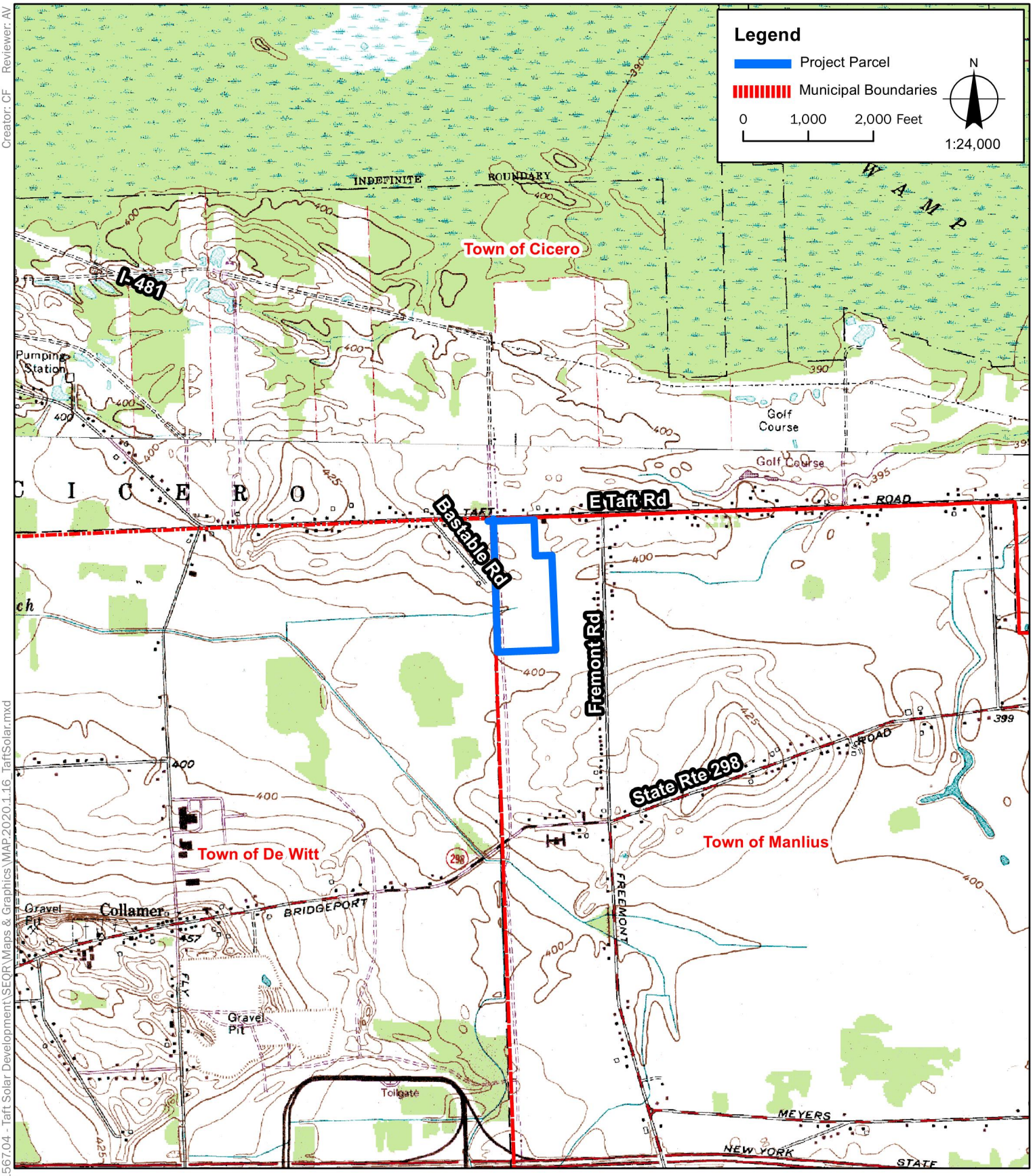
G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Taft Solar, LLC (Andrew Day) Date 02/06/2020

Signature _____ Title Civil Engineer for LaBella Associates
Acting Agent for Andrew Day

PRINT FORM



Creator: CF Reviewer: AV

Path: J:\Source Renewables\2191567.04 - Taft Solar Development\SEQR\Maps & Graphics\MAP 2020.1.16_TaftSolar.mxd

Sources:
1. USGS Map: ArcGIS basemap
2. Roads: TIGER 2010
3. Municipal Boundaries: NYS GIS Office 2018

LaBella
Powered by partnership.

TAFT SOLAR, LLC

TAFT ROAD SOLAR ARRAY

LaBella Project No: 2191567.04
Date: FEBRUARY 2020

USGS SITE LOCATION MAP

FIGURE 1

NEW YORK STATE

Services News Government Local Translate

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

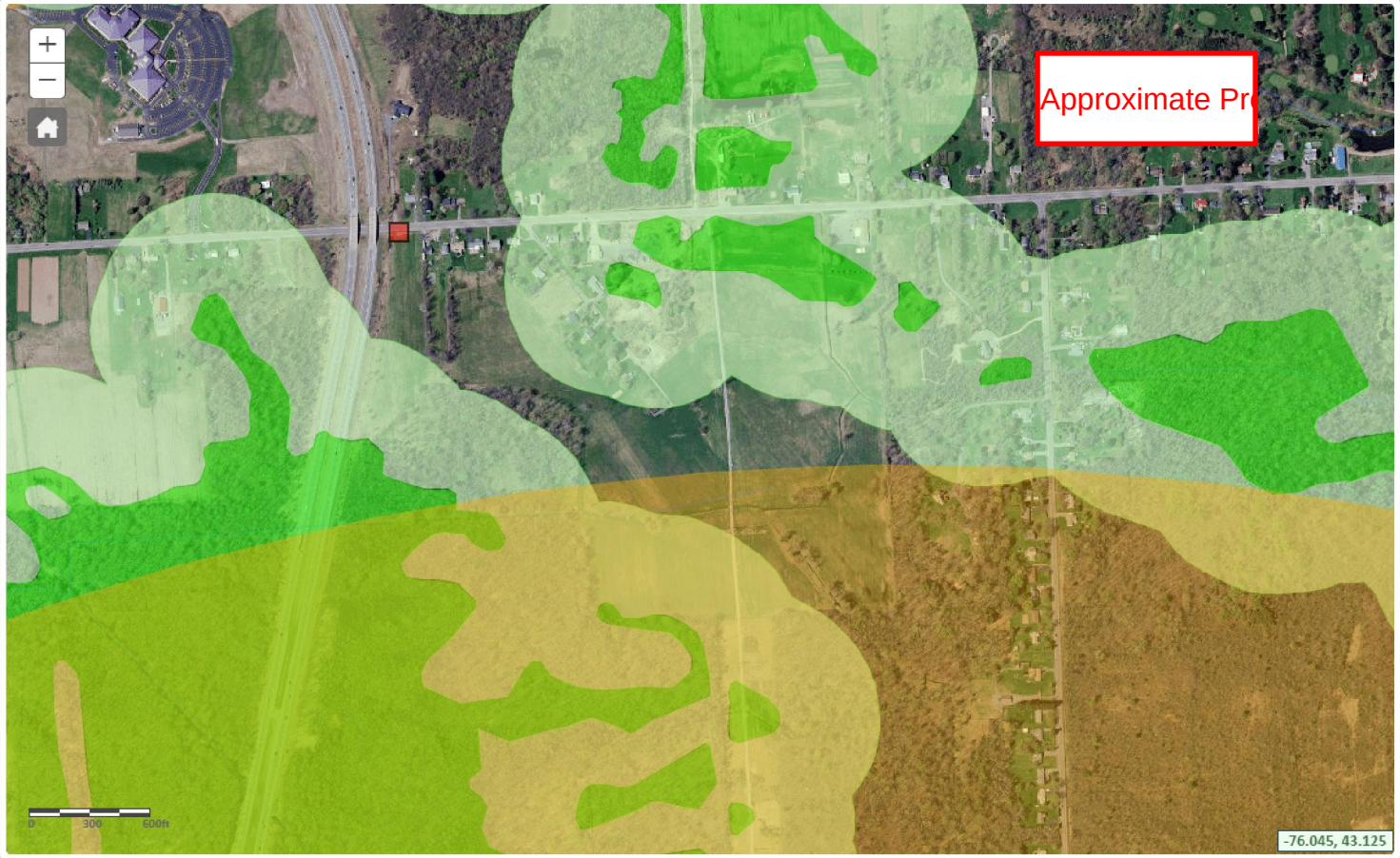
Environmental Resource Mapper

Base Map: NYS Aerial Using this map

Search
Tools
Layers and Legend

- All Layers
- Unique Geological Features
- Waterbody Classifications for Rivers/Streams
- Waterbody Classifications for Lakes
- State Regulated Freshwater Wetlands (Outside of the Adirondack Park)
  - State Regulated Wetland Checkzone
- Significant Natural Communities
  - Natural Communities Near This Location
- Rare Plants or Animals

Other Wetland Layers
Reference Layers
Tell Me More...
Need A Permit?
Contacts



NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

February 05, 2020

Alexandra Vitulano
Environmental Analyst
LaBella A
300 State St, Suite 201
Rochester, NY 14614

Re: NYSERDA
Taft Solar
Town of Manlius, Onondaga County, NY
20PR00799

Dear Alexandra Vitulano:

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

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

IPaC **U.S. Fish & Wildlife Service**

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.

NOT FOR CONSULTATION

Location

Onondaga County, New York



Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699

3817 Luker Road
Cortland, NY 13045-9385

http://www.fws.gov/northeast/nyfo/es/section7.htm

Endangered species

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 species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, 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

Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) Sistrurus catenatus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2202	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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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 below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

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 E-bird data mapping tool (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 below.

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.

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NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
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. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31

Canada Warbler Cardellina canadensis — Breeds May 20 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Cerulean Warbler Dendroica cerulea — Breeds Apr 20 to Jul 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/2974

Snowy Owl Bubo scandiacus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wood Thrush Hylocichla mustelina — Breeds May 10 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

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.

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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 (|)
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.



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Canada Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Cerulean Warbler
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Snowy Owl
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

NOT FOR CONSULTATION

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures 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. Additional measures and/or permits 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 migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) 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 Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets 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 (Eagle Act 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 AKN Phenology Tool.

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 Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

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, migrating or present year-round in my project 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 refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. 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 Birds of Conservation Concern (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 Eagle Act 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 Northeast Ocean Data Portal. 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 NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf 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 Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

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 Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

NOT FOR CONSULTATION

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.

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Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge 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

Impacts to NWI wetlands 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.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER FORESTED/SHRUB WETLAND

PFO1C
PFO1A

FRESHWATER POND

PUBHx

RIVERINE

R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

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.

NOT FOR CONSULTATION

EAF Mapper Summary Report

Friday, January 31, 2020 11:50 AM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	895-21
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters, NYS Wetland
E.2.h.iv [Surface Water Features - Wetlands Size]	NYS Wetland (in acres):30.6
E.2.h.iv [Surface Water Features - DEC Wetlands Number]	SYE-3
E.2.h.v [Impaired Water Bodies]	Yes

E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Ley Creek and tribs – Pathogens;Nutrients;Ammonia;Other Inorganics – Recreation;Public Bathing;Aquatic Life
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Indiana Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No



1 / C002 OVERALL SITE PLAN

SCALE: 1" = 100'

PROJECT DATA UNIT B

PARCEL INFORMATION

APPLICANT	SOURCE RENEWABLES LLC
PARCEL ADDRESS	6966 TAFT ROAD, EAST SYRACUSE, NY 13057
TAX NUMBER	034.000-1-20.1
PARCEL AREA	37.682 ACRES
PROJECT AREA	17.3 ACRES
EXISTING IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 0 SF GRAVEL 0 SF ASPHALT 0 SF TOTAL 0.00 AC
PROPOSED IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 910 SF GRAVEL 20,003 SF ASPHALT 0 SF TOTAL 0.48 AC
PANEL COVERAGE	6.35 ACRES
TOTAL DISTURBANCE AREA	**0.86 ACRES**

ZONING INFORMATION

	REQUIRED	PROPOSED
CLASSIFICATION	RESIDENTIAL - AGRICULTURAL DISTRICT (R-A)	
FRONT SETBACK	50 FT	±65 FT
SIDE SETBACK	50 FT	±51 FT
REAR SETBACK	50 FT	±72 FT

WETLAND INFORMATION

	EXISTING	PROPOSED
WETLANDS WITHIN PROPERTY	2.62 ACRES	2.62 ACRES

SYSTEM SUMMARY (UNIT B)

MODULE

MANUFACTURER	HANWHA Q-CELLS USA
MODULE MODEL	Q.PEAK DUO L-G5.3 395
MODULE OUTPUT	395W
MODULE COUNT	13,552
DC SYSTEM OUTPUT	5.35 MWDC
DESIGN TEMPERATURES	
EXTREME MINIMUM	-24°C

INVERTER

MANUFACTURER	SUNGROW
INVERTER NOMINAL OUTPUT POWER	
@50°C, PF=1	2500kVA
QUANTITY/TOTAL	2
AC SYSTEM OUTPUT NOM	4 MWAC ???

RACKING

MANUFACTURER	RBI OR APVD EQUAL
TILT	20°
PITCH	22.0 FT
FOUNDATION	PILE DRIVEN POSTS
CONFIGURATION	1-UP PORTRAIT
AZIMUTH	177°

PROJECT SITE

INTERCONNECTION VOLTAGE	13.2kV ASSUMED
AREA INSIDE FENCELINE	16.20 ACRES

WETLAND

100' WETLAND BUFFER ZONE

LaBella
Powered by partnership.
300 State Street, Suite 201
Rochester, NY 14614
585-454-6110
labellapc.com

NOT FOR CONSTRUCTION

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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SOURCE RENEWABLES, LLC
41 WEST ELM ST, SUITE C
GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: JANUARY 2020
DRAWING NAME:

PRELIMINARY SITE PLAN

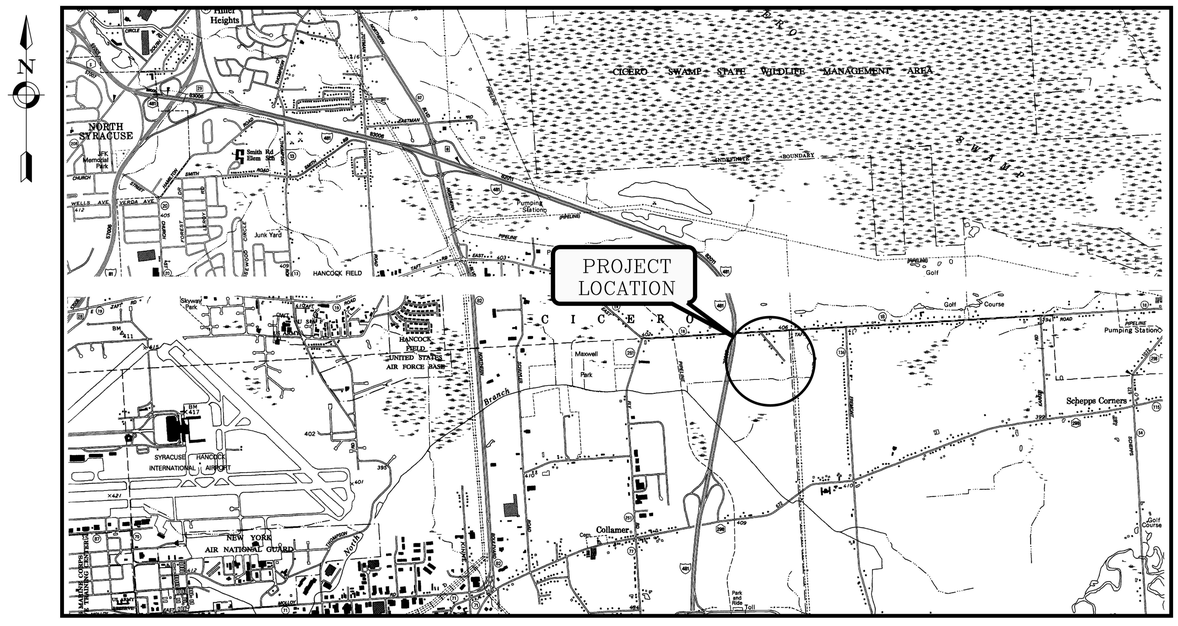
DRAWING NUMBER:

C002

Date & Time: 1/29/2020 11:09 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C002 SITE PLAN.dwg

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057



LOCATION MAP
N.T.S.

SOURCE RENEWABLES, INC.

41 WEST ELM ST, SUITE C
GREENWICH, CT 06830
PROJECT NO: 2191567.04
SUBMISSION: MARCH 2020

Source Renewables

STATE OF NEW YORK
DONALD J. HOEFLER
075470
LICENSED PROFESSIONAL ENGINEER

LaBella
Powered by partnership.
300 State Street, Suite 201
Rochester, NY 14614
585-454-6110
labellapc.com

ISSUED FOR SITE PLAN APPROVAL
MARCH 2020

SOURCE RENEWABLES
PROJECT NO: 2191567.04

TAFT ROAD SOLAR ARRAY
6966 EAST TAFT ROAD. EAST SYRACUSE, NY 13057

GENERAL NOTES:

1. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE TO LOCATE UTILITIES OUTSIDE THE RIGHT-OF-WAY INCLUDING PRIVATE ROADS.
2. SITE DRAINAGE, INCLUDING THE PROJECT SITE AND ADJACENT PRIVATE AND PUBLIC ROADWAYS, DRIVES, PARKING AREAS OR PROPERTIES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL MATERIALS, TOOLS AND EQUIPMENT, INCLUDING SPECIAL CUTTING DEVICES, NECESSARY TO PERFORM THE WORK CONTAINED IN THIS CONTRACT.
4. THE SIZES AND MATERIAL OF CONSTRUCTION OF WATER MAINS, SANITARY SEWERS AND STORM SEWERS TO REMAIN ARE REPUTED. THE CONTRACTOR SHALL VERIFY SIZES OF ALL UTILITIES WHERE CONNECTIONS TO SAID EXISTING UTILITIES ARE REQUIRED. EXCAVATION TO VERIFY THESE UTILITIES SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.
5. THE CONTRACTOR SHALL PROTECT ALL EXISTING SITE AMENITIES NOT DESIGNATED FOR REMOVAL.
6. UNLESS OTHERWISE INDICATED ON THE PLANS OR DIRECTED BY THE ARCHITECT/ENGINEER, THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING AND PROTECTING FROM DAMAGE ALL TREES, SHRUBS AND PLANTS IN THE VICINITY OF THE PROPOSED WORK.
7. THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING UTILITIES DESIGNATED TO REMAIN FOR THE DURATION OF THE CONTRACT.
8. ANY SITE AMENITY, UTILITY, STREET APPURTENANCE, OR OTHER ITEM WHICH BECOMES DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED IN-KIND BY THE CONTRACTOR AS DETERMINED BY THE PROJECT MANAGER OR ARCHITECT/ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.

SURVEY NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. NO ALLOWANCE WILL BE MADE FOR ADDITIONAL COSTS DUE TO CONTRACTOR'S FAILURE TO VERIFY EXISTING CONDITIONS,
2. THE CONTRACTOR SHALL LOCATE, MARK, SAFEGUARD AND PRESERVE ALL SURVEY MARKERS AND RIGHT-OF-WAY MARKERS IN THE AREA OF CONSTRUCTION.
3. ANY IRON PINS, MONUMENTS OR OTHER ITEMS DEFINING PROPERTY LINES WHICH ARE DISTURBED BY CONSTRUCTION OPERATIONS SHALL BE PROPERLY TIED AND ACCURATELY RESET BY A NYS LICENSED SURVEYOR UPON COMPLETION OF THE WORK.
4. THE HORIZONTAL DATUM IS REFERENCED TO NORTH AMERICAN DATUM 83 (NAD 83) - STATE PLANE NEW YORK CENTRAL.
5. THE VERTICAL DATUM IS REFERENCED TO NORTH AMERICAN VERTICAL DATUM 88 (NAVD 88).
6. TOPOGRAPHIC AND BOUNDARY SURVEY WAS COMPLETED BE LABELLA ASSOCIATES ON DECEMBER 9, 2019.

DEMOLITION NOTES:

1. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO BID. NO ALLOWANCE WILL BE MADE FOR ADDITIONAL COSTS DUE TO CONTRACTORS FAILURE TO VERIFY EXISTING CONDITIONS AND DIMENSIONS.
2. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL TO NOTIFY DIG SAFELY NEW YORK AT 1-800-962-7962 TO REQUEST UTILITY STAKEOUT OF ALL PUBLIC UTILITIES.
3. WORK ASSOCIATED WITH THIS CONTRACT WILL OCCUR AT AN ACTIVE AND FUNCTIONAL FACILITY. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO MINIMIZE DISRUPTION TO THE OPERATIONS OF THE FACILITY. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PROVIDE A SAFE WORK SITE AND TO PROTECT THE PUBLIC, VISITORS AND EMPLOYEES FROM HARM AS A RESULT OF HIS CONSTRUCTION ACTIVITIES.
4. THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING ABOVE GROUND AND BELOW GROUND UTILITIES, STRUCTURES, AND APPURTENANCES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES, STRUCTURES, AND APPURTENANCES IN THE PATH OF AND ADJACENT TO THE PROPOSED WORK.
5. SITE DRAINAGE, INCLUDING THE PROJECT SITE AND ADJACENT PRIVATE AND PUBLIC ROADWAYS, DRIVES, PARKING AREAS OR PROPERTIES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
6. CONTRACTOR SHALL PROTECT AND SUPPORT ALL EXISTING UTILITIES DESIGNATED TO REMAIN FOR THE DURATION OF THE CONTRACT.
7. THE CONTRACTOR SHALL NOTIFY THE LOCAL GOVERNMENT, LOCAL FIRE DEPARTMENT AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) AS NECESSARY AND SHALL OBTAIN ANY REQUIRED PERMITS PRIOR TO BEGINNING WORK. COPIES OF ANY REQUIRED PERMITS SHALL BE PROVIDED TO THE OWNER PRIOR TO BEGINNING THE WORK.
8. CONTRACTOR SHALL REMOVE FROM SITE, MATERIALS NOT INDICATED TO BE SALVAGED INCLUDING ALL DEBRIS. ALL REMOVED MATERIALS SHALL BECOME THE PROPERTY OF CONTRACTOR WHO SHALL LEGALLY DISPOSE OF SAME.
9. ALL TREES, SHRUBS AND PLANTS DESIGNATED TO REMAIN AND DISTURBED BY CONSTRUCTION OPERATIONS, SHALL BE REPLACED IN-KIND AS DIRECTED BY THE ARCHITECT/ENGINEER AND/OR OWNER'S DESIGNATED REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
10. THE CONTRACTOR SHALL MAINTAIN SAFE VEHICULAR AND PEDESTRIAN ACCESS TO THE EXISTING BUILDINGS FOR THE DURATION OF THE CONTRACT.
11. WHEN EXISTING CONSTRUCTION WHICH IS TO REMAIN IS DAMAGED DURING THE COURSE OF CONSTRUCTION AS A RESULT OF CONTRACTORS WORK, IT SHALL BE REPAIRED AND/OR REPLACED WITH SIMILAR OR LIKE MATERIALS AS MUCH AS POSSIBLE, AT NO COST TO THE OWNER. ALL REPAIRS AND/OR REPLACEMENTS WILL BE SUBJECT TO OWNERS APPROVAL.
12. COORDINATE LOCATION OF TEMPORARY CONSTRUCTION FENCE AND TEMPORARY STONE STAGING AREA WITH OWNER

SITE NOTES:

1. WELL COMPACTED SUBGRADE SHALL BE UTILIZED UNDERNEATH CONSTRUCTION OF PAVEMENT AND CONCRETE BASES.
2. ALL STAKEOUT FOR THE PROPOSED SITE IMPROVEMENTS SHALL BE COMPLETED BY A NEW YORK STATE LICENSED LAND SURVEYOR.
3. IF ANY DISCREPANCIES ARE NOTED BETWEEN THESE CONSTRUCTION DOCUMENTS AND INFORMATION PROVIDED OR AN ERROR IS SUSPECT, IT SHALL BE IMMEDIATELY REPORTED TO THE CONSTRUCTION MANAGER AND LABELLA ASSOCIATES PROJECT MANAGER IN WRITING.
4. ANY PROOF-ROOLING OF EXPOSED SUBBASE BY A MINIMUM 10 TON SMOOTH DRUM ROLLER SHALL BE DONE UNDER THE GUIDANCE OF, AND OBSERVED BY, QUALIFIED ENGINEERING PERSONNEL PRIOR TO PLACEMENT OF SUBBASE MATERIAL. THE ROLLER SHOULD BE OPERATED IN THE STATIC MODE AND COMPLETE AT LEAST TWO (2) PASSES OVER THE EXPOSED SUBGRADES.
5. EXISTING WETLANDS DELINEATED BY LABELLA ASSOCIATES ON 07/2019.

GRADING NOTES:

1. THE CONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF OSHA, AND ANY OTHER AGENCY HAVING JURISDICTION WITH REGARD TO SAFETY PRECAUTIONS WITH TRENCHING OPERATIONS. THE REQUIREMENTS SET FORTH HEREIN ARE INTENDED TO SUPPLEMENT REQUIREMENTS ESTABLISHED BY THESE AGENCIES. IN THE CASE OF A CONFLICT BETWEEN REQUIREMENTS OF OTHER JURISDICTIONAL AGENCIES AND THESE DOCUMENTS, THE MORE STRINGENT REQUIREMENT ON THE CONTRACTOR SHALL APPLY.
2. SHEETING, IF REQUIRED DURING CONSTRUCTION, IS CONSIDERED TO BE PART OF THIS CONTRACT AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
3. ALL TRENCHES THROUGH PAVEMENT SHALL BE SAW CUT PRIOR TO EXCAVATION AND AGAIN PRIOR TO PAVEMENT RESTORATION.
4. CONTRACTOR SHALL ADJUST THE RIMS OF ALL MANHOLES, CATCH BASINS, VALVE BOXES AND OTHER UTILITY SITE STRUCTURES TO MEET FINISHED GRADE IN AREAS REQUIRING REPAVING OR REGRADING AS PART OF THE WORK, INCLUDING THOSE THAT MAY NOT BE SHOWN ON THE PLANS.
5. VOIDS LEFT BY UTILITY OR STRUCTURE REMOVAL OR GRUBBING OPERATIONS SHALL BE BACKFILLED AND PROPERLY COMPACTED WITH STRUCTURAL FILL (NYSDOT ITEM 304.12) IN AREAS UNDER AND WITHIN 5 FEET HORIZONTALLY OF ALL STRUCTURES, BUILDINGS AND PAVEMENTS. IN GRASSED AREAS, VOIDS LEFT SHALL BE FILLED AND PROPERLY COMPACTED WITH SUITABLE ON-SITE OR IMPORTED EARTHEN BACKFILL. ALL DISTURBED AREAS SHALL BE RESTORED.
6. THE CONTRACTOR SHALL DEWATER ALL EXCAVATIONS TO PREVENT THE INTRODUCTION OF GROUNDWATER INTO THE TRENCHES/EXCAVATIONS. PROVIDE ALL EQUIPMENT NECESSARY TO MAINTAIN THE GROUNDWATER LEVEL AS NECESSARY.
7. THE CONTRACTOR SHALL PLACE AT MINIMUM 6 INCHES OF CLEANED SCREENED TOPSOIL IN ALL DISTURBED AREAS PRIOR TO SEEDING

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, AND LOCAL GOVERNING SOIL AND WATER CONSERVATION AGENCY RECOMMENDATIONS AND STANDARDS. CONTRACTOR SHALL SUBMIT PROPOSED EROSION CONTROL PLAN INCLUDING SEQUENCING OF WORK TO THE ENGINEER FOR REVIEW PRIOR TO START OF WORK.
2. UTILIZE CONSTRUCTION METHODS/TECHNIQUES, WHICH WILL LIMIT THE EXPOSED EARTHEN AREAS AND MINIMIZE THE EFFECT OF EARTH DISTURBANCE ACTIVITIES ON SOIL EROSION. THE AREA OF DISTURBANCE SHALL BE LIMITED TO A MAXIMUM OF 5 ACRES UNLESS OTHERWISE APPROVED BY THE ENGINEER.
3. ALL SEDIMENTATION BARRIERS AND OTHER TEMPORARY OR PERMANENT MEASURES SHALL BE IN PLACE PRIOR TO THE START OF CONSTRUCTION. PLANS SHOW THE SUGGESTED MINIMUM MEASURES REQUIRED.
4. REMOVAL OF ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE COMPLETED AT THE APPROVAL OF THE OWNER AND ENGINEER. THE COST OF REMOVING THESE MEASURES SHALL ALSO BE INCLUDED IN THE BID PRICE.
5. FOR THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL PROTECT ALL ON-SITE, ADJACENT AND/OR DOWNSTREAM STORM/SANITARY SEWERS, AND/OR OTHER WATER COURSES FROM CONTAMINATION BY WATER BORNE SILTS, SEDIMENTS, FUELS, SOLVENTS, LUBRICANTS OR OTHER POLLUTANTS ORIGINATING FROM ANY WORK DONE ON, OR IN SUPPORT OF THIS PROJECT.
6. DURING CONSTRUCTION NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO STORM/SANITARY SEWERS, DITCHES OR OTHER WATERS OF NEW YORK STATE, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS OR OTHER DEVICES BE ALLOWED TO ENTER ANY STORM/SANITARY SEWERS, DITCHES, RIVERS, OR WATER COURSES.
7. ALL EXCAVATED OR IMPORTED EARTHEN STOCKPILES SHALL BE SUITABLY STABILIZED AND PROTECTED BY SILT FENCE SO THAT IT CANNOT REASONABLY ENTER ANY WATER BODY, OR STORM OR SANITARY SEWER.
8. ALL METHODS AND EQUIPMENT PROPOSED BY THE CONTRACTOR TO ACCOMPLISH THE WORK FOR EROSION AND POLLUTION CONTROL SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.
9. THE CONTRACTOR SHALL BE REQUIRED TO TREAT TRAVELED AREAS TO CONTROL DUST. WATER SHALL BE APPLIED TO SUCH TRAVELED AREAS AS THE ARCHITECT/ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE MAY DESIGNATE. THE NUMBER OF APPLICATIONS AND THE AMOUNT OF WATER SHALL BE BASED UPON FIELD AND WEATHER CONDITIONS.
10. ALL AREAS OF SOIL DISTURBANCE RESULTING FROM THIS PROJECT WHICH WILL NOT BE SUBJECT TO FURTHER EARTHWORK OR CONSTRUCTION ACTIVITIES SHALL BE PERMANENTLY SEEDED TO ESTABLISH GRASS, AND MULCHED WITH HAY OR STRAW WITHIN ONE WEEK OF FINAL DISTURBANCE. MULCH SHALL BE MAINTAINED UNTIL A SUITABLE VEGETATIVE COVER IS ESTABLISHED.
11. CONTRACTOR STAGING AREAS AND CONSTRUCTION ENTRANCE LOCATIONS SHALL BE COORDINATED WITH THE OWNER PRIOR TO START OF CONSTRUCTION. STABILIZED CONSTRUCTION ENTRANCE(S), AS SHOWN ON THE PLANS SHALL BE PROVIDED. ALL DISTURBED AREAS SHALL BE RESTORED.
12. ALL CATCH BASINS/DRAINAGE INLETS SHALL HAVE STONED INLET PROTECTION AROUND THEM AND GEOTEXTILE FABRIC OVER THE GRATE TO PREVENT SEDIMENTATION FROM ENTERING THE STORM SYSTEM.
13. TILL ALL COMPACTED SOILS LOCATED IN LAWN AREAS TO RESTORE THE ORIGINAL PROPERTIES OF THE SOIL PRIOR TO SEEDING.

LANDSCAPING NOTES

1. ALL PLANTS SHALL MEET OR EXCEED THE MINIMUM REQUIREMENTS AS NOTED IN THE LATEST EDITION OF AMERICAN STANDARD FOR NURSERY STOCK BY AMERICAN ASSOCIATION OF NURSERYMEN, ANSI Z60.1.
2. REPLACE, IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, ALL PLANTS THAT ARE MISSING, DEAD, OR DO NOT DEVELOP FROM PLANTING STOCK, OR AS DETERMINED BY THE CLIENT ARE IN UNHEALTHY OR UNSIGHTLY CONDITION, AND HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES OR OTHER CAUSES DUE TO THE CONTRACTORS NEGLIGENCE. CONTRACTOR SHALL BEAR THE COST OF COMPLETE REPLACEMENT(S). IN CASE OF ANY QUESTIONS REGARDING THE CONDITION AND SATISFACTORY ESTABLISHMENT OF A REJECTED PLANT, THE LANDSCAPE ARCHITECT'S DECISION IS FINAL. PROVIDE A GUARANTEE FOR ALL REPLACEMENT PLANTS FOR AT LEAST ONE FULL GROWING SEASON.
3. REMOVE AND IMMEDIATELY REPLACE ALL PLANTS, AS DETERMINED BY THE CLIENT TO BE UNSATISFACTORY DURING THE INITIAL PLANTING INSTALLATION.
4. SHRUBS SHALL MEET THE REQUIREMENTS FOR HEIGHT INDICATED IN THE PLANT LIST. THE MEASUREMENTS FOR HEIGHT SHALL BE TAKEN FROM THE GROUND LEVEL TO THE AVERAGE HEIGHT OF THE TOP BRANCHES OF THE PLANT, AND NOT THE LONGEST BRANCH. SINGLE STEMMED OR THIN PLANTS WILL NOT BE ACCEPTED. SIDE BRANCHES SHALL BE GENEROUS, WELL TWIGGED, AND THE PLANT AS A WHOLE WELL SEATED IN THE GROUND. PLANTS SHALL BE IN A MOIST, VIGOROUS CONDITION, FREE FROM DEAD WOOD, BRUISES, OR OTHER ROOT OR BRANCH INJURIES.
5. PLANTED AREAS WILL BE INSPECTED AT COMPLETION OF INSTALLATION AND ACCEPTED SUBJECT TO COMPLIANCE WITH SPECIFIED MATERIALS AND INSTALLATION REQUIREMENTS. INSPECTION TO DETERMINE FINAL ACCEPTANCE OF PLANTED AREAS WILL BE MADE BY THE CLIENT UPON CONTRACTORS REQUEST. PROVIDE NOTIFICATION AT LEAST 10 WORKING DAYS BEFORE REQUESTED INSPECTION DATE. PLANTED AREAS WILL BE ACCEPTED PROVIDED ALL MATERIALS ARE ALIVE AND IN A HEALTHY, VIGOROUS CONDITION. UPON FINAL ACCEPTANCE, THE OWNER WILL ASSUME MAINTENANCE.
6. A TWO YEAR GUARANTEE SHALL BE PROVIDED FOR ALL NEW AND RELOCATED PLANT MATERIALS FROM DATE OF FINAL ACCEPTANCE TO THE OWNER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN QUANTITY TAKEOFF.
8. THE CONTRACTOR SHALL PERFORM A ROUGH FIELD STAKE OUT OF ALL PLANT MATERIAL AND SHRUB BEDS. CONTACT THE ENGINEER FOR INSPECTION AND APPROVAL. LOCATIONS SHOWN ON THE PLAN CONVEY DESIGN INTENT ONLY. ACTUAL LOCATIONS WILL BE AS DIRECTED BY THE ENGINEER AT THE TIME OF INSTALLATION.
9. NAMES OF WOODY PLANT MATERIAL MUST COMPLY WITH "STANDARDIZED PLANT NAMES" AS ADOPTED BY THE LATEST EDITION OF THE AMERICAN JOINT COMMITTEE OF HORTICULTURAL NOMENCLATURE. PROVIDE STOCK TRUE TO BOTANICAL NAME AND LEGIBLY TAGGED.
10. SHOULD LOCATION OF TREES BE WITHIN 5' OF UNDERGROUND UTILITIES, RELOCATE SAID TREES TO MIN. OF 5' FROM ROOT BALL TO UTILITIES.
11. SHOULD LOCATIONS OF TREES OF LARGER SPECIES BE WITHIN 20' OF OVERHEAD WIRES, RELOCATE SAID TREES TO MIN. OF 20' TO WIRES.
12. STAKE AND WRAP TREES IMMEDIATELY AFTER PLANTING. STAKES AND WRAPPING ARE TO BE REMOVED BY THE CONTRACTOR AT THE END OF THE GUARANTEE PERIOD.
13. MULCH ALL TREES AND SHRUB BEDS WITH 3" DOUBLE GROUND HARDWOOD BAR, COLOR: DARK BROWN. 'RIVER STONE' SURFACE SHALL BE SMOOTH, WASHED, GRADED GRAVEL, 1" TO 2" SIZE. PLACE ON FIBER MAT WEED BARRIER: MIRAFI 100X OR EQUAL.
14. PLANTING BACK FILL MIXTURE: 4 PARTS TOP SOIL; 1 PART PEAT MOSS; 1/2 PART WELL ROTTED MANURE; 10 LBS. 5-10-5 PLANTING FERTILIZER THOROUGHLY MIXED PER CUBIC YARD.
15. TOPSOIL SHALL BE FURNISHED FROM THE STOCKPILED ON-SITE MATERIAL. ON-SITE MATERIAL IS TO BE MECHANICALLY SCREENED, ANYTHING LARGER THAN 0.5" SHALL BE REMOVED AND DISPOSED. IF AN INSUFFICIENT QUANTITY EXISTS, FURNISH FROM OFF-SITE SOURCES IN QUANTITIES SUFFICIENT TO COMPLETE THE REQUIREMENTS AS SPECIFIED. TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE SOIL, CHARACTERISTIC OF PRODUCTIVE SOIL IN THE VICINITY, FREE FROM STONES, CLAY LUMPS, ROOTS AND OTHER FOREIGN MATTER WITH AN ACIDITY BETWEEN 6.0 AND 6.8 pH. PROPOSED TOPSOIL MATERIAL FROM OFF-SITE SOURCES SHALL BE MECHANICALLY SCREENED SUBJECT TO APPROVAL BY THE ENGINEER.
16. A MINIMUM OF 6" OF MECHANICALLY SCREENED TOPSOIL SHALL BE PROVIDED ON ALL AREAS TO BE SEEDED.
17. LAWN SEED MIXTURE- APPLY TO ALL AREAS NOT PAVED, PLANTED, DESIGNATED TO REMAIN NATURAL OR OTHERWISE SEEDED. SOLAR FARM FINE FESCUE SEED MIX SHALL BE:

	% WEIGHT	% PURITY	%
GERMINATION			
CREEPING RED FESCUE	50	90	90
DUTCH WHITE CLOVER	20	90	90
CHEWINGS FESCUE	15	90	90
HARD FESCUE	15	90	90

SEEDING RATE: 200 LBS. PER ACRE
FERTILIZER: 28:4:12 GRANULAR RATE: 1,000 LBS. PER ACRE
MULCH ALL SEEDED AREAS WITH APPROVED STRAW AT A RATE OF 4,000 LBS. PER ACRE.

ALL SEEDED AREAS SHALL RECEIVE:
FERTILIZER: 28:4:12 AT A RATE OF 1,000 LBS. PER ACRE
MULCH: APPROVED STRAW AT A RATE OF 2 TONS. PER ACRE
PROVIDE INOCULANT AT 5 TIMES MANUFACTURER'S RECOMMENDED RATE WHEN HYDROSEEDING.
FOR SLOPES STEEPER THAN 2:1, ADD 10 LBS ANNUAL RYE PER ACRE.

18. ANTIDESICCANT: PROTECTIVE FILM EMULSION, PROVIDING A PROTECTIVE FILM OVER PLANT SURFACES, BUT PERMEABLE TO PERMIT TRANSPIRATION. MIXED AND APPLIED IN ACCORDANCE WITH MANUFACTURE'S INSTRUCTIONS. APPLY TO ALL BROADLEAF EVERGREEN SHRUBS PER MANUFACTURER'S RECOMMENDATIONS.
19. LANDSCAPE MATERIALS SHALL BE INSTALLED BY LOCAL COMPANIES FAMILIAR WITH THE CONDITIONS IN THIS AREA THAT EMPLOY NYS CERTIFIED NURSERY PROFESSIONALS.
20. STAKE PLANTS AS INDICATED OR AS APPROVED IN THE FIELD. IF OBSTRUCTIONS ARE ENCOUNTERED THAT ARE NOT SHOWN ON THE DRAWINGS, DO NOT PROCEED PLANTING OPERATIONS UNTIL ALTERNATIVE PLANT LOCATIONS HAVE BEEN SELECTED.
21. MAINTAIN PLANTS UNTIL COMPLETION AND FINAL ACCEPTANCE OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PRUNING, CULTIVATING, EDGING, REMULCHING, FERTILIZING, WEEDING, WATERING AS REQUIRED FOR HEALTHY GROWTH, AND APPLICATION OF APPROPRIATE INSECTICIDES AND FUNGICIDES NECESSARY TO MAINTAIN PLANTS FREE OF INSECT AND DISEASE. RESET SETTLED PLANTS TO PROPER GRADE AND POSITION. RESTORE PLANTING SAUCER AND REMOVE DEAD MATERIAL. TIGHTEN AND REPAIR GUIDE WIRES AND DEFICIENCIES WITHIN THE FIRST 24 HOURS OF INITIAL PLANTING, AND NOT LESS THAN TWICE PER WEEK UNTIL FINAL ACCEPTANCE.
22. PLANTING SHALL BE PERFORMED ONLY BY EXPERIENCED WORKERS OR UNDER THE SUPERVISION OF A QUALIFIED SUPERVISOR.
23. FINAL LOCATION OF TREES AND OTHER LANDSCAPING SHALL BE DETERMINED IN THE FIELD BASED ON UTILITY STAKEOUT. LANDSCAPING SHALL BE PLACED SO AS NOT TO CONFLICT WITH UTLITIES.

LEGEND

EXISTING	PROPOSED	DESCRIPTION	EXISTING	PROPOSED	DESCRIPTION
		PROJECT BENCHMARK / CONTROL POINTS			END SECTION
		WETLAND			CATCH BASIN
		WETLAND BUFFER			DRAIN BASIN
		BORING LOCATIONS			INLET MANHOLE
		TREE REMOVAL			MANHOLE (SOLID COVER)
		- REMOVAL UTILITY			INLET DRYWELL
		- REMOVAL FENCE			CLEAN OUT
		SAWCUT			DOWN SPOUT
		PROTECTION (OBJECT)			HYDRANT
		TREE PROTECTION			VALVE
		FENCE, CHAIN LINK			ELECTRIC BOX
		FENCE, TYPE 1			BURIED FIBER OPTIC LINE
		FENCE, TYPE 2			REBAR
		FENCE, GUIDE RAIL			IRON PIPE (PROPERTY CORNER)
		TREE/VEGITATION LIMIT	CTV CTV	CTV CTV	CATV
BLDG	BLDG	BUILDING/STRUCTURE	COMM COMM	COMM COMM	COMMUNICATIONS
PL	PL	PROPERTY LINE	FO FO	FO FO	FIBER OPTICS
		SETBACK LINE	SIG	SIG	SIGNAL LINE
PE	PE	EASEMENTS	T T	T T	TELEPHONE LINE
ROW	ROW	RIGHT-OF-WAY	OE OE	OE OE	OVERHEAD ELECTRIC
		RETAINING WALL	P P	P	POWER LINE
		BOLLARD	UE UE	UE UE	UNDERGROUND ELECTRIC
		FLAG POLE	G	G	GAS LINE
		SIGN	SA	SA	SANITARY LINE
		DECIDUOUS TREE	FM FM	FM FM	SANITARY FORCEMAIN
		CONIFEROUS TREE	ST	ST	STORM LINE
		TREE STUMP			STORM UNDERDRAIN PIPE
		OUTLET PROTECTION	FS	FS	WATER FIRE SERVICE LINE
		BIORETENTION	W	W	WATER LINE
		BOLLARD LIGHT POLE	ST-SA	ST-SA	COMBINED SANITARY AND STORM
		LIGHT POLE SINGLE	510	510	MAJOR CONTOUR
		LIGHT POLE DOUBLE	509	509	MINOR CONTOUR
		LIGHT POLE TRIPLE			℄ OF DRAINAGE SWALE
		LIGHT POLE QUAD			EROSION FENCE
		UTILITY POLE			FLOW/SLOPE DIRECTION
		UTILITY POLE WITH LIGHT			SILT SOCK INLET PROTECTION
HH	HH	HANDHOLE			SILT FENCE INLET PROTECTION
E	E	MANHOLE			CHECK DAM
					STABILIZED CONSTRUCTION ENTRANCE (TEMPORARY)

DRAWING INDEX

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C201 SITE AND UTILITY PLAN (PAGE 1 OF 3)
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SOURCE RENEWABLES, LLC
41 WEST ELM ST, SUITE C
GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

GENERAL NOTES, LEGEND AND DRAWING INDEX

DRAWING NUMBER:

C001

Date & Time: 3/11/2020 11:26 AM By: Patranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C-000 COVER SHEET.dwg



1 C002 OVERALL SITE PLAN
SCALE: 1" = 100'

PROJECT DATA

PARCEL INFORMATION

APPLICANT	SOURCE RENEWABLES LLC
PARCEL ADDRESS	6966 TAFT ROAD, EAST SYRACUSE, NY 13057
TAX NUMBER	034.000-1-20.1
PARCEL AREA	37.682 ACRES
PROJECT AREA	17.3 ACRES
EXISTING IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 0 SF GRAVEL 0 SF ASPHALT 0 SF TOTAL 0.00 AC
PROPOSED IMPERVIOUS WITHIN PROJECT AREA	BUILDINGS 0 SF CONCRETE 910 SF GRAVEL 20,003 SF ASPHALT 0 SF TOTAL 0.48 AC
PANEL COVERAGE	6.35 ACRES
TOTAL DISTURBANCE AREA	**0.82 ACRES**

ZONING INFORMATION

	REQUIRED	PROPOSED
CLASSIFICATION	RESIDENTIAL - AGRICULTURAL DISTRICT (R-A)	
FRONT SETBACK	50 FT	±65 FT
SIDE SETBACK	50 FT	±51 FT
REAR SETBACK	50 FT	±72 FT

WETLAND INFORMATION

	EXISTING	PROPOSED
WETLANDS WITHIN PROPERTY	2.62 ACRES	2.62 ACRES

SYSTEM SUMMARY

MODULE

MANUFACTURER	HANWHA Q-CELLS USA
MODULE MODEL	Q.PEAK DUO L-G5.3 395
MODULE OUTPUT	395W
MODULE COUNT	13,552
DC SYSTEM OUTPUT	5.35 MWDC
DESIGN TEMPERATURES	
EXTREME MINIMUM	-24°C

INVERTER

MANUFACTURER	SUNGROW
INVERTER NOMINAL OUTPUT POWER	
@50°C, PF=1	2500kVA
QUANTITY/TOTAL	2
AC SYSTEM OUTPUT NOM	3.4 MWAC

RACKING

MANUFACTURER	RBI OR APVD EQUAL
TILT	20°
PITCH	22.0 FT
FOUNDATION	PILE DRIVEN POSTS
CONFIGURATION	1-UP PORTRAIT
AZIMUTH	177°

PROJECT SITE

INTERCONNECTION VOLTAGE	13.2kV ASSUMED
AREA INSIDE FENCELINE	16.20 ACRES

WETLAND

100' WETLAND BUFFER ZONE

50 0 50 100 150 200'
1" = 100'

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NO:	DATE:	DESCRIPTION:
REVISIONS		

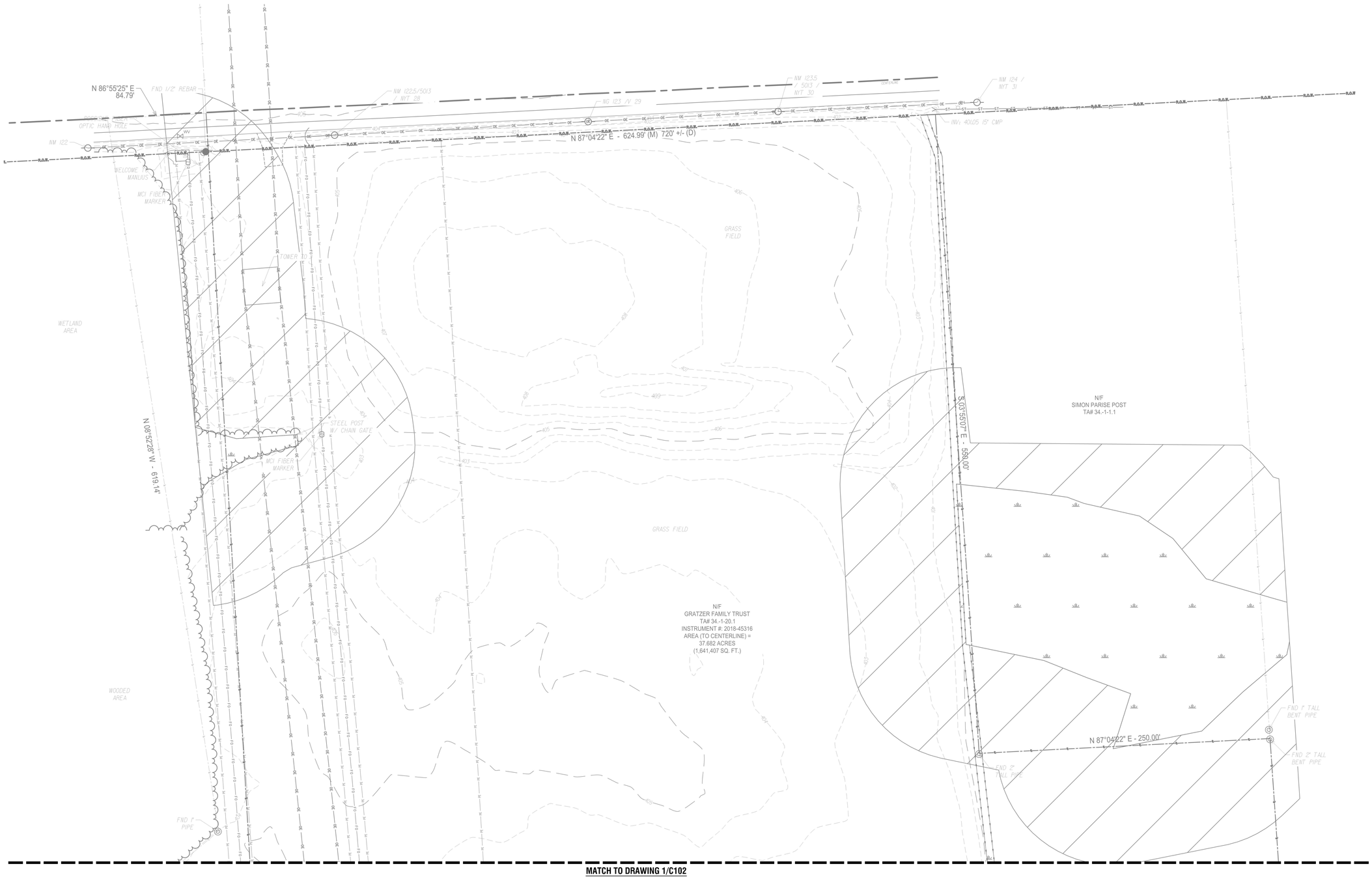
PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

OVERALL SITE PLAN

DRAWING NUMBER:

C002

Date & Time: 3/11/2020 11:27 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C002 SITE PLAN.dwg



MATCH TO DRAWING 1/C102

1 / C101 EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 40'

LIMIT OF TREE AND STUMP REMOVAL

TREE AND STUMP REMOVAL

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

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DRAWN BY: TAP

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DATE: MARCH 2020

DRAWING NAME:

EXISTING CONDITIONS AND DEMOLITION PLAN (SHEET 1 OF 3)

DRAWING NUMBER:

C101



1 / C102 EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 40'

LIMIT OF TREE AND STUMP REMOVAL

TREE AND STUMP REMOVAL

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

Date & Time: 3/11/2020 11:27 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C02\C-100 DEMO PLAN.dwg

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TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

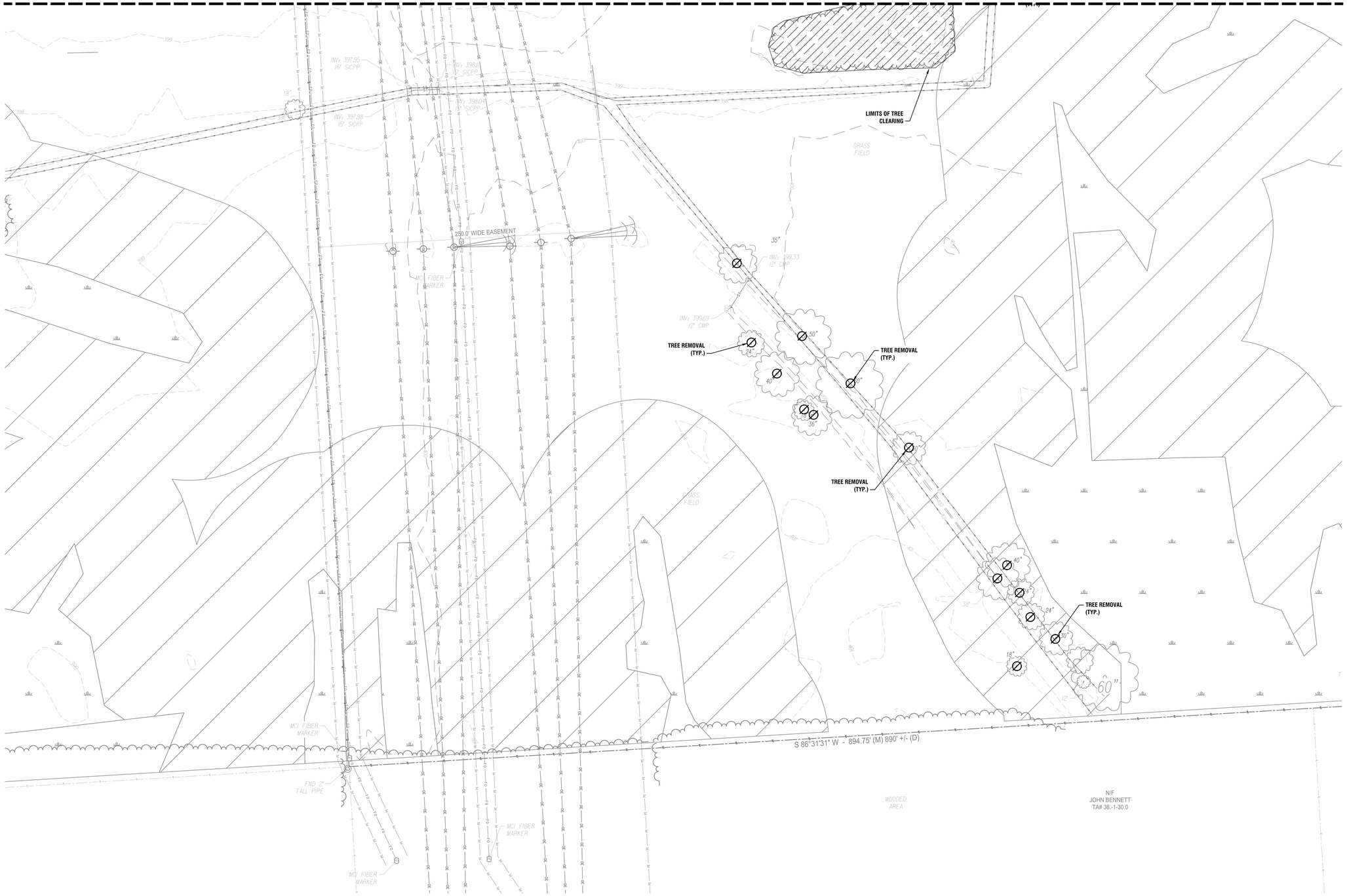
PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

EXISTING CONDITIONS AND DEMOLITION PLAN (SHEET 2 OF 3)

DRAWING NUMBER:

C102

MATCH TO DRAWING 1/C102



1 / C103 EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1" = 40'

N

LIMIT OF TREE AND STUMP REMOVAL

TREE AND STUMP REMOVAL

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

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TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04

DRAWN BY: TAP

REVIEWED BY: DJH

ISSUED FOR: SITE PLAN APPROVAL

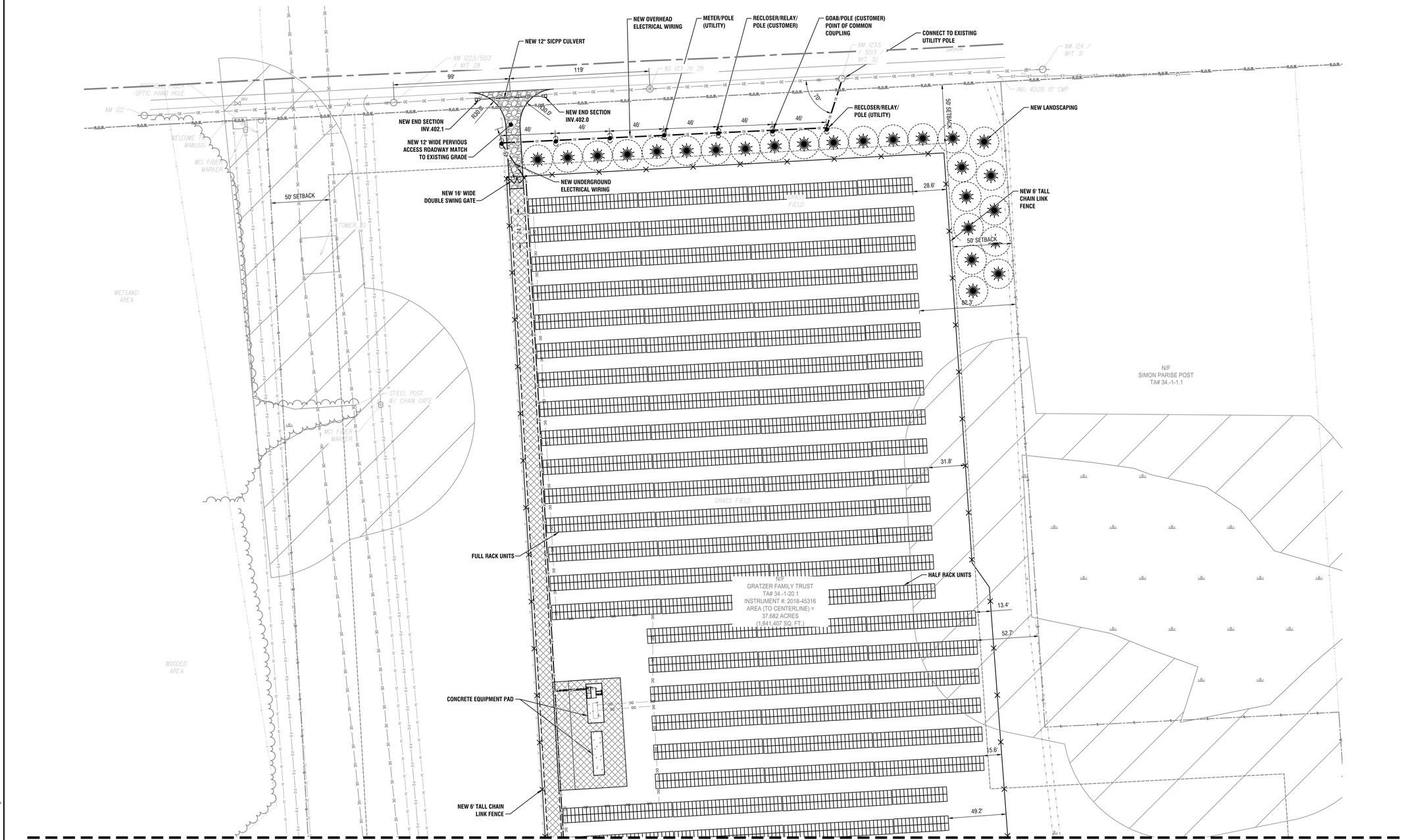
DATE: MARCH 2020

DRAWING NAME:

EXISTING CONDITIONS AND DEMOLITION PLAN (SHEET 3 OF 3)

DRAWING NUMBER:

C103



1 / C201 SITE AND UTILITY PLAN

SCALE: 1" = 40'

LANDSCAPING PLAN LIST		
MAP UNIT SYMBOL	SPECIES	TREE COUNT
○	SCOTCH PINE	25

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TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

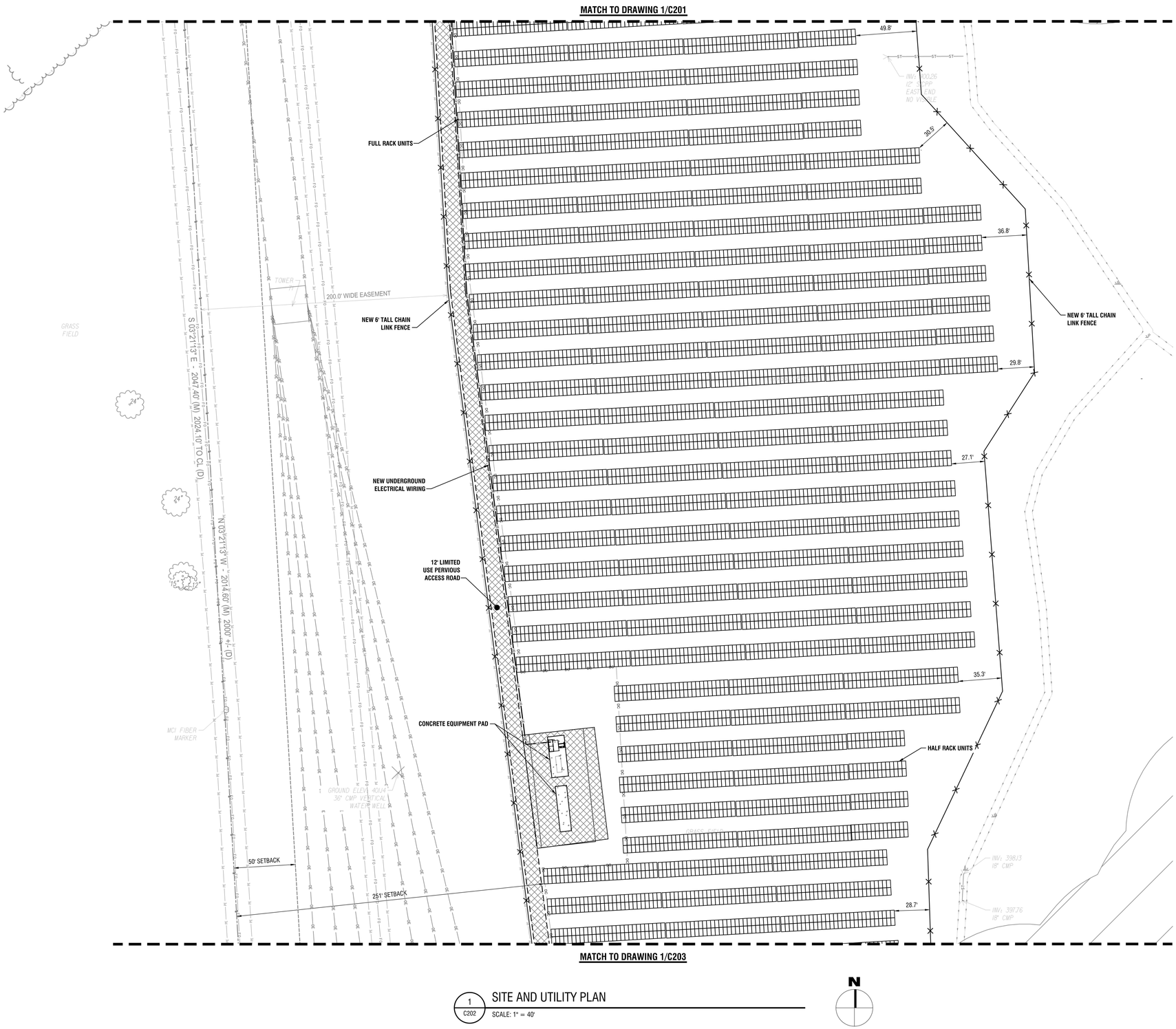
NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

SITE AND UTILITY PLAN (PAGE 1 OF 3)

DRAWING NUMBER:

C201



1 C202 SITE AND UTILITY PLAN
SCALE: 1" = 40'

Date & Time: 3/11/2020 11:28 AM By: Petranchuk, Tim
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TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

SITE AND UTILITY PLAN (PAGE 2 OF 3)

DRAWING NUMBER:

C202

MATCH TO DRAWING 1/C202



1 / C203 SITE AND UTILITY PLAN

SCALE: 1" = 40'

N

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

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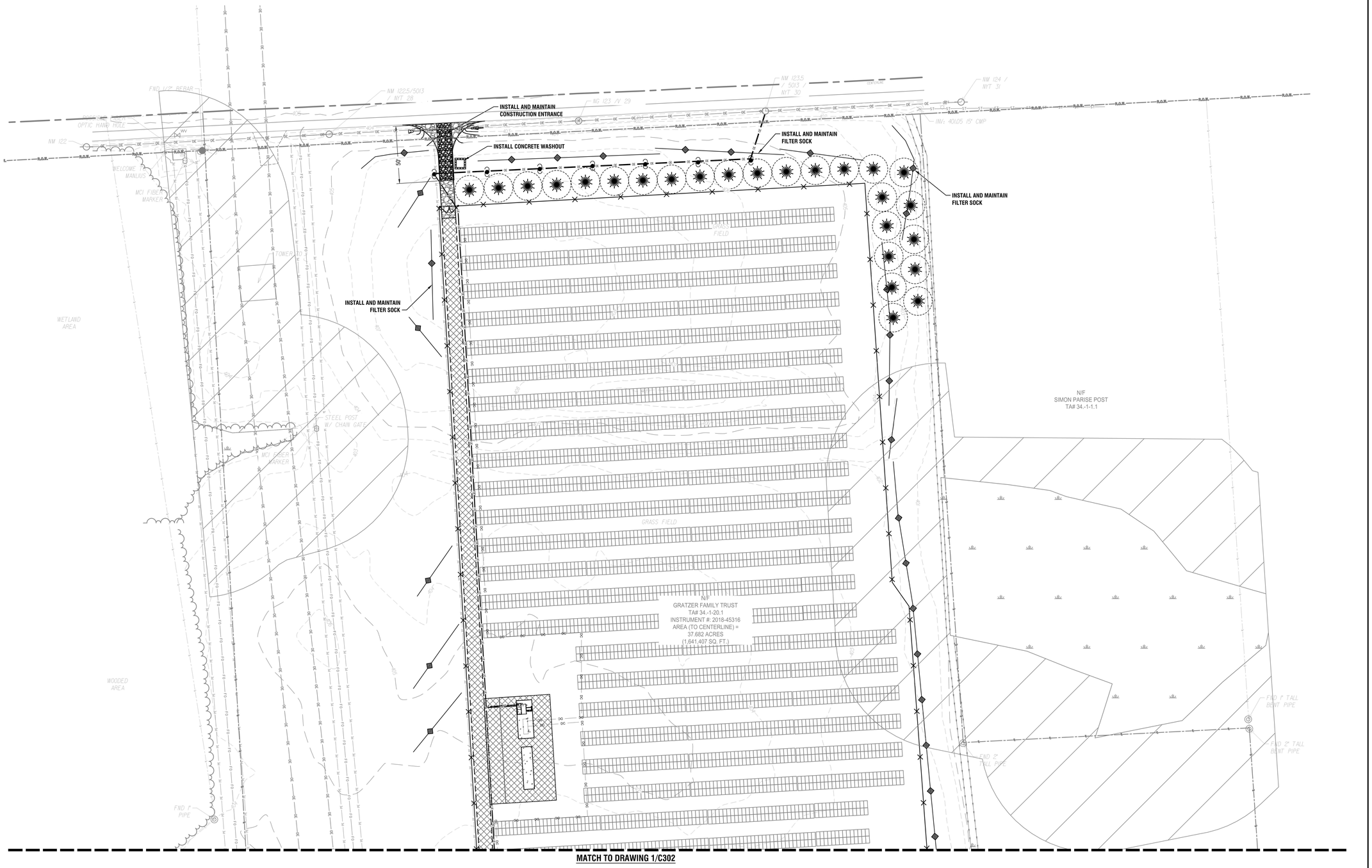
NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

SITE AND UTILITY PLAN (PAGE 3 OF 3)

DRAWING NUMBER:

C203



1 C301 GRADING AND EROSION CONTROL PLAN

SCALE: 1" = 40'

N

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

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TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04

DRAWN BY: TAP

REVIEWED BY: DJH

ISSUED FOR: SITE PLAN APPROVAL

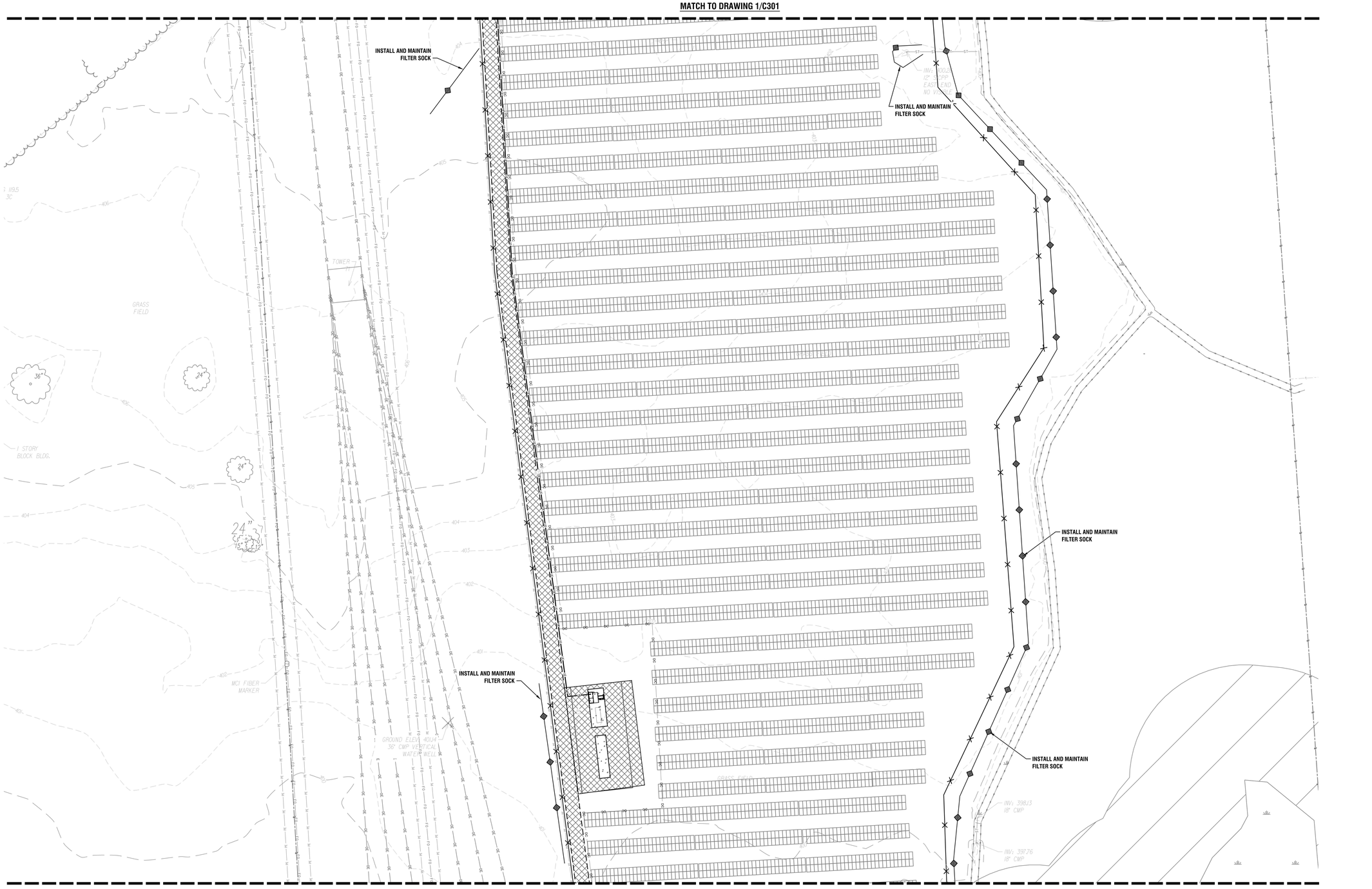
DATE: MARCH 2020

DRAWING NAME:

GRADING AND EROSION CONTROL PLAN (SHEET 1 OF 3)

DRAWING NUMBER:

C301



1 / C302 GRADING AND EROSION CONTROL PLAN

SCALE: 1" = 40'

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EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
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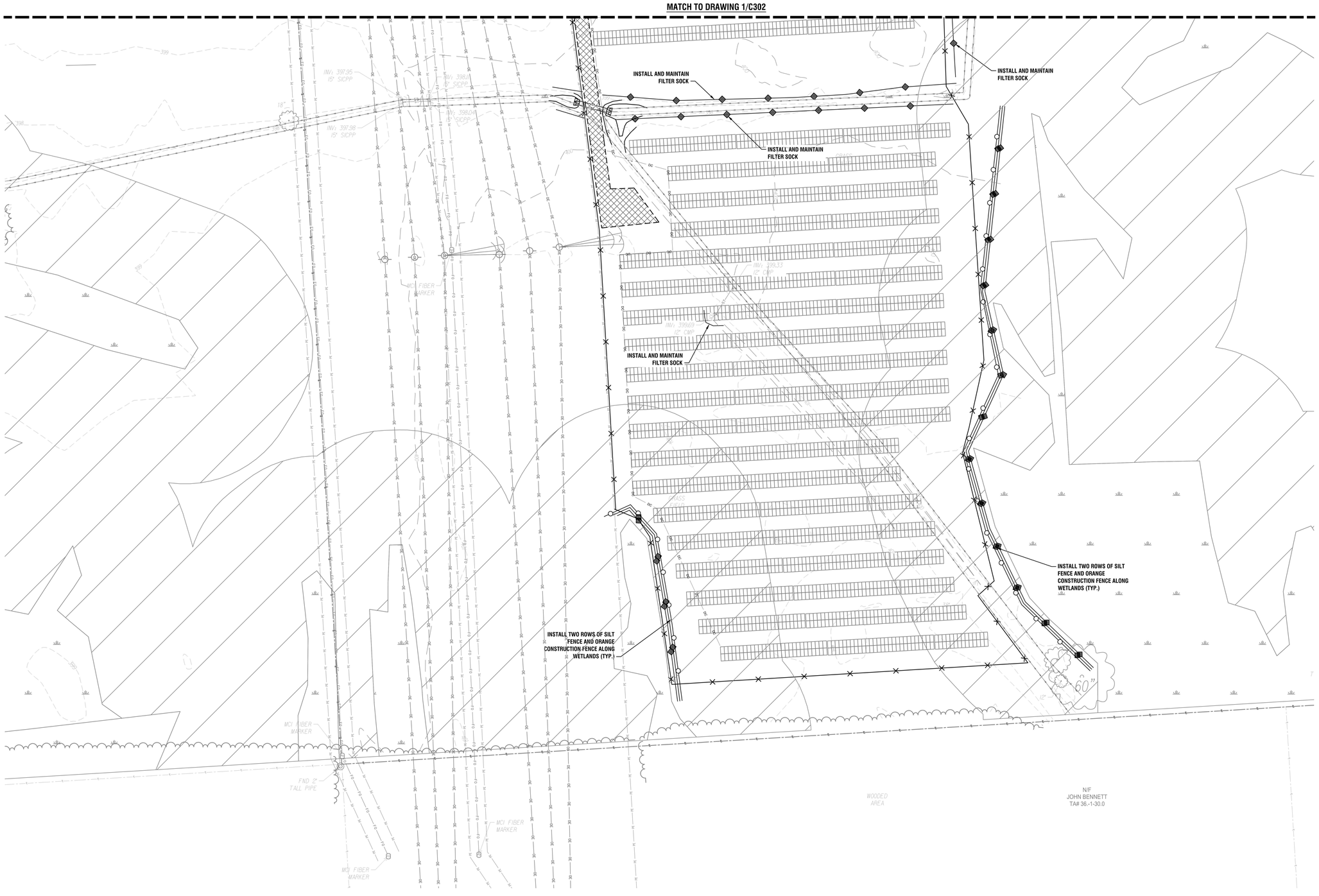
PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

GRADING AND EROSION CONTROL PLAN (SHEET 2 OF 3)

DRAWING NUMBER:

C302



1 C303 GRADING AND EROSION CONTROL PLAN

SCALE: 1" = 40'

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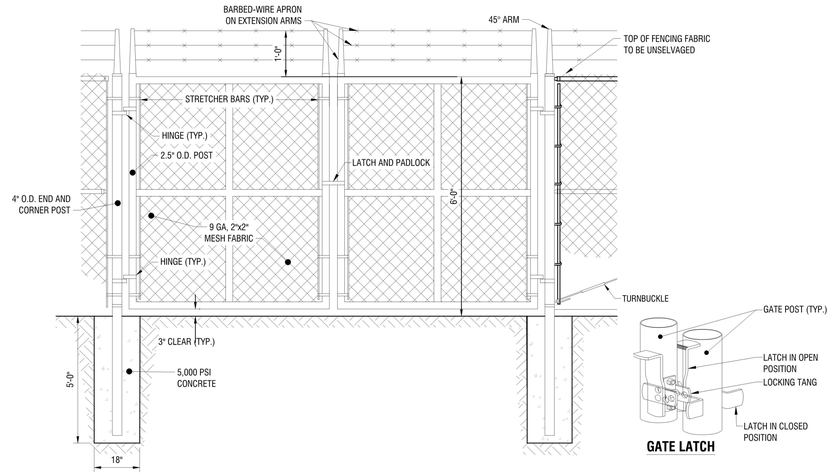
REVISIONS		

PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

GRADING AND EROSION CONTROL PLAN (SHEET 3 OF 3)

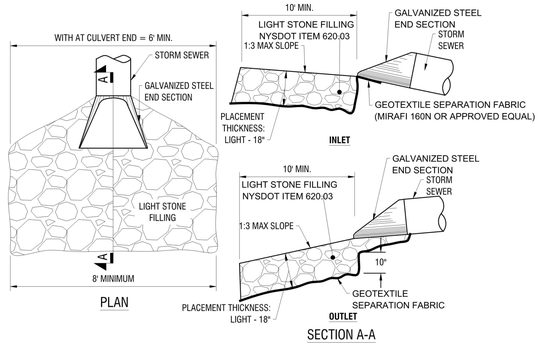
DRAWING NUMBER:

C303



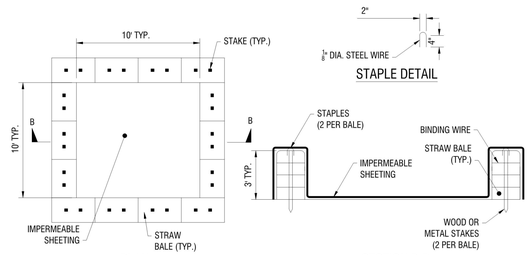
8 C501 N.T.S.

6' TALL 16' WIDE DOUBLE SWING GATE



7 C501 N.T.S.

END SECTION



NOTE:

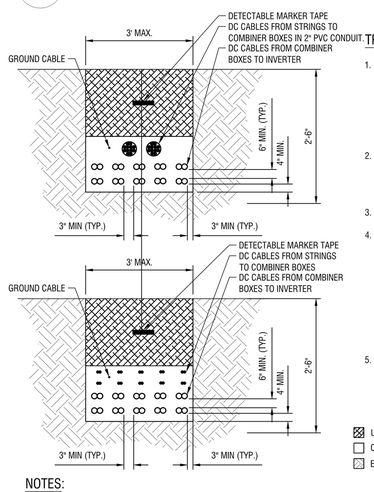
CAN BE TWO STACKED BALES OR PARTIALLY EXCAVATED TO REACH 3 FT DEPTH

CONSTRUCTION SPECIFICATIONS

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

6 C501 N.T.S.

CONCRETE WASHOUT AREA WITH STRAW BALES



TRENCH NOTES:

1. ADDITIONAL MISCELLANEOUS CABLES FROM FIELD DEVICES SUCH AS TEMPERATURE TRANSMITTERS, METEOROLOGICAL STATIONS, REFERENCE MODULES, SIGNAL, GROUND SHALL UTILIZE THE UNDERGROUND TRENCH SYSTEM WHERE IT IS APPLICABLE. CABLES SHALL BE INSTALLED AT LAYERS AS INDICATED.
2. THE TRENCH DETAIL BELOW SHOWS A SAMPLE NUMBER OF DC FEEDER CABLES FROM DC COMBINER BOXES. SPECIFIC CABLE QUANTITIES ARE SHOWN IN RESPECTIVE DETAIL SECTION.
3. TRENCHING MUST COMPLY WITH THE LATEST STANDARDS.
4. CLEAN FILL REQUIREMENTS: TRENCHING BEDDING SHALL BE SAND OR ROCK-FEE FILL SCREENED TO A MAXIMUM 1/4" SIZE AS A CUSHING (FREE OF SHARP EDGE MATERIAL, ROTTING WOOD OR ORGANIC MATTER THAT MIGHT ATTRACT INSECTS).
   THE CABLES SHALL BE COVERED WITH "CLEAN FILL" SAND OR SOFT EARTH, FREE FROM STONES, ROCKS OR OTHER MATERIAL THAT MAY DAMAGE THE CABLE DURING BACKFILL.
5. THE CABLES CROSS-SECTION AND THE NUMBER SHOWN IS ONLY AN EXAMPLE. ALL CABLES SHALL BE IN ACCORDANCE WITH STANDARDS AND SHALL BE SIZED ACCORDING TO USE AND TYPE OF INSTALLATION.

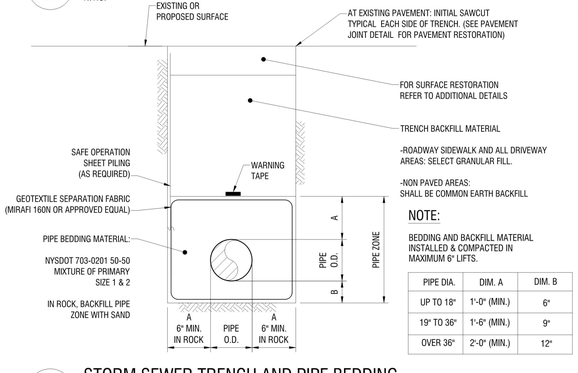
UNTREATED NATIVE SOIL
CLEAN, DRY BACKFILL CUSHION
EARTH UNDISTURBED

NOTES:

1. CONDUCTORS TO BE 1000V RATED FOR DIRECT BURIIAL. MEDIUM VOLTAGE CONDUCTORS FROM PS1 TO BE RATED FOR CLASS 35KV, AND MEDIUM VOLTAGE CONDUCTORS FROM PS2 TO BE RATED FOR CLASS 15KV.
2. CONDUCTORS OF THE SAME CIRCUIT TO BE NEXT TO EACH OTHER; COMBINER CIRCUITS TO BE SPACED 4.5" FROM EACH OTHER UNLESS POSTED OTHERWISE (HORIZONTAL/VERTICAL DIRECTIONS).
3. COMMUNICATIONS TO BE BURIED 1' AWAY FROM ALL POWER CONDUCTORS. USE DIRECT BURY RATED FIBER CABLE.
4. 3" OR 4" PVC SCH80 JUMP-CONDUIT SHALL BE UTILIZED FOR ROW-TO-ROW STRING CIRCUITS WIRING.
5. POWER SUPPLY CABLES TO ARC FAULT CIRCUIT INTERRUPTION CIRCUITS SHALL BE LOCATED AT A MINIMUM 1' FROM DC CIRCUITS.
6. CONTRACTOR SHALL SIZE THE ROW-TO-ROW JUMPER CONDUIT FOR THE CONDUCTORS USED, WITH PVC SCHEDULE 80. A TOTAL OF 60 #10 HOMERUN CABLES CAN FIT INTO A STANDARD 4" PVC CONDUIT. CONTACT THE ENGINEER IF ADDITIONAL GUIDANCE IS REQUIRED.

5 C501 N.T.S.

TYPICAL TRENCH DETAILS



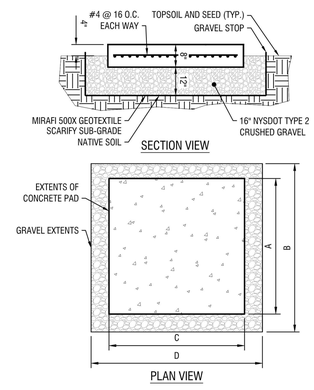
NOTE:

BEDDING AND BACKFILL MATERIAL INSTALLED & COMPACTED IN MAXIMUM 6" LIFTS.

PIPE DIA.	DIM. A	DIM. B
UP TO 18"	1'-0" (MIN.)	6"
19" TO 36"	1'-6" (MIN.)	9"
OVER 36"	2'-0" (MIN.)	12"

3 C501 N.T.S.

STORM SEWER TRENCH AND PIPE BEDDING



EQUIPMENT PAD DIMENSIONS

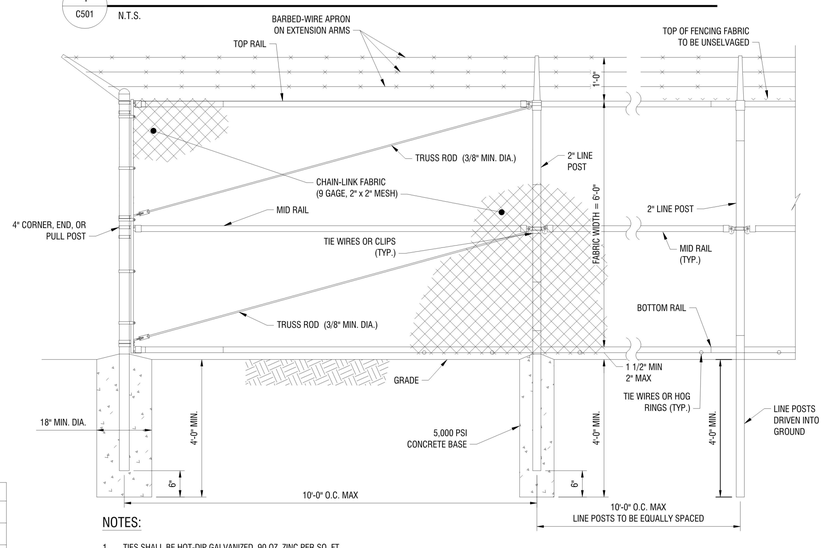
EQUIPMENT	DIM. A	DIM. B	DIM. C	DIM. D
TRANSFORMER AND MAIN SWITCH GEAR	34'	36'	14'	16'
BATTERY CONTAINERS	37'	39'	10'	12'

EQUIPMENT PAD NOTES:

1. ALL ELECTRICAL EQUIPMENT IS TO BE SITUATED ON A CONCRETE PAD AS SHOWN ON THE SITE PLANS.
2. CONCRETE STRENGTH: CLASS B CONCRETE. CONTRACTOR SHALL ALLOW 3 DAYS CURING TIME PRIOR TO INSTALLATION OF EQUIPMENT ON CONCRETE PAD.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, Fy=65,000 PSI, AND SHALL BE HOT-DIPPED GALVANIZED OR EPOXY COATED AFTER FABRICATION TO PRODUCE A CLASS 2 COATING EQUAL TO THAT SPECIFIED IN ASTM A641, TABLE 1.
4. ANCHOR BOLTS SHALL BE DRILLED AND SET IN FIELD AFTER INSTALLATION ON FOOTING AS PER MANUFACTURER'S SPECIFICATIONS.
5. LOCATION OF ALL ELECTRICAL EQUIPMENT AND CONCRETE PADS SHALL BE APPROVED BY THE OWNER PRIOR TO CONSTRUCTION.
6. COMPACTED STONE SHALL BE NYSDOT TYPE 2 CRUSHED GRAVEL OR APPROVED EQUAL BY THE ENGINEER OF RECORD.
7. ANCHOR BOLTS SHALL BE ¾" DIA. HILTI HSE ADHESIVE ANCHOR RODS WITH 4-1/2" EMBEDMENT DEPTH OR APPROVED EQUAL.
8. REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60.
9. VERIFY ALL DIMENSIONS WITH THOSE ON EQUIPMENT SKID SHOP DRAWINGS AND ADJUST ACCORDINGLY. LOCATE CHASES AND CONDUIT STUB-UPS PER EQUIPMENT SKID SHOP DRAWINGS.

4 C501 N.T.S.

CONCRETE PAD

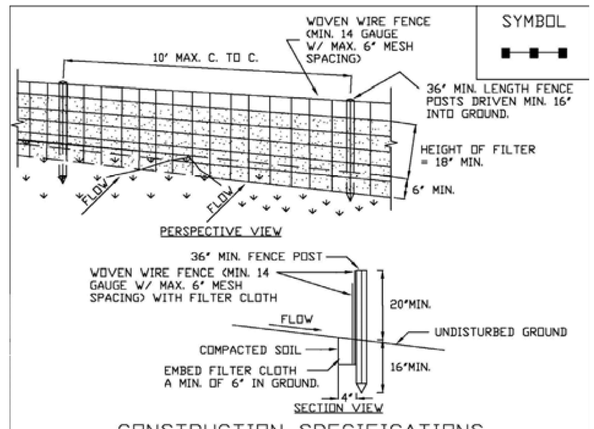


NOTES:

1. TIES SHALL BE HOT-DIP GALVANIZED, 90 OZ. ZINC PER SQ. FT.
2. ALL POSTS, RAILS, AND APPURTENANCES SHALL BE HOT-DIP GALVANIZED.

2 C501 N.T.S.

6' TALL CHAIN LINK FENCE



CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER 'T' OR 'U' TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24' AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6' MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL MEET THE MINIMUM REQUIREMENTS SHOWN.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN 'BULGES' DEVELOP IN THE SILT FENCE.

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

REINFORCED SILT FENCE

1 C501 NYS STANDARD SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL FIGURE 5.30

REINFORCED SILT FENCE

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Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

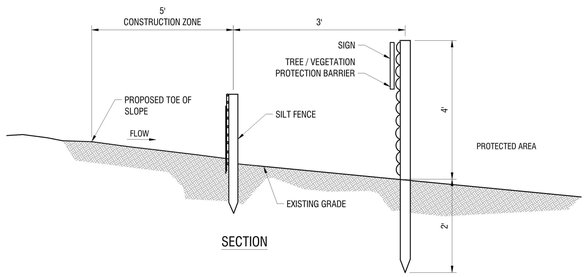
PROJECT NUMBER: 2191567.04
DRAWN BY: TAP
REVIEWED BY: DJH
ISSUED FOR: SITE PLAN APPROVAL
DATE: MARCH 2020
DRAWING NAME:

CONSTRUCTION DETAILS

DRAWING NUMBER:

C501

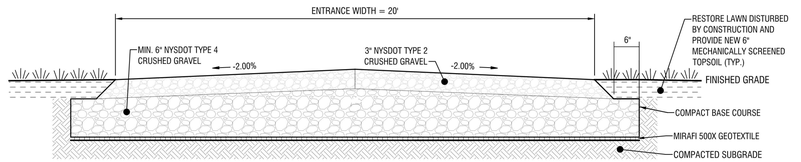
Date & Time: 3/11/2020 11:29 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C-500 CONSTRUCTION DETAILS.dwg



SECTION



WARNING SIGN



3 C502 GRAVEL DRIVEWAY ENTRANCE SECTION

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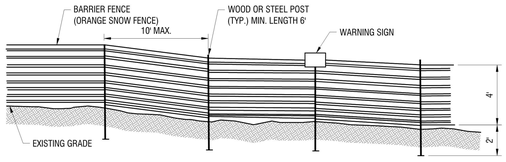
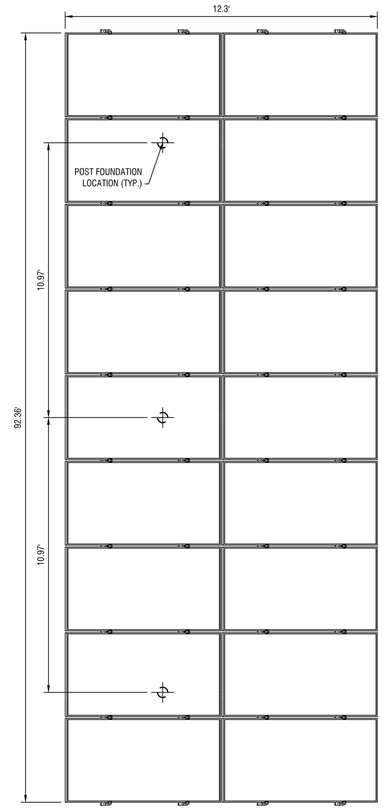
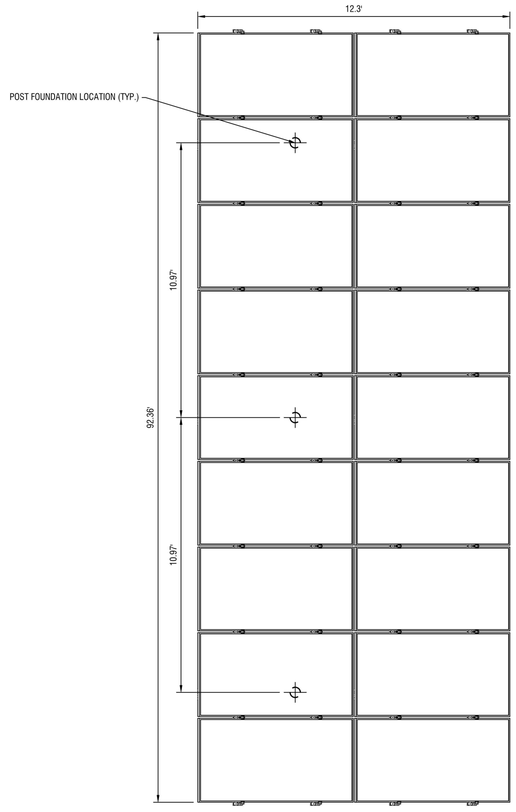


ELEVATION

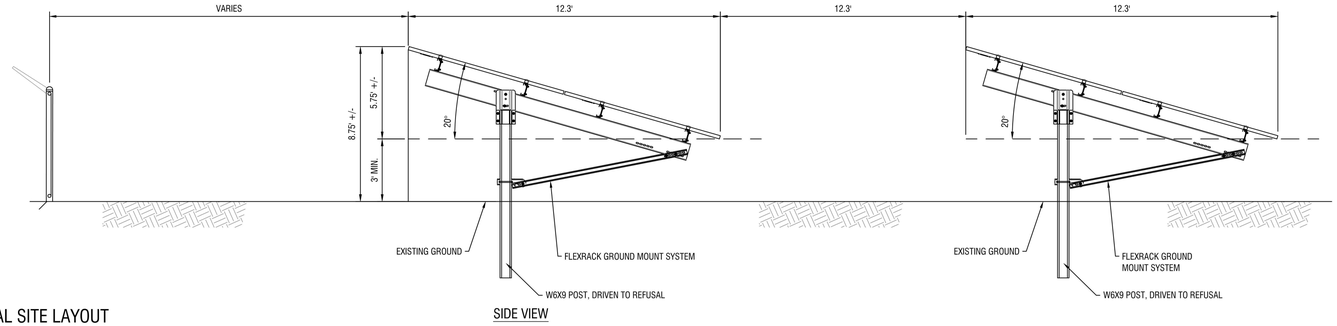
4 C502 TREE/VEGETATION PROTECTION BARRIER

N.T.S.





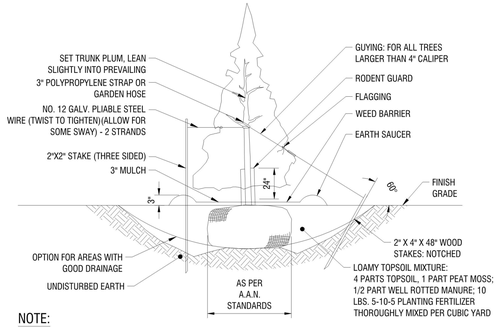
PLAN VIEW



SIDE VIEW

1 C502 TYPICAL SITE LAYOUT

N.T.S.



NOTE:

1. STAKING: FOR ALL TREES 4" CALIPER OR LESS. REMOVE STAKES ONE YEAR AFTER PLANTING.
2. USE 8' STAKES DRIVE 4' BELOW GROUND SURFACE.
3. GUYING: FOR ALL EVERGREEN TREES AND ALL TREES TALLER THAN 12'. USE SAME WIRE AS FOR STAKING. USE THREE PER TREE, EQUALLY SPACED. DO NOT TWIST WIRE TO TIGHTEN: USE 1/2"X6" TURNBUCKLE.
4. ROOT COLLAR TO BE SLIGHTLY ABOVE SURROUNDING GRADE.
5. MULCH SHALL BE 3" DOUBLE GROUND HARDWOOD BAR, COLOR DARK BROWN.
6. MULCH CAN NOT BE MORE THAN 1" THICK AT ROOT COLLAR EXTENDING OUT AT LEAST 6" FROM THE BARK, THEN IT CAN BE THICKENED.
7. MULCH IS TO BE PLACED 3 TO 6 INCHES AWAY FROM THE TRUNK.
8. KRAFT WRAP PAPER SHALL NOT BE PERMITTED FOR RODENT GUARD.

2 C502 TREE PLANTING

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Date & Time: 3/11/2020 11:29 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C-500 CONSTRUCTION DETAILS.dwg

GENERAL NOTES:

1. USE OF THIS DETAIL/CRITERION IS LIMITED TO ACCESS ROADS USED ON AN OCCASIONAL BASIS ONLY (I.E. PROVIDE ACCESS FOR MOWING EQUIPMENT REPAIR OR MAINTENANCE, ETC.)
2. LIMITED USE PERVIOUS ACCESS ROAD IS LIMITED TO LOW IMPACT IRREGULAR MAINTENANCE ACCESS ASSOCIATED WITH RENEWABLE ENERGY PROJECTS IN NEW YORK STATE.
3. REMOVE STUMPS, ROCKS AND DEBRIS AS NECESSARY, FILL VOIDS TO MATCH EXISTING NATIVE SOILS AND COMPACTION LEVEL.
4. REMOVED TOPSOIL MAY BE SPREAD IN ADJACENT AREAS AS DIRECTED BY THE PROJECT ENGINEER. COMPACT TO THE DEGREE OF THE NATIVE INSITU SOIL. DO NOT PLACE IN AN AREA THAT IMPEDES STORMWATER DRAINAGE.
5. GRADE ROADWAY, WHERE NECESSARY, TO NATIVE SOIL AND DESIRED ELEVATION. MINOR GRADING FOR CROSS SLOPE CUT AND FILL MAY BE REQUIRED.
6. REMOVE REFUSE SOILS AS DIRECTED BY THE PROJECT ENGINEER. DO NOT PLACE IN AN AREA THAT IMPEDES STORMWATER DRAINAGE.
7. ROADWAY WIDTH TO BE DETERMINED BY CLIENT.
8. THE LIMITED USE PERVIOUS ACCESS ROAD CROSS SLOPE SHALL BE 2% IN MOST CASES AND SHOULD NOT EXCEED 5%. THE LONGITUDINAL SLOPE OF THE ACCESS DRIVE SHOULD NOT EXCEED 15%.
9. LIMITED USE PERVIOUS ACCESS ROAD IS NOT INTENDED TO BE UTILIZED FOR CONSTRUCTION WHICH MAY SUBJECT THE ACCESS TO SEDIMENT TRACKING. THIS SPECIFICATION IS TO BE DEVELOPED FOR POST-CONSTRUCTION USE, SOIL RESTORATION PRACTICES MAY BE APPLICABLE TO RESTORE CONSTRUCTION RELATED COMPACTION TO PRE-EXISTING CONDITIONS AND SHOULD BE VERIFIED BY SOIL PENETROMETER READINGS. THE PENETROMETER READINGS SHALL BE COMPARED TO THE RESPECTIVE RECORDED READINGS TAKEN PRIOR TO CONSTRUCTION, EVERY 100 LINEAR FEET ALONG THE PROPOSED ROADWAY.
10. TO ENSURE THAT SOIL IS NOT TRACKED ONTO THE LIMITED USE PERVIOUS ACCESS ROAD, IT SHALL NOT BE USED BY CONSTRUCTION VEHICLES TRANSPORTING SOIL, FILL MATERIAL, ETC. IF THE LIMITED USE PERVIOUS ACCESS IS COMPLETED DURING INITIAL PHASES OF CONSTRUCTION, A STANDARD NEW YOK STATE STABILIZED CONSTRUCTION ACCESS SHALL BE CONSTRUCTED AND UTILIZED TO REMOVE SEDIMENT FROM CONSTRUCTION VEHICLES AND EQUIPMENT PRIOR TO ENTERING THE LIMITED USE PERVIOUS ACCESS ROAD FROM ANY LOCATION ON, OR OFF SITE. MAINTENANCE OF THE PERVIOUS ACCESS ROAD WILL BE REQUIRED IF SEDIMENT IS OBSERVED WITHIN THE CLEAN STONE.
11. THE LIMITED USE PERVIOUS ACCESS ROAD SHALL NOT BE CONSTRUCTED OR USED UNTIL ALL AREAS SUBJECT TO RUNOFF ONTO THE PERVIOUS ACCESS HAVE ACHIEVED FINAL STABILIZATION.
12. PROJECTS SHOULD AVOID INSTALLATION OF THE LIMITED USE PERVIOUS ACCESS ROAD IN POORLY DRAINED AREAS, HOWEVER IF NO ALTERNATIVE LOCATION IS AVAILABLE, THE PROJECT SHALL UTILIZE WOVEN GEOTEXTILE MATERIAL AS DETAILED IN FOLLOWING NOTES.
13. THE DRAINAGE DITCH IS OFFERED IN THE DETAIL FOR CIRCUMSTANCES WHEN CONCENTRATED FLOW COULD NOT BE AVOIDED. THE INTENTION OF THIS DESIGN IS TO MINIMIZE ALTERATIONS TO HYDROLOGY, HOWEVER WHEN DEALING WITH 5%-15% GRADES NOT PARALLEL TO THE CONTOUR, A ROADSIDE DITCH MAY BE REQUIRED. THE NYS STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS FOR GRASSED WATERWAYS AND VEGETATED WATERWAYS ARE APPLICABLE FOR SIZING AND STABILIZATION. DIMENSIONS FOR THE GRASSED WATERWAY SPECIFICATION WOULD BE DESIGNED FOR PROJECT SPECIFIC HYDROLOGIC RUNOFF CALCULATIONS, AND A SEPARATE DETAIL FOR THE SPECIFIC GRASSED WATERWAY WOULD BE INCLUDED IN THIS PRACTICE. RUNOFF DISCHARGES WILL BE SUBJECT TO THE OUTLET REQUIREMENTS OF THE REFERENCED STANDARD. INCREASED POST-DEVELOPMENT RUNOFF FROM THE ASSOCIATED ROADSIDE DITCH MAY REQUIRE ADDITIONAL PRACTICES TO ATTENUATE RUNOFF TO PRE-DEVELOPMENT CONDITIONS.
14. IF A ROADSIDE DITCH IS NOT UTILIZED TO CAPTURE RUNOFF FROM THE ACCESS ROAD, THE PERVIOUS ACCESS ROAD WILL HAVE A WELL-ESTABLISHED PERENNIAL VEGETATIVE COVER, WHICH SHALL CONSIST OF UNIFORM VEGETATION (I.E. BUFFER), 20 FEET WIDE AND PARALLEL TO THE DOWN GRADIENT SIDE OF THE ACCESS ROAD. POST-CONSTRUCTION OPERATION AND MAINTENANCE PRACTICES WILL MAINTAIN THIS VEGETATIVE COVER TO ENSURE FINAL STABILIZATION FOR THE LIFE OF THE ACCESS ROAD.
15. THE DESIGN PROFESSIONAL MUST ACCOUNT FOR THE LIMITED USE PERVIOUS ACCESS ROAD IN THEIR SITE ASSESSMENT/HYDROLOGY ANALYSIS. IF THE HYDROLOGY ANALYSIS SHOWS THAT THE HYDROLOGY HAS BEEN ALTERED FROM PRE- TO POST-DEVELOPMENT CONDITIONS (SEE APPENDIX A OF GP-0-15-002 FOR THE DEFINITION OF "ALTER THE HYDROLOGY…"), THE DESIGN MUST INCLUDE THE NECESSARY DETENTION/RETENTION PRACTICES TO ATTENUATE THE RATES (10 AND 100 YEAR EVENTS) TO PRE-DEVELOPMENT CONDITIONS.

GEOGRID MATERIAL NOTES:

1. THE GEOGRID, OR COMPARABLE PRODUCT, IS INTENDED FOR USE FOR ALL CONDITIONS, IN ORDER TO ASSIST IN MATERIAL SEPARATION FROM NATIVE SOILS AND PRESERVE ACCESS LOADS.
2. GRAVEL FILL MATERIAL SHALL CONSIST OF 1-4" CLEAN, DURABLE, SHARP-ANGLED CRUSHED STONE OF UNIFORM QUALITY, MEETING THE SPECIFICATIONS OF NYSDOT ITEM 703-02, SIZE DESIGNATION 3-5 OF TABLE 703-4. STONE MAY BE PLACED IN FRONT OF, AND SPREAD WITH, A TRACKED VEHICLE. GRAVEL SHALL NOT BE COMPACTED.
3. GEOGRID SHALL BE MIRAFI BXG110 OR APPROVED EQUAL. GEOGRID SHALL BE DESIGNED BASED ON EXISTING SOIL CONDITIONS AND PROPOSED HAUL ROAD SLOPES.
4. IF MORE THAN ONE ROLL WIDTH IS REQUIRED, ROLLS SHOULD OVERLAP A MINIMUM OF SIX INCHES.
5. REFER TO MANUFACTURER'S SPECIFICATION FOR PROPER TYING AND CONNECTIONS.
6. LIMITED USE PERVIOUS ACCESS ROAD SHALL BE TOP DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE MEETING NYSDOT ITEM 703-02 SPECIFICATIONS.

BASIS OF DESIGN: TENCATE MIRAFI BXG110 GEOGRIDS; 365 SOUTH HOLLAND DRIVE, PENDERGRASS, GA; 800-685-9990 OR 706-693-2226; WWW.MIRAFI.COM

GEOWEB MATERIAL NOTES:

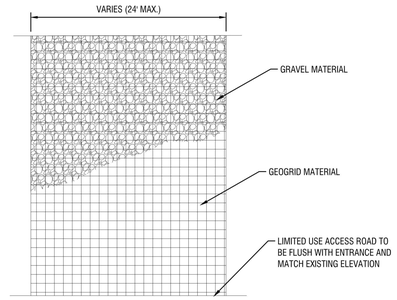
1. THE GEOWEB, OR COMPARABLE PRODUCT, IS SUGGESTED FOR USE ON ROAD PROFILES EXCEEDING 10%. THE GEOWEB PRODUCT IS INTENDED TO LIMIT SHIFTING STONE MATERIAL DURING USE.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
3. WHERE REQUIRED, A NATIVE SOIL WEDGE SHALL BE PLACED TO ACCOMMODATE ROAD CROSS SLOPE OF 2%. NATIVE SOIL SHALL BE COMPACTED TO MATCH EXISTING SOIL CONDITIONS.
4. GRAVEL FILL MATERIAL SHALL CONSIST OF 1-4" CLEAN, DURABLE, SHARP-ANGLED CRUSHED STONE OF UNIFORM QUALITY, MEETING THE SPECIFICATIONS OF NYSDOT ITEM 703-02, SIZE DESIGNATION 3-5 OF TABLE 703-4. STONE MAY BE PLACED IN FRONT OF, AND SPREAD WITH, A TRACKED VEHICLE. GRAVEL SHALL NOT BE COMPACTED.
5. GEOWEB SYSTEM SHALL BE PRESTO GEOSYSTEM GEOWEB OR APPROVED EQUAL. GEOWEB SHALL BE DESIGNED BASED ON EXISTING SOIL CONDITIONS AND PROPOSED HAUL ROAD SLOPES.
6. LIMITED USE PERVIOUS ACCESS ROAD SHALL BE TOP DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE, SIZE 3A, MEETING NYSDOT ITEM 703-02 SPECIFICATIONS.
7. THE TOP EDGES OF ADJACENT CELL WALLS SHALL BE FLUSH WHEN CONNECTING. ALIGN THE I-SLOTS FOR INTERLEAF AND END TO END CONNECTIONS. THE GEOWEB PANELS SHALL BE CONNECTED WITH ATRA KEYS AT EACH INTERLEAD AND END TO END CONNECTIONS. REFER TO MANUFACTURER'S SPECIFICATION FOR PROPER INSTALLATION, TYING AND CONNECTIONS.

BASIS OF DESIGN: PRESTO GEOSYSTEMS GEOWEB; 670 NORTH PERKINS STREET, APPLETON, WI; 800-548-3424 OR 920-738-1222; INFOR@PRESTOGEO.COM; WWW.PRESTOGEO.COM

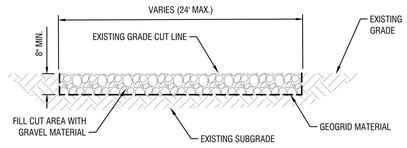
WOVEN GEOTEXTILE MATERIAL NOTES:

1. SPECIFIED GEOTEXTILE WILL ONLY BE UTILIZED IN PLACID SOILS. PLACID SOILS CONSIST OF POORLY DRAINED SOILS COMPOSED OF FINELY TEXTURED PARTICLES AND ARE PRONE TO RUTTING. PLACID SOILS ARE TYPICALLY PRESENT IN LOW-LYING AREAS WITH HYDROLOGIC SOILS GROUP (HSG) OF C OR D, OR AS SPECIFIED FROM AN ENVIRONMENTAL SCIENTIST, SOIL SCIENTIST, OR GEOTECHNICAL DATA.
2. THE CONCERN FOR POTENTIAL REDUCTION OF NATIVE INFILTRATION RATES DUE TO THE GEOTEXTILE MATERIAL WOULD NOT BE A SIGNIFICANT CONCERN IN POORLY DRAINED SOILS WHERE SEGREGATION OF PERVIOUS STONE AND NATIVE MATERIALS IS CRUCIAL FOR LONG TERM OPERATION AND MAINTENANCE.

BASIS OF DESIGN: TENCATE MIRAFI RSI-SERIES WOVEN GEOSYNTHETICS; 365 SOUTH HOLLAND DRIVE, PENDERGRASS, GA; 800-685-9990 OR 706-693-2226; WWW.MIRAFI.COM



PLAN



SECTION

2 C503 LIMITED USE PERVIOUS ACCESS ROAD - 0% TO 10% SLOPES

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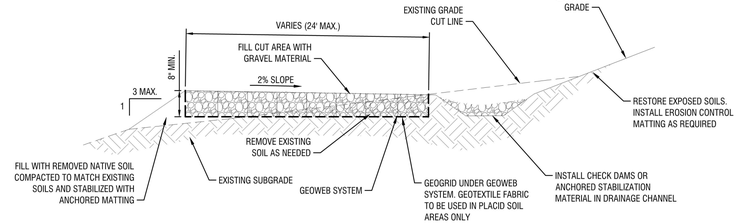


SECTION

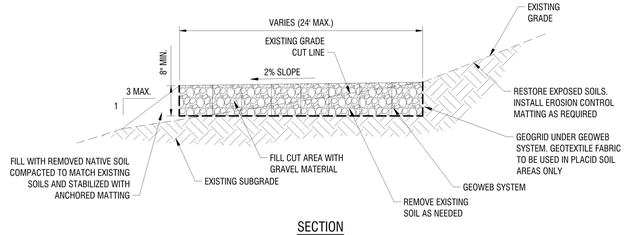
NOTE:

1. THE ROADSIDE DITCH SHALL BE DESIGNED IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS FOR GRASSED AND VEGETATED WATERWAYS. ADDITIONAL DETAILS WILL BE PROVIDED SPECIFIC TO THE SITE DESIGN.

3 C503 LIMITED USE PERVIOUS ACCESS ROAD - 10% AND GREATER SLOPES WITH DITCH

N.T.S.

PLAN



SECTION

1 C503 LIMITED USE PERVIOUS ACCESS ROAD - 10% AND GREATER SLOPES

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CONSTRUCTION DETAILS

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C503

Date & Time: 3/11/2020 11:29 AM By: Petranchuk, Tim
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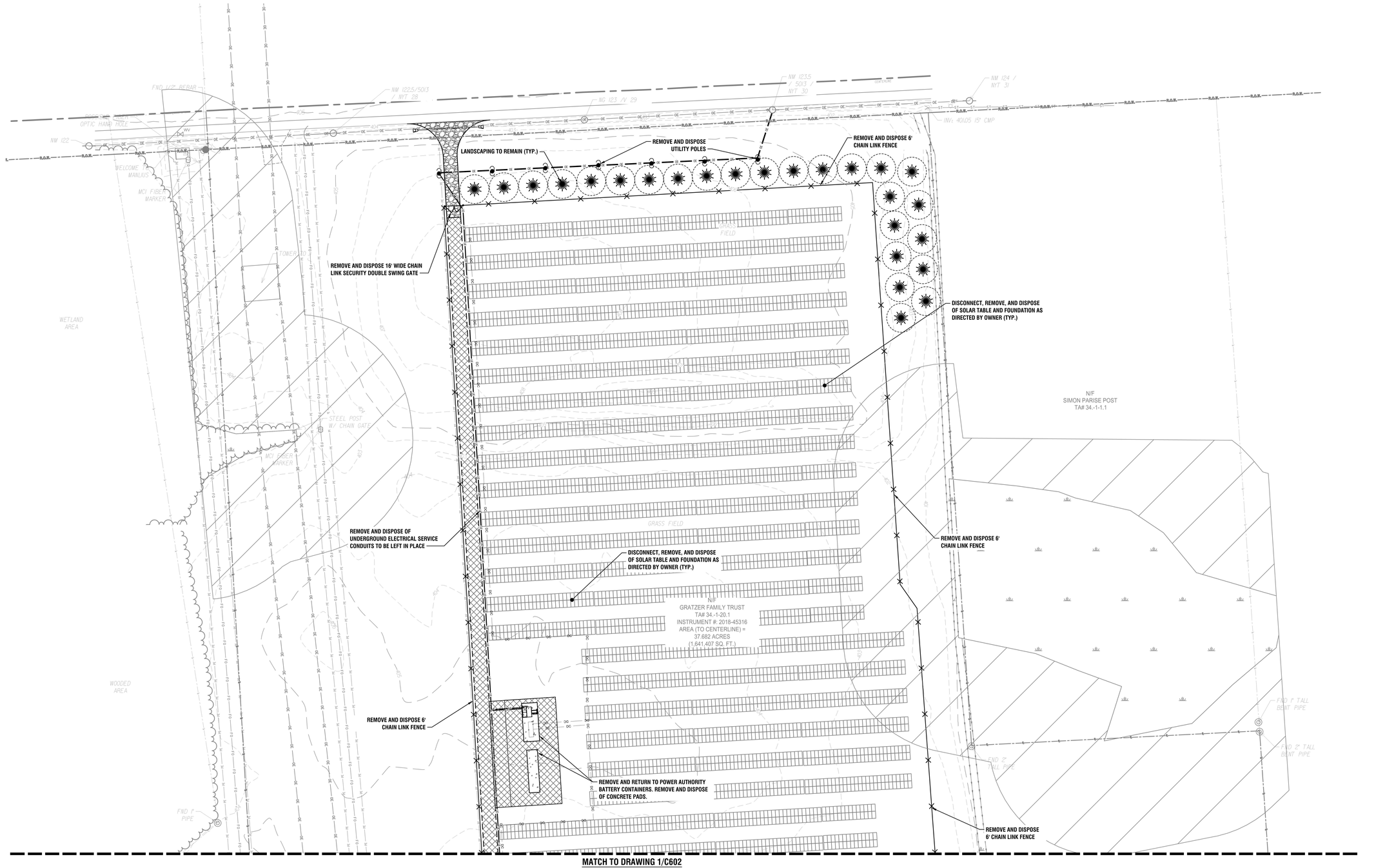

1 C601 DECOMMISSIONING PLAN - PHASE I

SCALE: 1" = 40'

Date & Time: 3/11/2020 11:29 AM By: Petranchuk, Tim
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ISSUED FOR: SITE PLAN APPROVAL
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DRAWING NAME:

DECOMMISSIONING PLAN - PHASE I (SHEET 1 OF 3)

DRAWING NUMBER:

C601

MATCH TO DRAWING 1/C601

DISCONNECT, REMOVE, AND DISPOSE OF SOLAR TABLE AND FOUNDATION AS DIRECTED BY OWNER (TYP.)

REMOVE AND DISPOSE 6' CHAIN LINK FENCE

REMOVE AND DISPOSE OF UNDERGROUND ELECTRICAL SERVICE, CONDUITS TO BE LEFT IN PLACE

REMOVE AND DISPOSE 6' CHAIN LINK FENCE

DISCONNECT, REMOVE, AND DISPOSE OF SOLAR TABLE AND FOUNDATION AS DIRECTED BY OWNER (TYP.)

REMOVE AND RETURN TO POWER AUTHORITY BATTERY CONTAINERS. REMOVE AND DISPOSE OF CONCRETE PADS.

REMOVE AND DISPOSE 6' CHAIN LINK FENCE

MATCH TO DRAWING 1/C603

1 / C602 DECOMMISSIONING PLAN - PHASE I
SCALE: 1" = 40'

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'
1" = 40'

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DRAWING NAME:

DECOMMISSIONING PLAN - PHASE I (SHEET 2 OF 3)

DRAWING NUMBER:

C602

MATCH TO DRAWING 1/C602

DISCONNECT, REMOVE, AND DISPOSE OF SOLAR TABLE AND FOUNDATION AS DIRECTED BY OWNER (TYP.)

REMOVE AND DISPOSE 6' CHAIN LINK FENCE

REMOVE AND DISPOSE 6' CHAIN LINK FENCE

DISCONNECT, REMOVE, AND DISPOSE OF SOLAR TABLE AND FOUNDATION AS DIRECTED BY OWNER (TYP.)

REMOVE AND DISPOSE 6' CHAIN LINK FENCE

INV: 397.95 IS" SICPP

INV: 398.04 IS" SICPP

INV: 397.98 IS" SICPP

INV: 399.33 IS" CMP

INV: 399.63 IS" CMP

MCI FIBER MARKER

FND. 2" TALL PIPE

WOODED AREA

N/F JOHN BENNETT TA# 36.-1-30.0

60"

1 C603 DECOMMISSIONING PLAN - PHASE I

SCALE: 1" = 40'

N

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

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Rochester, NY 14614
585-454-6110

labellapc.com

STATE OF NEW YORK
DONALD J. HOEFLER
075470
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

It is a violation of New York Education Law Article 145 Sec.7209, for any person, unless acting under the direction of a licensed architect, professional engineer, or land surveyor, to alter an item in any way. If an item bearing the seal of an architect, engineer, or land surveyor is altered; the altering architect, engineer, or land surveyor shall affix to the item their seal and notation "altered by" followed by their signature and date of such alteration, and a specific description of the alteration.

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SOURCE RENEWABLES, LLC
41 WEST ELM ST, SUITE C
GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04

DRAWN BY: TAP

REVIEWED BY: DJH

ISSUED FOR: SITE PLAN APPROVAL

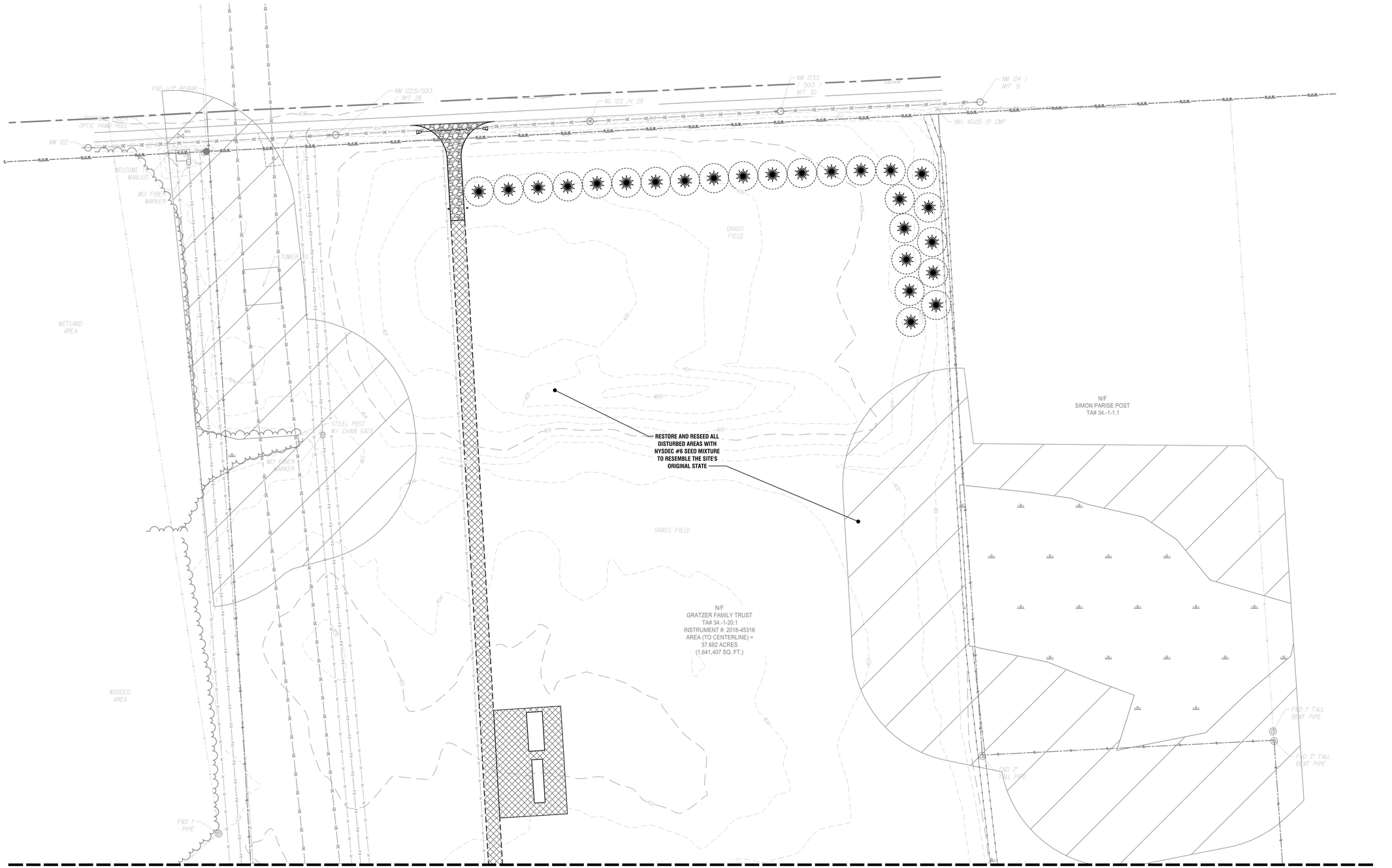
DATE: MARCH 2020

DRAWING NAME:

DECOMMISSIONING PLAN - PHASE I (SHEET 3 OF 3)

DRAWING NUMBER:

C603



1 C604 DECOMMISSIONING PLAN - PHASE II

SCALE: 1" = 40'

Date & Time: 3/11/2020 11:30 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C-601 Decommissioning.dwg

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GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04

DRAWN BY: TAP

REVIEWED BY: DJH

ISSUED FOR: SITE PLAN APPROVAL

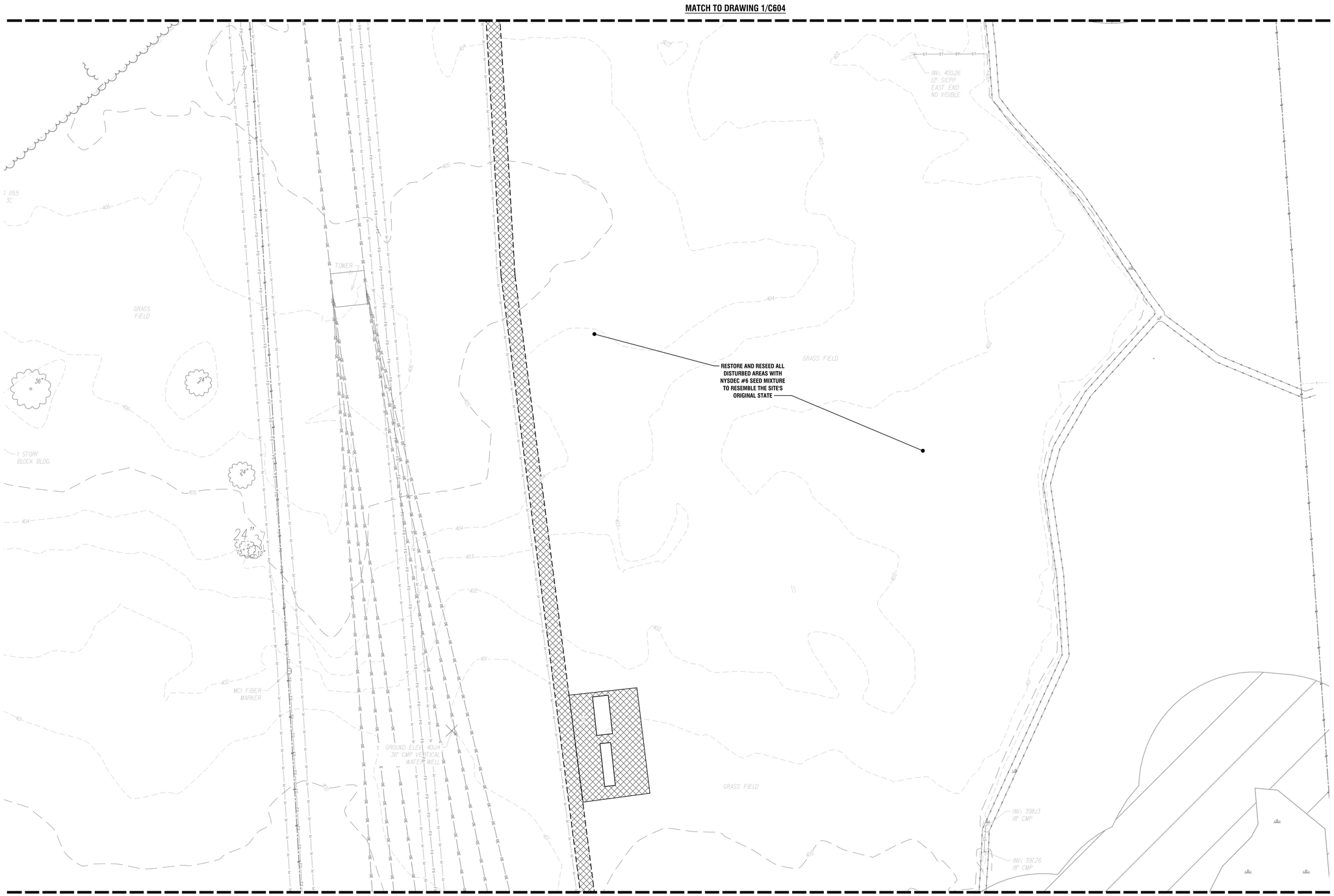
DATE: MARCH 2020

DRAWING NAME:

DECOMMISSIONING PLAN - PHASE II (SHEET 1 OF 3)

DRAWING NUMBER:

C604



1 C605 DECOMMISSIONING PLAN - PHASE II
SCALE: 1" = 40'

N

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'
1" = 40'

Date & Time: 3/11/2020 11:30 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C-601 Decommissioning.dwg

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DONALD J. HOEFLER
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SOURCE RENEWABLES, LLC
41 WEST ELM ST, SUITE C
GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04

DRAWN BY: TAP

REVIEWED BY: DJH

ISSUED FOR: SITE PLAN APPROVAL

DATE: MARCH 2020

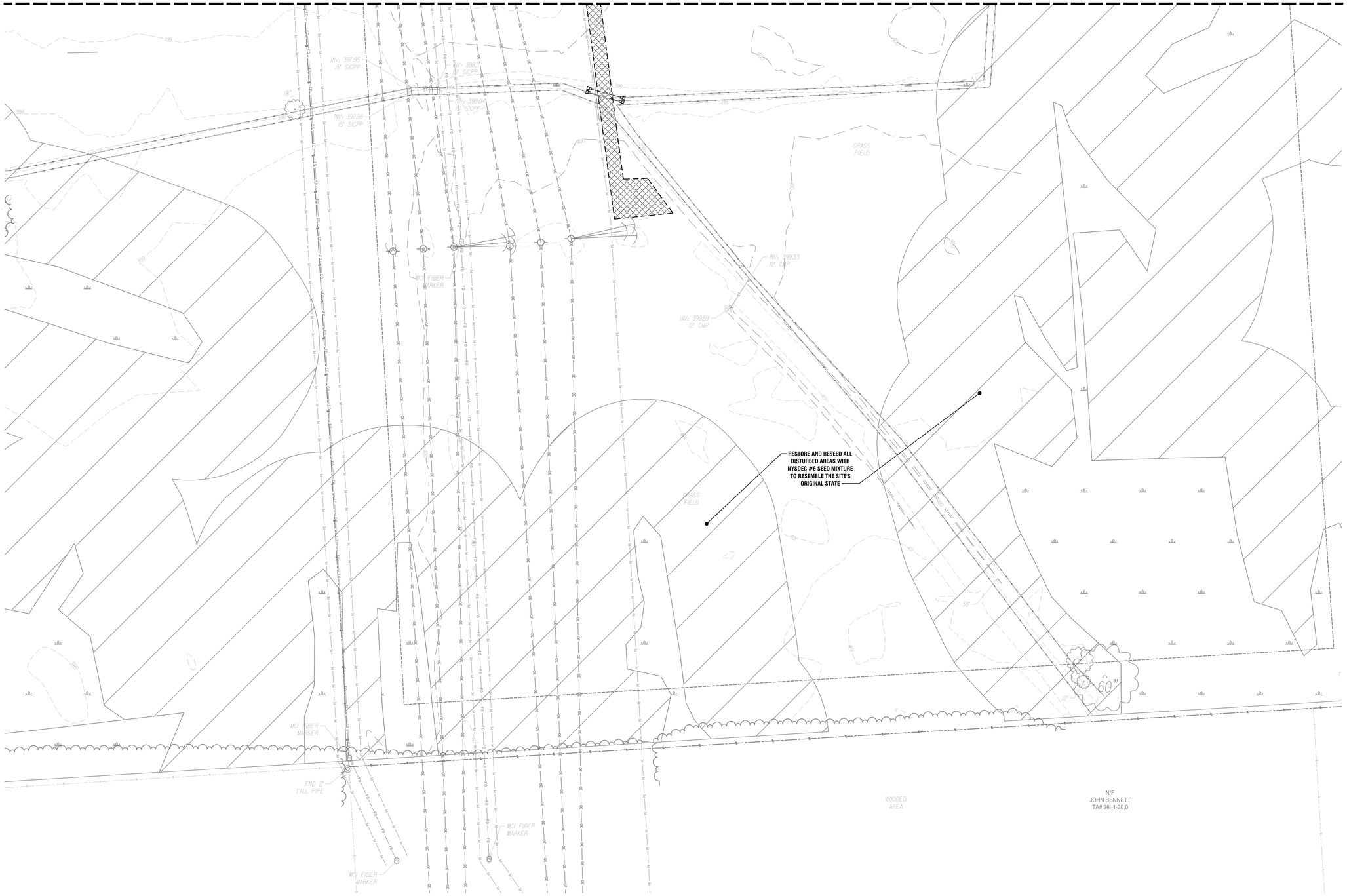
DRAWING NAME:

DECOMMISSIONING PLAN - PHASE II (SHEET 2 OF 3)

DRAWING NUMBER:

C605

MATCH TO DRAWING 1/C605



1 / C606 DECOMMISSIONING PLAN - PHASE II

SCALE: 1" = 40'

N

WETLAND

100' WETLAND BUFFER ZONE

20 0 20 40 60 80'

1" = 40'

Date & Time: 3/11/2020 11:30 AM By: Petranchuk, Tim
Path: J:\Source Renewables\2191567.04 - Taft Solar Development\Drawings\Civil\C3D\C-691 Decommissioning.dwg

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STATE OF NEW YORK
DONALD J. HOESS
075470
LICENSED PROFESSIONAL ENGINEER

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SOURCE RENEWABLES, LLC
41 WEST ELM ST, SUITE C
GREENWICH, CT 06830

Source Renewables

TAFT ROAD SOLAR ARRAY

6966 EAST TAFT ROAD
EAST SYRACUSE, NY 13057

NO:	DATE:	DESCRIPTION:
REVISIONS		

PROJECT NUMBER: 2191567.04

DRAWN BY: TAP

REVIEWED BY: DJH

ISSUED FOR: SITE PLAN APPROVAL

DATE: MARCH 2020

DRAWING NAME:

DECOMMISSIONING PLAN - PHASE II (SHEET 3 OF 3)

DRAWING NUMBER:

C606

Expected Fee: _____

TOWN OF MANLIUS
PLANNING DEPARTMENT
INITIAL APPEARANCE APPLICATION

DATE: March 10, 2020

Name of Project: Taft Solar Development

Applicant must submit 12 copies of all site plans, surveys, and supporting data with the final application before a planning board meeting can be scheduled.

Location of Project: Taft Road, Town of Manlius, Onondaga County, New York 13057

Type of Project:

○ Division of Land ○ Subdivision ○ Accessory Use ○ Zone Change ● Site Review ○ Other _____

Developer: Taft Solar, LLC (Mr. Andrew Day) Phone: 203-542-5651

Address: 41 West Elm Street, Suite C, Greenwich, CT Zip: 06830

Tax Map Number(#)/s: Tax parcel # 034.-01-20.1

Present Zoning: Restricted Agriculture, with Technical Development Overlay (TD/O) on northern portion of the parcel

Desired Zoning: Restricted Agriculture, with Technical Development Overlay (TD/O) on northern portion of the parcel

Total Acreage: 17.3 acres

Total Number of Lots: 1

Property Owner/s: Gratzer Family Trust Phone: _____

Address: 6787 Taft Road, East Syracuse Zip: 13057

Tax Map#(s): 034.-01-20.1

Owner's Signature: Dragen Gaić (La Bella Associates)

Printed Name: Acting Agent for Source Renewables

Property Owner/s: _____ Phone: _____

Address: _____ Zip: _____

Tax Map#(s): _____

Owner's Signature: _____

Printed Name: _____

Use next page for additional known property owners' information

---

Planning Board Meeting Date Assignment: _____

Fee: _____ Paid: _____ Per: ○ Credit/Debit Card ○ Check ○ Cash

TOWN OF MANLIUS
SPECIAL PERMIT APPLICATION
(Original or Renewal)

DATE: 2/06/2020 Tax Map # 134.000-1-20.1

I Andrew Day of Taft Solar, LLC as applicant relative to property located at 6966 Taft Road, Manlius, NY hereby request/apply for ~~issuance~~/renewal (CIRCLE ONE) of a **SPECIAL PERMIT** from the Town of Manlius Town Board as required by the Town of Manlius Code, submit the following application and documentary evidence and/or information, including comprising the Exhibits in support of this request and certify that it is correct, true and accurate to the best of my/our knowledge and after reasonable due diligence and investigation. I further knowledge and agree that should any such evidence or information be later determined as false or not credible in any material respect, any special permit issued/renewed based thereon may be determined by the Town Board as void from the start or revocable. LaBella Associates Acting Agent of Anydron Day (Source Renewables)

Applicant's Signature

A 1. Owner(s) of property: Gratzer Family Trust

A 2. Status (Owner, Lessee) of each applicant: Site will be purchased by Taft Solar, LLC subject to approvals

A 3. Present Zoning of Property: Restricted Agricultural

A.4. Present Use of Property (describe in detail as best as reasonably possible- add additional pages as needed): Vacant - meadow previously farmed

A5Describe property condition at present: Open meadow

B 1. Proposed use of property: Solar Array - Large Solar Photovoltaic Energy System (LSES) 3.4 MW - AC Capacity

B 2. Anticipated number of employees, guests, customers on property:

periodic maintenance

B 3. Hours of Proposed Operation: N/A

B 4. Anticipated Automobile Parking: N/A

B 5. Parking Area Buffer/Screening: N/A

B 6. Anticipated Vehicle Traffic Volume/Flow: NONE TO MINIMAL - EXCEPT DURING CONSTRUCTION

B 7. Proposed Site Lighting: NONE

B 8. Anticipated noise sources, known decibel levels: PV INVERTER - BELOW AMBIENT LEVELS DURING OPERATION

B 9. Landscape:

a) Existing landscaping: NONE

b) Proposed landscaping: LANDSCAPE BUFFER ALONG TAFT ROAD FRONTAGE

B 10. Proposed Signage: NONE

B 11. Level of municipal and other services required to support the proposed activity (i.e., water supply sanitary sewage facilities): NONE

B 12. Specific Requirements:

	Town Code (District) Requirement;	Proposal:
Parking Spaces	N/A	N/A
Lot Coverage	N/A	36.7%
Front Yard Setback	50'	65' +/-
Side Yard Setback	50'	51' +/-
Rear Yard Setback	50'	72' +/-
Maximum Height of Building	N/A	N/A

Onondaga County Planning Board

J.Ryan McMahon II
County Executive

RESOLUTION OF THE
ONONDAGA COUNTY PLANNING BOARD

Meeting Date: March 18, 2020
OCPB Case # Z-20-86

WHEREAS, the Onondaga County Planning Board, pursuant to General Municipal Law, Section 239 l, m and n, has considered and reviewed the referral for a SPECIAL PERMIT from the Town of Manlius Planning Board at the request of Taft Solar, LLC for the property located at East Taft Road; and

WHEREAS, General Municipal Law Section 239-m allows the County Planning Board to review issuance of special permits and the site is located within 500 feet of East Taft Road (Route 18), a county highway, and the municipal boundaries between the Towns of Manlius, Cicero and DeWitt; and

WHEREAS, the applicant is proposing construction of a 3.45 MW-AC solar farm on 17.3 acres of a 37.682-acre parcel in a Restricted Agricultural (R-A) zoning district; and

WHEREAS, the site is located in a rural area east of I-481 with surrounding residential land uses and large tracts of agricultural lands and wooded areas; aerial imagery shows the site has frontage on East Taft Road, a county road that also marks the boundary between the Towns of Manlius, DeWitt, and Cicero in this location, and contains vacant, undeveloped land; per aerial imagery, there are existing transmission towers and overhead utility lines along the western lot line, which are served by an existing gravel access road onto East Taft Road; per the local application, the site will be purchased by the applicant subject to approvals for the project; and

WHEREAS, the submitted application and plan indicate the solar farm will include installation of 263 solar tables with a total of 13,522 solar panels, each standing 9' in height, with portions of the solar arrays occurring on either side of a drainage channel on the southern half of the site; the solar arrays will be enclosed by a 6' high chain link fence with 3 strands of barbed wire affixed to the top; there will be two new equipment pads within the fence enclosure, each containing an inverter and batter storage; the plan shows a row of new landscaping at the front of the site to screen the view from East Taft Road; and

WHEREAS, per the plan, the solar farm will be served by a new 12' wide gravel access roadway onto East Taft Road; the proposed road requires two new SICPP culverts, one 18" at the front of the site and one 24" to cross the drainage channel; ADVISORY NOTES: the proposed driveway onto East Taft Road requires highway access and work permits from the Onondaga County Department of Transportation and will be subject to the availability of sight distance; all existing or proposed driveways on a County road must meet Department requirements; and

WHEREAS, the project is intended for Community Solar purposes and the plan shows proposed utility poles and overhead electrical wiring at the front of the site to connect the solar farm to the existing utility grid; the submitted Letter of Intent dated February 6, 2020 indicates the application for interconnection to the utility grid will be submitted with formal plans; and

WHEREAS, per the submitted Environmental Assessment Form (EAF) dated February 6,

2020, the applicant is seeking a PILOT agreement with the Onondaga County Industrial Development Agency (OCIDA) for the project; and

WHEREAS, per the EAF, 0.8 acres of the site will be disturbed by the proposed project; the EAF notes that maximum depth of ground disturbance will not exceed 4 feet and the helix screws (or H-piles) of the solar tables will be installed at a depth of approximately 8-10 feet;
ADVISORY NOTE: per the Onondaga County Department of Transportation, additional stormwater runoff into the county's drainage system is prohibited; and

WHEREAS, the site does not have existing drinking water or wastewater services and is located outside of the Onondaga County Sanitary District; no drinking water or wastewater services are proposed as part of the project; and

WHEREAS, the Letter of Intent indicates a wetland delineation was completed in July 2019 and is subject to final determination by the US Army Corps of Engineers (USACOE); a wetland report will be produced under separate submittal once a final determination is made by the USACOE; the delineated wetland boundaries is not shown on the project plans; however, the letter notes that a wetland permit will be required from the NYS Department of Environmental Conservation and obtained for installation of the solar array within the 100' wetland buffer, and a USACOE permit will be required and obtained for the culvert installation within the existing drainage ditch; and

WHEREAS, the EAF notes that NYSDEC Spill #0702926 is identified in the area under the power lines located on the northern portion of the site; the NYSDEC Spill listing identifies this as a hydraulic oil spill to the soil, which occurred in 2007 and has since been closed; and

WHEREAS, the site may contain the Indiana bat, or its associated habitat, which has been listed by the state or federal government as a threatened or endangered animal species (per EAF Mapper); impacts to bat species are often associated with tree clearing and from the plans it appears that no trees will be removed as part of the proposed project; and

WHEREAS, the site or a portion of it is located in or adjacent to an area designated as sensitive for archaeological sites on the NYS Historic Preservation Office archaeological site inventory (per EAF Mapper); the referral materials includes a letter from the NYS Office of Parks, Recreation and Historic Preservation (OPRHP), dated February 5, 2020, that indicates the office reviewed the project and determined that no properties, including archaeological and/or historic resources, will be impacted by the project; and

WHEREAS, ADVISORY NOTE: per GML § 239-nn, the legislative body or other authorized body having jurisdiction in a municipality shall give notice to an adjacent municipality when a hearing is held by such body relating to a subdivision, site plan, special use permit, or a use variance on property that is within five hundred feet of an adjacent municipality; such notice shall be given by mail or electronic transmission to the clerk of the adjacent municipality at least ten days prior to any such hearing; and

NOW THEREFORE BE IT RESOLVED, that the Onondaga County Planning Board recommends the following MODIFICATION(S) to the proposed action prior to local board approval of the proposed action:

The applicant must contact the Onondaga County Department of Transportation to coordinate requirements for the proposed driveway on East Taft Road, in order

to satisfy commercial driveway standards, which will require paving the portion of the driveway in the right-of-way and aligning the driveway with the existing driveway on the north side of East Taft Road. To further meet Department requirements, the applicant must contact the Department to discuss any required drainage data for the proposed project. The municipality must ensure any mitigation as may be determined by the Department is reflected on the project plans prior to, or as a condition of, municipal approval.

The Board also offers the following comments:

1. Additional landscape screening is encouraged to buffer the solar farm from the adjacent VFW property.

2. The applicant and Town are encouraged to further minimize encroachment into wetland areas, and/or provide high-quality mitigation to preserve these important and sensitive environmental areas to the extent possible. Best practices to consider related to wetland and habitat protection may include avoiding soil compaction during construction, avoiding drilled foundations, restoring or improving adjacent wetlands, buffering stream channels, planting of beneficial and diverse native species and pollinators and removing invasive species, and allowing small openings in fencing to allow for small wildlife movement.

3. For more information regarding the management of Battery Energy Solar System (BESS) development within solar projects, the Town is advised to coordinate with the CNY Regional Planning Development Board (RPDB) Energy Management office. The New York State Energy Research and Development Authority (NYSERDA) also offers a BESS model law, model permit, and full guidebook to help local governments manage such systems in their community.

4. The Town is advised to ensure battery storage systems meet applicable requirements for fire preventaion and safety and handling of potentially hazardous materials.

Daniel Cupoli, Chairman
Onondaga County Planning Board
Transmittal Date: 03-18-2020

1100 Civic Center, 421 Montgomery Street, Syracuse, NY 13202 (315) 435-2611, Fax (315) 435-2439

E-mail Address: countyplanning@ongov.ne

GML 239 Report of Final Action

NYS GML § 239-m.6. and n.6. require the referring body to file a report of the final action it has taken on a referred matter with the county planning agency within 30 days after the final action (separate from the minutes taken at the meeting). A referring body which acts contrary to a County Planning Board recommendation of MODIFICATION or DISAPPROVAL of a referred matter shall also set forth the reasons for the contrary action in such report.

This section to be completed by the Syracuse-Onondaga County Planning Agency

To: Onondaga County Planning Board **From:** Town of Manlius Planning Board

Fax: 435-2439 **Phone:** 435-2611

Re:

Applicant:	Taft Solar, LLC
Address:	at East Taft Road
Referral Type:	SPECIAL PERMIT
OCPB Date:	March 18, 2020
OCPB Action:	Modification
OCPB Case #:	Z-20-86

The local board took the following action regarding the above referenced referral (Check one box. If checking Other, please specify the final action taken. Use the space at the bottom of the report to identify reasons if acting contrary to the OCPB recommendation.):

☐ Approved the proposed action with regard to the OCPB's No Position or No Position with Comment.
☐ Approved the proposed action as modified by the OCPB.
☐ Approved the proposed action contrary to some of the modifications recommended by the OCPB.*
☐ Approved the proposed action contrary to all of the modifications recommended by the OCPB.*
☐ Approved the proposed action contrary to the disapproval recommended by the OCPB.*

☐ Disapproved the proposed action with regard to the OCPB's no position or no position with comment.
☐ Disapproved the proposed action with regard to the recommended modification(s) by the OCPB.
☐ Disapproved the proposed action as recommended and for reasons set forth by the OCPB.
☐ Disapproved the proposed action as recommended but for reasons other than those set forth by the OCPB. (Please list reasons below for local disapproval.)

☐ Other _____

Local Board Date: _____

*List reasons for acting contrary to the OCPB recommendation and include a copy of the local board resolution. Attach additional reasons on a separate sheet of paper as necessary.

_____

_____

_____

_____

1100 Civic Center, 421 Montgomery Street, Syracuse, NY 13202 (315) 435-2611, Fax (315) 435-2439

E-mail Address: countyplanning@ongov.ne

TOWN OF MANLIUS
SPECIAL PERMIT APPLICATION
(Original or Renewal)

DATE: April 16, 2020 Tax Map # 098-01-15.0

I Jonathan Koch , as applicant relative to property located at 5062 North Eagle Village Road, Manlius, New York, hereby request/apply for issuance of a **SPECIAL PERMIT** from the Town of Manlius Town Board as required by the Town of Manlius Code, submit the following application and documentary evidence and/or information, including comprising the Exhibits in support of this request and certify that it is correct, true and accurate to the best of my/our knowledge and after reasonable due diligence and investigation. I further knowledge and agree that should any such evidence or information be later determined as false or not credible in any material respect, any special permit issued/renewed based thereon may be determined by the Town Board as void from the start or revocable.

Applicant's Signature

A 1 Owner(s) of property: Paul Shapero

A 2 Status (Owner, Lessee) of each applicant: An affiliated entity of Falck Renewables, which has the option to lease the property

A 3 Present Zoning of Property: Restricted Agricultural

A 4 Present Use of Property (describe in detail as best as reasonably possible- add additional pages as needed): The property located at 5062 North Eagle Village Road, Manlius, New York was being utilized as farm land. Most recently, the area of the proposed solar project was used as a corn field. The project site is currently vacant land.

A 5 Describe property condition at present: The project site consists of vacant land. The Site is bounded by wooded land followed by residential properties and Salt Springs Road to the north, Townsend Road followed by wooded land and residential properties to the east, North Eagle Village Road followed by agricultural land to the south, and wooded land followed by agricultural land and a church to the west. The proposed project site occupies approximately 21.3 acres of the larger 44.71 acre parcel.

B 1 Proposed use of property: EF NY CDG 001, LLC (an affiliate of Falck Renewables) proposes the development of approximately 21.3 acres of a larger 44.71-acre parcel of private land in Onondaga County into a ground-mounted photovoltaic (PV) solar energy generating facility (North Eagle Solar). The proposed project would be capable of delivering about 5,000 kilowatts (kW) of alternating electric current (AC) to the electrical power grid, which is sufficient to provide renewable energy to approximately 600 households. The PV panels proposed for this project are similar to solar panels utilized for typical residential roof top installations and would be placed on a racking system either pile driven or screw mounted to the ground surface. The PV project will be directly interconnected to, and provide energy to,

National Grid's local electric distribution grid via either underground or overhead electrical service. Prior to utility interconnection, direct current (DC) electrical power generated by the solar panels will be transformed to AC power and modified as necessary to connect to National Grid's electrical power supply. The project would also include an equipment pad, a gravel access road and would be surrounded by a chain-linked security fence.

B 2 Anticipated number of employees, guests, customers on property: The PV project, after construction is completed, will not require continuous supervision, maintenance or support. The PV Arrays are monitored using a GPS/Telemetry system and maintenance personnel would respond to indications that the arrays were not functioning properly. Landscaping, mowing, and snow removal would occur on an as-needed basis.

B 3 Hours of Proposed Operation:

During Construction:		During Operations:	
Monday – Friday	7 a.m. – 5 p.m.	Monday – Friday	Daylight Hours
Saturday	N/A	Saturday	Daylight Hours
Sunday	N/A	Sunday	Daylight Hours
Holidays	N/A	Holidays	Daylight Hours

B 4. Anticipated Automobile Parking: The proposed PV project includes an access road to provide ingress/egress and temporary parking during construction and for maintenance personnel. There is no designated parking area.

B 5. Parking Area Buffer/Screening: Automobile parking is prohibited on the project site except for temporary parking for maintenance personnel.

B 6. Anticipated Vehicle Traffic Volume/Flow: Traffic impacts are generally limited to the construction period which lasts approximately three months for a 5,000 kW ground mounted solar project. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation and provide facility maintenance.

B 7. Proposed Site Lighting: In general, lighting is not required for the proposed solar energy project. Security for the solar energy project is provided by security fencing.

B 8. Anticipated noise sources, known decibel levels: Electrical inverters, which convert power from DC to AC, and associated electrical equipment can generate noise at a solar energy site. The low hum of the electrical equipment is not generally heard at distances greater than 100 feet from the electrical equipment. The proposed inverter is located more than 100 feet from the nearest property line. Noise can also be generated during periodic mowing and trimming of the facility during operation.

B 9. Landscape:

a) Existing landscaping: The project area consists of a cultivated crops, the northern portion of the Site is bordered by hardwood forest and Salt Springs Road to the north, hardwood forest and Townsend Road to the east, cultivated farm fields and North Eagle Village Road to the south, and a forest boundary followed by fields and a church to the west.

b) Proposed landscaping: The Project area will have approximately 55 rows of solar panels. The height of the solar panels are typically seven to ten feet above the ground

surface. The project site would also include an equipment pad, a gravel access road and would be surrounded by a chain-linked security fence. The proposed security fencing is located more than 50 feet from Townsend and North Eagle Village Road.

B 10. Proposed Signage: Signs demarcating the solar energy facility will be located on the security fence and no larger than 24 inches in diameter.

B 11. Level of municipal and other services required to support the proposed activity (i.e., water supply sanitary sewage facilities): The PV project will be directly interconnected to, and provide energy to, National Grid's local electric distribution grid via either underground or overhead electrical service. No municipal water supply or sanitary sewage services will be required.

B 12.

Specific Requirements:	**Town Code (District) Requirements:**	**Proposal:**
Parking Spaces	Not Specified	N/A
Lot Coverage	Not Specified	~48%
Front Yard Setback	40	50 feet
Side Yard Setback	20	50 feet
Rear Yard Setback	40	50 feet
Maximum Height of Building	Not Specified	7-10 feet

EXHIBITS TO SPECIAL PERMIT APPLICATION:

1. Detailed site plan of any proposed construction anticipated (attach as Exhibit "A"). The Town Board requires that drawings be certified by the appropriate design professional, i.e. a licensed engineer, architect, or surveyor, and include, except as may be permitted at #10 below, at time of application such detail as required per Town Zoning Code §155-28A(1)(13) for site plan submission.

2. Survey Map (Exhibit "B") Certified by a licensed surveyor within two years of date of application. Survey should show all existing state of facts, improvements, structures, easements, rights-of-way, appropriations, landscape features, encroachments and existing pavement on site. Any survey map last redated prior to 60 days before the application filing date shall be accompanied by an affidavit from the applicant, owner or occupant, i.e. someone with personal knowledge, that the survey map accurately shows the state of facts of the survey map as of the date of the application filing or if it does not the affidavit should describe any change features.

3. Legal description of proposed site (Exhibit "C"). The legal description must be in a form sufficient to follow the legal description on the survey map submitted.

4. Drainage, SWPPP if applicable, sanitary sewer, water service plans and specifications for proposed site (certified by a licensed professional engineer). Attach as Exhibit "D" and as applicable, numbered sub-exhibits e.g. "D-1", "D-2" etc.

5. Environmental Assessment Form (Exhibit "E"). A short environmental assessment form(see attached form) may be provided with any application for an unlisted action, however acceptance of same shall not be deemed a waiver by the Town of its right to require a long EAF with appropriate documentary substantiation of answers provided (including without limitation #6 following). For Type One Actions a long EAF must be submitted at time of application.

6. Freshwater Wetlands Letter. Pursuant to 6 NYCRR 663.4(a), where the application involves conduct of regulated activity on freshwater wetlands or adjacent areas, the applicant must obtain either a permit or letter of permission from the DEC or the authorized local government having jurisdiction over the wetland. Any delineation such determination is based on shall likewise be provided. Attach as Exhibit "F" and as applicable, with numbered sub-exhibits.

7. Professional Fees Reimbursement Agreement (Exhibit "G").

8. Disclosure Affidavit. The applicant shall submit an affidavit attesting it has reviewed General Municipal Law §809 and is familiar with the provisions contained therein, that no state officer, or any officer or employee of the County of Onondaga or Town of Manlius has any interest in the person, partnership or association owning the premises subject of the application or making such application, and that no other violation of §809 shall result from such application (Exhibit "H").

9. Filing and Professional Review Fees. At the time of application filing, applicant shall submit $100.00 in the form of cash or check payable to the Town of Manlius for Special Permit filing or renewal fees. Site Plan filing and Professional Review fees must be paid per Town Code Fee Schedule prior to commencement of Planning Board advisory review.

10. NOTE: THE ABOVE ARE NOT INTENDED AS AN EXHAUSTIVE LISTING OF THE APPLICATION REQUIREMENTS. THE APPLICANT SHALL BE RESPONSIBLE FOR FAMILIARIZING ITSELF WITH ALL TOWN CODE ZONING, SITE PLAN REVIEW, AND SPECIAL PERMIT REQUIREMENTS, AND THE REQUIREMENTS OF OTHER INVOLVED AND PERMITTING AGENCIES INCLUDING RELATIVE TO SEQRA, GENERAL MUNICIPAL LAW SECTION 239 REVIEW, STATE/COUNTY DOT, DOH AND THE LIKE.

11. THE FOREGOING NOTWITHSTANDING IT IS ACKNOWLEDGED THAT UPON INITIAL APPLICATION CERTAIN OF THE ABOVE MAY NOT, WITHOUT INITIAL INPUT FROM THE TOWN BOARD OR PLANNING BOARD, BE REASONABLY CAPABLE OF FINAL

COMPLETION, AND ACCORDINGLY MAY BE WAIVED OR SUCH REQUIREMENTS RELAXED TEMPORARILY AND UNTIL SUFFICIENT SPECIFIC DIRECTION FROM THE RESPECTIVE BOARDS HAS BEEN GIVEN. AT TIME OF SUBMISSION THE APPLICANT SHALL SPECIFICALLY REFERENCE ANY SUCH REQUEST(S) AND ITS REASON(S) FOR SAME IN A DETAILED ENCLOSURE LETTER DESCRIBING THE SUBMISSION AND EXHIBITS.

RENEWAL APPLICATIONS SHALL REQUIRE ONLY SUCH OF THE FOREGOING INFORMATION AND EXHIBITS AS ARE DEEMED NECESSARY FOR CONSIDERATION OF A RENEWAL PERMIT INVOLVING NO MATERIAL CHANGES FROM OR VIOLATIONS UNDER THE PRIOR ISSUED SPECIAL PERMIT.

APPLICATIONS SHALL BE SUBMITTED IN BOUND TABBED BOOKLET FORM WITH A COVER LETTER, TABLE OF CONTENTS REFERENCING EXHIBITS, AND LEGIBLE 11"by 17" MINIMUM DRAWINGS FOLDED TO LETTER SIZE THEREIN. TWENTY COPIES SHALL BE DELIVERED TOGETHER WITH SEVEN(7) FULL SIZE PRINTS OF ALL DRAWINGS. SUBSEQUENT SUBMISSIONS OF MINOR MODIFICATIONS MAY BE SUBMITTED IN THE SAME MANNER WITH A LETTER REFERENCING THE SPECIFICS OF THE SUBSTITUTION, HOWEVER IF NUMEROUS OR MATERIAL IN NATURE ENTIRE REPLACEMENT SUBMISSIONS MAY BE REQUESTED.

Exhibit A

SITE PLAN

FALCK RENEWABLES

GRUPPOFALCK



LOCATION MAP
SCALE 1"=1000'

NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE ROAD
MANLIUS, NY 13104

DISCRETIONARY PERMITTING

DRAWING INDEX	
SHEET NUMBER	SHEET TITLE
C-001	CIVIL TITLE SHEET
C-101	EXISTING CONDITIONS
C-201	SITE PLAN
C-202	EROSION & SEDIMENT CONTROL PLAN
C-401	SITE DETAILS
C-402	FENCE & GATE DETAILS
C-403	EROSION & SEDIMENT CONTROL DETAILS

PROJECT SUMMARY	
PARCEL NUMBER	098.-01-15.0
PARCEL ACREAGE	44.71 ACRES
ZONING CLASSIFICATION	RESTRICTED AGRICULTURE (R-A)
FRONT SETBACK	50 FT
REAR SETBACK	50 FT
SIDE SETBACK	50 FT
PROJECT AREA	21.3 ACRES (INCLUDES ACCESS ROAD)
LATITUDE/LONGITUDE	43.0229°/-75.9604°
SYSTEM SIZE (DC)	7.50 MW DC
SYSTEM SIZE (AC)	5.00 MW AC
PITCH	24.9 FT (CENTER TO CENTER)
TREE CLEARING	0.00 ACRES
ROAD LENGTH	±1,280 FT
PERIMETER FENCE LENGTH	±3,910 FT
SILT FENCE LENGTH	±2,450 FT

PROJECT DEVELOPER

FALCK RENEWABLES NORTH AMERICA
DEVELOPMENT SERVICES &
CONSTRUCTION MANAGEMENT, LLC
1 BRIDGE STREET
IRVINGTON, NEW YORK 10533
+1 (914) 340-4740

PROJECT SCOPE

THIS PERMITTING PACKAGE PROVIDES DRAWINGS AND DETAILS FOR THE INSTALLATION OF A SOLAR PHOTOVOLTAIC SYSTEM IN THE STATE OF NEW YORK. THIS DRAWING SET IS FOR DISCRETIONARY PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION.

CIVIL ENGINEER

TETRA TECH
ENGINEERING CORPORATION, P.C.
CERT #0015490
3136 SOUTH WINTON RD, SUITE 303
ROCHESTER, NEW YORK 14624
(585) 417-4009

APPLICABLE CODES & STANDARDS

- NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
- NFPA 855 (REFERENCE ONLY)
- 2015 INTERNATIONAL BUILDING CODE (IBC) AND NEW YORK AMENDMENTS
- 2015 INTERNATIONAL FIRE CODE (IFC) AND NEW YORK AMENDMENTS
- 2016 NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL
- 2015 NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL
- 2016 TOWN OF MANLIUS LOCAL SOLAR CODE

PROPERTY OWNER

PAUL SHAPERO
5062 NORTH EAGLE VILLAGE ROAD
MANLIUS, NY 13104

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WWW.FALCKRENEWABLES.COM

TETRA TECH
TETRA TECH ENGINEERING CORPORATION, P.C.
CERT# 0015490
3136 SOUTH WINTON ROAD, SUITE 303
ROCHESTER, NY 14623

STAMP:



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NORTH EAGLE SOLAR PROJECT
5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
CIVIL TITLE SHEET

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.
A	PERMITTING	03/31/2020	KMG
B	WETLANDS	04/09/2020	KMG

DATE:	03/09/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-001

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Printed: 4/10/2020 9:50 AM
GESTAMP FTGM SHEET SET R1.0.4



LEGEND

- PROPERTY LINE (APPROX.)
- ADJACENT PROPERTY LINE
- ZONING SETBACKS
- 475 EXISTING TOPO (5 FT CONTOURS)
- EXISTING TREE LINE
- DELINEATED STREAM
- 25' STREAM BUFFER
- DELINEATED WETLAND
- EXISTING ROAD CENTERLINE
- EXISTING ROAD EASEMENTS
- EXISTING OVERHEAD ELECTRIC
- EXISTING UTILITY POLE
- EXISTING STONE WALL

GENERAL NOTES:

1. CONTOUR DATA AND EXISTING CONDITIONS INFORMATION OBTAINED FROM SURVEY BY THEW ASSOCIATES, PLLC DATED MARCH 18, 2020. THIS DATA IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83)(2011) NEW YORK CENTRAL ZONE, US FOOT AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD88) GEOID 12B, US. FOOT.
2. EXISTING ROAD FEATURES OBTAINED FROM USDA NRCS GEOSPATIAL DATA GATEWAY.
3. TREE LINES SHOWN HEREON ARE APPROXIMATE. SOURCE: GOOGLE EARTH.
4. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.
5. ORTHOIMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, 2018 ONE FOOT FOUR BAND CENTRAL ZONE INDEX.

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TETRA TECH
TETRA TECH ENGINEERING CORPORATION, P.C.
CERT# 0015490
3136 SOUTH WINTON ROAD, SUITE 303
ROCHESTER, NY 14623

STAMP:

BRIAN M. SIELSKI — STATE OF NEW YORK — 084250-1 — LICENSED PROFESSIONAL ENGINEER

Brian Sielski 4/9/20

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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

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194-7179

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EXISTING CONDITIONS

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DATE:	03/09/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-101

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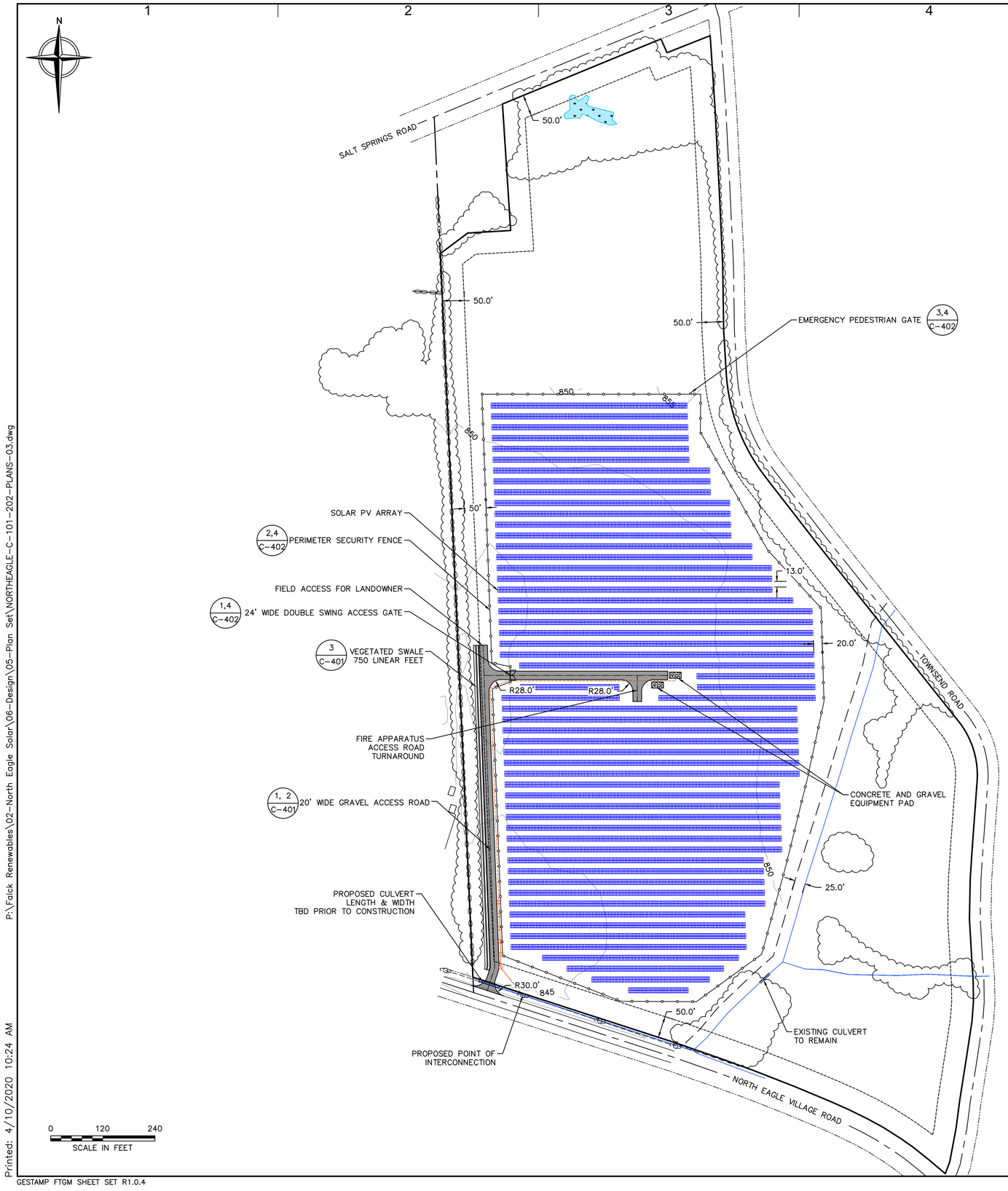

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- EXISTING STONE WALL
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED CONCRETE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED UTILITY POLE
- PROPOSED CULVERT
- PROPOSED VEGETATED SWALE

GENERAL NOTES:

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5. MAINTAIN MINIMUM 2 FOOT DISTANCE BETWEEN GROUND ELEVATION AND BOTTOM OF SOLAR PANEL. DISTANCE BETWEEN GROUND ELEVATION AND TOP OF SOLAR PANEL NOT TO EXCEED 20 FEET.

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Brian Sielski 4/9/20

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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
SITE PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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DATE:	03/09/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-201

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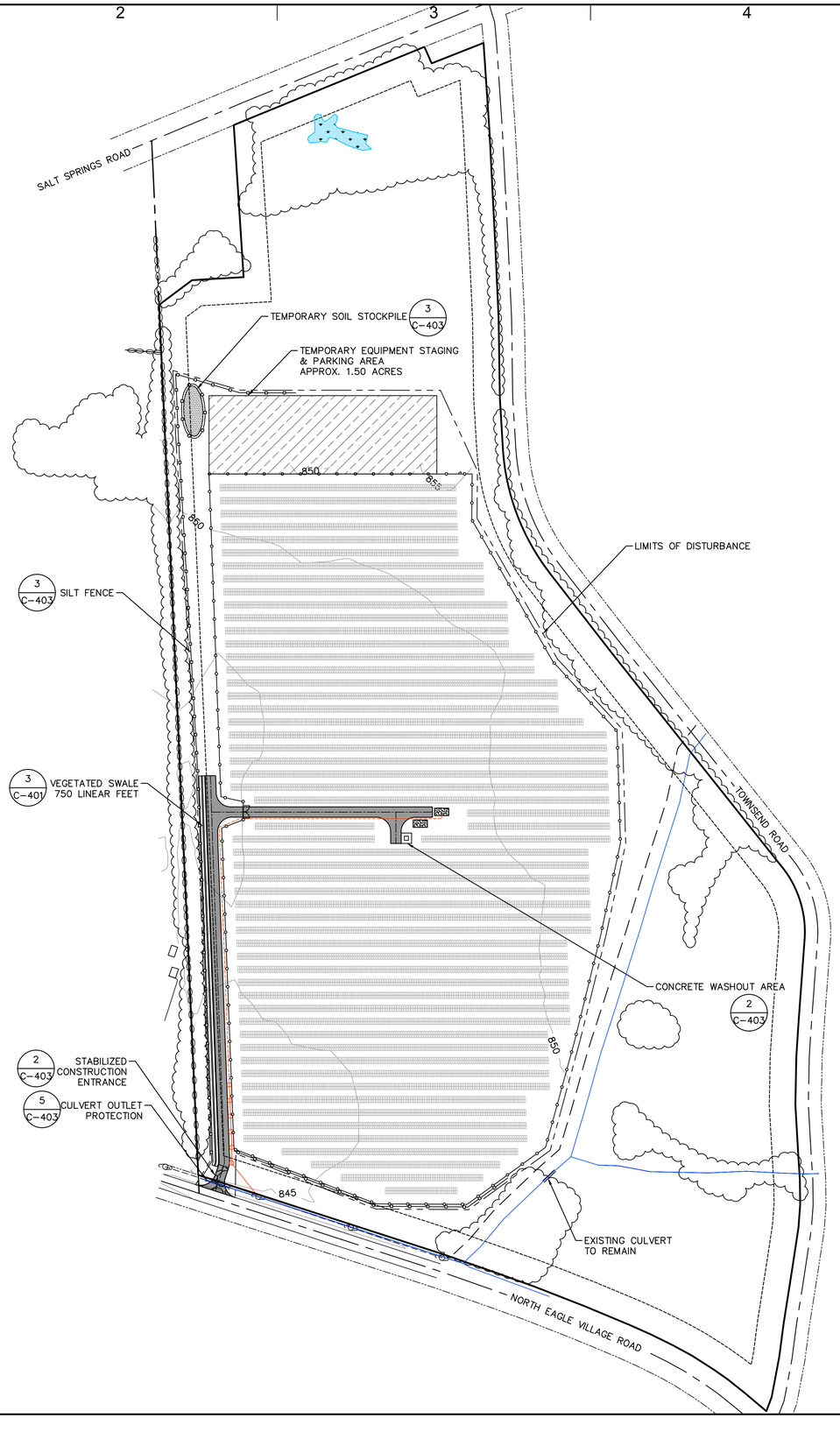

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SCALE IN FEET

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- EXISTING ROAD EASEMENTS
- EXISTING OVERHEAD ELECTRIC
- EXISTING UTILITY POLE
- EXISTING STONE WALL
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED CONCRETE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED UTILITY POLE
- PROPOSED SILT FENCE
- LIMITS OF DISTURBANCE
- TEMPORARY EQUIPMENT LAYDOWN AREA
- TEMPORARY SOIL STOCKPILE AREA
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED CULVERT
- PROPOSED VEGETATED SWALE
- TEMPORARY CONCRETE WASHOUT AREA

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ROCHESTER, NY 14623

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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
EROSION & SEDIMENT CONTROL PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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DATE:	03/09/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-202

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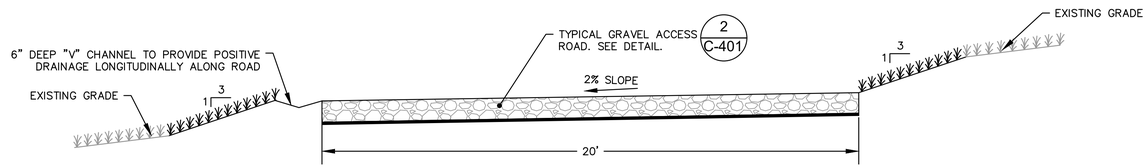

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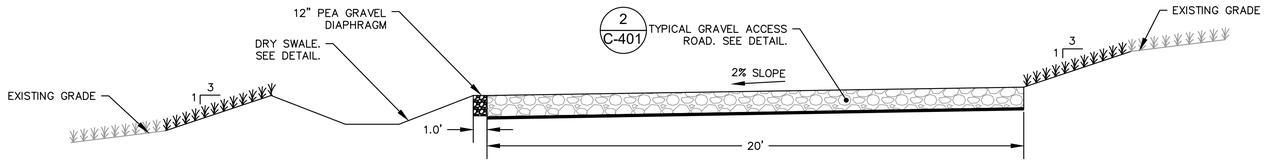


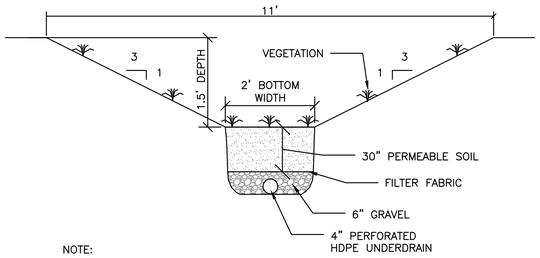
SECTION WITH VEGETATED SWALE

TYPICAL ACCESS ROAD

DETAIL

SCALE: NTS

1
C-401



NOTE:

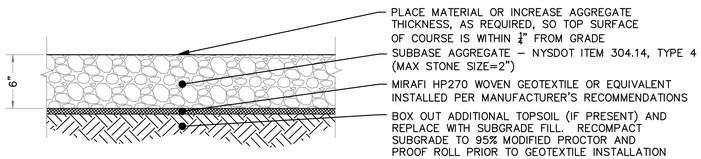
1. PERMEABLE SOIL SHALL CONSIST OF A MINIMUM OF 6 INCHES OF TOPSOIL OVERLYING A 50/50 MIX OF TOPSOIL AND SAND.
2. GRAVEL SHALL BE AASHTO M-43 SIZE NO. 57.

TYPICAL VEGETATED SWALE

DETAIL

SCALE: N.T.S.

3
C-401



TYPICAL GRAVEL ACCESS ROAD SECTION

SECTION

SCALE: N.T.S.

2
C-401

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SCALE:
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SHEET NO.:
C-401

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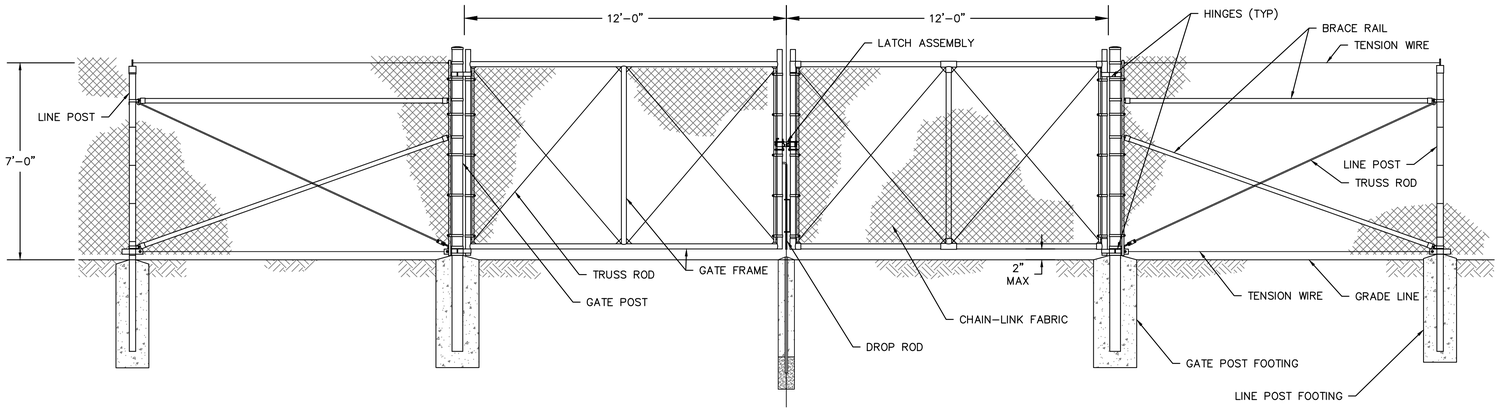
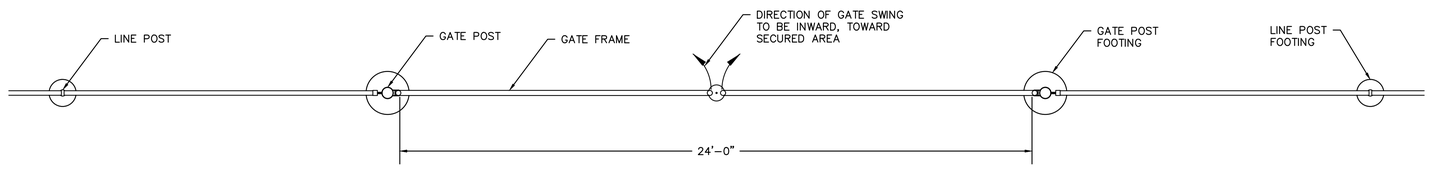


ELEVATION



PLAN VIEW

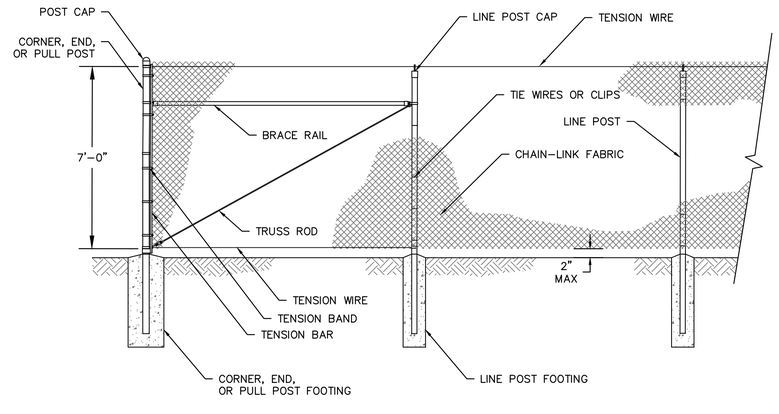
TYPICAL 24' DOUBLE SWING ACCESS GATE

DETAIL 1 / C-402

SCALE: NTS

FENCE & GATE NOTES:

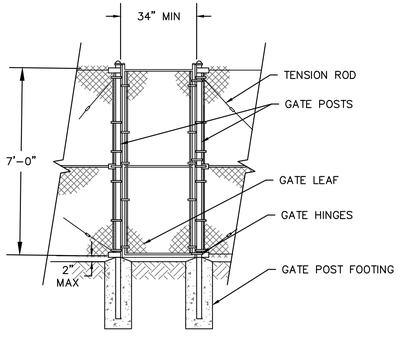
1. SIZE AND DIMENSIONS OF THE FENCE AND GATE COMPONENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH THE CHAIN-LINK FENCE MANUFACTURER SPECIFICATIONS UNLESS OTHERWISE NOTED ON THIS DRAWING.
2. GROUNDING AND BONDING OF THE SECURITY FENCE SYSTEM SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), AND ALL OTHER APPLICABLE STATE AND LOCAL CODE REQUIREMENTS.
3. DOUBLE SWING GATE TO OPEN INWARD, TOWARD SECURED AREA AS SHOWN ON THE SITE PLAN.
4. INSTALL WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE FENCE ALIGNMENT. PLACE CHAIN-LINK FABRIC ON THE OPPOSITE SIDE OF THE SECURE AREA.
5. DESIGN AND INSTALL GATE, LINE, CORNER, END, AND PULL POST CONCRETE FOOTINGS, AS REQUIRED, PER APPLICABLE CODES AND CHAIN-LINK FENCE MANUFACTURER SPECIFICATIONS.
6. TOP SELVAGES TO BE TWISTED, BOTTOM SELVAGES TO BE KNUCKLED.
7. SIGNAGE SHALL BE AS REQUIRED BY CODE WITH DETAILS INCLUDING FACILITY NAME, OWNER, AND CONTACT PHONE NUMBER. WARNING SIGNAGE TO BE PLACED AT BASE OF ALL PAD-MOUNTED TRANSFORMERS AND SUBSTATIONS.



TYPICAL SECURITY PERIMETER FENCE

DETAIL 2 / C-402

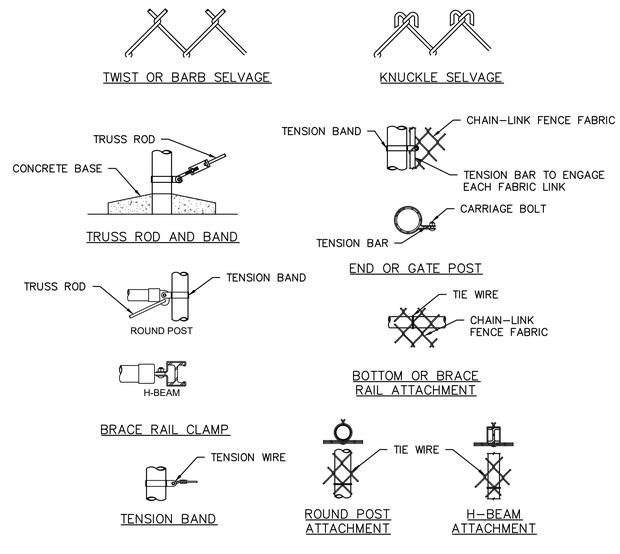
SCALE: NTS



TYPICAL EMERGENCY PEDESTRIAN GATE

DETAIL 3 / C-402

SCALE: NTS



TYPICAL CHAIN LINK FENCE FASTENING

DETAILS 4 / C-402

SCALE: NTS

NOT FOR CONSTRUCTION

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TETRA TECH
TETRA TECH ENGINEERING CORPORATION, P.C.
CERT# 0015490
3136 SOUTH WINTON ROAD, SUITE 303
ROCHESTER, NY 14623

STAMP:



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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
FENCE & GATE DETAILS

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.
A	PERMITTING	03/31/2020	KMG
B	WETLANDS	04/09/2020	KMG

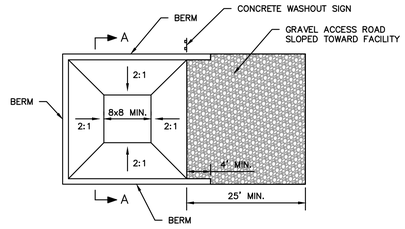
DATE:	03/09/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

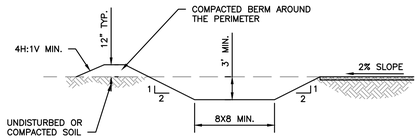
SCALE:
AS SHOWN

SHEET NO.:
C-402

P:\Falck Renewables\02-North Eagle Solar\06-Design\05-Plan Set\NORTHEAGLE-C-402-FENCE & GATE DETAILS-01.dwg
Printed: 4/10/2020 10:45 AM
GESTAMP FTGM SHEET SET R1.0.4



PLAN



SECTION A-A

CONCRETE TRUCK WASHOUT AREA NOTES:

1. LOCATE THE FACILITY A MINIMUM OF 100 FEET FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATER.
2. PREVENT SURFACE WATER FROM ENTERING THE STRUCTURE EXCEPT FOR THE ACCESS ROAD.
3. PROVIDE A GRAVEL ACCESS ROAD TO FACILITY THAT IS SLOPED DOWN TO FACILITY.
4. SIGNS SHALL BE PLACED TO DIRECT DRIVERS TO THE FACILITY AFTER THEIR LOAD IS DISCHARGED.
5. ALL WASHOUT FACILITIES SHALL BE LINED TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND. THE LINER SHALL BE PLASTIC SHEETING HAVING A MINIMUM THICKNESS OF 10 MILS WITH NO HOLES OR TEARS, AND ANCHORED BEYOND THE TOP OF THE PIT WITH AN EARTHEN BERM, SAND BAGS, STONE, OR OTHER STRUCTURAL APPURTENANCES EXCEPT AT THE ACCESS POINT.
6. PREFABRICATED WASHOUT FACILITIES CAN BE USED BUT THEY MUST CAPTURE AND CONTAIN CONCRETE WASH AND BE SIMILARLY SIZED AS SHOWN ABOVE AND LOCATED AS NOTED ABOVE.
7. WASH WATER IS ESTIMATED TO BE 7 GALLONS PER CHUTE AND 50 GALLONS PER HOPPER OF A PUMP TRUCK AND/OR DISCHARGING DRUM.

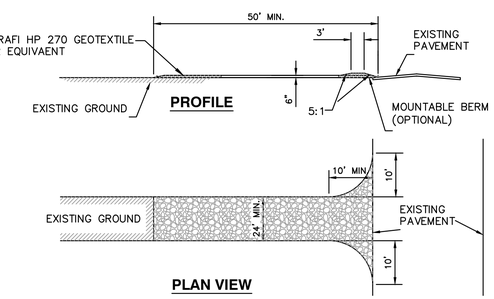
MAINTENANCE:

1. ALL FACILITIES MUST BE INSPECTED DAILY.
2. DAMAGED OR LEAKING FACILITIES SHALL BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
3. EXCESS ACCUMULATED RAINWATER OVER HARDENED CONCRETE SHALL BE PUMPED TO A STABILIZED AREA, SUCH AS A GRASS FILTER STRIP.
4. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE FACILITY IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF-SITE AT A PERMITTED C&D LANDFILL. NO ONSITE DISPOSAL WILL BE ALLOWED.
5. THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE FACILITY.
6. INSPECT PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.

CONCRETE WASHOUT

DETAIL 1 / C-403

SCALE: N.T.S.



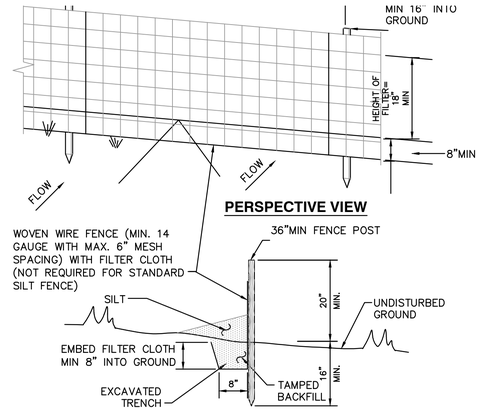
STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. THICKNESS – NOT LESS THAN SIX (6) INCHES.
3. WIDTH –TWENTY (20) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY FOUR FEET (24) FOOT IF SINGLE ENTRANCE TO SITE.
4. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50'.
5. GEOTEXTILE – PLACE OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – MAINTAIN THE ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – CLEAN WHEELS TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PROVIDE WEEKLY INSPECTION AND NEEDED MAINTENANCE.

STABILIZED CONSTRUCTION ENTRANCE

DETAIL 2 / C-403

SCALE: N.T.S.



SILT FENCE NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
4. PERFORM MAINTENANCE AS NEEDED AND REMOVE MATERIALS WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. USE SILT FENCE WHERE EROSION COULD OCCUR IN THE FORM OF SHEET EROSION.
6. DO NOT USE SILT FENCE WHEN A CONCENTRATION OF WATER IS FLOWING TO THE BARRIER AND SOIL CONDITIONS DO NOT ALLOW FOR PROPER KEYING OF FABRIC, OR OTHER ANCHORAGE, TO PREVENT BLOWOUTS.
7. THE TYPE OF SILT FENCE SHALL NOT EXCEED THE MAXIMUM SLOPE LENGTH AND MAXIMUM FENCE LENGTH REQUIREMENTS SHOWN IN THE FOLLOWING TABLE.

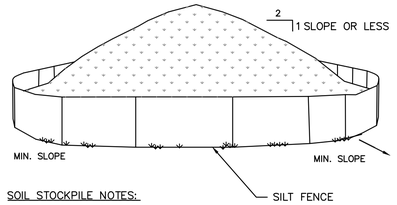
SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT)		
		STANDARD	REINFORCED	SUPER
<2%	<50:1	300/1500	N/A	N/A
2-10%	50:1 TO 10:1	125/1000	250/2000	300/2500
10-20%	10:1 TO 5:1	100/750	150/1000	200/1000
20-33%	5:1 TO 3:1	60/500	80/750	100/1000
33-50%	3:1 TO 2:1	40/250	70/350	100/500
>50%	>2:1	20/125	30/175	50/250

8. STANDARD SILT FENCE DOES NOT REQUIRE WOVEN WIRE FENCE. SUPER SILT FENCE REQUIRES CHAIN LINK FENCE IN-LIEU OF WOVEN WIRE FENCE AND THE POSTS MUST BE STANDARD CHAIN LINK FENCE POSTS AND BE DRIVEN 3 FEET INTO THE GROUND.

SILT FENCE

DETAIL 3 / C-403

SCALE: N.T.S.



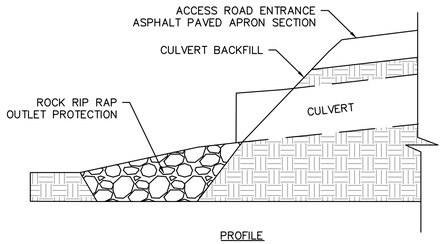
SOIL STOCKPILE NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, SURROUND EACH PILE WITH SILT FENCING, THEN STABILIZE WITH VEGETATION OR COVER THE STOCKPILE IF IT REMAINS FOR MORE THAN 7 DAYS.
4. SEE DETAILS FOR INSTALLATION OF SILT FENCE.
5. STOCKPILE HEIGHT SHOULD GENERALLY NOT EXCEED 20 FEET.

TEMPORARY SOIL STOCKPILE

DETAIL 4 / C-403

SCALE: N.T.S.



NOTES:

1. RIP-RAP APRON DIMENSIONS WILL VARY DEPENDING UPON THE GRADING CONFIGURATION.
2. STONE RIP-RAP SHALL BE PLACED ON NON-WOVEN GEOTEXTILE HAVING A THICKNESS OF 60 MILS (MIN.), GRAB STRENGTH NO LESS THAN 120 LBS: AND SHALL CONFORM TO ASTM D-1777 AND ASTM D-1682.

CULVERT OUTLET PROTECTION

DETAIL 5 / C-403

SCALE: N.T.S.

NOT FOR CONSTRUCTION

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TETRA TECH ENGINEERING CORPORATION, P.C.
CERT# 0015490
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ROCHESTER, NY 14623

STAMP:



Brian Sielski 4/9/20

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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
EROSION & SEDIMENT CONTROL DETAILS

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.
A	PERMITTING	03/31/2020	KMG
B	WETLANDS	04/09/2020	KMG

DATE:	03/09/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-403

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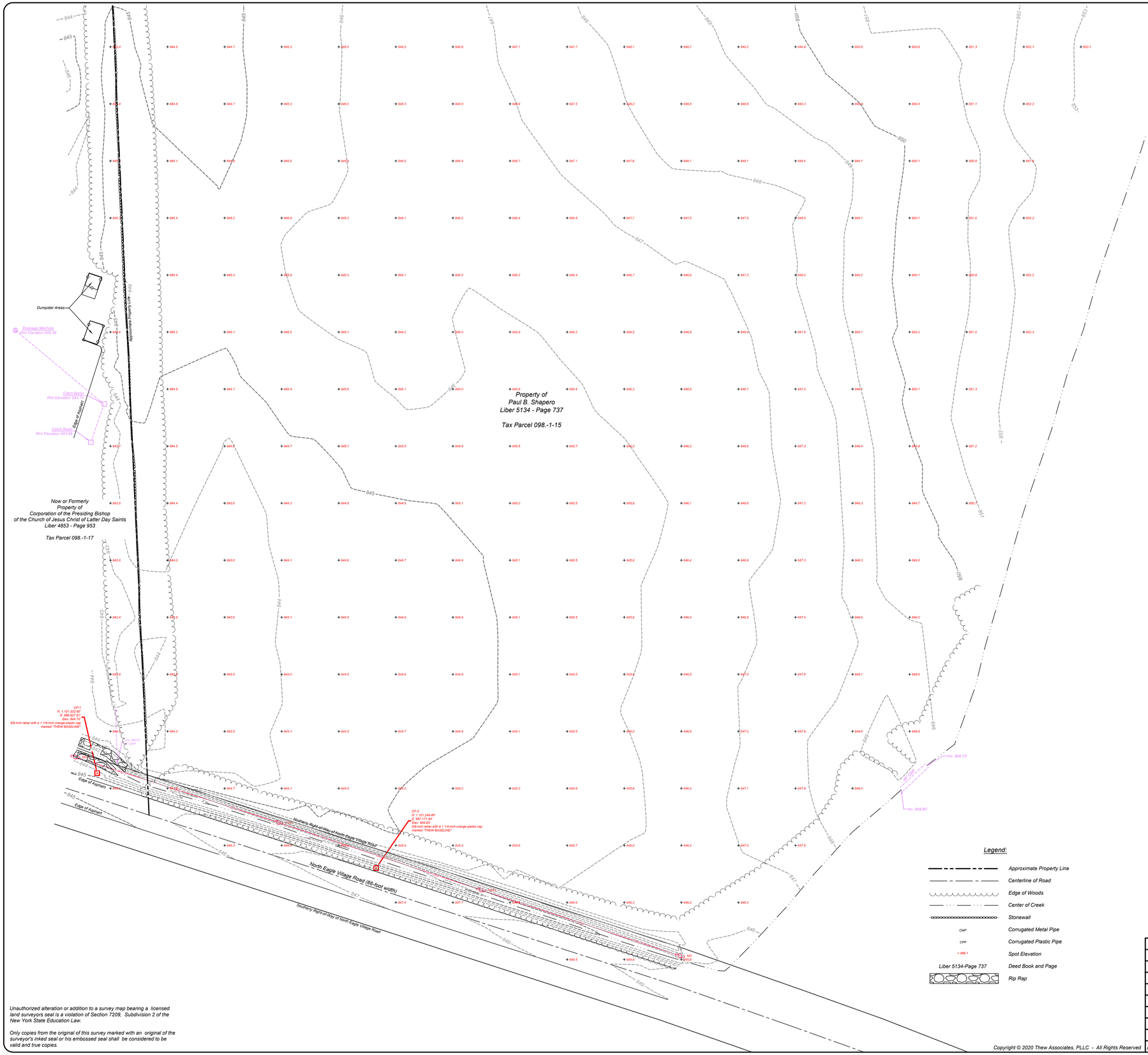
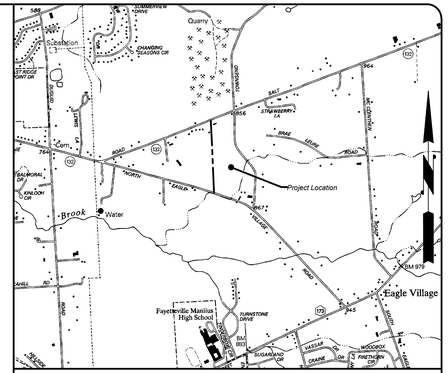
GESTAMP FTGM SHEET SET R1.0.4

Exhibit B

SURVEY MAPS





General Notes:

1. *This survey is referenced horizontally to the North American Datum of 1983, 2011 adjustment (NAD83/2011), projected on the New York State Plane Coordinate System (Central Zone) and vertically to the North American Vertical Datum of 1988 (NAVD88).*
2. *North arrow as shown indicates Grid North referenced to NAD83/2011, projected on the New York State Plane Coordinate System (Central Zone).*
3. *The reference horizontal and vertical control station is a GPS Continuously Operating Reference Station (CORS). Designated as "North Syracuse CORS ARP" (CORS ID: NYNS), NYNS was established by the New York State Department of Transportation in 2011. Elevation 433.84 feet.*
4. *The property lines shown hereon are approximate and should not be relied upon. The location of the property lines were derived from record documents (i.e. deeds, filed maps, and tax maps).*
5. *Location of spot elevation is indicated by the tick "+" mark located adjacent to the elevation.*
6. *The subsurface utilities shown hereon are of Quality Level "C" as defined by the American Society of Civil Engineers (ASCE) in the "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data". The subsurface utilities shown hereon are based on physical evidence located during the field survey and existing utility drawings. The surveyor further does not warrant or certify that the subsurface utilities are in the exact location indicated although he does certify that they are depicted as accurately as possible from the information available. This surveyor has not physically located the subsurface utilities.*
7. *Elevations and contours shown reference the North American Vertical Datum of 1988 (NAVD88-Geoid12B).*
8. *Contours shown hereon were generated from a Digital Terrain Model utilizing AutoCAD Civil 3D Land Surveying and Engineering software.*
9. *The information shown hereon is based on an instrument survey completed on March 12, 2020.*

Tax Parcel Number:

Town of Manlius, Onondaga County, New York
Section 98. Block 1 Lot 15

Deed References:

Ernest A and Maureen A. Shapero
to
Paul B. Shapero
Liber 5134 - Page 737
Dated: 6, August 2010
Recorded: 6, August 2010

Project Control:

CP-1

CP-1 is 5/8-inch by 30-inch rebar with a 1 1/4-inch diameter orange plastic cap marked "Thew Baseline", set flush with grade. CP-1 is located 20.9 feet northerly of the centerline of North Eagle Village Road and 23.8 feet southeasterly from utility pole NG81.
N: 1,101,332.60'
E: 986,927.61'
Elev: 844.70'

CP-2

CP-2 is 5/8-inch by 30-inch rebar with a 1 1/4-inch diameter orange plastic cap marked "Thew Baseline", set flush with grade. CP-2 is located 17.1 feet northerly of the centerline of North Eagle Village Road, 94.4 feet southeasterly from utility pole NG82, and 93.8 feet northwesterly from utility pole NG83.
N: 1,101,249.46'
E: 987,171.94'
Elev: 846.83'

Legend:

- *Approximate Property Line*
- *Centerline of Road*
- *Edge of Woods*
- *Center of Creek*
- *Stonewall*
- CMP — *Corrugated Metal Pipe*
- CPP — *Corrugated Plastic Pipe*
- + 489.1 — *Spot Elevation*
- Liber 5134-Page 737 — *Deed Book and Page*
- *Rip Rap*

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

REV	DESCRIPTION	DATE

PROJECT NUMBER: CK4026-03-20

DRAWN: JLS
CHECKED: JST
SCALE: 1" = 40'
DATE: 03/18/2020

Map Showing Existing Topography
5062 North Eagle Village Road
Proposed North Eagle Solar
Sheet 1 of 2

Town of Manlius
County of Onondaga
State of New York

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F: 315/386-1012
9478 River Road
Marcy, New York 13403
T: 315/733-7278
F: 315/797-1937

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Only copies from the original of this survey marked with an original of the surveyor's inked seal or his embossed seal shall be considered to be valid and true copies.

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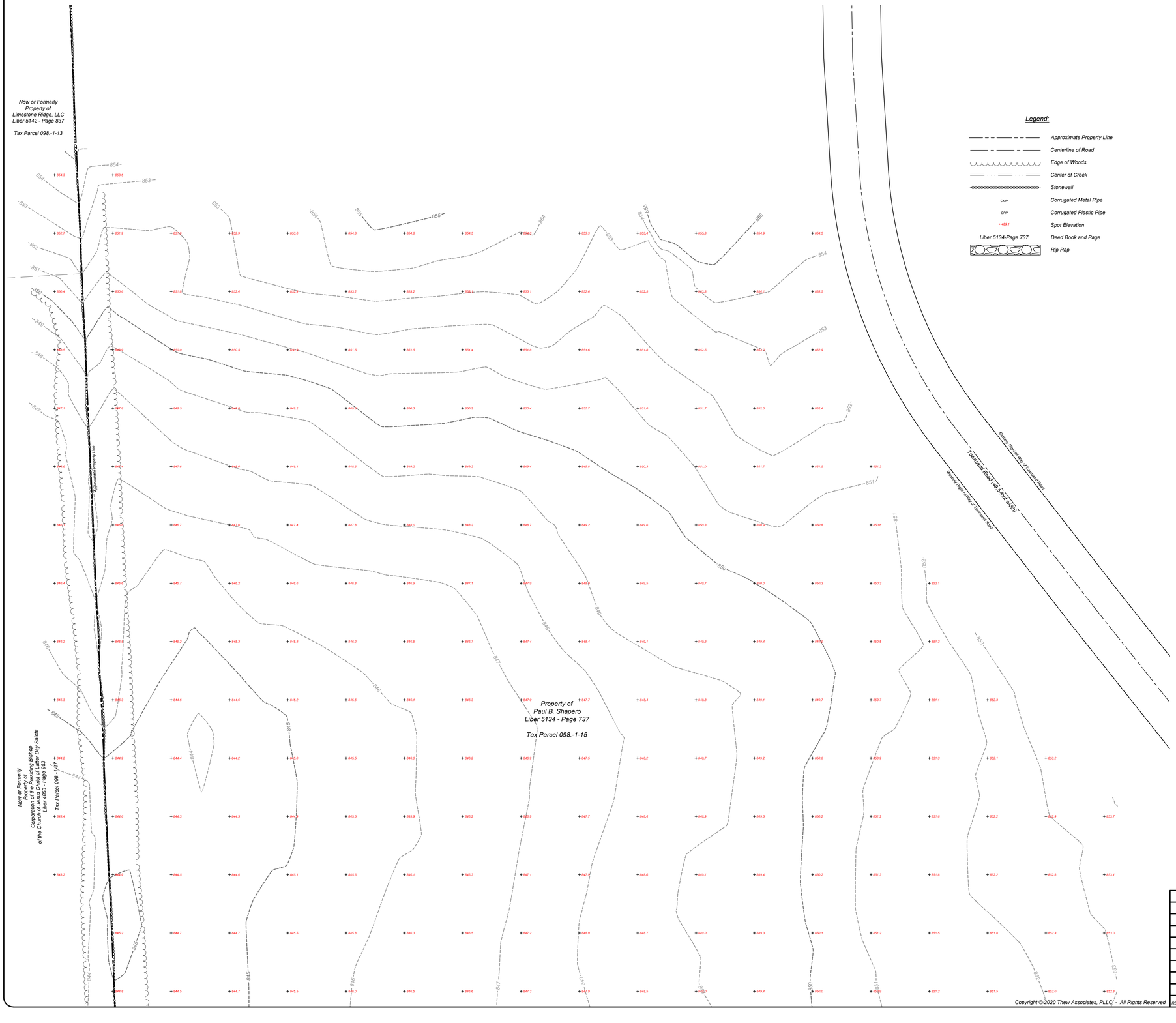

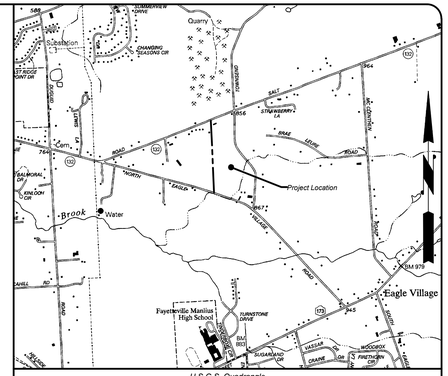

U.S.G.S. Quadrangle
XXXXXX, New York
1" = X000' +/-

Legend:

- *Approximate Property Line*
- *Centerline of Road*
- *Edge of Woods*
- *Center of Creek*
- *Stonewall*
- *CMP* — *Corrugated Metal Pipe*
- *CPP* — *Corrugated Plastic Pipe*
- *+ 489.1* — *Spot Elevation*
- *Liber 5134-Page 737* — *Deed Book and Page*
- *Rip Rap*

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Tax Parcel Number:

Town of Manlius, Onondaga County, New York
Section 98. Block 1 Lot 15

Deed References:

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to
Paul B. Shapero
Liber 5134 - Page 737
Dated: 6, August 2010
Recorded: 6, August 2010

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Elev: 844.70'

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Elev: 846.83'

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

REV	DESCRIPTION	DATE

PROJECT NUMBER: *CK4026-03-20*

DRAWN: *JLS*
CHECKED: *JST*
SCALE: *1" = 40'*
DATE: *03/18/2020*

Map Showing Existing Topography
5062 North Eagle Village Road
Proposed North Eagle Solar
Sheet 2 of 2

Town of Manlius
County of Onondaga
State of New York

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F: 315/386-1012

Thew Associates LAND SURVEYORS
www.ThewAssociates.com

9478 River Road
Marcy, New York 13403
T: 315/733-7278
F: 315/797-1937

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Exhibit C

LEGAL SITE DESCRIPTION

Proposed Lease Area
Contains: 21.758 acres

All that tract or parcel of land situate in the Town of Manlius, County of Onondaga, State of New York, and being more precisely described as follows:

Beginning at a 5/8-inch rebar with a 1 1/4-inch diameter red plastic cap marked "THEW ASSOCIATES - UTICA NY" (herein after referred to as a 5/8-inch rebar) set on the northerly right-of-way of North Eagle Village Road (66-foot width), said rebar having New York State plane coordinates (NAD83/2011 - Central Zone) of 1,101,322.31 feet North and 986,998.54 feet East;

thence through a parcel of land conveyed by Ernest A. and Maureen A. Shapero to Paul B. Shapero by deed dated August 6, 2010 and recorded in the Onondaga County Clerk's Office on August 6, 2010 in Liber 5134 of Deeds at Page 737, the following 20 courses and distances:

1. North 17 degrees 59 minutes 18 seconds East a distance of 21.17 feet to a set 5/8-inch rebar;
2. North 72 degrees 00 minutes 25 seconds West a distance of 14.50 feet to a set 5/8-inch rebar;
3. North 17 degrees 59 minutes 35 seconds East a distance of 10.56 feet to a set 5/8-inch rebar;
4. North 02 degrees 05 minutes 14 seconds West a distance of 743.58 feet to a set 5/8-inch rebar;
5. North 88 degrees 25 minutes 50 seconds East a distance of 40.67 feet to a set 5/8-inch rebar;
6. North 02 degrees 06 minutes 22 seconds West a distance of 577.91 feet to a set 5/8-inch rebar;
7. South 89 degrees 59 minutes 21 seconds East a distance of 514.00 feet to a set 5/8-inch rebar;
8. South 00 degrees 28 minutes 29 seconds West a distance of 91.00 feet to a set 5/8-inch rebar;
9. South 29 degrees 43 minutes 27 seconds East a distance of 311.65 feet to a set 5/8-inch rebar;
10. South 42 degrees 40 minutes 20 seconds East a distance of 182.33 feet to a set 5/8-inch rebar;
11. South 01 degrees 43 minutes 20 seconds East a distance of 216.96 feet to a set 5/8-inch rebar;
12. South 12 degrees 08 minutes 21 seconds West a distance of 181.31 feet to a set 5/8-inch rebar;
13. South 13 degrees 51 minutes 12 seconds West a distance of 207.91 feet to a set 5/8-inch rebar;
14. South 15 degrees 14 minutes 32 seconds West a distance of 213.26 feet to a set 5/8-inch rebar;
15. South 53 degrees 59 minutes 33 seconds West a distance of 189.32 fee tot a set 5/8-inch rebar;
16. North 89 degrees 42 minutes 17 seconds West a distance of 175.70 feet to a set 5/8-inch rebar;
17. North 68 degrees 56 minutes 12 seconds West a distance of 298.59 feet to a set 5/8-inch rebar;

18. South 02 degrees 07 minutes 18 seconds East a distance of 19.12 feet to a set 5/8-inch rebar;

19. South 07 degrees 56 minutes 06 seconds West a distance of 14.84 feet to a set 5/8-inch rebar;

20. South 17 degrees 59 minutes 18 seconds West a distance of 31.18 feet to a 5/8-inch rebar set on the northerly right-of-way of North Eagle Village Road;

thence North 72 degrees 03 minutes 11 seconds West, along the northerly right-of-way of North Eagle Village Road, a distance of 25.00 feet to the **Point of Beginning.**

To contain 21.758 acres of land, more or less, as surveyed by Jeremy L. Sweeney, Licensed Land Surveyor No. 050863.

The above described parcel of land is intended to be a portion of the same premises conveyed by Ernest A. and Maureen A. Shapero to Paul B. Shapero by deed dated August 6, 2010 and recorded in the Onondaga County Clerk's Office on August 6, 2010 in Liber 5134 of Deeds at Page 737.

The above-mentioned coordinates, bearings, and distances are referenced to the North American Datum of 1983, 2011 adjustment (NAD83/2011), projected on the New York State Plane Coordinate System (Central Zone).

Exhibit D

SWPPP

Preliminary Stormwater Pollution Prevention Plan (Prelim SWPPP)

North Eagle Solar Project
5062 N. Eagle Village Rd.
Manlius, NY 13104

April 9, 2020

PREPARED FOR:

Falck Renewables
1 Bridge Street, Suite 11
Irvington, New York 10533

PREPARED BY:

Tetra Tech, Inc.
3136 South Winton Road, Suite 303
Rochester, NY 14623



SIGNATORY REQUIREMENTS

The owner or operator has signed this document as acknowledgement that they have read and understand this SWPPP; and shall ensure that the provisions of this SWPPP are implemented as defined by the NYSDEC SPDES General Permit No. GP-0-20-001 and outlined herein.

Owner/Operator Signature	Date
Owner/Operator Printed Name	Title

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
CWA	Clean Water Act
ECL	Environmental Conservation Law
FIRM	Flood Insurance Rate Map
NTS	Not to Scale
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OPRHP	Office of Parks, Recreation and Historic Preservation
PV	Photovoltaic
SCS	Soil Conservation Service
SHPA	State Historic Preservation Act
SMDM	Stormwater Management Design Manual (NYS)
SMP	Stormwater Management Practice
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

1.0 INTRODUCTION

This Preliminary Stormwater Pollution Prevention Plan (SWPPP) has been prepared for Falck Renewables North America Development Services & Construction Management, LLC (Falck Renewables) for proposed activities associated with construction of the North Eagle Solar project (the Project) located on North Eagle Village Road, Manlius, Onondaga County, New York. The property on which the Project is located comprises approximately 44.7 acres of land. The Project will encompass an approximately 21.3-acre subset of that property (the Site).



Figure 1 – Property Boundary & Project Area

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. The New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) permit program is a NPDES-approved program with permits issued in accordance with the Environmental Conservation Law (ECL). The General Permit for Stormwater Discharges from Construction Activity, General Permit Number GP-0-20-001 (the Permit) is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL.

The Permit authorizes stormwater discharges to surface waters of the State from construction activities involving soil disturbances of one or more acres, provided all of the eligibility provisions of the Permit are met. Part III.C of the Permit states that construction activities identified in Table 1 of Appendix B (of the Permit) are required to prepare a SWPPP that only includes erosion and sediment control practices. Construction activities identified in Table 2 of Appendix B (of the Permit) are required to prepare a SWPPP that also includes post-construction stormwater management practices.

The Project involves construction of a ground-mounted solar photovoltaic (PV) array, a permanent gravel access road, and concrete equipment pads. Although overall impervious area is relatively small and a majority of the site will consist of a permanent vegetative cover, the construction activities described above are identified in Table 2 of the Permit, and therefore post-construction stormwater management practices will be included in this preliminary SWPPP.

The total area to be disturbed is shown by the limits of disturbance on the discretionary permitting drawings for this Project. The gravel access roads, concrete & gravel equipment pads, racking posts and fence footings are all considered to be impervious surfaces. Table 1 shows the total impervious area to be 0.63 acres. Please note that the area contributing to impervious surface from the racking posts is considered negligible but has been shown for illustrative purposes.

Table 1 – Areas of Impervious Surface

Gravel Access Road	0.60 acres
Equipment Pads	0.02 acres
Racking Posts	0.001 acres
Fence Post Footings	0.01 acres
Total Impervious Surface	**0.63 acres**

It is not expected that more than 5 acres of the Project area will be disturbed at one given time. **If more than 5 acres of the Project area will be disturbed at one given time, the following are required by the Owner and Contractor**:

- Obtain written authorization from the NYSDEC prior to construction.
- Conduct at least two site inspections in accordance with Part IV.C of the General Permit every seven calendar days, for as long as greater than five acres of soil remain disturbed. The two inspections shall be separated by a minimum of two full calendar days.
- Initiate soil stabilization measures by the end of the next business day in areas where soil disturbance has temporarily or permanently ceased and complete within seven days from the date the current soil disturbance activity ceased.
- Prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
- Install additional site-specific practices needed to protect water quality.

Refer to Appendix B for a copy of the Permit.

2.0 SITE DESCRIPTION

2.1 PROPERTY

The Site, as previously noted, covers approximately 21.3 acres of a larger parcel located within Manlius, New York. The Site is located in a rural area to the north east of the Town of Manlius. The general area around the Site consists of rural residential/agricultural properties. The Site is bound by Salt Springs Road to the north; by North Eagle Village Road to the south; a tree-line and property boundary to the west; and a swale and Townsend Road to the east. The Site was primarily used for agricultural purposes.

2.2 TOPOGRAPHY

The maximum elevation of the Site is approximately 863 feet above mean sea level. The Site generally slopes from the northeast to the southwest. There is an existing swale that bisects the southeastern section of the Site from the northeast to the southwest. Areas within the Site have slopes ranging from 0–3%.

2.3 SOILS

The United States Department of Agriculture (USDA) Soil Conservation Service (SCS) Soil Survey for Onondaga County was reviewed and provided surficial soil conditions for the Site. The SCS identified the presence of three (3) soil types within the Project area. Figure 2 shows the soil map for the Site.

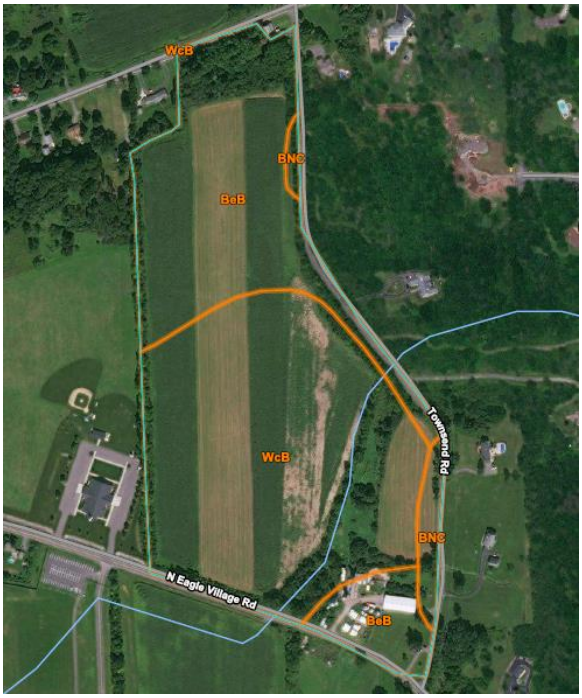

Figure 2 – Soil Map (NTS)

Soil data as provided by the SCS is presented in Table 2.

Table 2 – Soils Data

MAP SYMBOL/ DESCRIPTION	HYDROLOGIC SOIL GROUP	SLOPE (%)	SOIL PROFILE		K VALUE	DEPTH TO WATER TABLE (INCHES)
			DEPTH (IN)	USDA TEXTURE		
Benson silt loam (BeB)	D	0 – 8	0 – 8	Silt Loam	0.37	> 80
			8 – 18	Very Channery Loam		
			18 – 22	Unweathered Bedrock		
Benson-Wassaic-Rock outcrop association (BNC)	C/D	0 – 25	0 – 11	Silt Loam	n/a	19 – 39
			11 – 23	Channery Silt Loam		
			23 – 35	Channery Loam		
			35 – 39	Unweathered Bedrock		
Wassaic silt loam (WcB)	C	0 – 8	0 – 11	Silt Loam	0.28	19 – 39
			11 – 23	Channery Silt Loam		
			23 – 35	Channery Loam		
			35 – 39	Unweathered Bedrock		

The SCS defines the hydrologic soil groups as follows:

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

Type B Soils: Soils having a moderate infiltration rate when thoroughly wet and consists mainly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately course textures. These soils have a moderate rate of water transmission.

Type C Soils: Soils having a low infiltration rate when thoroughly wet. These soils consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine-to-fine texture. These soils have a low rate of water transmission.

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

The complete USDA Soil Survey (including the soil map to scale) for the Site can be found in Appendix E.

2.4 COVER CONDITIONS

The existing Site cover condition is pasture/grassland with some wooded area. The Site cover condition post-construction is to be a permanent grassed vegetative cover, a gravel access road, and concrete equipment pads with a portion of the Site remaining as pasture/grassland with the wooded area. Disturbed areas to be vegetated will receive topsoil and seeding for final stabilization.

Runoff curve numbers for the various cover types and descriptions used in the stormwater evaluation for this project were obtained from Tables 2-2a-d of the *Urban Hydrology for Small Watersheds Technical Release 55* by the USDA. A summary of the curve numbers is provided in Table 3.

Table 3 – Curve Numbers for Hydrologic Soil Group

Cover Type	A	B	C	D
Woods (Good)	30	55	70	77
Straight Row Crop (Good)	67	78	85	89
Pasture, grassland, or range – continuous forage for grazing (Good)	39	61	74	80
Meadow – continuous grass, protected from grazing and generally mowed for hay	30	58	71	78
Gravel	96	96	96	96
Paved parking lots, roofs, driveways, etc.	98	98	98	98

2.5 WETLANDS

No wetlands were identified in the project area on the NYSDEC Environmental Resource Mapper website. A wetland delineation was performed on April 1, 2020 by Tetra Tech. One wetland was field delineated at the northern portion of the property. The proposed project does not impact this wetland, as it is outside of the project area. In addition to the wetland, there were two intermittent streams and one excavated ditch delineated on the property. A 25-foot buffer is applied to the intermittent streams. The Project is located outside of the stream buffer. The delineated wetland features are shown on the discretionary permitting drawings and will be incorporated into the final construction documents.

2.6 HISTORIC PRESERVATION

The NYSDEC and NYS Office of Parks, Recreation and Historic Preservation (OPRHP) have developed a process for construction projects to identify and address potential impacts on archeological and historic resources. This process is documented in a Letter of Resolution (LOR) that was developed between the NYSDEC and OPRHP. A letter from the Office concluded that the Project will have No Adverse Impact on historic resources. A copy of the letter from the State Historic Preservation Act (SHPA) Review is included in Appendix C.

2.7 SURFACE WATERS & FLOOD PLAINS

The Site is located in the Limestone Creek Watershed as part of the Oswego River/Finger Lakes Basin that ultimately outlets to Lake Ontario. The Limestone Creek watershed is not identified in Appendix C of the Permit; as such, enhanced phosphorous removal standards are not required. Runoff from the Site flows over agricultural areas (currently row crop), infiltrates into surface soils and leaves via overland flow to wetlands and the stream that bisects the Site before entering Bishop Brook. The Site ultimately leads to tributaries of the Oneida River.

Using the map service center provided by the Federal Emergency Management Agency (FEMA), a Flood Insurance Rate Maps (FIRMs) for the Town of Manlius, panel number 36067C0264F was printed for the Site as a FIRMette. The entirety of the Site is located within Zone X, Area of Minimal Flood Hazard. A copy of the FIRMette can be found in Appendix D.

2.8 RAINFALL DATA

In accordance with the *2016 New York State Standards and Specifications for Erosion and Sediment Control*, hydrologic data and rainfall distributions published by the Northeast Regional Climate Center (NRCC) on their website (http://precip.eas.cornell.edu/) are used in the stormwater hydrology calculations herein. The rainfall data for various 24-hour storm events anticipated at the Site is presented in Table 4.

Table 4 – Rainfall Data

Storm Event	24-Hour Rainfall
1-year	2.06–inches
2-year	2.40-inches
10-year	3.45–inches
100-year	5.81–inches

3.0 EROSION & SEDIMENT CONTROL

This section of the SWPPP and the associated construction drawings identify the temporary and permanent erosion and sediment control (ESC) measures that have been incorporated into the design of this Project. These measures will be implemented during construction to protect the waters of the state from sediment loads during runoff events.

The anticipated order of construction activities is outlined along with the ESC measures to be implemented for each construction activity that will result in soil disturbance. The SWPPP and construction drawings provide a description of the temporary and permanent ESC measures including limitations on the duration of soil exposure, criteria and specifications for placement and installation of the ESC measures, and a maintenance schedule.

An emphasis was placed on the preservation of natural features, conserving existing drainage patterns and vegetation, minimizing impervious surfaces, slowing down runoff, increasing infiltration, and utilizing green infrastructure techniques throughout the design process.

3.1 CONSTRUCTION SEQUENCE

Construction is anticipated to start in 2020. Operation is targeted for 2020. The Project's construction will be approximately four months in duration. The construction will begin with the initial site preparation, preliminary site grading, installation of access roadway, erection of arrays, electrical installation, and commissioning/startup.

The following is a typical sequence of operations and phasing plan describing the intended order of construction activities:

Initial Phase

1. Hold a pre-construction meeting on-site to be attended by the qualified inspector, and any involved subcontractors to discuss responsibilities as they relate to the implementation of the SWPPP, identify the secure location where the SWPPP will be kept on the Site (must be accessible during normal business hours), and review appropriate measures to avoid and minimize impacts to protected species during remediation, demolition and construction. If contractors and subcontractors have not already done so, the certification statements in Appendix L shall be signed at this time.

2. Delineate limits of work disturbance, proposed infrastructure areas for the Project, and resources to protect.

3. Install and stabilize temporary ESC measures (i.e. sediment control barrier, stabilized construction entrance). Minimal clearing may be required for this installation.

4. Minimally clear areas as required for the following:

    a. Rough grading; and
    b. Placement of construction office trailer and parking areas.

5. Install temporary infrastructure (e.g., construction office trailer, interim road, fence, security measures).

6. Establish equipment staging (laydown area), topsoil stockpile, and concrete truck washout areas.

7. Identify post-construction stormwater management practice areas to be protected in order to preserve native soil permeability.

Interim Phase

1. Perform grading, clearing, grubbing for the remainder of the site per approved construction drawings.

2. Mount and install the supporting structure and racking system.

3. Install solar panels, string inverters and connections.

4. Construct equipment pads (transformer, central inverters, battery storage systems, etc.).
5. Install underground electric wiring and/or above ground cable management systems.

Final Phase

1. Install permanent ESC measures.
2. Install permanent access road and paved access road entrance (if required).
3. Install permanent post-construction stormwater management practices (if required)
4. Install permanent perimeter fencing.
5. Conduct soil restoration (as required).
6. Complete fine grading, landscaping, seeding and soil stabilization.
7. Remove temporary ESC measures.
8. Restore and stabilize any disturbed areas remaining upon removal of temporary ESC measures

If the disturbed area exceeds 5 acres at any given time, prior written acceptance of this plan from the Regional NYSDEC office must be received and attached.

3.2 TEMPORARY EROSION & SEDIMENT CONTROL MEASURES

Temporary erosion and sediment control measures are included as part of the construction drawings and described herein.

3.2.1 Stabilized Construction Entrance

During the initial phase, a stabilized construction entrance shall be installed, as shown on the construction drawings, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the Site at the stabilized construction entrance. The intent is to trap dust and mud that would otherwise be carried off-Site by construction traffic.

The entrance shall be maintained in a condition that will control tracking of sediment onto the local roadway. When necessary, the placement of additional aggregate atop the filter fabric will be done to assure the minimum thickness is maintained. All sediments and soils spilled, dropped, or washed onto any public right-of-way must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

3.2.2 Dust Control

Water trucks may be used as needed during construction to reduce dust generated on the Site. Dust control must be provided by the Contractor to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

3.2.3 Material Storage & Equipment Staging Areas

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that minimizes the impacts of the construction materials affecting stormwater quality and protected by a temporary sediment control barrier.

Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the Site, treated and disposed at an approved solid waste or chemical disposal facility.

Material resulting from the clearing and grubbing operation shall be stockpiled up slope from adequate sedimentation controls or at an off-site location with appropriate protections for re-use during the restoration stage.

3.2.4 Concrete Wash Area

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in a specifically designated diked and impervious washout area which has been prepared to prevent contact between the concrete wash and stormwater. Waste generated from concrete wash water shall not be allowed to flow into drainage ways, inlets, receiving waters or highway right of ways, or any location other than the designated Concrete Wash Areas. Proper signage designating the “Concrete Wash Area” shall be implemented. The Concrete Wash Area shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters.

The hardened residue from the Concrete Wash Area shall be disposed of in the same manner as other non-hazardous construction waste materials. Maintenance of the wash area shall include removal of hardened concrete. The Facility shall have sufficient volume to contain all the concrete waste resulting from washout and a minimum freeboard of 12 inches. The Facility shall not be filled beyond 95 percent capacity and shall be cleaned out once 75 percent full unless a new facility is constructed. The Contractor will be responsible for seeing that these procedures are followed.

Saw-cut Portland Cement Concrete (PCC) slurry shall not be allowed to enter storm drains or watercourses. Saw-cut residue should not be left on the surface of pavement or be allowed to flow over and off pavement.

All concrete washout areas shall be inspected daily and repaired or replaced as necessary. The Site shall be inspected frequently to ensure that no concrete discharges are taking place in non-designated areas.

3.2.5 Sediment Control Barrier

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) or compost filter sock will be established along the perimeter of areas to be disturbed as a result of the construction that lies upgradient of water courses or adjacent properties. These barriers may extend into non-impact areas to ensure adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To ensure effectiveness of the sediment control barrier, daily inspections and

inspections immediately after significant storm events will be performed by Site personnel. Maintenance of the fence will be performed as needed.

3.2.6 Temporary Soil Stockpile

Materials, such as topsoil or removed soil for special handling, shall be temporarily stockpiled (if necessary) on the Site during the grading and construction process. Stockpiles shall be located in an area away from storm drainage, water bodies and/or courses, and shall be properly protected from erosion by a surrounding sediment control barrier.

3.2.7 Preservation of Natural Areas

During the initial phase, limits of construction and resources to protect shall be identified in accordance with the construction drawings. Sturdy fences or other protective materials shall be placed around valuable vegetation for protection from construction equipment. Soil placement over existing tree and shrub roots shall be limited to a maximum of 3 inches.

3.2.8 Temporary Seeding

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.

3.2.9 Temporary Diversion Swales

Temporary diversion swales shall be used to divert off-site runoff around the construction Site, divert runoff from stabilized areas around disturbed areas, and direct runoff from disturbed areas into sediment traps.

3.2.10 Temporary Slope Protection

Erosion control blankets shall be installed on all slopes exceeding 3H:1V. Erosion control blankets provide temporary erosion protection, rapid vegetative establishment, and long-term erosion resistance to shear stresses associated with high runoff flow velocities associated with steep slopes.

3.2.11 Stone Check Dams

Stone check dams shall be installed within drainage ditches to reduce the velocity of stormwater runoff, to promote settling of sediment, and to reduce sediment transport offsite.

The stone check dams shall be inspected after each runoff event. Damage shall be repaired upon discovery. If significant erosion has occurred between structures, a liner of stone or other suitable material shall be installed in that portion of the channel.

Sediment accumulated behind the stone check dam shall be removed as needed to allow the channel to drain through the stone check dam and prevent large flows from carrying sediment over or around the dam. Stones shall be replaced as needed to maintain the design cross section of the structures.

3.2.12 Temporary Soil Stabilization

In areas where soil disturbance activity has temporarily or permanently ceased, the application of temporary soil stabilization measures shall 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. Appendix A of the Permit defines temporarily ceased as an existing disturbed area that will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary soil stabilization can be achieved by covering exposed soil with mulch, seed and mulch, and/or erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats) to prevent the exposed soil from eroding until permanent soil stabilization has been implemented and achieved.

3.3 PERMANENT EROSION & SEDIMENT CONTROL MEASURES

Permanent erosion and sediment control measures are included as part of the construction drawings provided in Appendix A and described herein.

3.3.1 Permanent Soil Stabilization

Disturbed areas that will be vegetated must be seeded in accordance with the construction drawings. The type of seed, mulch, and maintenance measures are also defined in the construction drawings.

All areas at final grade must be seeded and mulched within 7 days after completion of the major construction activity. All seeded areas should be protected with mulch.

Final Site stabilization is achieved when all soil-disturbing activities at the Site have been completed and a uniform, perennial vegetative cover with a density of 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.

3.3.2 Riprap Weir

A riprap weir may be utilized at the outlet of proposed vegetated swales to prevent erosion of the downstream face of the outlet during rainfall events. Outlet types and specifications are identified in the construction drawings.

3.3.3 Rock Outlet Protection

Outlet protection will be utilized as necessary using rock riprap at culvert outlets, new channels constructed as outlets for culverts and conduits, and pipe conduits from sediment basins, dry storm water ponds, and permanent ponds. Rock for riprap shall consist of field rock or rough unhewn quarry rock. The rock shall be hard and angular, and of a quality that will not disintegrate on exposure to water or weathering. The specific gravity of the individual rocks shall be at least 2.5. A filter shall be placed under the rock riprap as specified in the construction drawings. Permanent sections of rock protection at outlets reduce the depth, velocity, and energy of the water in order to prevent the flow from eroding the downstream reach.

3.3.4 Soil Restoration

The structure of healthy soil is permeable, with spaces between solid particles where water, air, and soil organisms can move. Soil compaction occurs when weight on the soil surface collapses these spaces, creating a hard, solid mass. Water, air, and roots may be completely unable to penetrate compacted soil, reducing or destroying its capacity to sustain life. Soil restoration promotes greater stormwater infiltration in areas with pervious cover and, therefore, helps to reduce runoff volume.

Soil restoration is achieved by aeration through mechanical loosening, and addition of organic matter and soil amendments. In areas where significant soil disturbance has occurred outside of buildings and pavement areas, the disturbed sub-soils shall be returned to rough grade and soils restoration steps applied, in accordance with Table 4.6, Soil Restoration Requirements of the NYS Standards and Specifications for Erosion and Sediment Control dated July 2016 and amended in November 2016 and Section 5.1.6, Soil Restoration of the NYS Stormwater Management Design Manual, dated January 2015.

Table 5 provides the soil restoration requirements for various types of soil disturbance. Grading and soil restoration requirements shall be in accordance with the construction drawings.

Table 5 – Soil Restoration Requirements

<table>
<tr><th>Type of Soil Disturbance</th><th colspan="2">Soil Restoration Requirement</th><th>Comments/Examples</th></tr>
<tr><td>No Soil Disturbance</td><td colspan="2">Restoration not permitted.</td><td>Preservation of natural features.</td></tr>
<tr><td>Minimal Soil Disturbance</td><td colspan="2">Restoration not required.</td><td>Clearing and grubbing.</td></tr>
<tr><td rowspan="2">Areas where topsoil is stripped only – no change in grade</td><td>HSG A & B</td><td>HSG C & D</td><td rowspan="2">Protect areas from any ongoing construction activities.</td></tr>
<tr><td>Apply 6 inches of topsoil</td><td>Aerate* and apply 6 inches of topsoil</td></tr>
<tr><td rowspan="2">Areas of cut or fill</td><td>HSG A & B</td><td>HSG C & D</td><td rowspan="2"></td></tr>
<tr><td>Aerate and apply 6 inches of topsoil</td><td>Apply full soil restoration**</td></tr>
<tr><td>Heavy traffic areas on site (especially within 5-25 feet of buildings but not within a 5-foot perimeter around foundation walls)</td><td colspan="2">Apply full soil restoration (de-compaction and compost enhancement)</td><td></td></tr>
<tr><td>Areas where runoff reduction and/or infiltration practices are applied</td><td colspan="2">Restoration not required but may be applied to enhance the reduction specified for appropriate practices.</td><td>Keep construction equipment away from crossing these areas.</td></tr>
</table>

***** Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per “Deep Ripping and De-compaction, DEC 2008”

4.0 STORMWATER MANAGEMENT DESIGN

The design described herein is in conformance with the sizing criteria outlined in the Permit, and the performance criteria provided in New York State Stormwater Management Design Manual (SMDM). The SMDM outlines provisions for water quality, runoff reduction, channel protection, overbank flood control, and extreme flood management in the State of New York.

The design objectives are focused on water quality and quantity. Utilization of green infrastructure techniques to the maximum extent possible reduces the total water quality volume and the overall site runoff volume. Additional structural SMPs may be required to maintain the pre-development rate of runoff in order to minimize impacts to adjacent or downstream properties, but only after all other techniques to reduce runoff have been exhausted or deemed infeasible.

4.1 STORMWATER MANAGEMENT PRACTICES (SMPS)

The SWPPP and construction drawings identify the stormwater management practices that have been incorporated into the design of this Project. Stormwater runoff from the proposed development will be collected and conveyed to the quantity and quality control systems described herein.

4.1.1 Preservation of Undisturbed Areas & Buffers

Important natural features and areas such as undisturbed forested and native vegetated areas, natural terrain, riparian corridors, wetlands and other important site features have been delineated and placed outside the limits of construction. These areas are shown on the construction drawings. Permanently protected natural areas that have been placed into conservation easements can be used to reduce the area required for treatment by structural stormwater management measures.

4.1.2 Reduction of Clearing & Grading

Clearing and grading of the site has been limited to the minimum amount needed for the development function, road access, and infrastructure. Limits of disturbance have been established for all development activities.

4.1.3 Locating Development in Less Sensitive Areas

The site layout has been located to avoid sensitive resource areas such as floodplains, steep slopes (> 15%), erodible soils, mature forests and critical habitat areas. The entire 100-year floodplain should be avoided for clearing and should be preserved in a natural, undisturbed state. There are no floodplains on the Site.

4.1.4 Reduction of Impervious Cover

Reduction of impervious cover utilized in this design includes methods to reduce the amount of parking lots, roadways, and other surfaces that do not allow rainfall to infiltrate the soil, in order to reduce the volume of stormwater runoff, increase groundwater recharge, and reduce pollutant loadings that are generated from a site.

The length and width of the proposed access road have been minimized to reduce overall imperviousness. The design of the access road is based on minimum lengths and widths required to meet applicable federal, state and local codes and support the necessary equipment accessing the Site.

4.1.5 Sheetflow to Riparian Buffers or Filter Strips

An existing riparian buffer exists around the stream that bisects the eastern portion of the Site that is avoided by the Project and is to be preserved. The water quality calculations in this SWPPP do not take credit for the additional benefits that the buffer will provide for runoff from the Site entering the stream.

4.1.6 Disconnection of Non-rooftop Runoff

Due to the nature of ground mounted solar system installation, the solar panels themselves are not considered to contribute to the amount of impervious area by acting as a pervious cover. The memorandum from the NYSDEC dated February 21, 2020 provides guidance for solar panel construction stormwater permitting. This project falls under scenario 2, which requires post-construction stormwater practices to be designed in accordance with chapter 4 of the SMDM. However, the water quality volume and runoff reduction volume sizing criteria can be addressed by design and constructing the solar panels in accordance with the criteria in items 1-4, which are summarized below.

1. Solar panels are constructed on post or rack systems elevated off the ground surface.
2. The panels are spaced apart so that rainwater can flow off the down gradient side of the panel and continue as sheet flow across the ground surface.
3. For solar panels constructed on slopes, the individual rows of solar panels are generally installed along the contour so rainwater sheet flows down slope.
4. The ground surface below the panels consist of a well-established vegetative cover (see “Final Stabilization” definition in Appendix A of the General Permit).

This guidance is consistent with the rationale behind solar panels acting as a pervious cover. By providing adequate row spacing, enough distance below the racking system to allow for natural sheet flow, and a well-established vegetative cover, the infiltration rate into the ground beneath the panels will be equal to the rate of infiltration prior to construction or better. An important component of this rationale is that the existing cultivated row crops and agricultural field within the Site will be seeded and brought to a permanent vegetation for the life of the system. Ground cover is one of the most important factors for erosion.

Items 2 & 3 in the above criteria refer to the Maryland Department of the Environment’s stormwater design guidance for solar panel installations. This guidance suggests the use of level spreaders for areas where slopes exceed 5%. The Site does not have slopes that exceed 5% and therefore no level spreaders are proposed.

4.1.7 Vegetated Swales

Vegetated swales have been implemented in the design to convey stormwater at a low velocity, promoting natural treatment and infiltration of the runoff from the proposed access road. The

vegetated swales provide a runoff reduction for the water quality volume calculations. The swale must also be a minimum of 100 feet, a bottom width between 2-6 feet, have side slopes no steeper than 3 feet horizontal to 1 foot vertical, have a slope between 0.5-4%.

See the construction drawings and Drainage Maps for the location and design requirements of the proposed vegetated swales.

The NRCS soil report for Onondaga County (Appendix E) identifies shallow depth to bedrock (10-40 inches) in soils across the Site. Taking this into consideration, geotechnical investigations will be required to assess if vegetated swales will be an effective approach to satisfy water quality requirements. Based on the results of geotechnical investigations to be completed prior to construction, an alternative practice may be implemented such as a vegetated filter strip or placing the tree line along the western property boundary into a conservation easement.

As per 6 New York Code of Rules and Regulations (NYCRR) Chapter V – Resource Management Services, Subchapter E, Water Regulation, Part 608, Use and Protection of Waters, Section608.3, Dams, a dam permit is not required for the Project as none of the stormwater management facilities have been designed with a height greater than 15 feet.

4.2 DRAINAGE AREAS

The study area for this Project consists of drainage areas that encompass approximately 47.2 acres. These drainage areas discharge to six different outfall locations, each defined as a Design Point (DP).

The separation of the drainage areas was dictated by watershed conditions, methods of collection, conveyance, and points of discharge. Watershed characteristics for each drainage area were assessed using aerial photographs, a topographical survey, soil surveys, Site investigations, and land use maps.

Table 6 summarizes the location and acreage for each of the drainage areas.

Table 6 – Summary of Drainage Areas

Drainage Area	Acreage	Description
1	11.2	Drainage occurs mostly from the northeast to the east and discharges to discharge point 1 that will ultimately discharge to the vegetated swale on the west boundary.
1A	0.90	This drainage area will ultimately discharge to the same discharge point as drainage area 1 but is used for water quality calculations and sizing the vegetated swale along the west boundary.
2	21.3	Drainage occurs mostly from east to west and discharges to drainage point 2. Drainage point 2 will ultimately discharge to the vegetated swale on the west boundary.
2A	1.73	A majority of the Site falls within Drainage Area 2. This area is a segment of drainage area 2 that includes the proposed access road and concrete/gravel equipment pads. This drainage area will ultimately discharge to the same discharge point as drainage area 1

Drainage Area	Acreage	Description
		but is used for water quality calculations and sizing the vegetated swale along the west boundary.
3	10.7	Drainage occurs from the east to the west and discharges to the stream that bisects the eastern portion of the Site.
4	0.80	This small drainage area in the northwest corner of the Site drains northeast to southwest and discharges towards the west to drainage point 4.
5	1.00	Drainage occurs generally from the east to the west and discharges to drainage point 5 at the northern Site boundary, adjacent to Salt Springs Road.
6	2.20	Drainage occurs generally south to north and discharges to drainage point 6 at the northern Site boundary, adjacent to Salt Springs Road.

Drainage maps are provided in Appendix F and depict the extent of the drainage areas, the locations of the design points, the flow paths and routing, and the soils within each drainage area for both pre-development and post-development conditions.

Note that the locations of proposed stormwater features (e.g. vegetated swales) have been identified on the post-development drainage map. These features shall be designed by a New York State Professional Engineer and sized in accordance with the NYS SMDM and the General Permit prior to construction.

4.3 STORMWATER QUALITY CONTROL

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of the receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

The objective for this design in accordance with the Permit is to reduce the total water quality volume of the Site by application of runoff reduction techniques and standard SMPs with runoff reduction volume capacity. The NYS SMDM provides a unified approach for calculating the water quality volume, runoff reduction volumes, and sizing green infrastructure and SMPs to meet pollutant removal goals.

4.3.1 Water Quality Volume (WQ_v)

The Water Quality Volume (WQ_v) is intended to improve water quality by capturing and treating runoff from small, frequent storm events that tend to contain higher pollutant levels. New York has defined the WQ_v as the volume generated from the 90th percentile rain event.

The following equation is used to determine the water quality volume (in acre-feet of storage):

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

Where:

WQ_v	=	Water Quality Volume (acre-feet)
P	=	90% Rainfall Event Number (Figure 4.1 in NYS SMDM)
R_v	=	0.05 + 0.009(I), where I is percent impervious cover
A	=	Site contributing area (acres)

The WQ_v is calculated in the Runoff Reduction Worksheet provided by NYSDEC for each sub-drainage area (1A and 2A). The remaining drainage areas described above containing only solar panels and fence (i.e. no impervious surfaces) have been left out of these calculations as the area reduction technique for disconnection of non-rooftop runoff and guidance discussed in section 4.1.6 satisfies the water quality volume requirement.

Full calculations are provided in Appendix G. Runoff reduction techniques previously discussed that help to reduce the overall contributing area have been accounted for in this calculation and are summarized in Table 7.

4.3.2 Runoff Reduction Volume (RR_v)

The NYS SMDM states that runoff reduction shall be achieved by infiltration, groundwater recharge, reuse, recycle, or evaporation/evapotranspiration of 100 percent of the post-development water quality volume to the maximum extent practical. If the runoff reduction volume (RR_v) is greater than the WQ_v, then the Project has already met the requirement for WQ_v by applying runoff reduction techniques.

Projects that do not achieve runoff reduction requirements must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the Site. In no case shall the runoff reduction achieved be less than the minimum RR_v.

The percent reduction is based upon the Hydrologic Soil Group (HSG) of the Site and is defined as the Specific Reduction Factor (S). Section 4.3 of the NYS SMDM defines the minimum Runoff Reduction Volume ($RR_{v\ min}$) as:

$$RR_{vmin} = \frac{(P)(\overline{R}_V{}^*)(A_{ic})(S)}{12}$$

Where:

RR_{vmin}	=	Minimum Runoff Reduction Volume required (acre-feet)
P	=	90 percent Rainfall Event Number
$\overline{R}_V{}^*$	=	0.05 + 0.009 (I), where I is 100% impervious
A_{ic}	=	Total Area of New Impervious Cover (Acres)
S	=	Hydrologic Soil Group (HSG) Specific Reduction Factor where:

HSG A = 0.55 HSG C = 0.30

HSG B = 0.40 HSG D = 0.20

The RR_v provided and the RR_{vmin} are calculated in the Runoff Reduction Worksheet provided by NYSDEC. Full calculations are provided in Appendix G.

The minimum runoff reduction volume is 439 cubic feet. The runoff reduction volume for each of the SMPs utilized in this project are summarized in Table 7.

4.3.3 Summary

The following table summarizes the water quality volume, the runoff reduction volume provided by the implemented green infrastructure practices and the total water quality volume that has been treated for each drainage area.

As shown, the water quality requirements have been satisfied through the implementation of runoff reduction techniques and standard SMPs.

Table 7 – Summary of the Water Quality Volume (WQ_v) Calculations

Drainage Area	Total Area (acres)	Impervious Surface (acres)	WQ_v (cf)	Runoff Reduction Technique(s)	RR_v (cf)	WQ_v Treated (cf)
1	11.2	0.00	--	Non-Rooftop Disconnection	--	--
1A	0.90	0.21	838	Vegetated Swale	699	139
2	21.3	0.00	--	Non-Rooftop Disconnection	--	--
2A	1.73	0.22	1,025	Vegetated Swale	801	225
3	10.7	0.00	--	Non-Rooftop Disconnection	--	--
4	0.80	0.00	--	Non-Rooftop Disconnection	--	--
5	1.00	0.00	--	Non-Rooftop Disconnection	--	--
6	2.20	0.00	--	Non-Rooftop Disconnection	--	--

4.4 STORMWATER QUANTITY CONTROL

This section presents the methodology and analysis performed for the pre- and post-development conditions of the Site to address erosion and flood control during specified storm events.

4.4.1 Hydrologic & Hydraulic Analysis

The methodology Hydrocad® Storm and Sanitary Analysis, a comprehensive hydrology and hydraulic analysis application, was used to compute the stormwater peak discharge rate at the

drainage area outfalls for each storm event. A stormwater network model was produced consisting of three types of components as described below:

- Subbasin: Hydrologic areas of land whose topography and drainage system elements direct surface runoff to a single discharge point.
- Conveyance Link: Channels, pipes and culverts used to route the stormwater runoff to various features.
- Storage Nodes: Catchbasins, detention ponds, reservoirs and lakes associated with storage volume.

A comparison of the pre- and post-development watershed conditions was performed for all design points and storm events evaluated herein.

The hydrologic and hydraulic analysis considers the SCS Type II 24-hour storm events and uses TR-20 methodology. The TR-55 method is used for calculating the time of concentration (T_c). Input data required to perform the analysis includes acreages and curve numbers for the associated drainage areas, and slopes and flow lengths for the time of concentration calculations.

The analyses demonstrate that the peak rate of runoff will not be increased post-development for each design point and design storm. Therefore, the Project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The results of the computer modeling used to analyze the pre- and post-development conditions are presented in Appendix H and Appendix I, respectively. Tables 8 and 9 summarize the results.

Table 8 – Summary of Pre-Development & Post-Development Peak Discharge Rates

Design Point (DP #)	24-Hour Storm Event (cfs)					
	1-year		10-year		100-year	
	Pre	Post	Pre	Post	Pre	Post
1	10.63	2.13	24.05	10.72	47.87	30.71
2	22.73	7.43	49.83	27.54	97.31	70.22
3	12.43	12.43	28.62	28.62	57.55	57.55
4	1.25	1.25	2.79	2.79	5.56	5.56
5	1.28	1.28	3.12	3.12	6.54	6.54
6	2.08	2.08	5.80	5.80	13.11	13.11
Total	**50.40**	**26.60**	**114.21**	**78.59**	**227.94**	**183.69**

Table 9 – Summary of Pre-Development & Post-Development Runoff Volume

Design Point (DP #)	24-Hour Storm Event (acre-feet)					
	1-year		10-year		100-year	
	Pre	Post	Pre	Post	Pre	Post
1	0.889	0.271	1.995	0.963	4.047	2.563
2	1.799	0.729	3.946	2.248	7.886	5.539
3	0.798	0.798	1.832	1.832	3.771	3.771
4	0.060	0.060	0.137	0.137	0.282	0.282
5	0.061	0.061	0.151	0.151	0.326	0.326
6	0.102	0.102	0.280	0.280	0.644	0.644
Total	**3.709**	**2.021**	**8.341**	**5.611**	**16.956**	**13.125**

Table 8 and 9 show that overall discharge leaving the site has decreased from the pre-development condition due to improvement in the ground cover type from agricultural row crop to permanent grass cover. It should be noted that drainage areas 3-6 are outside of the proposed Site and therefore the pre-development and post-development runoff rates and volumes remain the same.

4.4.2 Stream Channel Protection Volume (Cp_v)

The stream channel protection volume requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 1 year, 24-hour storm event, remaining from runoff reduction. The NYS SMDM defines the Cp_v detention time as the center of mass detention time through each stormwater management practice.

The Cp_v requirement does not apply when the reduction of the entire Cp_v is achieved at a site through green infrastructure or infiltration systems. This reduction is shown in Table 9.

4.4.3 Overbank Flood Control (Q_p)

The overbank flood control requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and, therefore, must spill over into the floodplain. The control requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Q_p) to pre-development rates.

Tables 8 & 9 show the results of the 24-hour, 10-year storm event for pre- and post-development.

4.4.4 Extreme Flood Control (Q_f)

The extreme flood control requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. The control requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Q_f) to pre-development rates.

Tables 8 & 9 show the results of the 24-hour, 100-year storm event for pre- and post-development.

5.0 SPILL PREVENTION & SOLID WASTE MANAGEMENT

The following describes other control measures to be employed during all phases of construction.

5.1 SPILL PREVENTION & RESPONSE

A Spill Prevention and Response Plan shall be developed for the Site by the Contractor. The plan shall detail the steps needed to be followed in the event of an accidental spill and shall identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Safety Data Sheets (SDS) for materials to be stored on-Site. Workers on-Site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction.

The use of detergents for large scale washing is prohibited (e.g., vehicles, buildings, pavement surfaces, etc.)

5.2 SOLID & LIQUID WASTE DISPOSAL

No solid or liquid waste, including building materials, are allowed to be discharged from the Site with stormwater. All solid waste, including disposable materials incidental to the major construction activities, must be collected and placed in containers. The containers shall be emptied periodically by a licensed solid waste disposal service and hauled away from the Site and disposed of a permitted facility.

Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the Site. As an example, special care must be exercised during equipment fueling and servicing operations. A designated refueling area will be provided that will allow for appropriate containment; however, if a spill occurs, it must be contained and disposed so that it will not flow from the Site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.

5.2.1 Sanitary Facilities

Temporary sanitary facilities will be provided throughout the construction phase. These facilities will be utilized by construction personnel and will be serviced by an outside contractor. These facilities shall comply with state and local sanitary or septic system regulations.

5.2.2 Water Source

Non-stormwater components of Site discharge must be clean water. Water used for construction, which discharged from the Site, must originate from a public water supply or private well approved by the Onondaga County Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the Site. It can be retained until it infiltrates and evaporates.

6.0 INSPECTION & MAINTENANCE REQUIREMENTS

6.1 PRE-CONSTRUCTION INSPECTION

Prior to the commencement of construction, 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 (1) person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the Trained Contractor, who shall be on site on a daily basis when soil disturbance activities are being performed.

The responsible Contractor or Subcontractor shall sign the form included in Appendix L.

A Qualified Inspector shall conduct an assessment of the Site and certify that the appropriate erosion and sediment control structures have been adequately installed and implemented. Refer to the inspection forms in Appendix M.

6.2 CONSTRUCTION PHASE INSPECTIONS & MAINTENANCE

A Qualified Inspector, as defined in Appendix A of the General Permit GP-0-020-001, shall conduct weekly Site inspections between the time the SWPPP is implemented and final site stabilization. To ensure the stability and effectiveness of all protective measures and practices during construction, all erosion and sediment control measures employed will be inspected by the Qualified Inspector at least every 7 calendar days. If disturbance exceeds 5 acres, the Qualified Inspector shall conduct at least two inspections every 7 calendar days. The two inspections shall be separated by a minimum of two full calendar days.

The purpose of Site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector shall decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the Site via stormwater runoff. The Construction Contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during Site inspections are listed below. This list is not intended to be comprehensive. During each inspection the inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

- Locations where vehicles enter and exit the Site must be inspected for evidence of off-site sediment tracking. A stabilized construction entrance will be constructed where vehicles enter and exit. This entrance will be maintained or supplemented as necessary to prevent sediment from leaving the Site on vehicles.

- Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up-slope side. Additional sediment barriers must be constructed as needed.

- Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered, or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.

- Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The Site will be considered to have achieved final stabilization once all areas are covered with building foundation, pavement, or gravel, or have a stand of grass with at least 80 percent density, which is considered stabilized or mulched. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.

- All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

Within 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 (or subcontractor) shall begin implementing corrective actions within 1 business day of this notification and shall complete the corrective actions in a reasonable time frame.

In addition to the inspections performed by the Qualified Inspector, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the Drawings. Sediment removed from erosion and sediment control measures will be exported from the Site, stockpiled for later use, or used immediately for general non-structural fill.

It is the responsibility of the Contractor to assure the adequacy of Site pollutant discharge controls. Actual physical Site conditions or contractor practices could make it necessary to install more erosion and sediment controls than shown on the attached Drawings. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers.) Assessing the need for additional controls and implementing them or adjusting existing controls will need to be addressed throughout all aspects of this Project, and until the Site achieves final stabilization.

6.3 INSPECTION & MAINTENANCE REPORTS

Inspection reports must be completed for every inspection conducted and include additional remarks if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the Site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Sample inspection forms are included in Appendix M. At a minimum, the inspection report shall include and/or address the following:

- Date and time of inspection;
- Name and title of person(s) performing inspection;
- A description of the weather and soil conditions (e.g., dry, wet, saturated) at the time of the inspection;
- 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 (e.g., pipes, culverts, ditches, etc.) and overland flow;
- Identification of all erosion and sediment control practices that need repair or maintenance;
- Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
- Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;
- 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; and
- Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices, and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s).
- Include color photographs with date stamp, taken with a digital camera that clearly show the condition of all practices that have been identified as needing corrective actions. Color copies of photographs shall be attached to the inspection report within 7 calendar days of inspection. Color photographs with date stamp, taken with a digital camera must clearly show the condition of practice(s) after the corrective action has been completed. Color copies of the photographs, that document completion of the corrective action work within 7 calendar days of inspection, shall be attached to inspection report.

All inspection reports shall be signed by the Qualified Inspector and shall be maintained on Site with the SWPPP, kept in Appendix N.

6.4 TEMPORARY SUSPENSION OF CONSTRUCTION ACTIVITIES

For constructions areas where soil disturbance activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the frequency of Qualified Inspector inspections can be reduced to once every 30 calendar days.

Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Division of Water in writing.

6.5 PARTIAL PROJECT COMPLETION

For construction areas 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 NYSDEC Region 7 Water (SPDES) Program contact 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 Notice of Termination (NOT).

6.6 POST-CONSTRUCTION OR PLANNED SHUTDOWN INSPECTION

The Owner or Operator shall have the Qualified Inspector perform a final Site inspection prior to submitting the NOT when all disturbed areas are stabilized, and all stormwater management systems are in place and operable. The Qualified Inspector shall 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.

Prior to submitting the Notice of Termination, the Owner or Operator must have a deed restriction in place to ensure that the Operation and Maintenance Plan is implemented for the post-construction stormwater management practices.

6.7 RETENTION OF RECORDS

The owner or operator shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, and any inspection reports that were prepared in conjunction with this permit for a period of at least 5 years from the date that the Site achieves final stabilization. This period may be extended by the NYSDEC, in its sole discretion, at any time upon written notification.

With the exception of the NOI, and NOT, all written correspondence requested by the NYSDEC, including individual permit applications, shall be sent to the following NYSDEC address:

NYSDEC Region 7 Office
615 Erie Blvd. West
Syracuse, NY 13204-2400

7.0 CONCLUSION

This Project is not subject to the requirements of a regulated Municipal Separate Storm Sewer System (MS4), and this SWPPP has been prepared in conformance with the New York State (NYS) Stormwater Design Manual 2015. As such, it is anticipated that GP-0-20-001 coverage will be effective 5 business days from the date the NYSDEC receives the complete electronic version of the NOI (eNOI) or 10 business days from the date the NYSDEC receives the complete paper version of the NOI, unless notified otherwise by the NYSDEC.

The proposed stormwater collection system consisting of pipes and open drainage ways will adequately collect and convey the stormwater generated by the proposed activities during construction.

Following construction of the project, the Site soils shall be restored in accordance with Section 5.1.6 of the NYS SMDM, and re-vegetation shall be implemented.

The post-construction stormwater management practice(s) will be owned by the landowner. Policies and procedures will be put in place that ensure that operation and maintenance of the practice(s) are in accordance with the operation and maintenance plan.

As demonstrated within this SWPPP, the proposed Project will not adversely impact adjacent or downstream properties.

8.0 LIMITATIONS

The work product included in this report was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and, thus, should be relied upon and used by our client recognizing these considerations and limitations. Tetra Tech shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

9.0 REFERENCES

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-20-001 (effective January 29, 2020, expires January 28, 2025).

New York State Department of Environmental Conservation, Stormwater Toolbox, from World Wide Web: http://www.dec.ny.gov/.

New York State Department of Environmental Conservation, Memorandum “Solar Panel Construction Stormwater Permitting/SWPPP Guidance”, February 21, 2020.

New York State Stormwater Management Design Manual (January 2015).

New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (November 2016).

Maryland Department of the Environment Stormwater Design Guidance – Solar Panel Installations.

APPENDIX A – CONSTRUCTION DRAWINGS

Refer to the discretionary permitting civil drawing set.
Construction level drawings will be attached and included with the final SWPPP.

APPENDIX B – NYSDEC GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY PERMIT NO. GP-0-20-001

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

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

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

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

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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

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

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

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

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

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

   (ii) Control stormwater *discharge*s, 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 *discharge*s from the site;

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

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

   (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**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

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

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

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, 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 *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

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

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

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

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

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

C. Post-construction Stormwater Management Practice Requirements

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

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

a. Sizing Criteria for New Development

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

c. Sizing Criteria for Redevelopment Activity

(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 *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

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

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

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

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

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

E. Eligibility Under This General Permit

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

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; 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 *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

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

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

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

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

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

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

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

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.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
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

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

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

d. Documentation that:

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

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

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

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

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

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

B. Notice of Intent (NOI) Submittal

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

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

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

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

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

C. Permit Authorization

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

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

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

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

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

c. the final SWPPP has been prepared, and

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

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

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

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

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

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

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

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

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

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

D. General Requirements For Owners or Operators With Permit Coverage

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

F. Change of Owner or Operator

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

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

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

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

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

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

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

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

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

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

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

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

d. to document the final construction conditions.

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

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

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

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

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

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

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

B. Required SWPPP Contents

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

e. Infiltration test results, when required; and

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

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

C. Required SWPPP Components by Project Type

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

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

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

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

B. Contractor Maintenance Inspection Requirements

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

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

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

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

C. Qualified Inspector Inspection Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

a. Date and time of inspection;

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

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

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

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

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

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

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

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

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

k. Identification and status of all corrective actions that were required by previous inspection; and

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

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

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

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. 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 source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

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

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

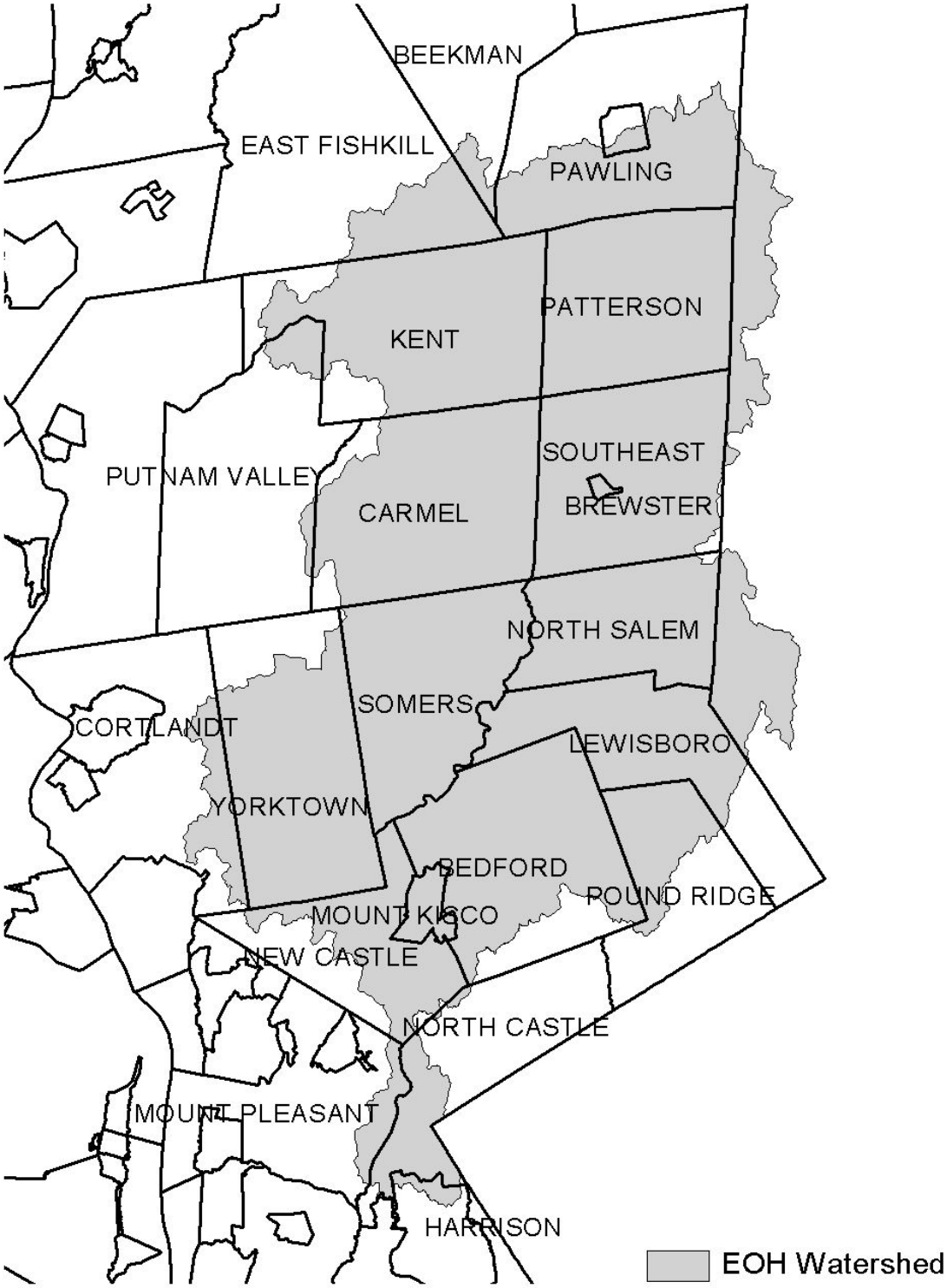


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

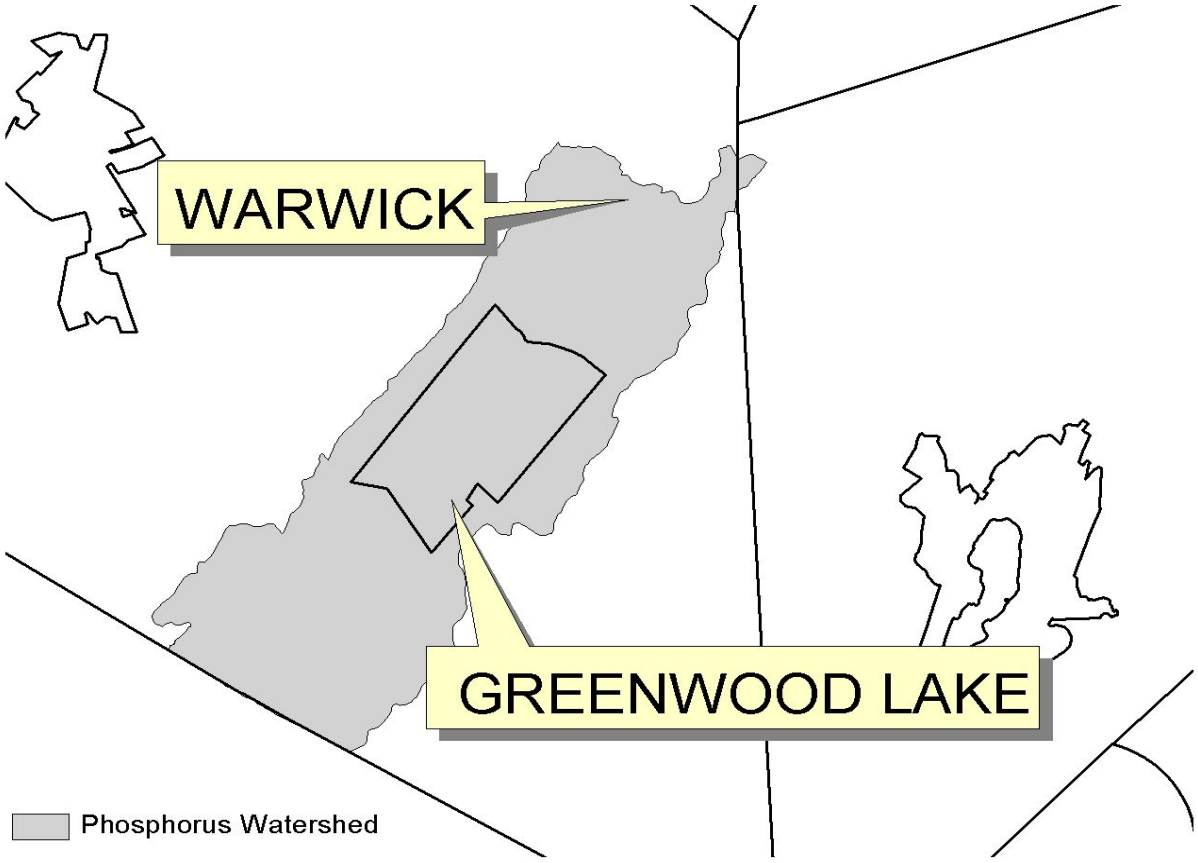


Figure 4 - Oscawana Lake Watershed

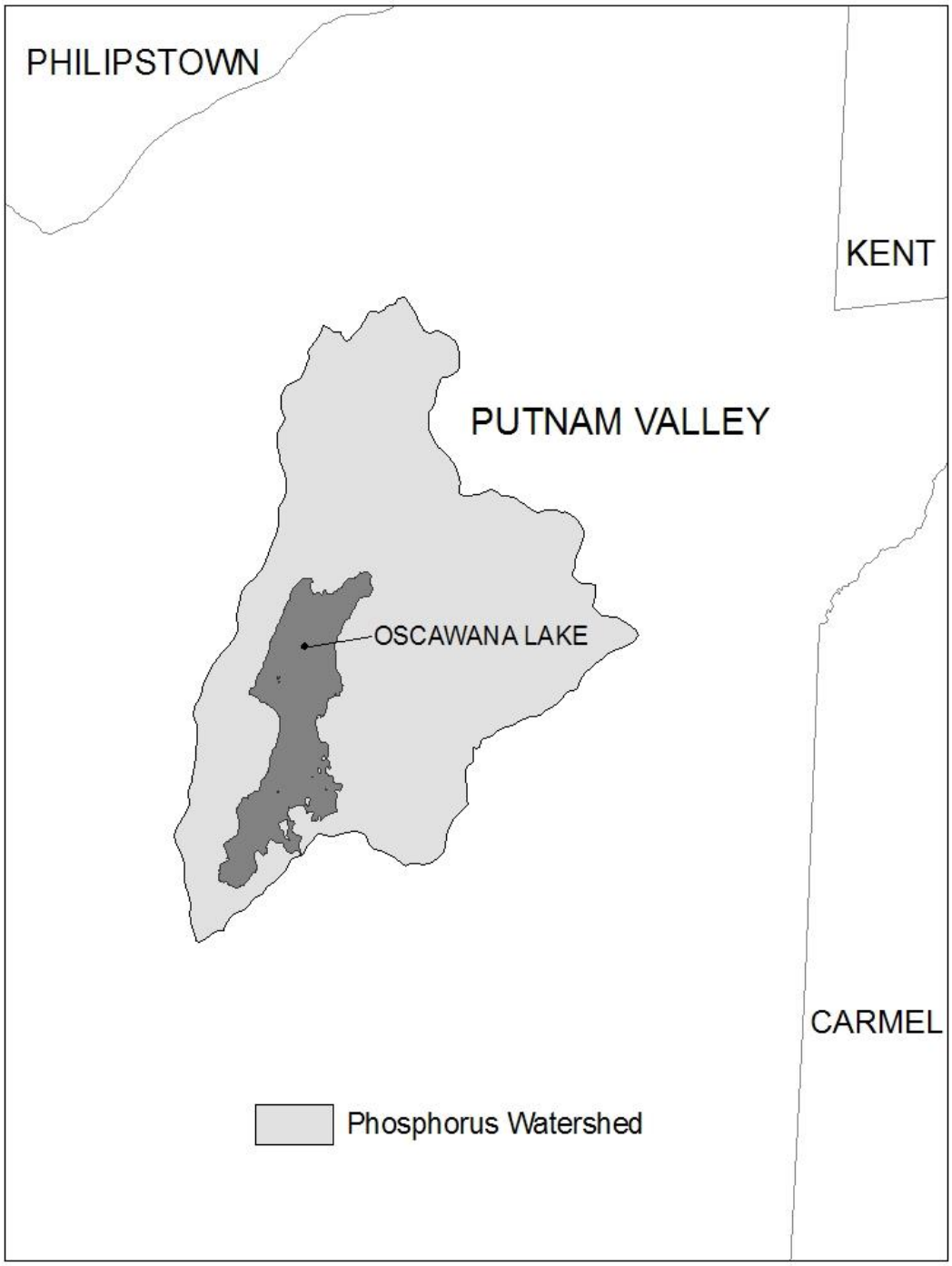
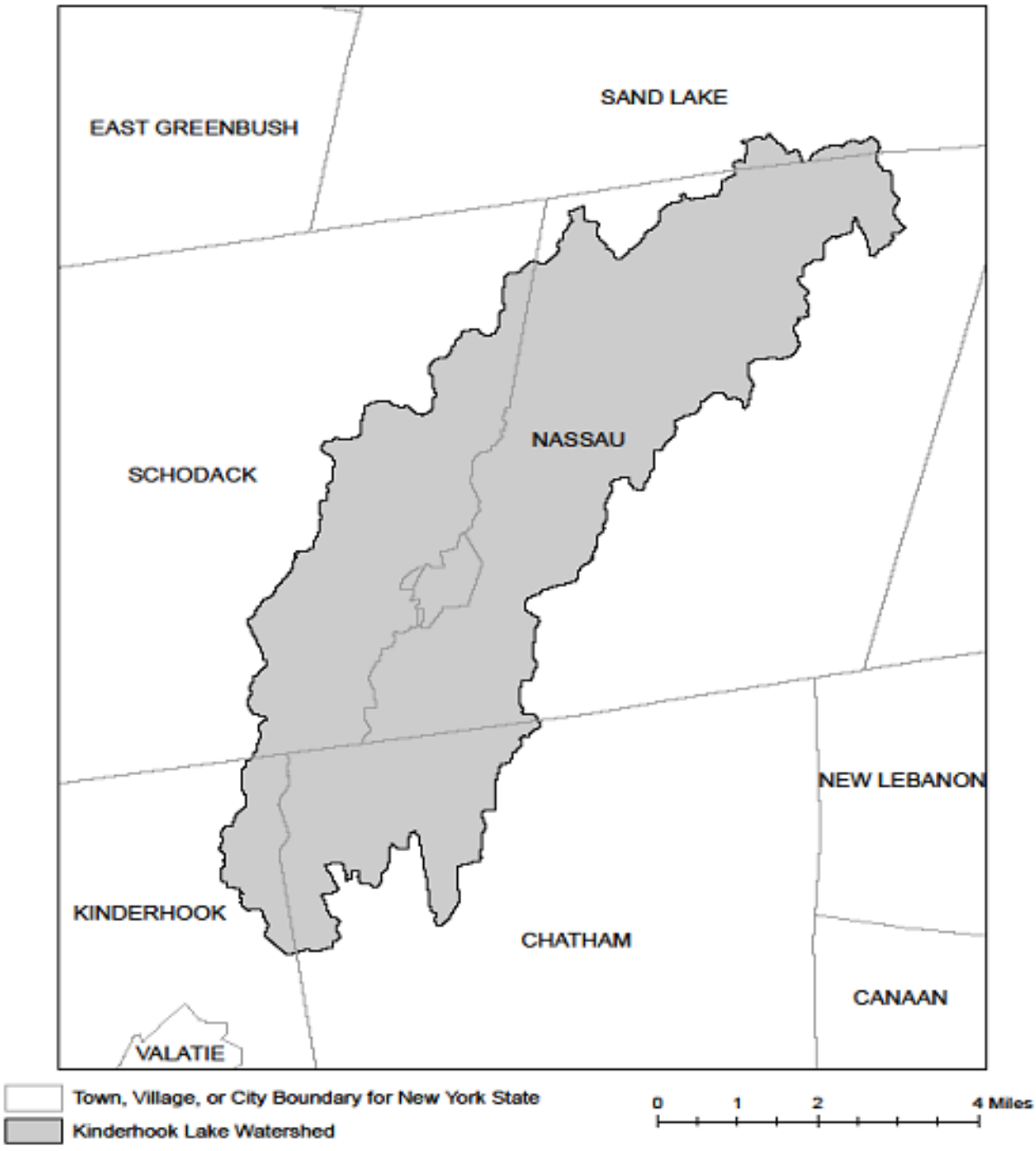


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX C – LETTER FROM NYS OPRHP

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

March 17, 2020

Charles Vandrei
Agency Historic Preservation Officer
NYS Environmental Conservation
625 Broadway
Albany, NY 12233

Re: DEC
North Eagle Solare Site/44.71 Acres
5062 N Eagle Rd., Manlius Onondaga County
20PR01564

Dear Charles Vandrei:

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

We note that the proposed project at 5062 N Eagle Village Road is within a half mile of 8142 Salt Springs Road, which is eligible for listing in the State and National Registers of Historic Places. We have reviewed the submission received on March 4, 2020. Based on that review, it is the OPRHP's opinion that the project, as described, will have No Adverse Impact on historic resources. If you have any questions, I can be reached at (518) 268-2170.

Sincerely,

Robyn Sedgwick
Historic Site Restoration Coordinator
e-mail: robyn.sedgwick@parks.ny.gov via e-mail only

cc: D. Timmis – Tetra Tech

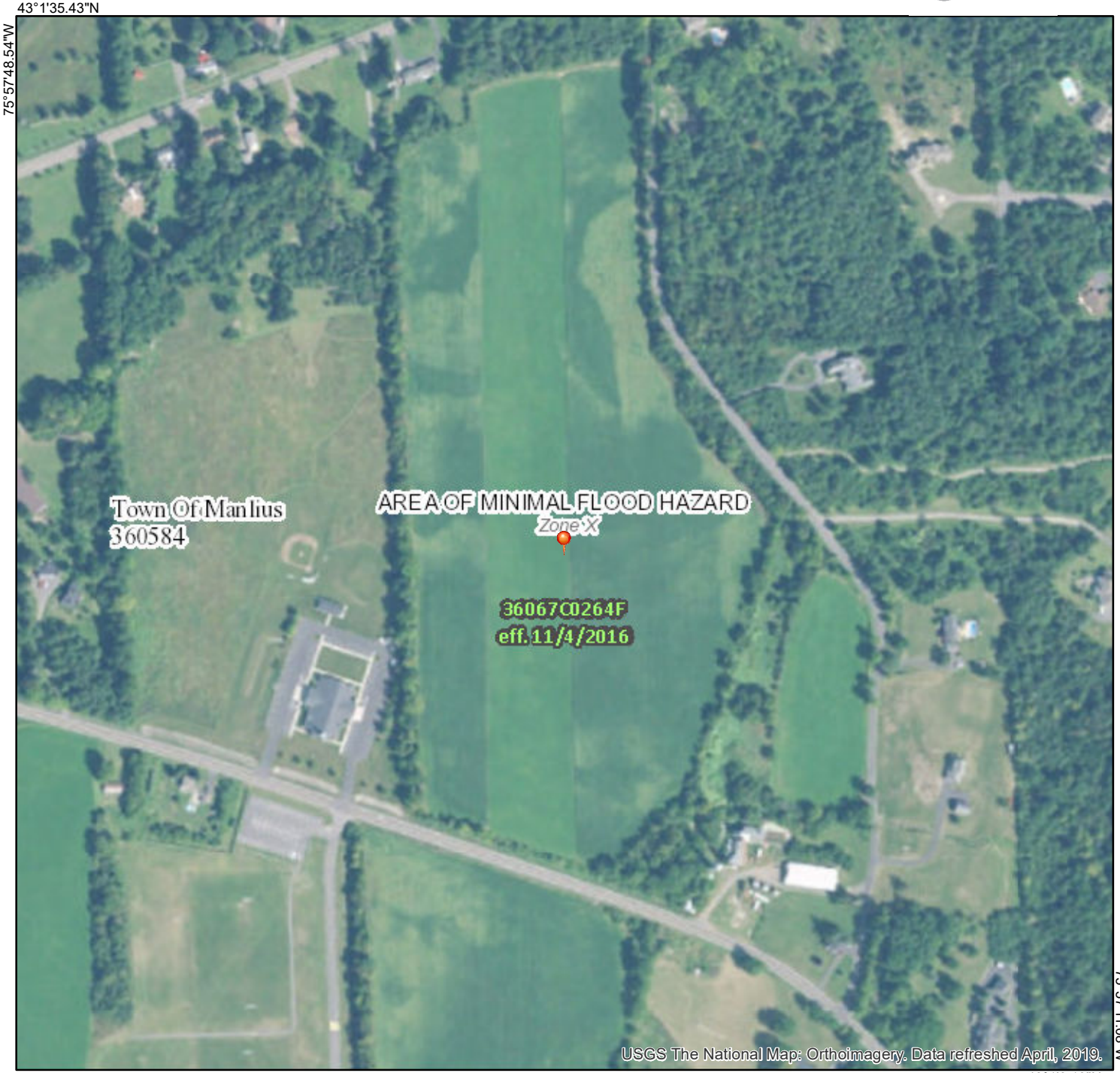
APPENDIX D – FLOOD INSURANCE RATE MAP (FIRM)

National Flood Hazard Layer FIRMette

FEMA

43°1'35.43"N

75°57'48.54"W



75°57'11.08"W

43°1'9.13"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/23/2020 at 6:28:07 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX E – NRCS SOILS 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 Onondaga County, New York



March 23, 2020

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

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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.

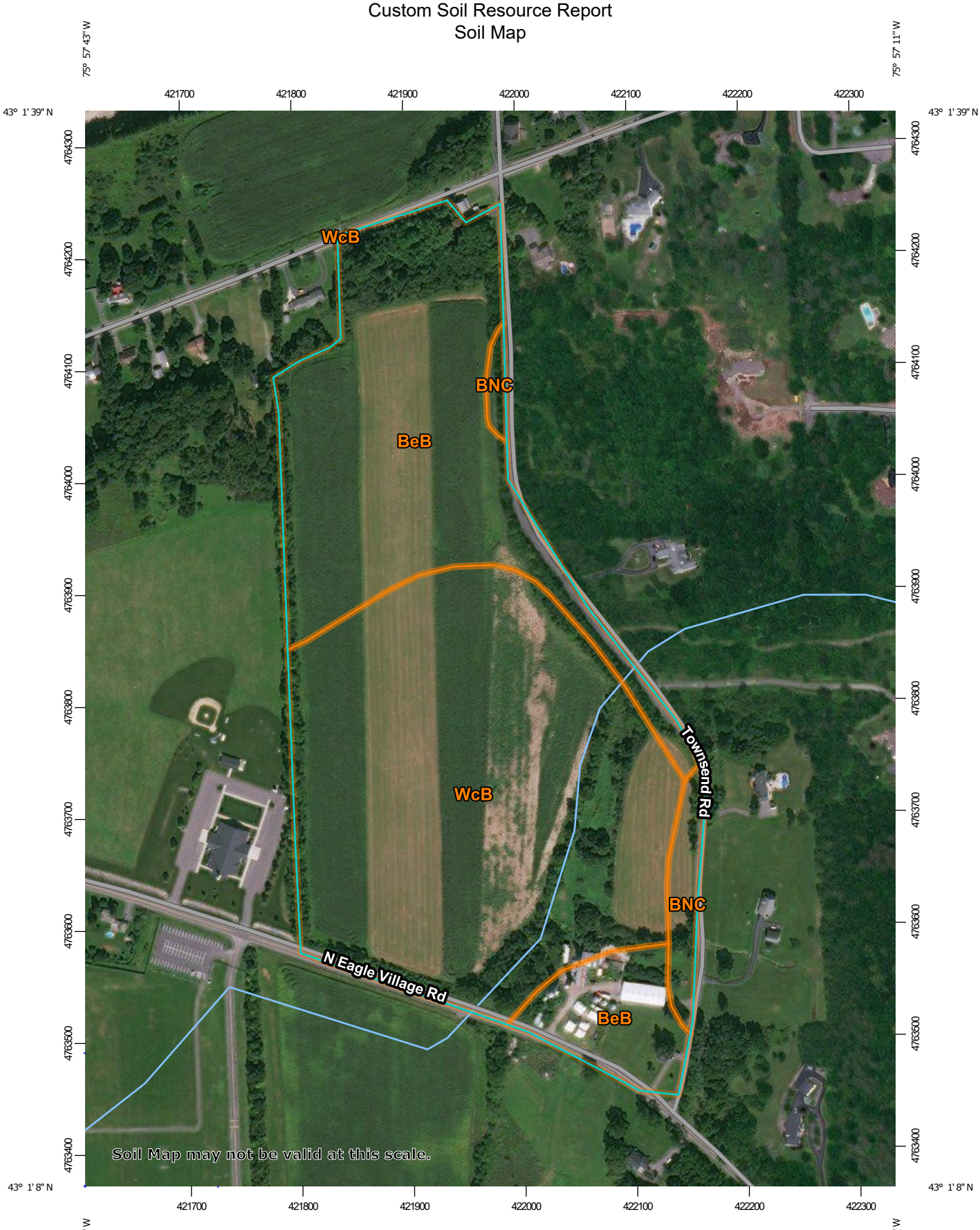
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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.

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,680 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 14, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	27.2	55.9%
Totals for Area of Interest		**48.7**	**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.

Onondaga County, New York

BeB—Benson silt loam, undulating

Map Unit Setting

National map unit symbol: 9vft
Elevation: 90 to 1,000 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Benson

Setting

Landform: Benches, ridges, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till underlain by limestone or calcareous shale

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 18 inches: very channery loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Wassaic

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

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

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

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

BNC—Benson-Wassaic-Rock outcrop association, sloping

Map Unit Setting
National map unit symbol: 9vfq
Elevation: 90 to 1,750 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition
Benson and similar soils: 30 percent
Wassaic and similar soils: 30 percent
Rock outcrop: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Benson

Setting
Landform: Benches, ridges, till plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till underlain by limestone or calcareous shale

Typical profile
H1 - 0 to 8 inches: silt loam
H2 - 8 to 18 inches: very channery loam
H3 - 18 to 22 inches: unweathered bedrock

Properties and qualities
Slope: 0 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Wassaic

Setting

Landform: Ridges, till plains, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till derived mainly from limestone, with varying amounts of sandstone, shale, and crystalline rock

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 23 inches: channery silt loam
C - 23 to 35 inches: channery loam
R - 35 to 39 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 19 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ontario

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

Unnamed soils

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

Honeoye

Percent of map unit: 5 percent

Hydric soil rating: No

Cazenovia

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

WcB—Wassaic silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9vl8
Elevation: 800 to 1,750 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Wassaic

Setting

Landform: Ridges, till plains, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till derived mainly from limestone, with varying amounts of sandstone, shale, and crystalline rock

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 23 inches: channery silt loam
C - 23 to 35 inches: channery loam
R - 35 to 39 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 19 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Benson

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

Honeoye

Percent of map unit: 4 percent
Hydric soil rating: No

Mohawk

Percent of map unit: 4 percent
Hydric soil rating: No

Ontario

Percent of map unit: 4 percent
Hydric soil rating: No

Palatine

Percent of map unit: 4 percent
Hydric soil rating: No

Cazenovia

Percent of map unit: 4 percent
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

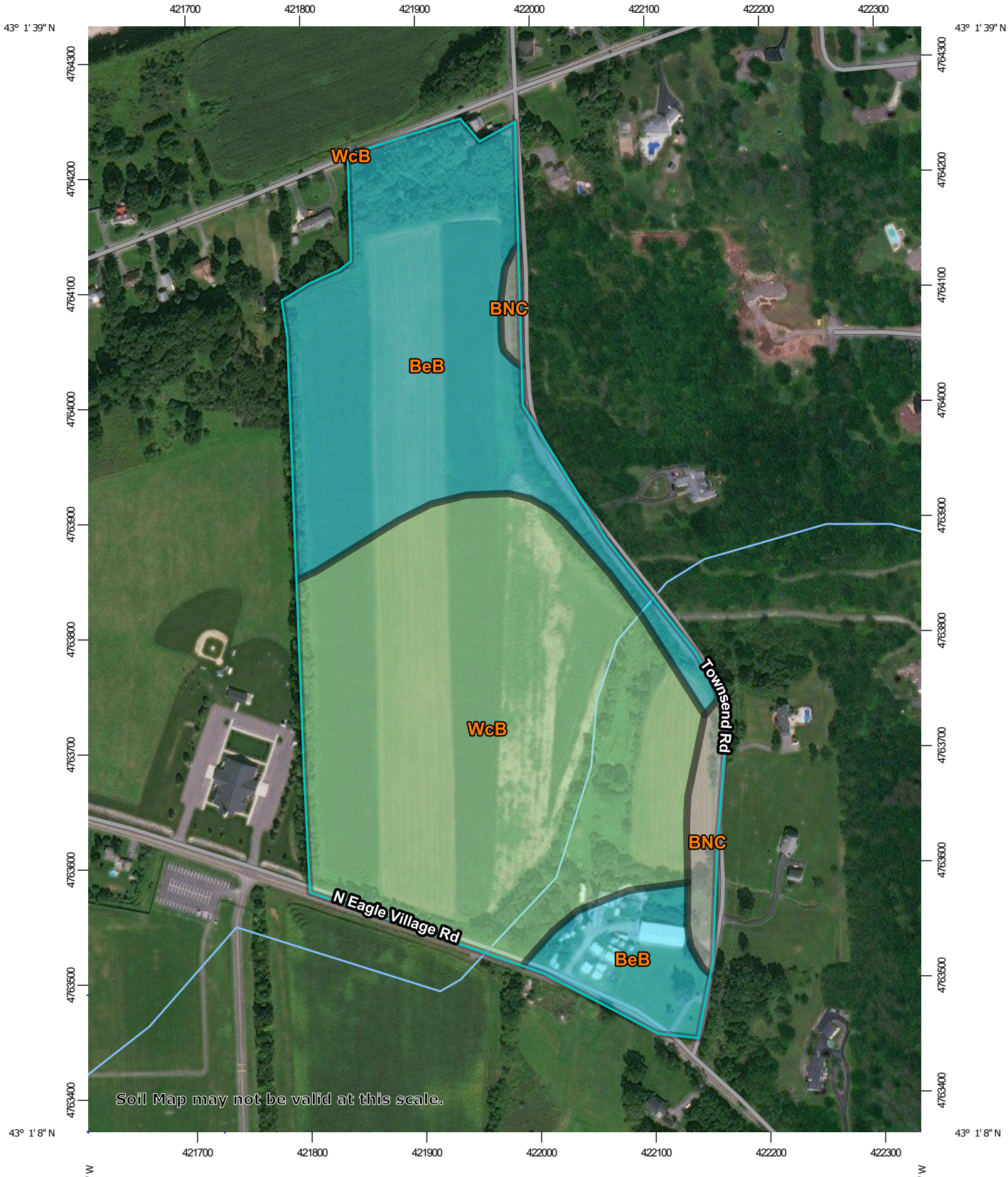
Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Whole Soil

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Custom Soil Resource Report
Map—K Factor, Whole Soil



Map Scale: 1:4,680 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

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

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 14, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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

Table—K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	.37	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping		1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	.28	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—K Factor, Whole Soil

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Liquid Limit

Liquid limit (LL) is one of the standard Atterberg limits used to indicate the plasticity characteristics of a soil. It is the water content, on a percent by weight basis, of the soil (passing #40 sieve) at which the soil changes from a plastic to a liquid state. Generally, the amount of clay- and silt-size particles, the organic matter content, and the type of minerals determine the liquid limit. Soils that have a high liquid limit have the capacity to hold a lot of water while maintaining a plastic or semisolid state.

Liquid limit is used in classifying soils in the Unified and AASHTO classification systems.

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

Table—Liquid Limit

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	30.0	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	30.0	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	23.1	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Liquid Limit

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Percent Clay

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The amount and kind of clay affect the fertility and physical condition of the soil and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, saturated hydraulic conductivity (Ksat), plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Most of the material is in one of three groups of clay minerals or a mixture of these clay minerals. The groups are kaolinite, smectite, and hydrous mica, the best known member of which is illite.

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

Table—Percent Clay

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	12.0	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	22.0	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	22.0	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Percent Clay

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Percent Sand

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the database, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter. The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

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

Table—Percent Sand

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	39.4	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	39.4	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	31.6	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Percent Sand

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Percent Silt

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the database, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification

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

Table—Percent Silt

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	48.6	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	48.6	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	46.4	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Percent Silt

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Plasticity Index

Plasticity index (PI) is one of the standard Atterberg limits used to indicate the plasticity characteristics of a soil. It is defined as the numerical difference between the liquid limit and plastic limit of the soil. It is the range of water content in which a soil exhibits the characteristics of a plastic solid.

The plastic limit is the water content that corresponds to an arbitrary limit between the plastic and semisolid states of a soil. The liquid limit is the water content, on a percent by weight basis, of the soil (passing #40 sieve) at which the soil changes from a plastic to a liquid state.

Soils that have a high plasticity index have a wide range of moisture content in which the soil performs as a plastic material. Highly and moderately plastic clays have large PI values. Plasticity index is used in classifying soils in the Unified and AASHTO classification systems.

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

Table—Plasticity Index

Map unit symbol	Map unit name	Rating (percent)	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	9.0	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	9.0	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	6.0	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Plasticity Index

Units of Measure: percent

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Surface Texture

This displays the representative texture class and modifier of the surface horizon.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example, "gravelly."

Table—Surface Texture

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	Silt loam	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	Silt loam	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	Silt loam	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Surface Texture

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

AASHTO Group Classification (Surface)

AASHTO group classification is a system that classifies soils specifically for geotechnical engineering purposes that are related to highway and airfield construction. It is based on particle-size distribution and Atterberg limits, such as liquid limit and plasticity index. This classification system is covered in AASHTO Standard No. M 145-82. The classification is based on that portion of the soil that is smaller than 3 inches in diameter.

The AASHTO classification system has two general classifications: (i) granular materials having 35 percent or less, by weight, particles smaller than 0.074 mm in diameter and (ii) silt-clay materials having more than 35 percent, by weight, particles smaller than 0.074 mm in diameter. These two divisions are further subdivided into seven main group classifications, plus eight subgroups, for a total of fifteen for mineral soils. Another class for organic soils is used.

For each soil horizon in the database one or more AASHTO Group Classifications may be listed. One is marked as the representative or most commonly occurring. The representative classification is shown here for the surface layer of the soil.

Table—AASHTO Group Classification (Surface)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	A-4	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	A-4	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	A-4	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—AASHTO Group Classification (Surface)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

Hydrologic Soil Group

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

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

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

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

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

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

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

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	D	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping		1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	C	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Map Unit Name

A soil map unit is a collection of soil areas or nonsoil areas (miscellaneous areas) delineated in a soil survey. Each map unit is given a name that uniquely identifies the unit in a particular soil survey area.

Table—Map Unit Name

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	Benson silt loam, undulating	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping	Benson-Wassaic-Rock outcrop association, sloping	1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	Wassaic silt loam, 0 to 8 percent slopes	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Map Unit Name

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Unified Soil Classification (Surface)

The Unified soil classification system classifies mineral and organic mineral soils for engineering purposes on the basis of particle-size characteristics, liquid limit, and plasticity index. It identifies three major soil divisions: (i) coarse-grained soils having less than 50 percent, by weight, particles smaller than 0.074 mm in diameter; (ii) fine-grained soils having 50 percent or more, by weight, particles smaller than 0.074 mm in diameter; and (iii) highly organic soils that demonstrate certain organic characteristics. These divisions are further subdivided into a total of 15 basic soil groups. The major soil divisions and basic soil groups are determined on the basis of estimated or measured values for grain-size distribution and Atterberg limits. ASTM D 2487 shows the criteria chart used for classifying soil in the Unified system and the 15 basic soil groups of the system and the plasticity chart for the Unified system.

The various groupings of this classification correlate in a general way with the engineering behavior of soils. This correlation provides a useful first step in any field or laboratory investigation for engineering purposes. It can serve to make some general interpretations relating to probable performance of the soil for engineering uses.

For each soil horizon in the database one or more Unified soil classifications may be listed. One is marked as the representative or most commonly occurring. The representative classification is shown here for the surface layer of the soil.

Table—Unified Soil Classification (Surface)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeB	Benson silt loam, undulating	CL	19.8	40.6%
BNC	Benson-Wassaic-Rock outcrop association, sloping		1.7	3.5%
WcB	Wassaic silt loam, 0 to 8 percent slopes	ML	27.2	55.9%
Totals for Area of Interest			**48.7**	**100.0%**

Rating Options—Unified Soil Classification (Surface)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

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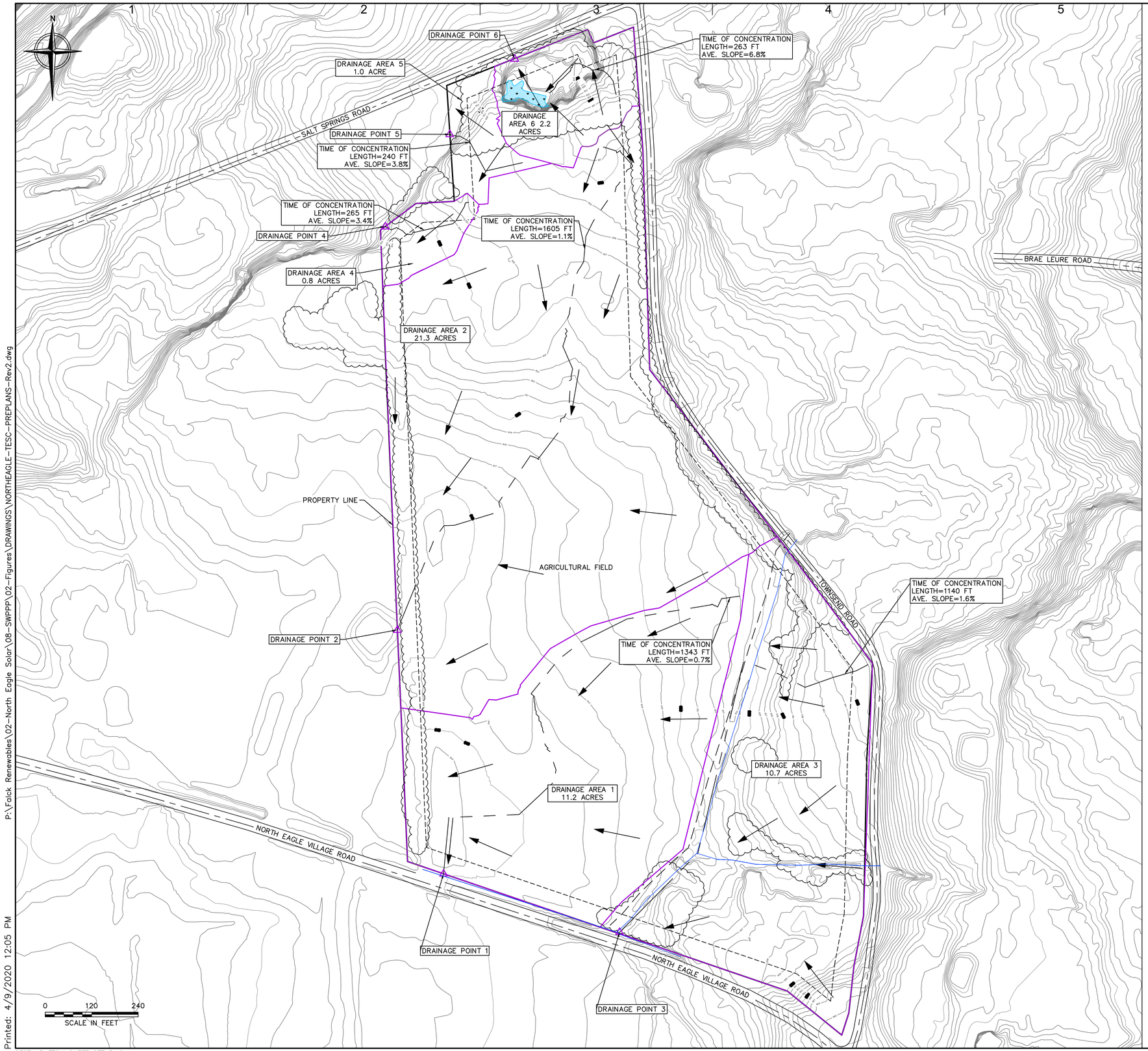
APPENDIX F – DRAINAGE MAPS



LEGEND

- PROPERTY LINE
- ZONING SETBACKS
- EXISTING TOPO (1 FT CONTOURS)
- EXISTING TREE LINE
- 25' NWI WETLAND BUFFER
- NWI WETLAND
- DRAINAGE FLOW
- WcB — SOIL GROUP BOUNDARY
- DRAINAGE AREA
- FLOW PATH

GENERAL NOTES:

1. CONTOUR DATA OBTAINED FROM ONONDAGA COUNTY, TOWN OF MANLIUS FROM GIS.NY.GOV. THIS DATA IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83)(2011) NEW YORK CENTRAL ZONE, US FOOT AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD88), US. FOOT.
2. EXISTING ROAD FEATURES OBTAINED FROM USDA NRCS GEOSPATIAL DATA GATEWAY.
3. TREE LINES SHOWN HEREON ARE APPROXIMATE. SOURCE: GOOGLE EARTH.
4. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.
5. ORTHOIMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, 2018 ONE FOOT FOUR BAND CENTRAL ZONE INDEX.

NOT FOR CONSTRUCTION

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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
PRE-DEVELOPMENT DRAINAGE MAP

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.

DATE:	03/24/2020
DRAWN BY:	JDB
ENGINEER:	JDB
APPROVED BY:	JT

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
1

P:\Falck Renewables\02-North Eagle Solar\08-SWPPP\02-Figures\DRAWINGS\NORTHEAGLE-TESC-PREPLANS-Rev2.dwg

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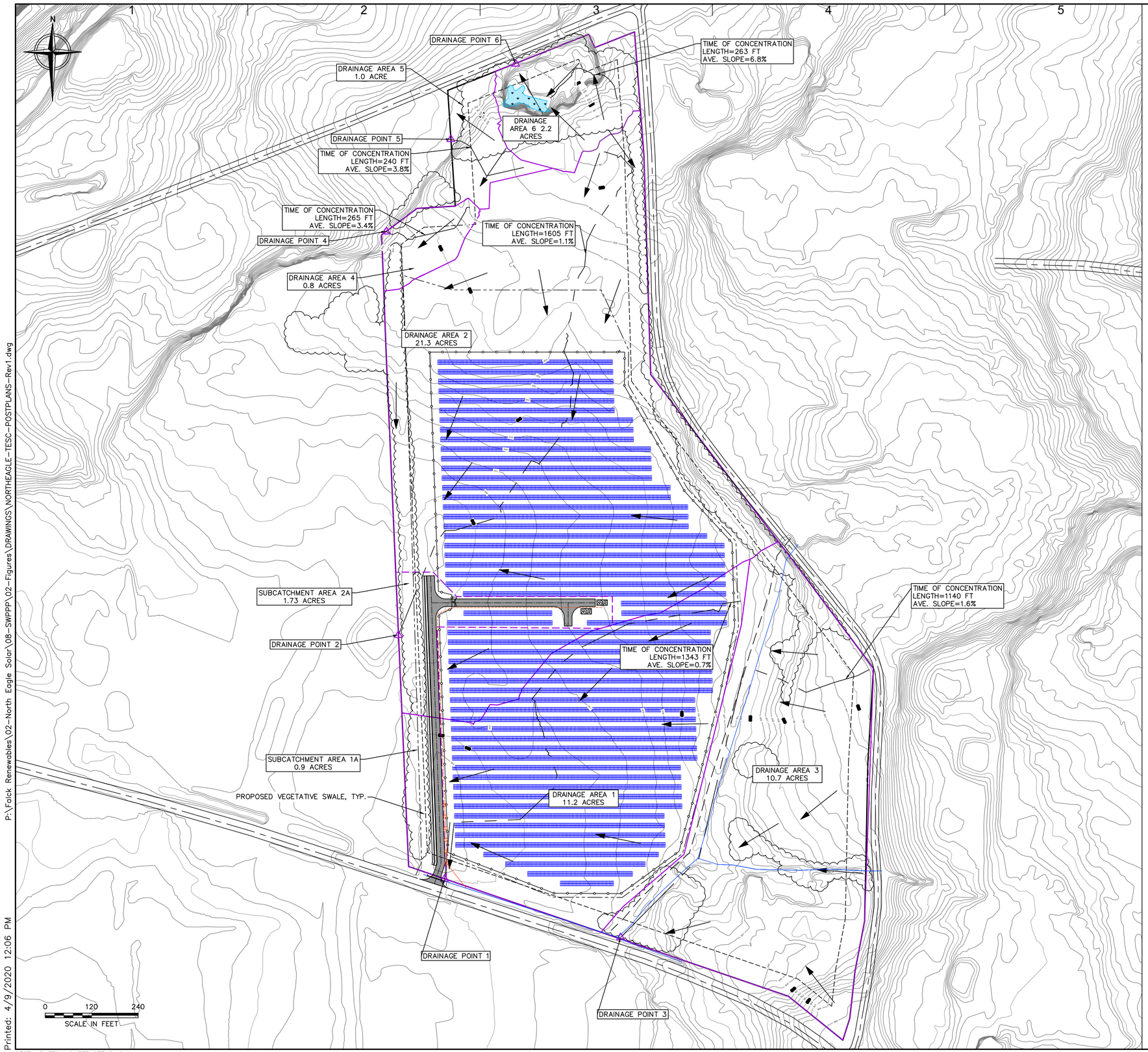

LEGEND

- PROPERTY LINE
- CONSTRUCTION LIMITS
- ZONING SETBACKS
- EXISTING TOPO (1 FT CONTOURS)
- EXISTING TREE LINE
- 25' NWI WETLAND BUFFER
- NWI WETLAND
- EXISTING UTILITY POLE
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED CONCRETE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED UTILITY POLE
- PROPOSED CULVERT
- DRAINAGE FLOW
- SOIL GROUP BOUNDARY (WcB)
- DRAINAGE AREA
- FLOW PATH
- SOLAR PANELS

GENERAL NOTES:

1. CONTOUR DATA OBTAINED FROM ONONDAGA COUNTY, TOWN OF MANLIUS FROM GIS.NY.GOV. THIS DATA IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83)(2011) NEW YORK CENTRAL ZONE, US FOOT AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAD88), US. FOOT.
2. EXISTING ROAD FEATURES OBTAINED FROM USDA NRCS GEOSPATIAL DATA GATEWAY.
3. TREE LINES SHOWN HEREON ARE APPROXIMATE. SOURCE: GOOGLE EARTH.
4. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.

NOT FOR CONSTRUCTION

THIS PERMITTING PACKAGE, AND THE DATA HEREIN, IS INTENDED FOR PERMITTING PURPOSES ONLY, AND IS NOT TO BE USED FOR CONSTRUCTION.

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CERT# 0015490
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ROCHESTER, NY 14623

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NORTH EAGLE SOLAR PROJECT

5062 NORTH EAGLE VILLAGE RD
MANLIUS, NY 13104

PROJECT NUMBERS:
194-7179

SHEET TITLE:
POST-DEVELOPMENT DRAINAGE MAP

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.

DATE:	03/26/2020
DRAWN BY:	JDB
ENGINEER:	JDB
APPROVED BY:	JT

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
2

P:\Falck Renewables\02-North Eagle Solar\08-SWPPP\02-Figures\DRAWINGS\NORTHEAGLE-TESC-POSTPLANS-Rev1.dwg
Printed: 4/9/2020 12:06 PM
GESTAMP FTGM SHEET SET R1.0.4

APPENDIX G – DESIGN CALCULATIONS

Version 1.8
Last Updated: 11/09/2015

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

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	No
Design Point:	1
P=	1.00 *inch*

Manually enter P, Total Area and Impervious Cover.

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	0.90	0.21	23%	0.26	838	Vegetated Swale
2	1.73	0.22	13%	0.16	1,025	Vegetated Swale
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	2.63	0.42	16%	0.20	**1,863**	**Subtotal 1**
Total	2.63	0.42	16%	0.20	**1,863**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

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

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	2.63	0.42	16%	0.20	1,863
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	**2.63**	**0.42**	16%	0.20	1,863
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	2.63	0.42	16%	0.20	**1,863**
WQv reduced by Area Reduction techniques					0

Total Water Quality Volume Calculation

WQv(acre-feet) = [(P)(Rv)(A)] /12

All Subcatchments						
Catchment	**Total Area** *(Acres)*	**Impervious Cover** *(Acres)*	**Percent Impervious** *%*	**Runoff Coefficient** *Rv*	**WQv** *(ft^3)*	**Description**
1	0.90	0.21	0.23	0.26	837.98	Vegetated Swale
2	1.73	0.22	0.13	0.16	1,025	Vegetated Swale
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**cf**	**cf**
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4				
	Bioretention & Infiltration Bioretention	F-5	0.00	0.00	0	0
	Dry swale	O-1	2.63	0.42	1500	364
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction		→	0.00	0.00	0	
Totals by Volume Reduction		→	0.00	0.00	0	
Totals by Standard SMP w/RRV		→	2.63	0.42	1500	364
Totals by Standard SMP		→	0.00	0.00		0
Totals (Area + Volume + all SMPs)		→	2.63	0.42	1,500	364
	Impervious Cover √	okay				

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C	3.05	30%
D		20%
Total Area	3.05	
Calculate the Minimum RRv		
S =	**0.30**	
Impervious =	0.42	*acre*
Precipitation	1	*in*
Rv	0.95	
Minimum RRv	**439**	***ft3***
	0.01	af

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	1863	*0.043*
30	Total RRV Provided	1500	*0.034*
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	439	*0.010*
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	364	*0.008*
34	Sum of Volume Reduced & Treated	1863	*0.043*
34	Sum of Volume Reduced and Treated	1863	*0.043*
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

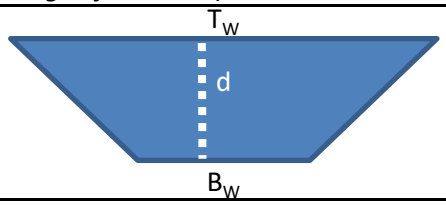
Apply Peak Flow Attenuation			
36	Channel Protection	*Cpv*	
37	Overbank	*Qp*	
37	Extreme Flood Control	*Qf*	
	Are Quantity Control requirements met?	*Yes*	Plan Completed

Dry Swale Worksheet

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	0.90	0.21	0.23	0.26	837.98	1.00	Vegetated Swale
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	23%	0.26	838	<<WQv after adjusting for Disconnected Rooftops	

Pretreatment Provided			Pretreatment Technique
Pretreatment (10% of WQv)	84	ft^3	

Calculate Available Storage Capacity			
Bottom Width	2	*ft*	Design with a bottom width no greater than eight feet to avoid potential gullying and channel braiding, but no less than two feet
Side Slope (X:1)	3	*Okay*	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope
Longitudinal Slope	1%	*Okay*	*Maximum longitudinal slope shall be 4%*
Flow Depth	1.5	*ft*	*Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Top Width	11	*ft*	
Area	9.75	*sf*	
Minimum Length	77	*ft*	
Actual Length	350	*ft*	
End Point Depth check	1.50	*Okay*	*A maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Storage Capacity	3,496	ft^3	
Soil Group (HSG)		C	

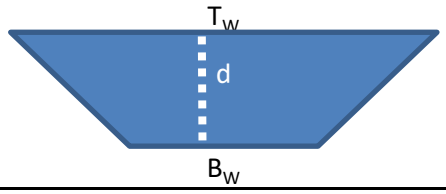
Runoff Reduction				
Is the Dry Swale contributing flow to another practice?		No	Select Practice	
RRv	**699**	ft^3	**Runnoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv**	
Volume Treated	139	ft^3	This is the difference between the WQv calculated and the runoff reduction achieved in the swale	
Volume Directed	0	ft^3	This volume is directed another practice	
Volume √	*Okay*		Check to be sure that channel is long enough to store WQv	

Dry Swale Worksheet

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
2	1.73	0.22	0.13	0.16	1025.37	1.00	Vegetated Swale
Enter Impervious Area Reduced by Disconnection of Rooftops		0.00	13%	0.16	1,025	<<WQv after adjusting for Disconnected Rooftops	

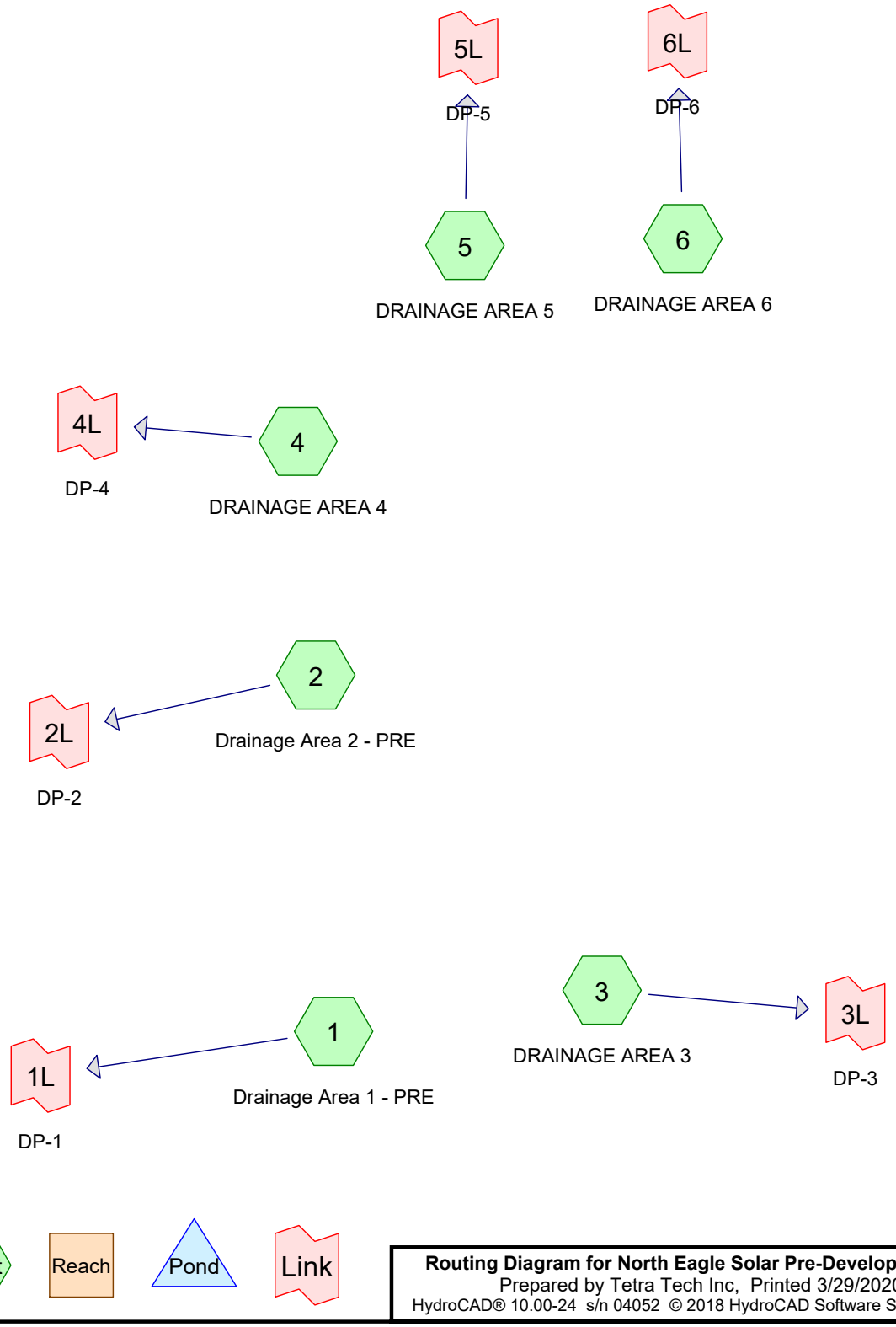
Pretreatment Provided			Pretreatment Technique
Pretreatment (10% of WQv)	103	ft^3	

Calculate Available Storage Capacity			
Bottom Width	2	*ft*	Design with a bottom width no greater than eight feet to avoid potential gullying and channel braiding, but no less than two feet
Side Slope (X:1)	3	*Okay*	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope
Longitudinal Slope	1%	*Okay*	*Maximum longitudinal slope shall be 4%*
Flow Depth	1.5	*ft*	*Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Top Width	11	*ft*	
Area	9.75	*sf*	
Minimum Length	95	*ft*	
Actual Length	400	*ft*	
End Point Depth check	1.50	*Okay*	*A maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Storage Capacity	4,003	ft^3	
Soil Group (HSG)		C	

Runoff Reduction				
Is the Dry Swale contributing flow to another practice?		No	Select Practice	
RRv	**801**	***ft^3***	**Runnoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv**	
Volume Treated	225	ft^3	This is the difference between the WQv calculated and the runoff reduction achieved in the swale	
Volume Directed	0	ft^3	This volume is directed another practice	
Volume √	*Okay*		Check to be sure that channel is long enough to store WQv	

APPENDIX H – PRE-DEVELOPMENT ANALYSIS

Existing Conditions



Routing Diagram for North Eagle Solar Pre-Development-Rev1
Prepared by Tetra Tech Inc, Printed 3/29/2020
HydroCAD® 10.00-24 s/n 04052 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.210	89	Roadway (1)
11.500	86	WEIGHTED FROM TR55 (3, 4)
2.200	79	WEIGHTED FROM TR55 (6)
1.000	83	WEIGHTED TR55 (5)
10.990	87	Weighted CN from TR55 (1)
21.300	88	Weighted CN from TR55 (2)
47.200	**87**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
47.200	Other	1, 2, 3, 4, 5, 6
47.200		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.210	0.210	Roadway	1
0.000	0.000	0.000	0.000	13.700	13.700	WEIGHTED FROM TR55	3, 4, 6
0.000	0.000	0.000	0.000	1.000	1.000	WEIGHTED TR55	5
0.000	0.000	0.000	0.000	32.290	32.290	Weighted CN from TR55	1, 2
0.000	**0.000**	**0.000**	**0.000**	**47.200**	**47.200**	**TOTAL AREA**	

Summary for Subcatchment 1: Drainage Area 1 - PRE

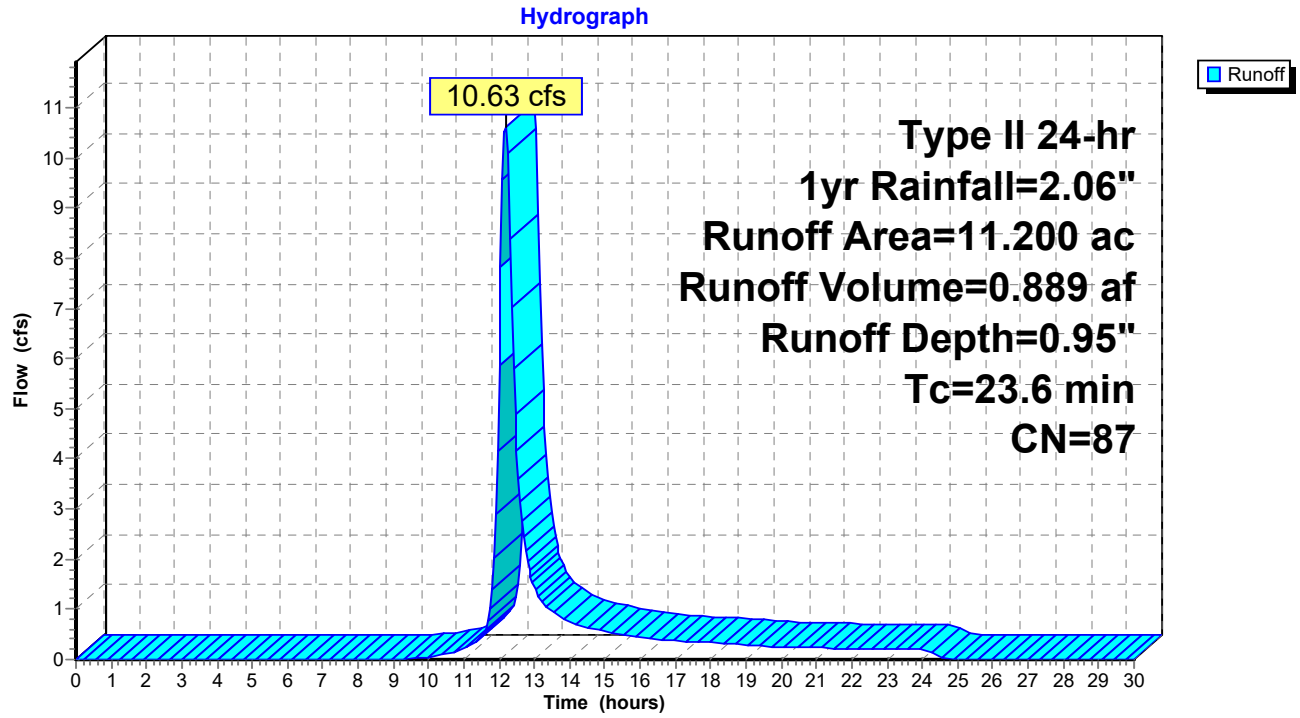
Runoff = 10.63 cfs @ 12.17 hrs, Volume= 0.889 af, Depth= 0.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	10.990	87	Weighted CN from TR55
*	0.210	89	Roadway
	11.200	87	Weighted Average
	11.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.6					**Direct Entry, TR55**

Subcatchment 1: Drainage Area 1 - PRE



Summary for Subcatchment 2: Drainage Area 2 - PRE

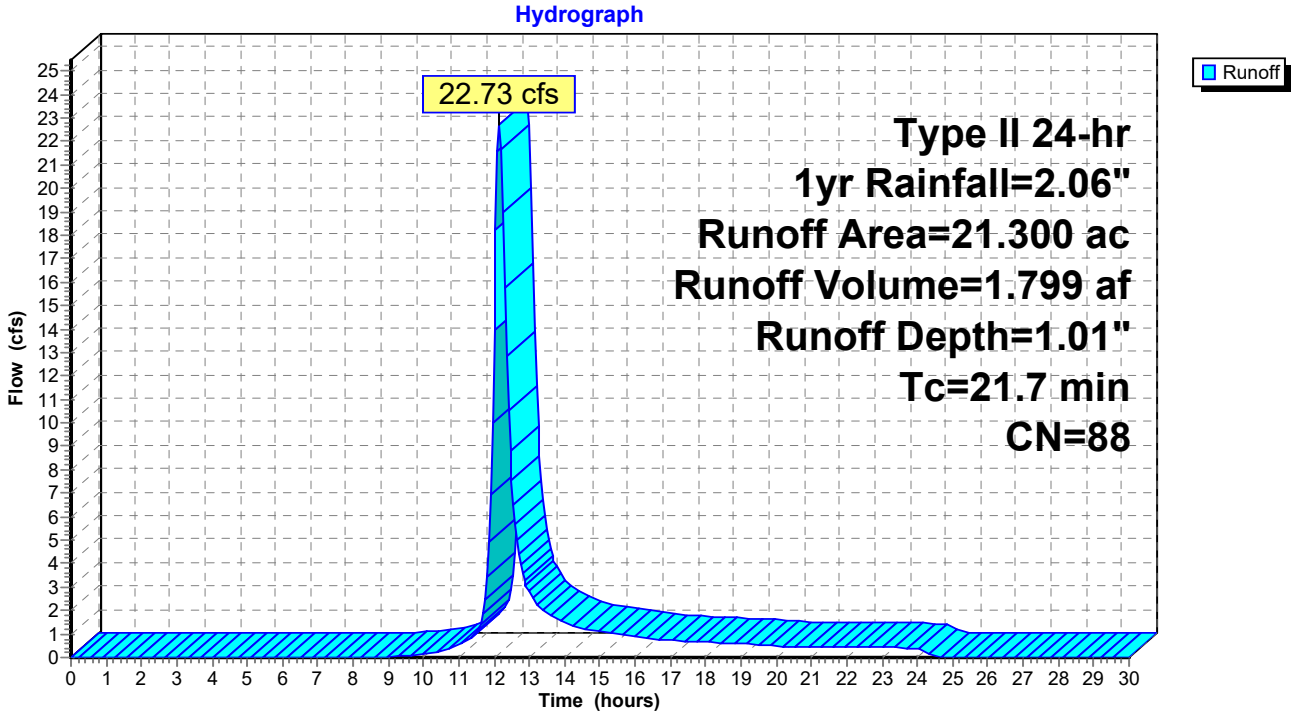
Runoff = 22.73 cfs @ 12.15 hrs, Volume= 1.799 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	21.300	88	Weighted CN from TR55
	21.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7					**Direct Entry, TR55 Tc**

Subcatchment 2: Drainage Area 2 - PRE



Summary for Subcatchment 3: DRAINAGE AREA 3

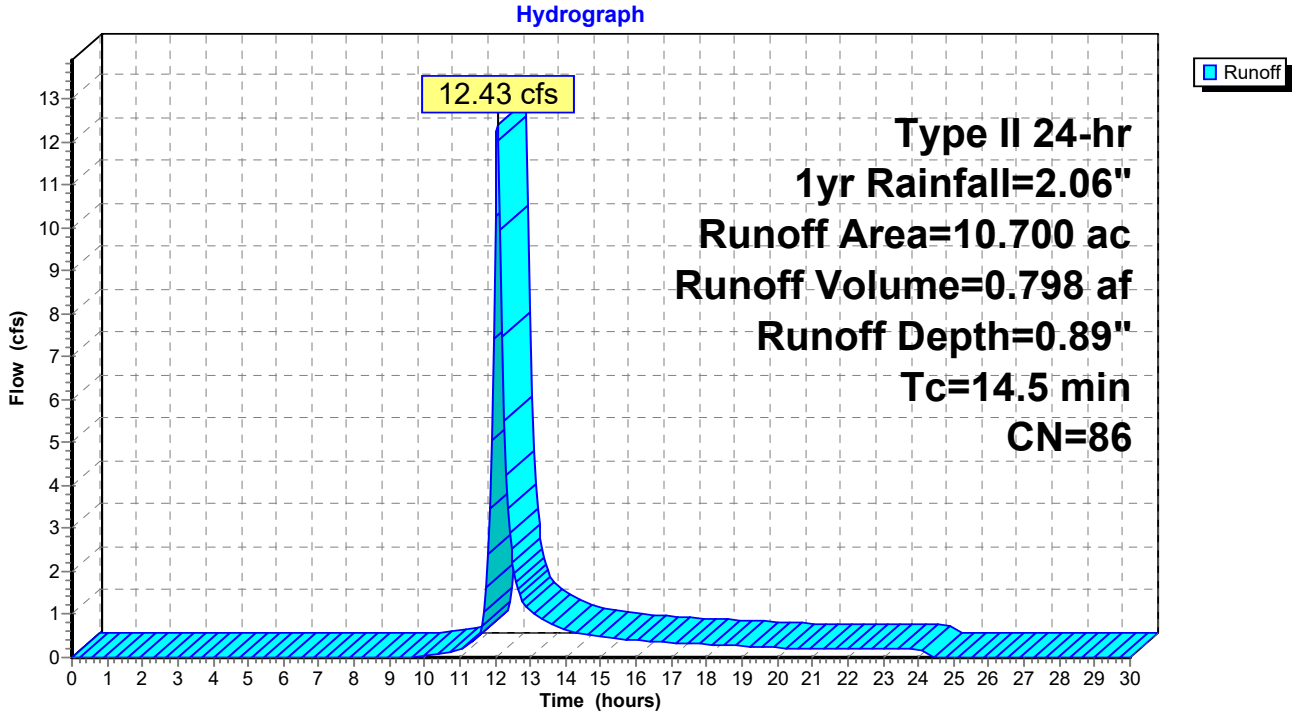
Runoff = 12.43 cfs @ 12.07 hrs, Volume= 0.798 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	10.700	86	WEIGHTED FROM TR55
	10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					**Direct Entry, TR55**

Subcatchment 3: DRAINAGE AREA 3



Summary for Subcatchment 4: DRAINAGE AREA 4

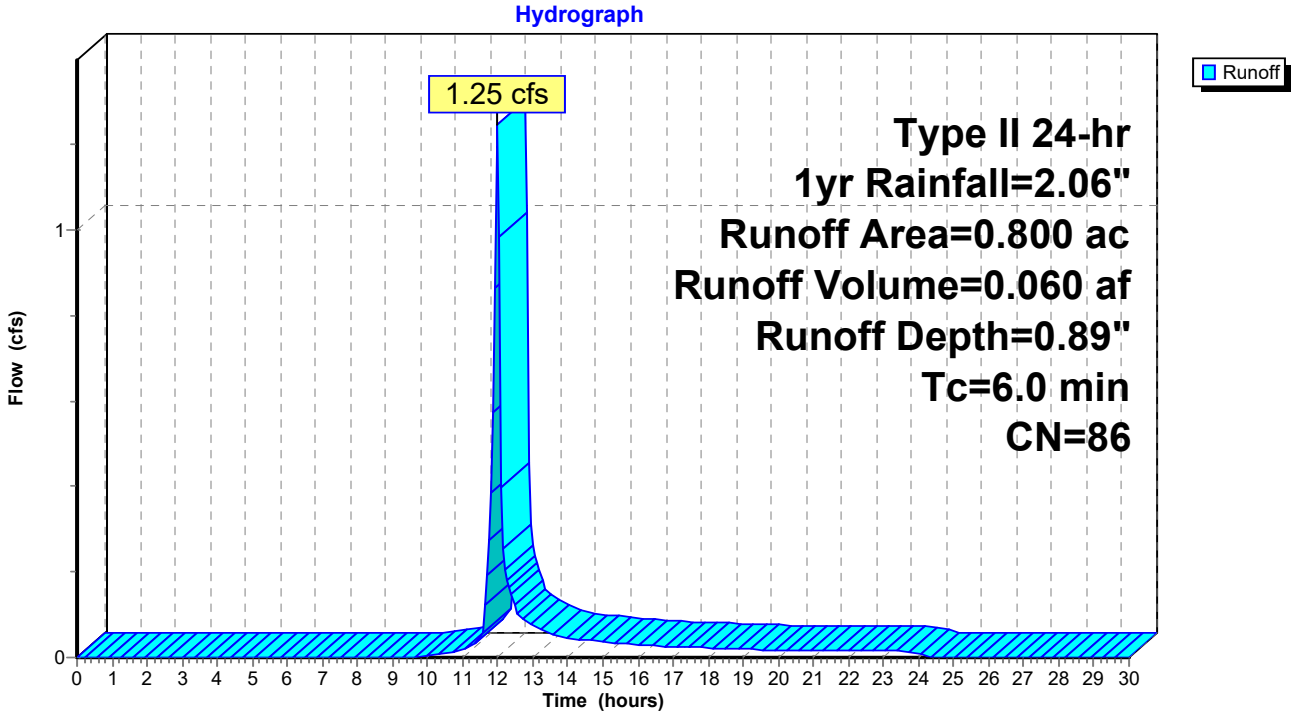
Runoff = 1.25 cfs @ 11.98 hrs, Volume= 0.060 af, Depth= 0.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	0.800	86	WEIGHTED FROM TR55
	0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 4: DRAINAGE AREA 4



Summary for Subcatchment 5: DRAINAGE AREA 5

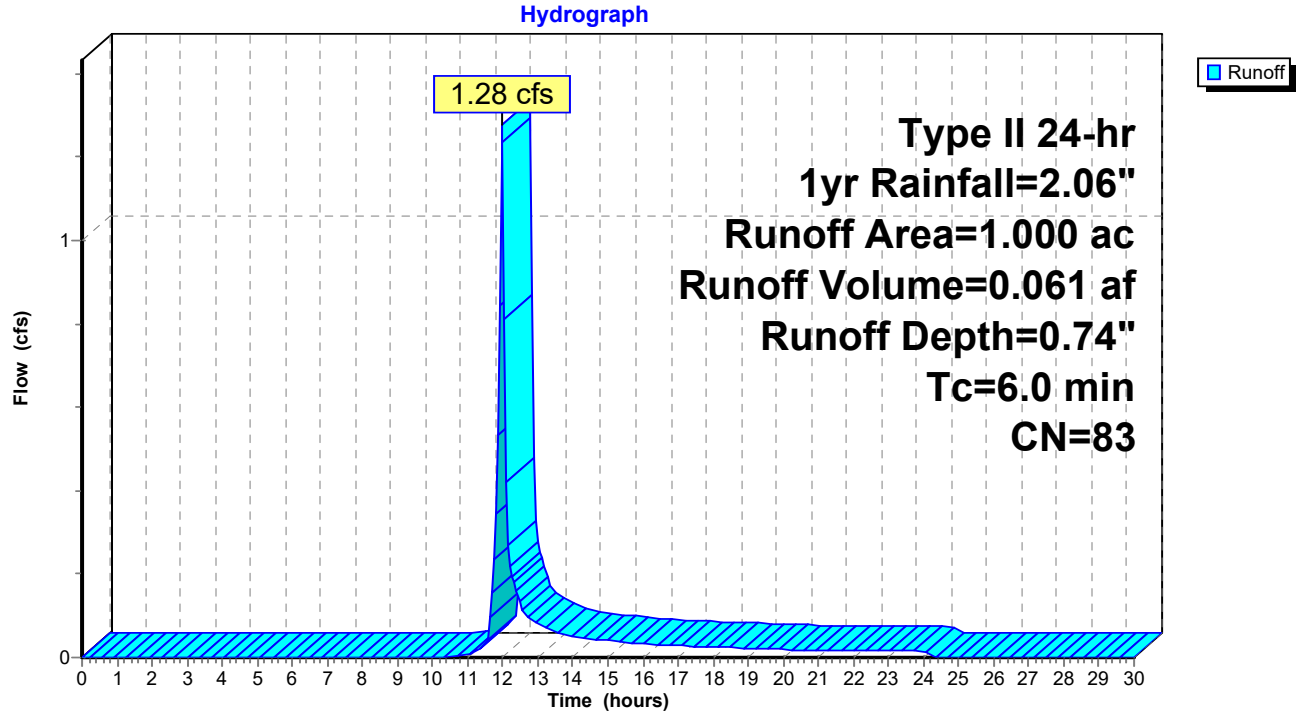
Runoff = 1.28 cfs @ 11.98 hrs, Volume= 0.061 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	1.000	83	WEIGHTED TR55
	1.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 5: DRAINAGE AREA 5



Summary for Subcatchment 6: DRAINAGE AREA 6

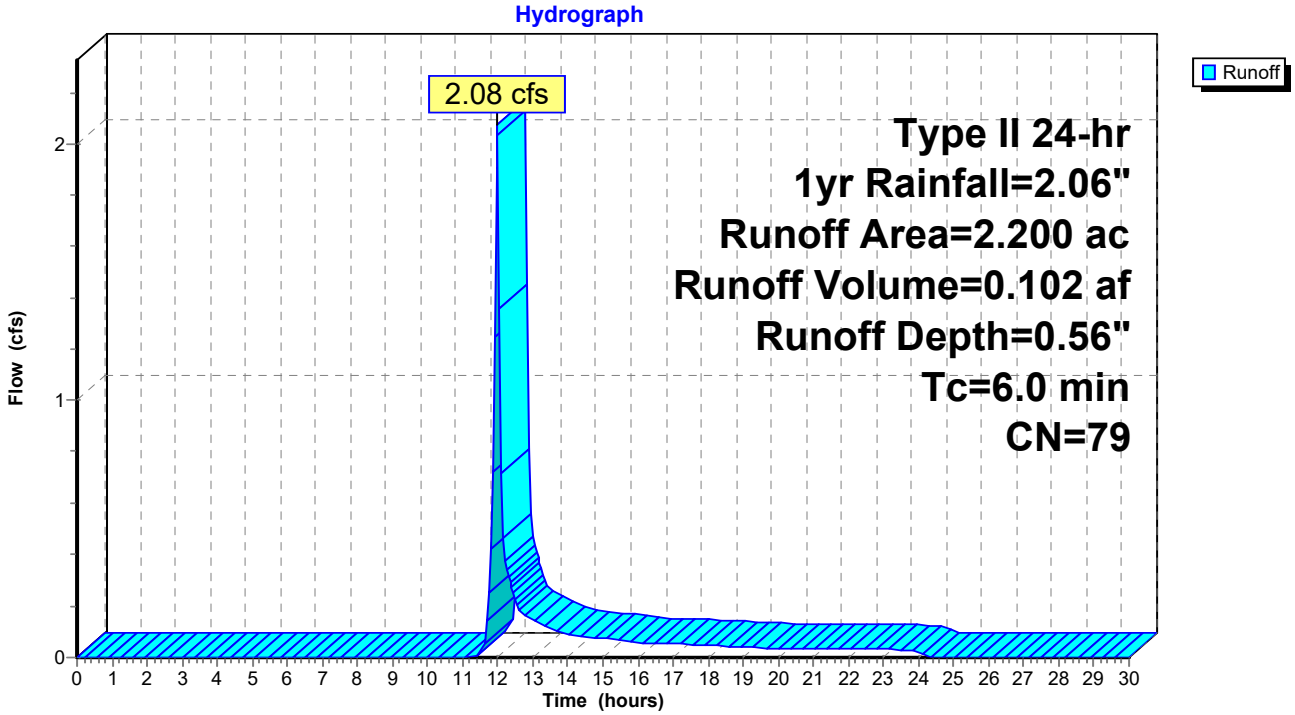
Runoff = 2.08 cfs @ 11.98 hrs, Volume= 0.102 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	2.200	79	WEIGHTED FROM TR55
	2.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 6: DRAINAGE AREA 6

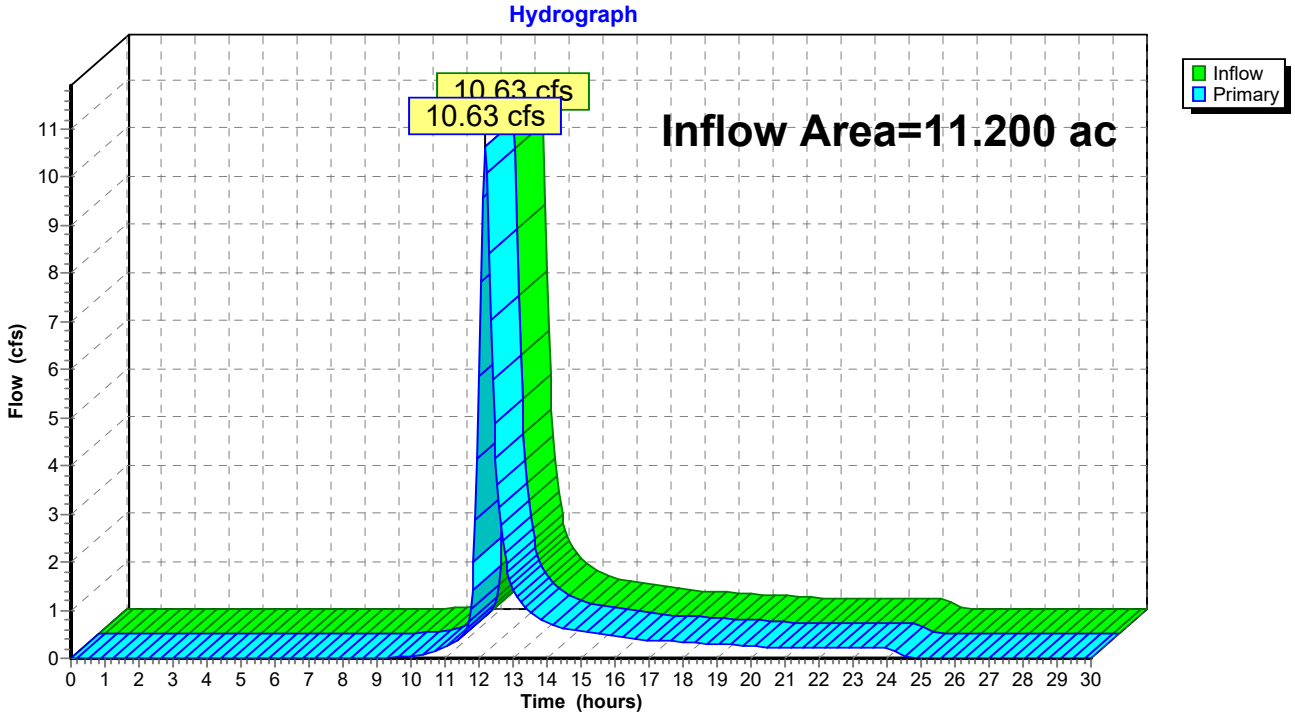


Summary for Link 1L: DP-1

Inflow Area = 11.200 ac, 0.00% Impervious, Inflow Depth = 0.95" for 1yr event
Inflow = 10.63 cfs @ 12.17 hrs, Volume= 0.889 af
Primary = 10.63 cfs @ 12.17 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP-1

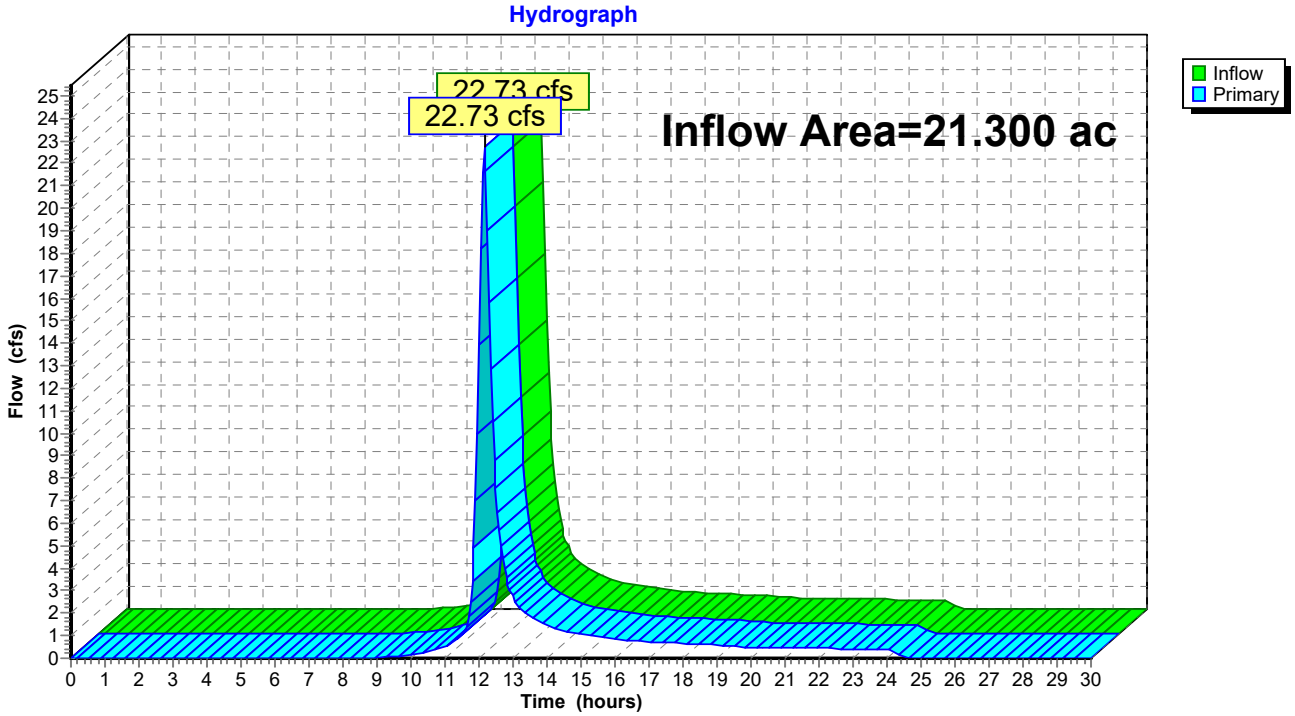


Summary for Link 2L: DP-2

Inflow Area = 21.300 ac, 0.00% Impervious, Inflow Depth = 1.01" for 1yr event
Inflow = 22.73 cfs @ 12.15 hrs, Volume= 1.799 af
Primary = 22.73 cfs @ 12.15 hrs, Volume= 1.799 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP-2

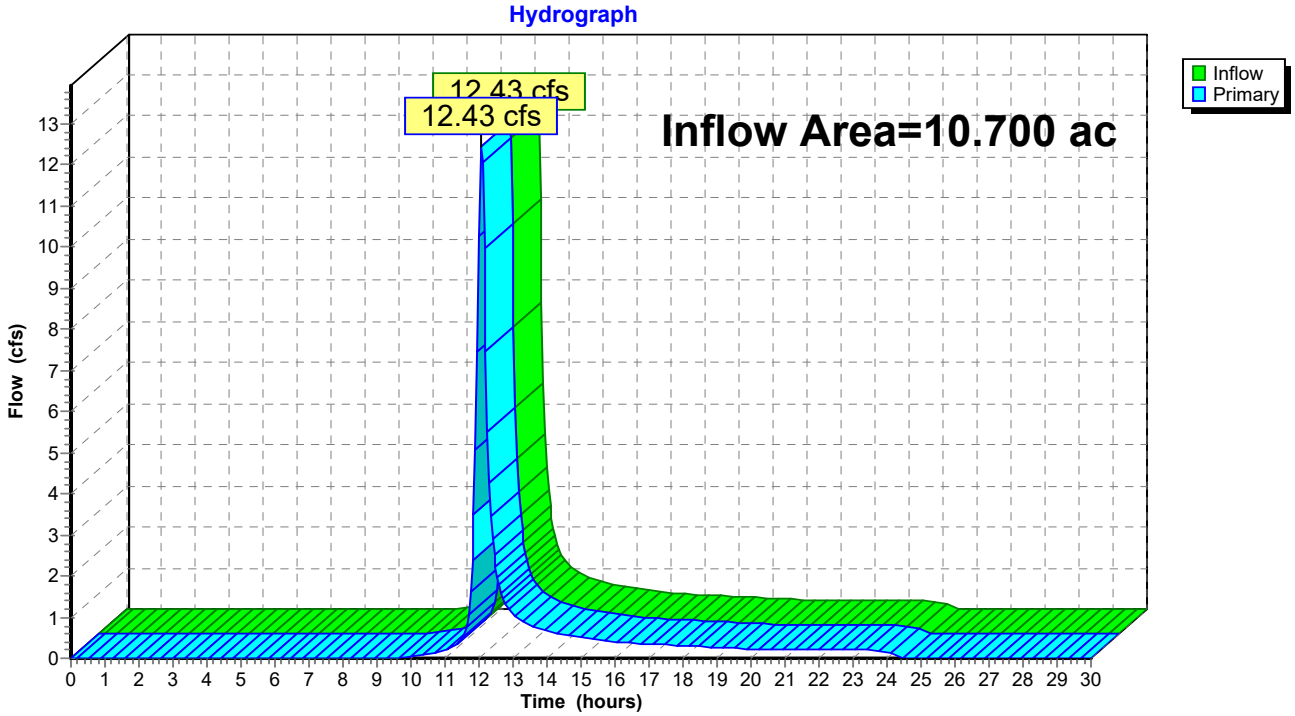


Summary for Link 3L: DP-3

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 0.89" for 1yr event
Inflow = 12.43 cfs @ 12.07 hrs, Volume= 0.798 af
Primary = 12.43 cfs @ 12.07 hrs, Volume= 0.798 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP-3

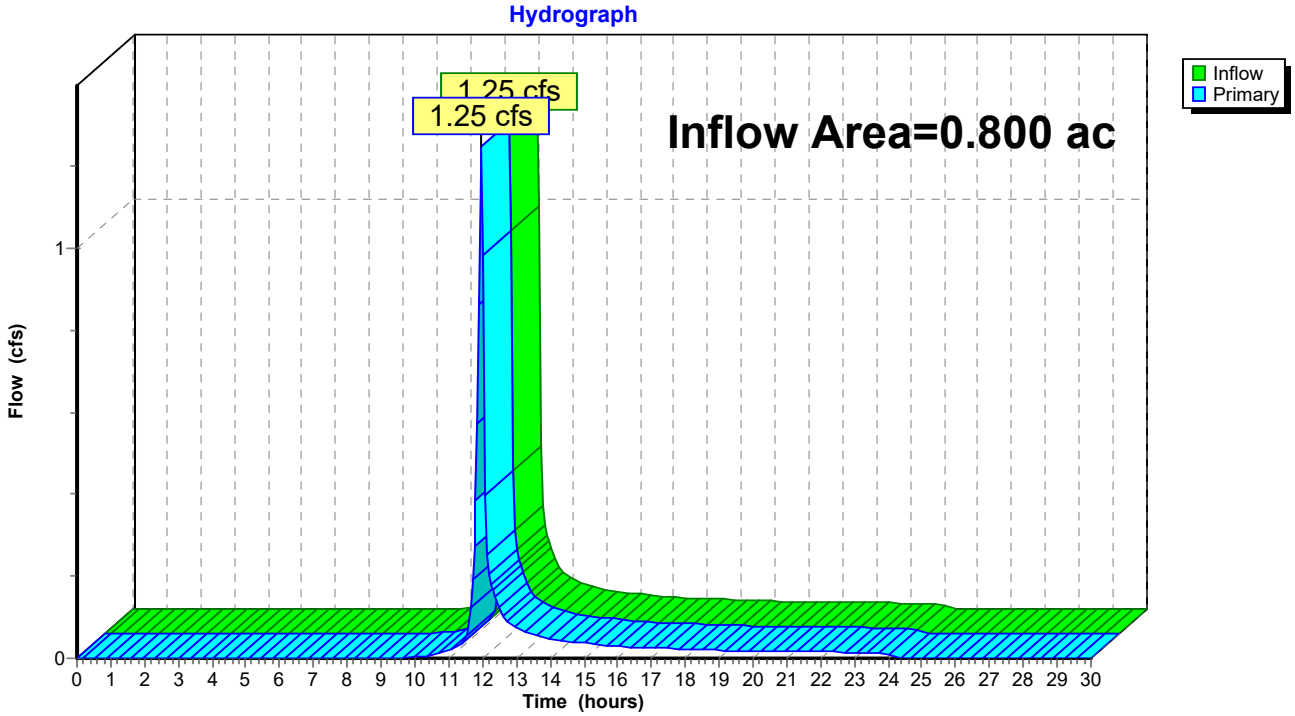


Summary for Link 4L: DP-4

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth = 0.89" for 1yr event
Inflow = 1.25 cfs @ 11.98 hrs, Volume= 0.060 af
Primary = 1.25 cfs @ 11.98 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP-4

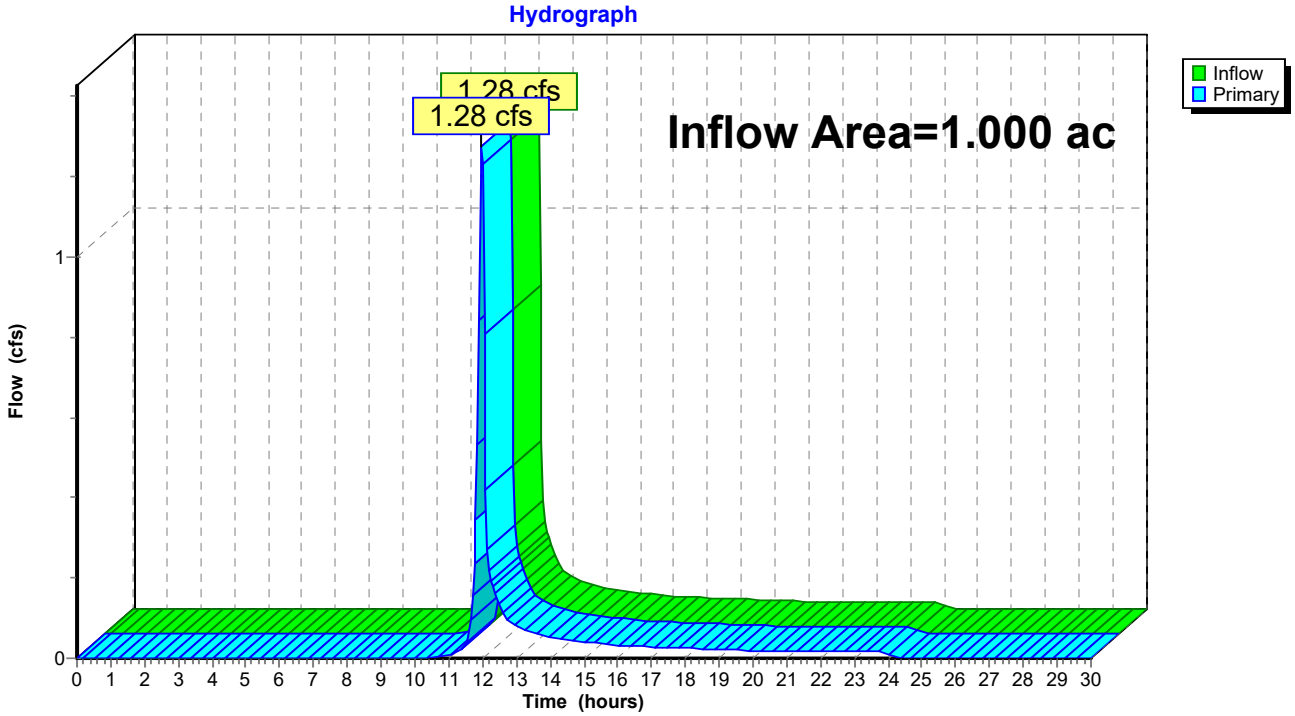


Summary for Link 5L: DP-5

Inflow Area = 1.000 ac, 0.00% Impervious, Inflow Depth = 0.74" for 1yr event
Inflow = 1.28 cfs @ 11.98 hrs, Volume= 0.061 af
Primary = 1.28 cfs @ 11.98 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP-5

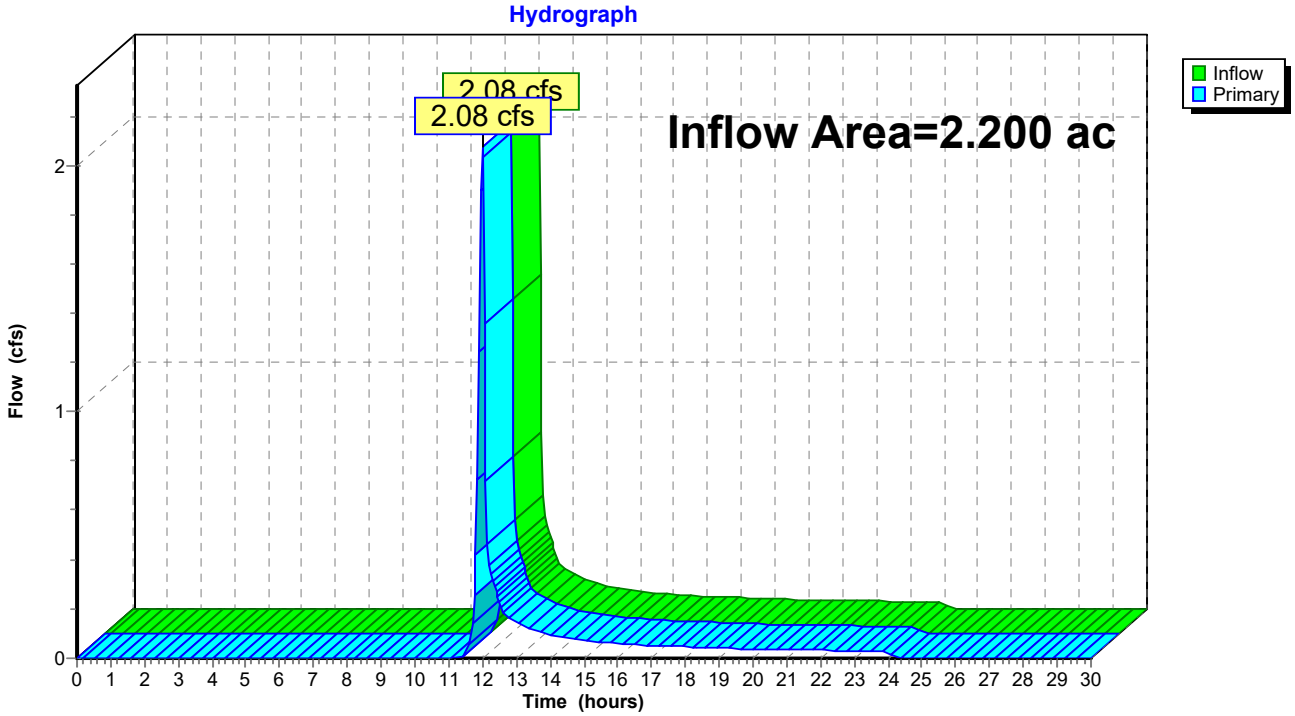


Summary for Link 6L: DP-6

Inflow Area = 2.200 ac, 0.00% Impervious, Inflow Depth = 0.56" for 1yr event
Inflow = 2.08 cfs @ 11.98 hrs, Volume= 0.102 af
Primary = 2.08 cfs @ 11.98 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP-6



Summary for Subcatchment 1: Drainage Area 1 - PRE

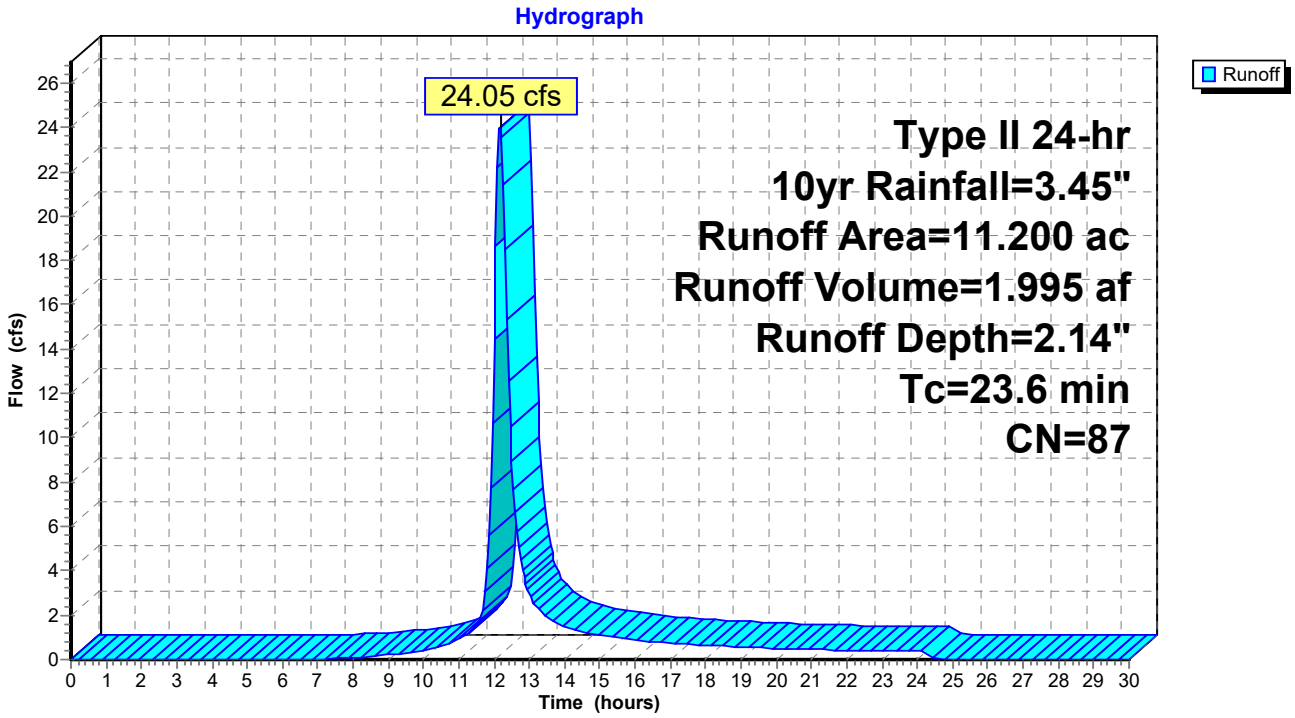
Runoff = 24.05 cfs @ 12.17 hrs, Volume= 1.995 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	10.990	87	Weighted CN from TR55
*	0.210	89	Roadway
	11.200	87	Weighted Average
	11.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.6					**Direct Entry, TR55**

Subcatchment 1: Drainage Area 1 - PRE



Summary for Subcatchment 2: Drainage Area 2 - PRE

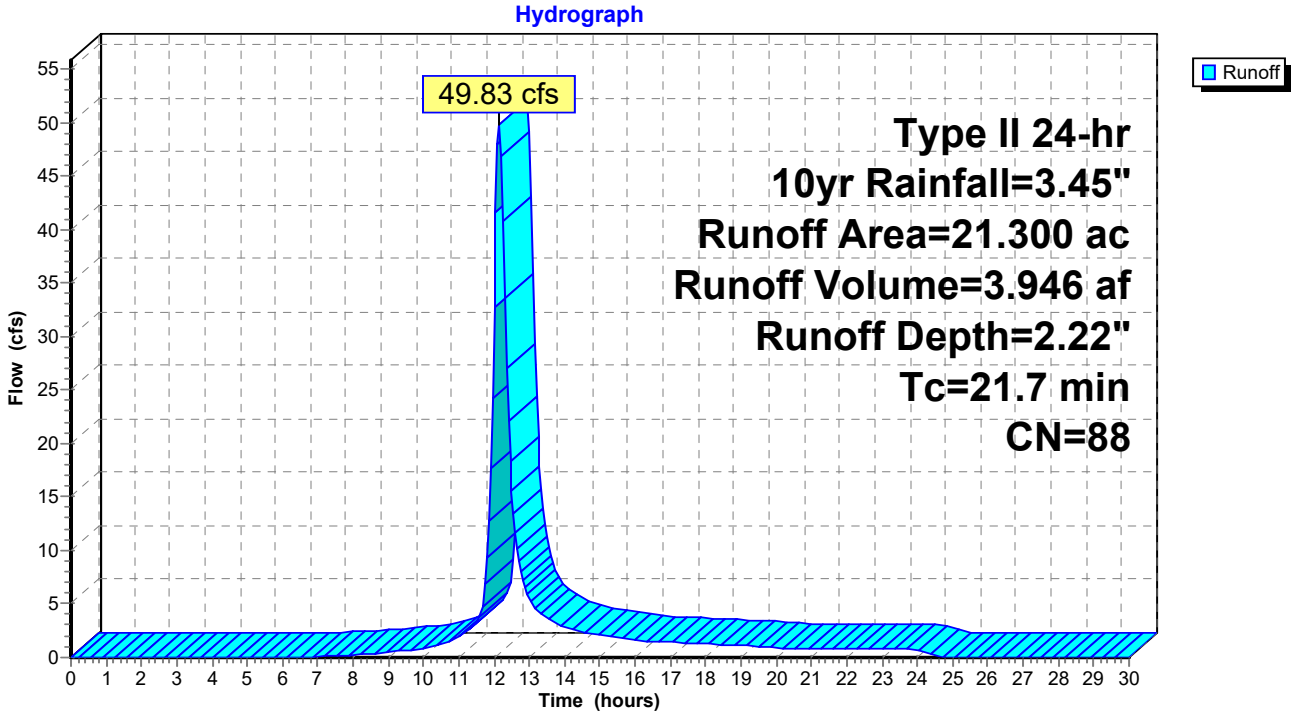
Runoff = 49.83 cfs @ 12.14 hrs, Volume= 3.946 af, Depth= 2.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	21.300	88	Weighted CN from TR55
	21.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7					**Direct Entry, TR55 Tc**

Subcatchment 2: Drainage Area 2 - PRE



Summary for Subcatchment 3: DRAINAGE AREA 3

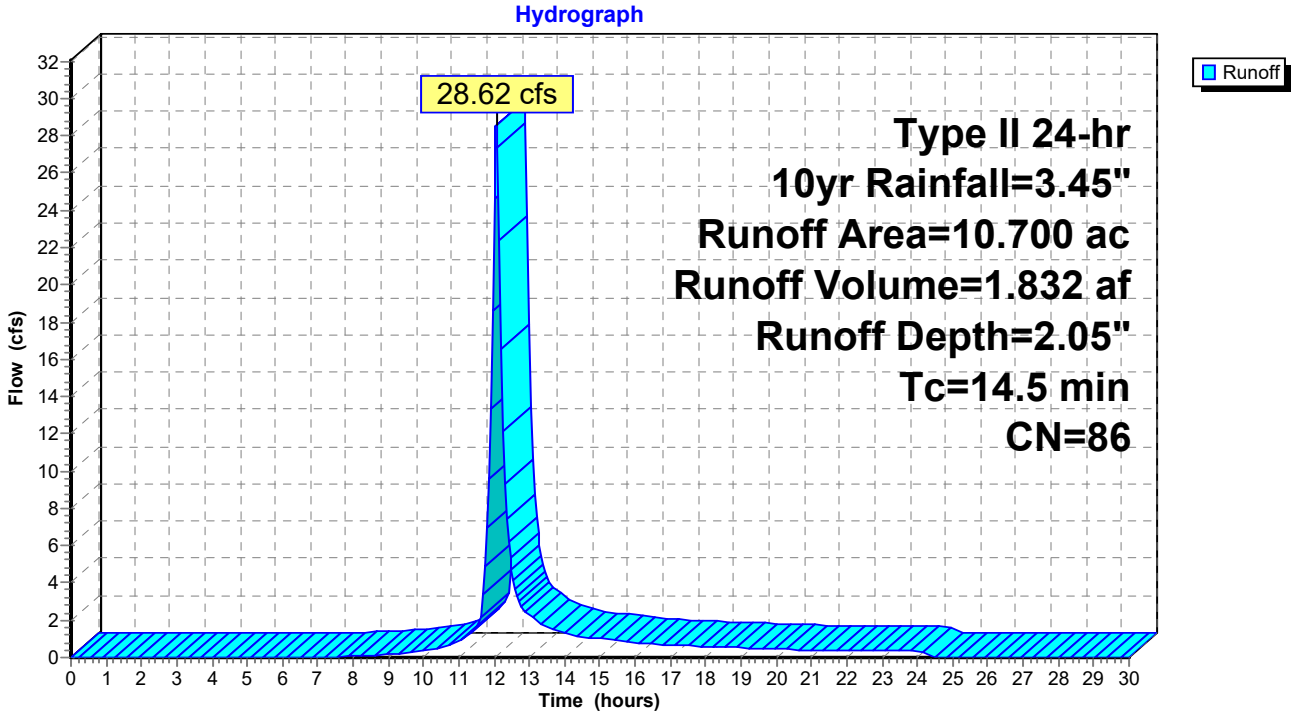
Runoff = 28.62 cfs @ 12.06 hrs, Volume= 1.832 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	10.700	86	WEIGHTED FROM TR55
	10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					**Direct Entry, TR55**

Subcatchment 3: DRAINAGE AREA 3



Summary for Subcatchment 4: DRAINAGE AREA 4

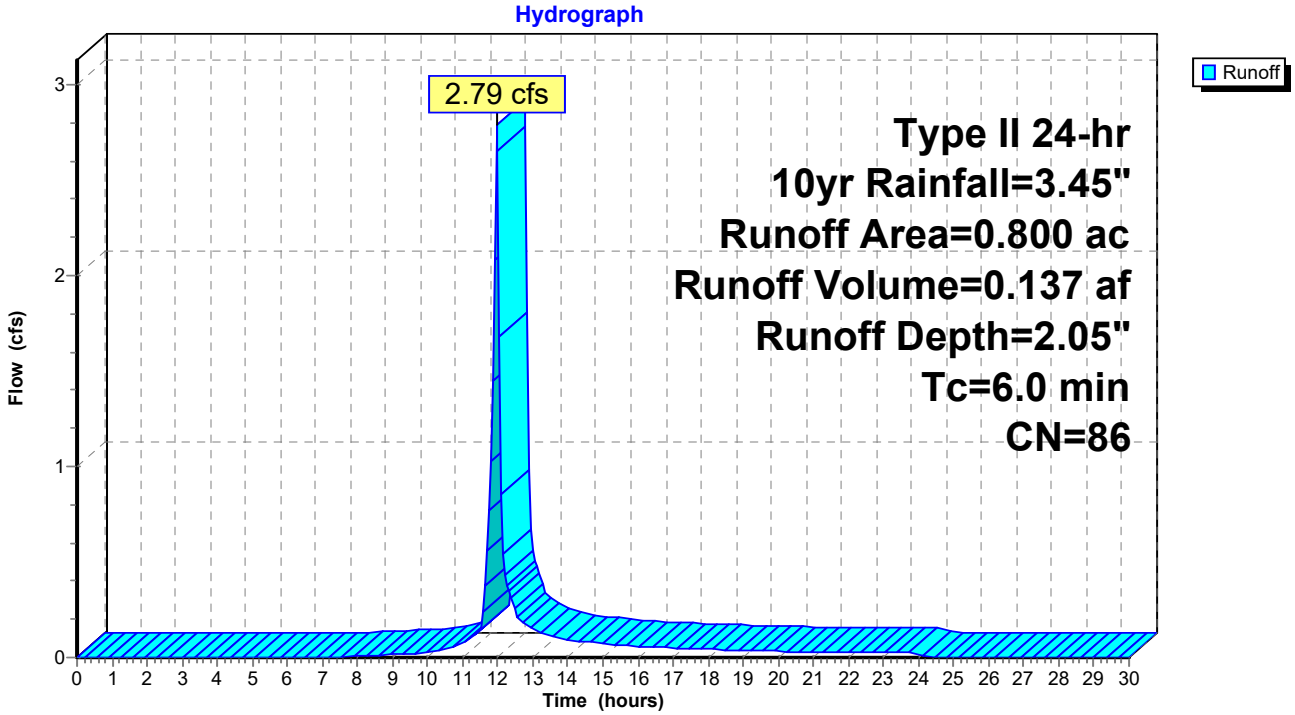
Runoff = 2.79 cfs @ 11.97 hrs, Volume= 0.137 af, Depth= 2.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	0.800	86	WEIGHTED FROM TR55
	0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 4: DRAINAGE AREA 4



Summary for Subcatchment 5: DRAINAGE AREA 5

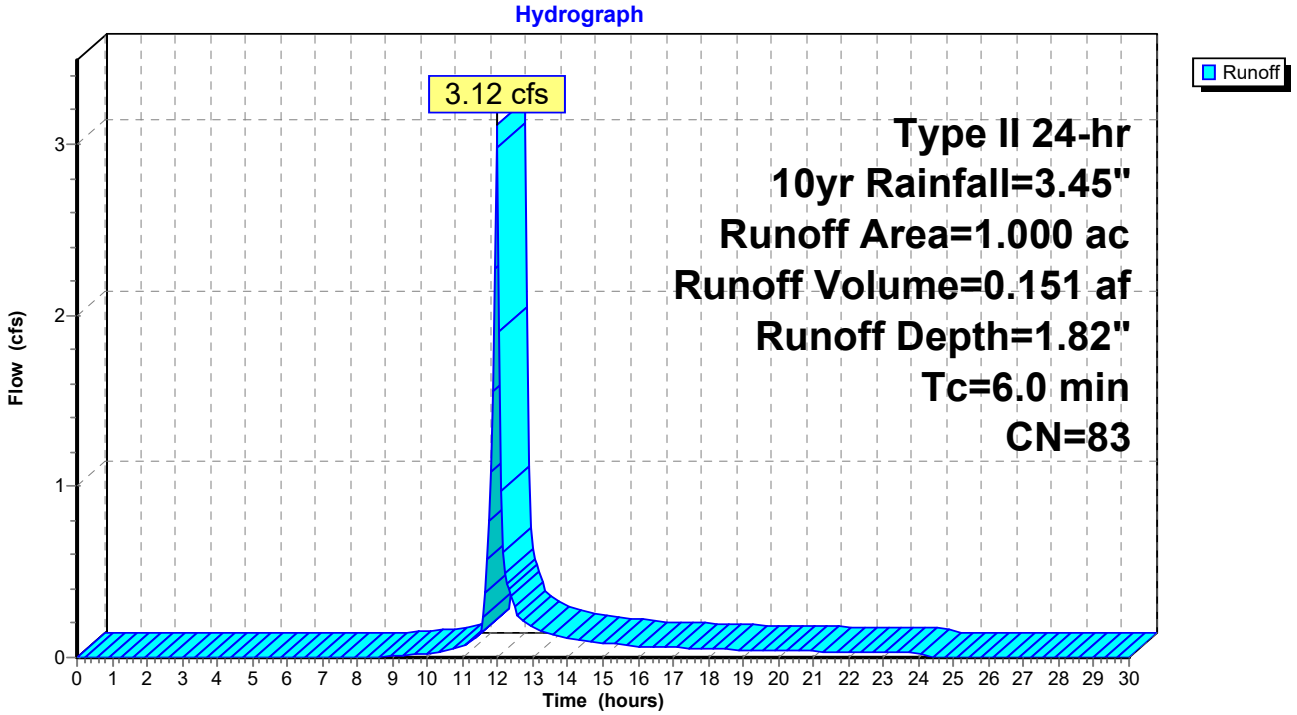
Runoff = 3.12 cfs @ 11.97 hrs, Volume= 0.151 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	1.000	83	WEIGHTED TR55
	1.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 5: DRAINAGE AREA 5



Summary for Subcatchment 6: DRAINAGE AREA 6

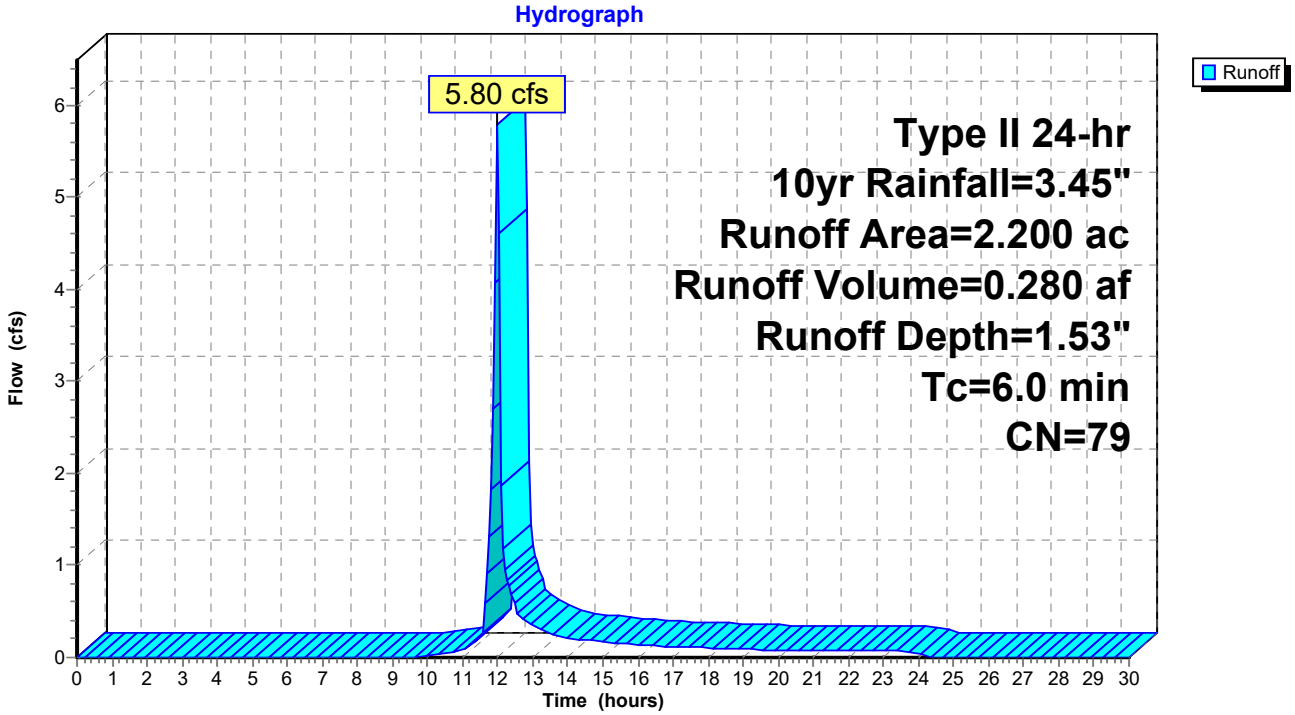
Runoff = 5.80 cfs @ 11.97 hrs, Volume= 0.280 af, Depth= 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	2.200	79	WEIGHTED FROM TR55
	2.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 6: DRAINAGE AREA 6

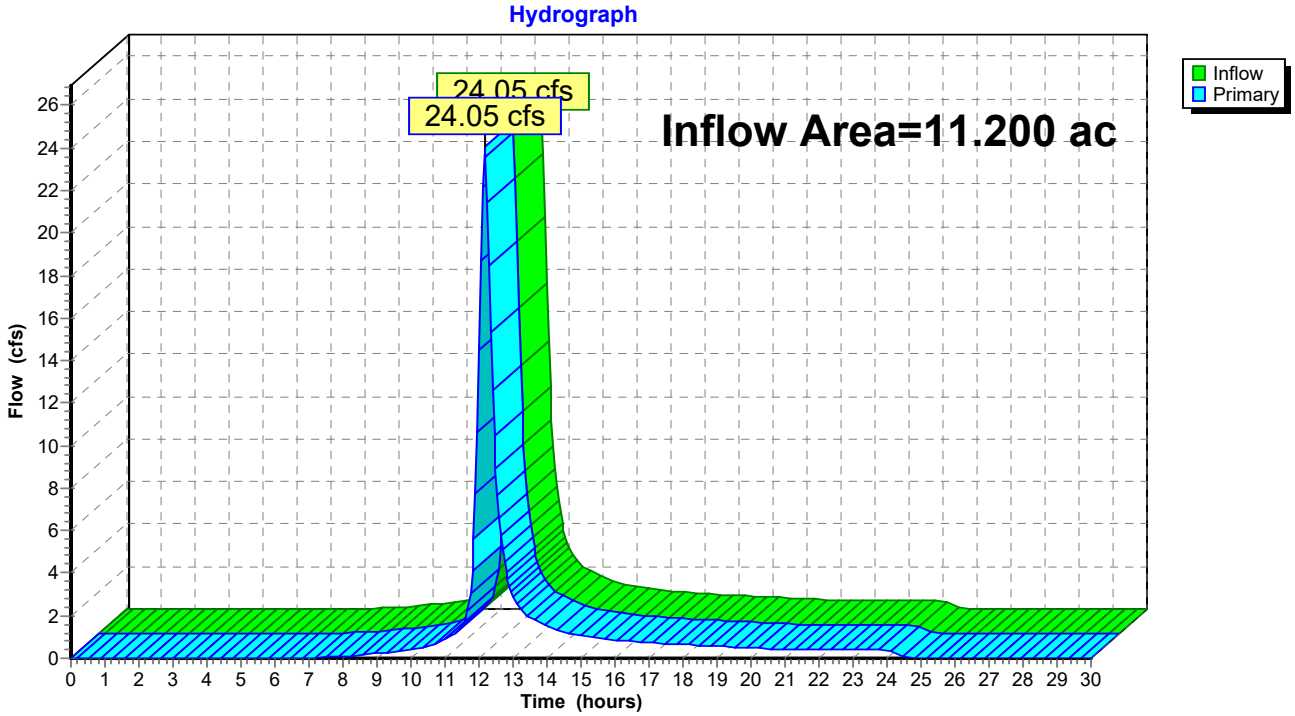


Summary for Link 1L: DP-1

Inflow Area = 11.200 ac, 0.00% Impervious, Inflow Depth = 2.14" for 10yr event
Inflow = 24.05 cfs @ 12.17 hrs, Volume= 1.995 af
Primary = 24.05 cfs @ 12.17 hrs, Volume= 1.995 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP-1

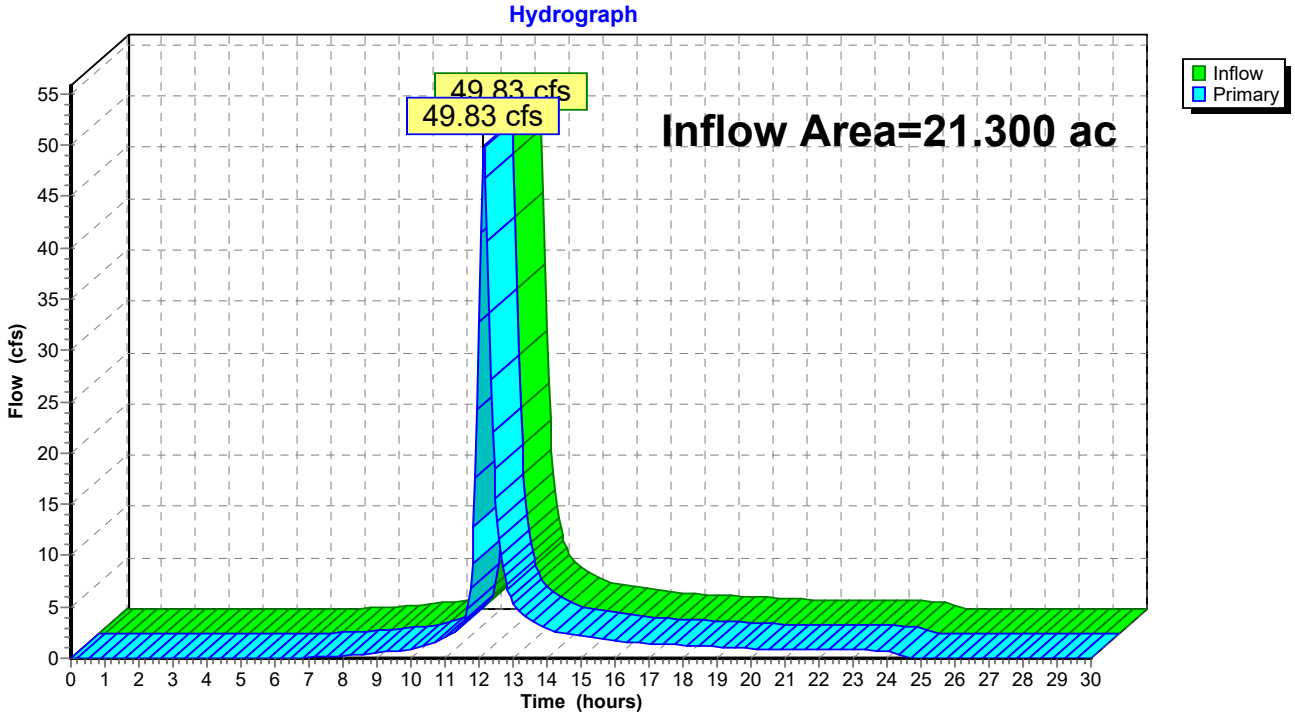


Summary for Link 2L: DP-2

Inflow Area = 21.300 ac, 0.00% Impervious, Inflow Depth = 2.22" for 10yr event
Inflow = 49.83 cfs @ 12.14 hrs, Volume= 3.946 af
Primary = 49.83 cfs @ 12.14 hrs, Volume= 3.946 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP-2

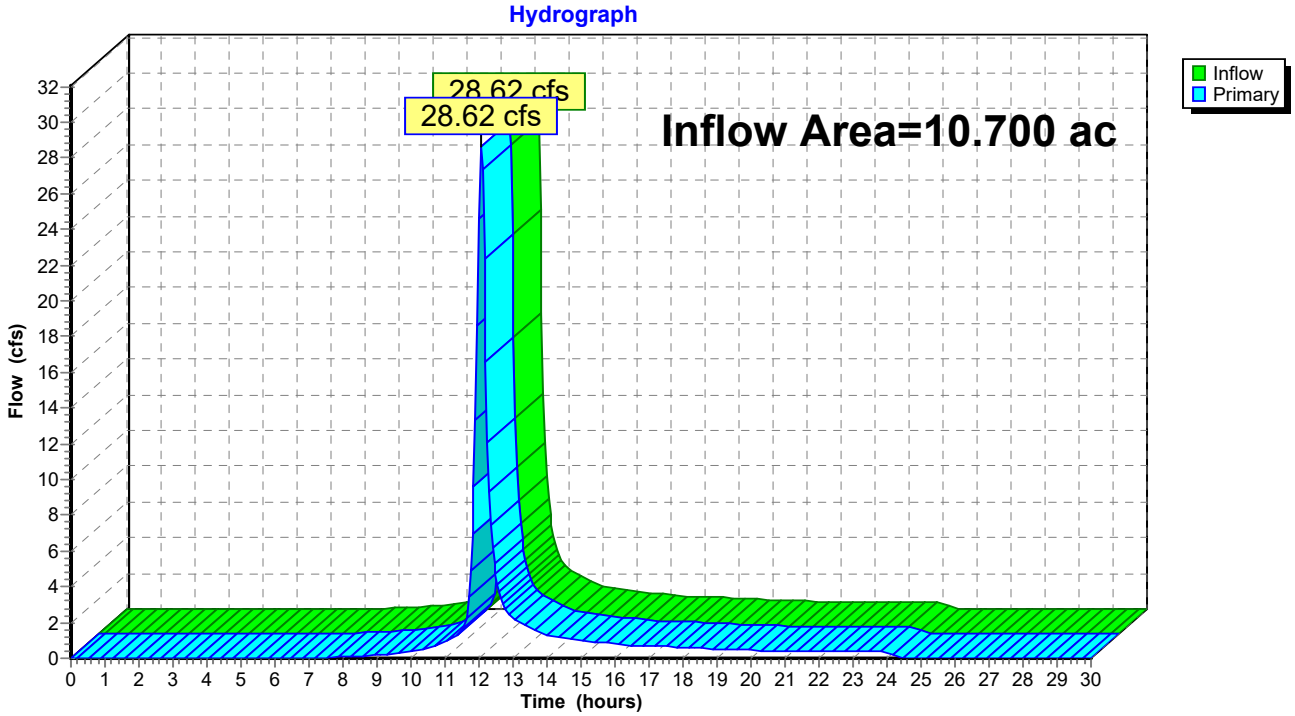


Summary for Link 3L: DP-3

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 2.05" for 10yr event
Inflow = 28.62 cfs @ 12.06 hrs, Volume= 1.832 af
Primary = 28.62 cfs @ 12.06 hrs, Volume= 1.832 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP-3

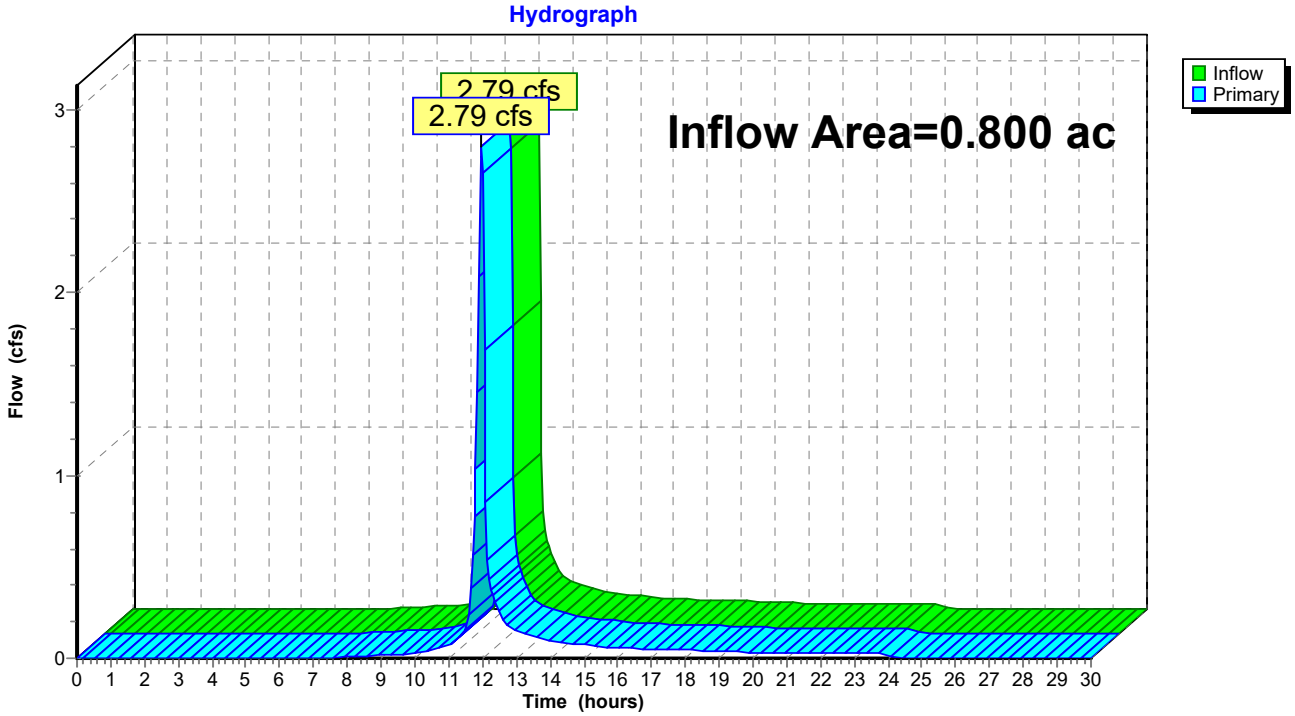


Summary for Link 4L: DP-4

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth = 2.05" for 10yr event
Inflow = 2.79 cfs @ 11.97 hrs, Volume= 0.137 af
Primary = 2.79 cfs @ 11.97 hrs, Volume= 0.137 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP-4

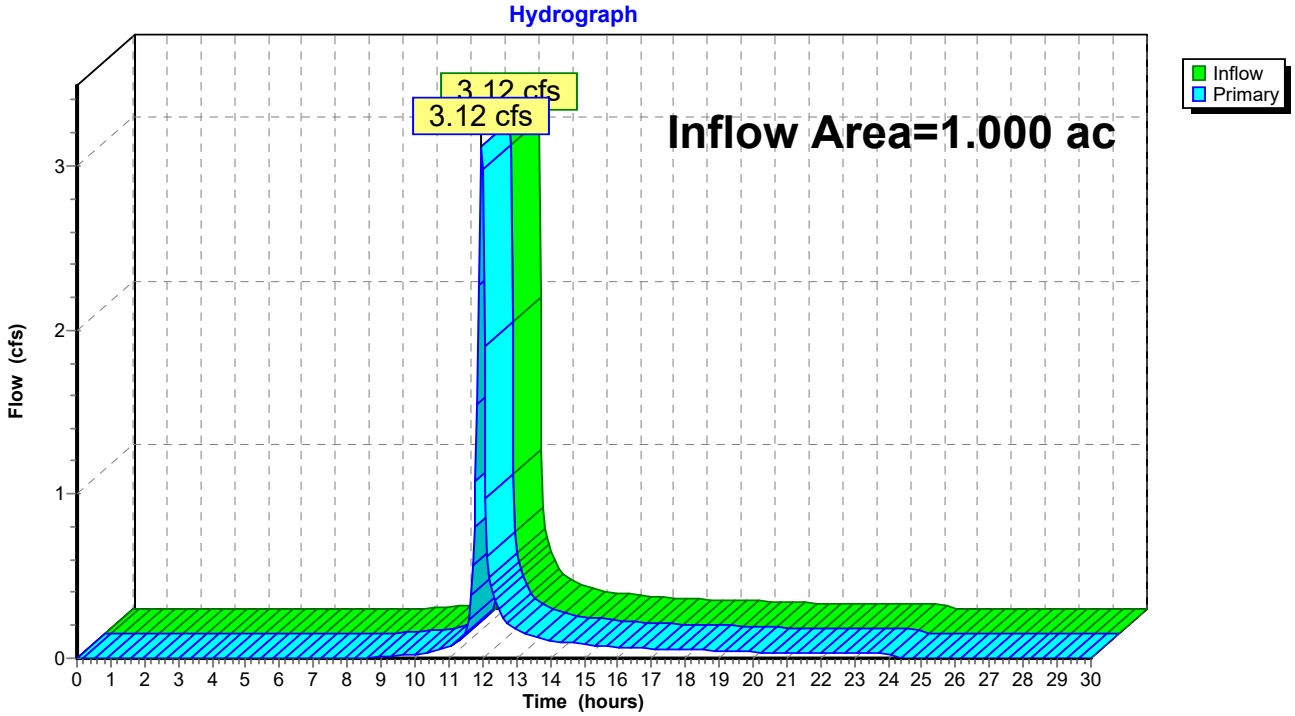


Summary for Link 5L: DP-5

Inflow Area = 1.000 ac, 0.00% Impervious, Inflow Depth = 1.82" for 10yr event
Inflow = 3.12 cfs @ 11.97 hrs, Volume= 0.151 af
Primary = 3.12 cfs @ 11.97 hrs, Volume= 0.151 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP-5

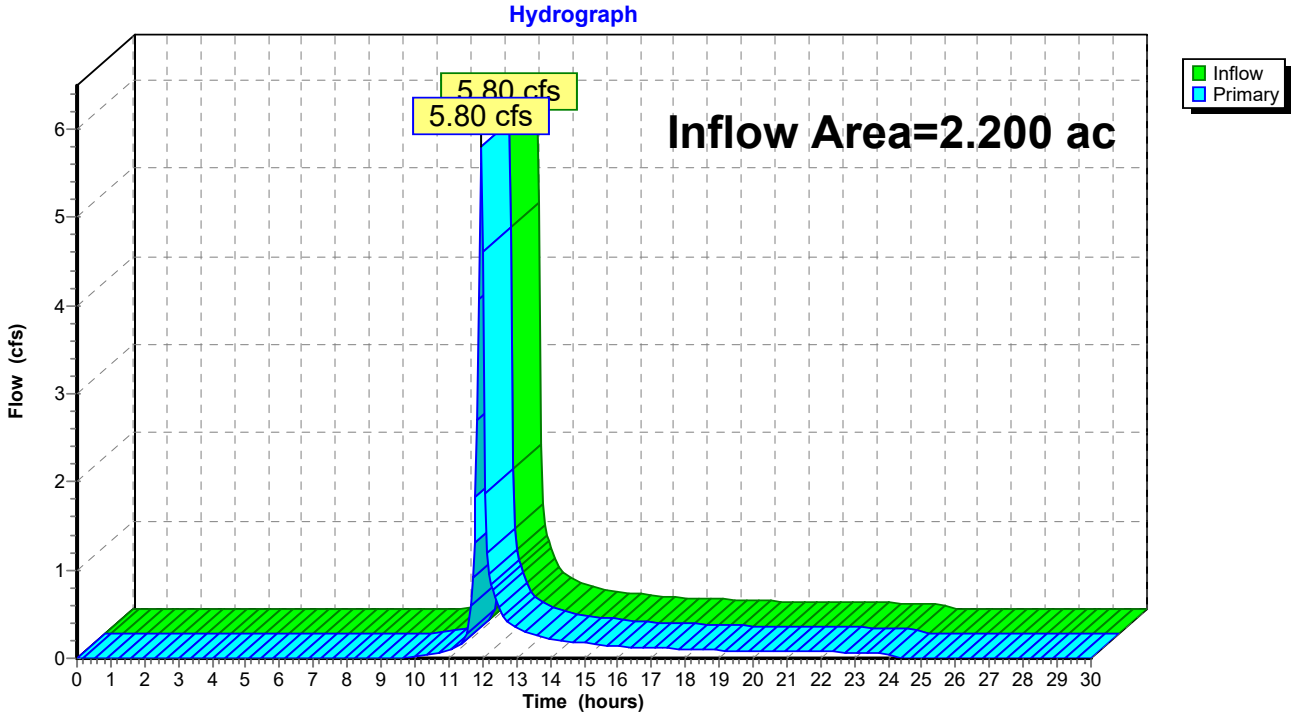


Summary for Link 6L: DP-6

Inflow Area = 2.200 ac, 0.00% Impervious, Inflow Depth = 1.53" for 10yr event
Inflow = 5.80 cfs @ 11.97 hrs, Volume= 0.280 af
Primary = 5.80 cfs @ 11.97 hrs, Volume= 0.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP-6



Summary for Subcatchment 1: Drainage Area 1 - PRE

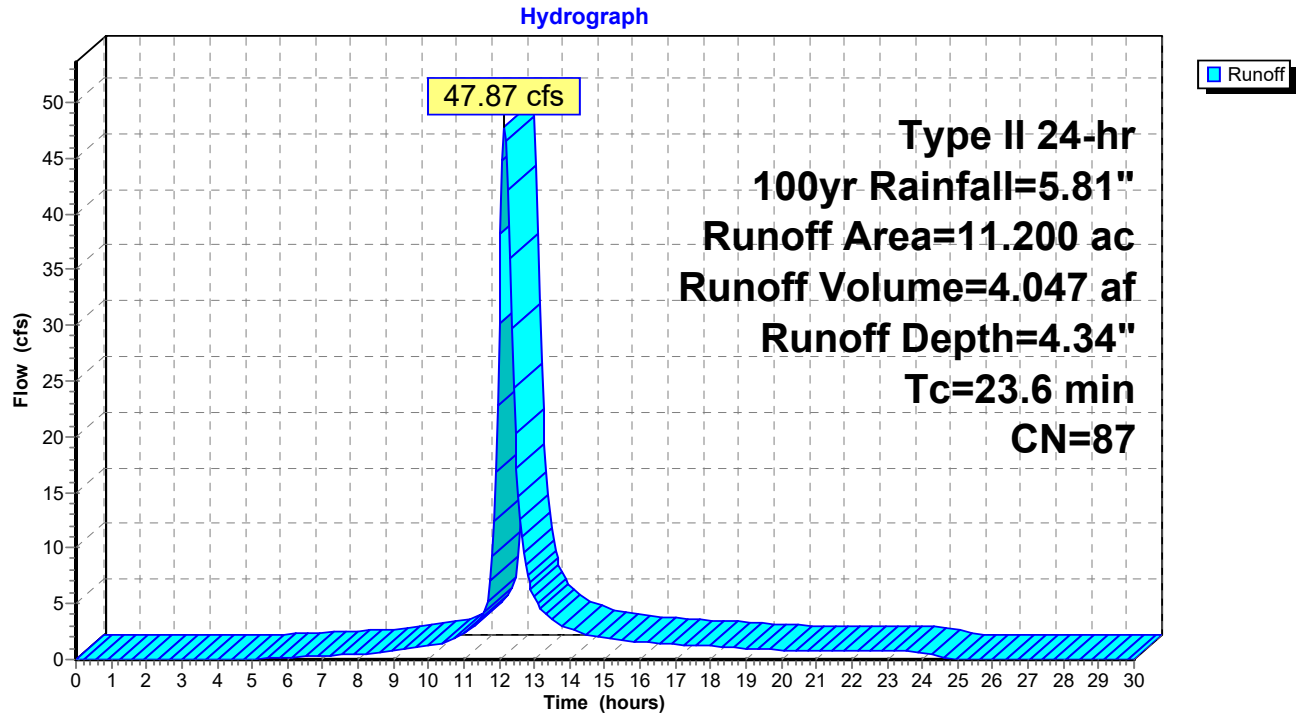
Runoff = 47.87 cfs @ 12.16 hrs, Volume= 4.047 af, Depth= 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	10.990	87	Weighted CN from TR55
*	0.210	89	Roadway
	11.200	87	Weighted Average
	11.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.6					**Direct Entry, TR55**

Subcatchment 1: Drainage Area 1 - PRE



Summary for Subcatchment 2: Drainage Area 2 - PRE

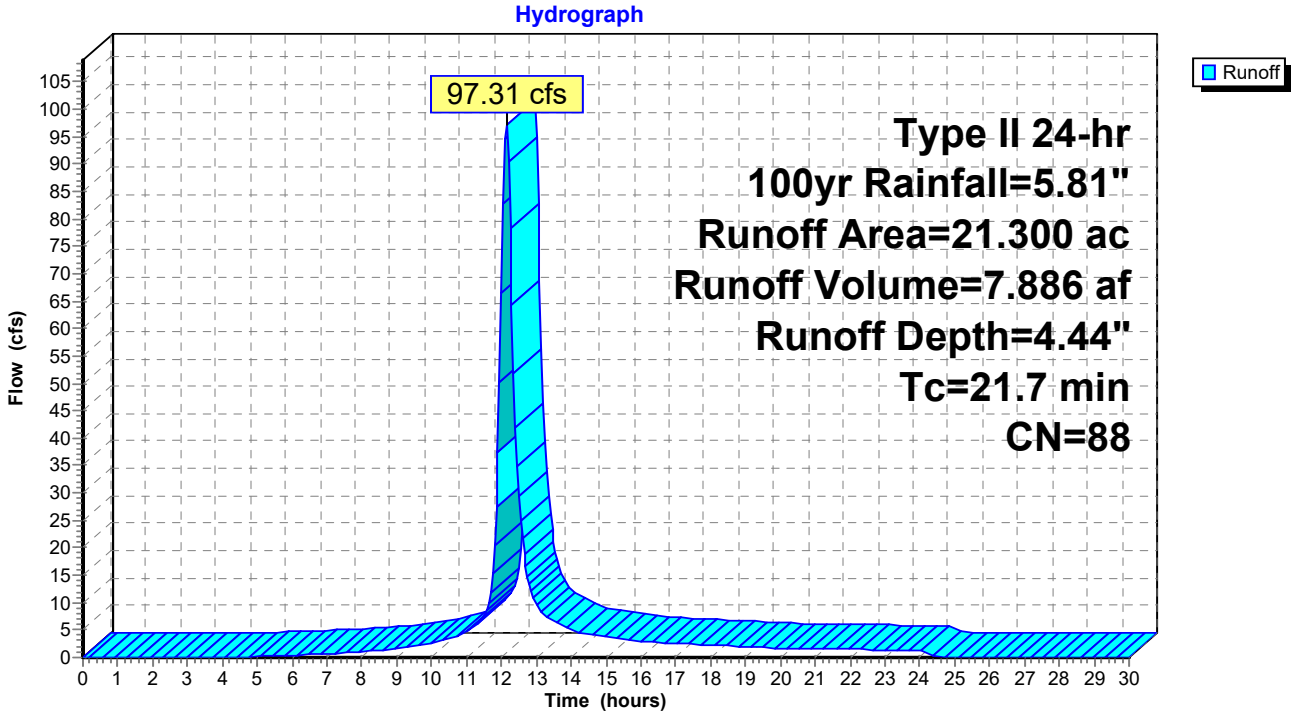
Runoff = 97.31 cfs @ 12.14 hrs, Volume= 7.886 af, Depth= 4.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	21.300	88	Weighted CN from TR55
	21.300		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7					**Direct Entry, TR55 Tc**

Subcatchment 2: Drainage Area 2 - PRE



Summary for Subcatchment 3: DRAINAGE AREA 3

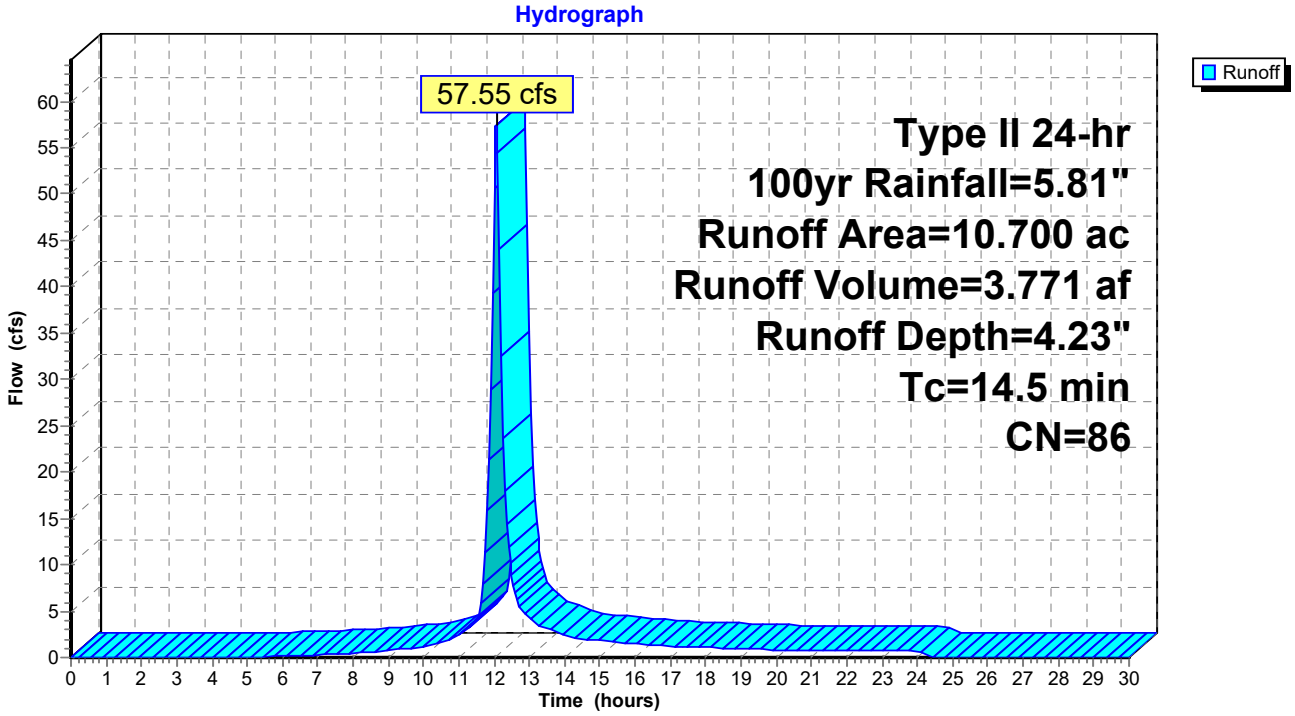
Runoff = 57.55 cfs @ 12.06 hrs, Volume= 3.771 af, Depth= 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	10.700	86	WEIGHTED FROM TR55
	10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5					**Direct Entry, TR55**

Subcatchment 3: DRAINAGE AREA 3



Summary for Subcatchment 4: DRAINAGE AREA 4

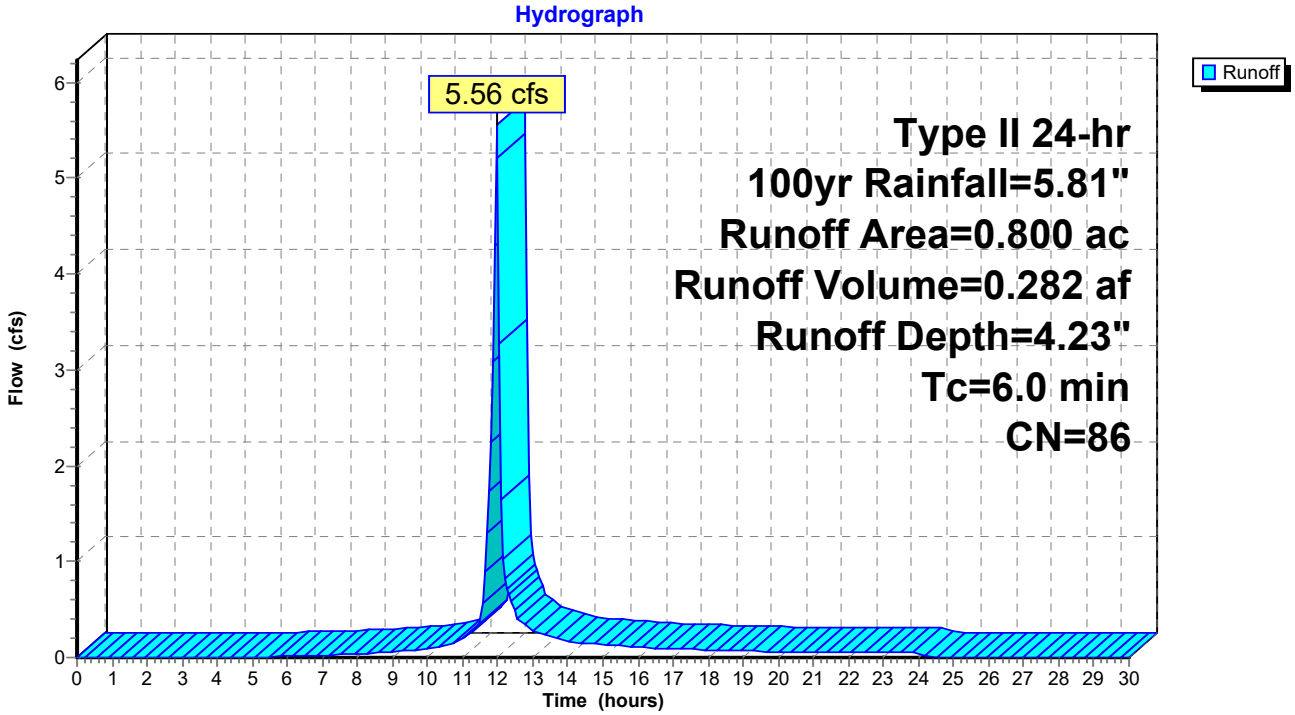
Runoff = 5.56 cfs @ 11.97 hrs, Volume= 0.282 af, Depth= 4.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	0.800	86	WEIGHTED FROM TR55
	0.800		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 4: DRAINAGE AREA 4



Summary for Subcatchment 5: DRAINAGE AREA 5

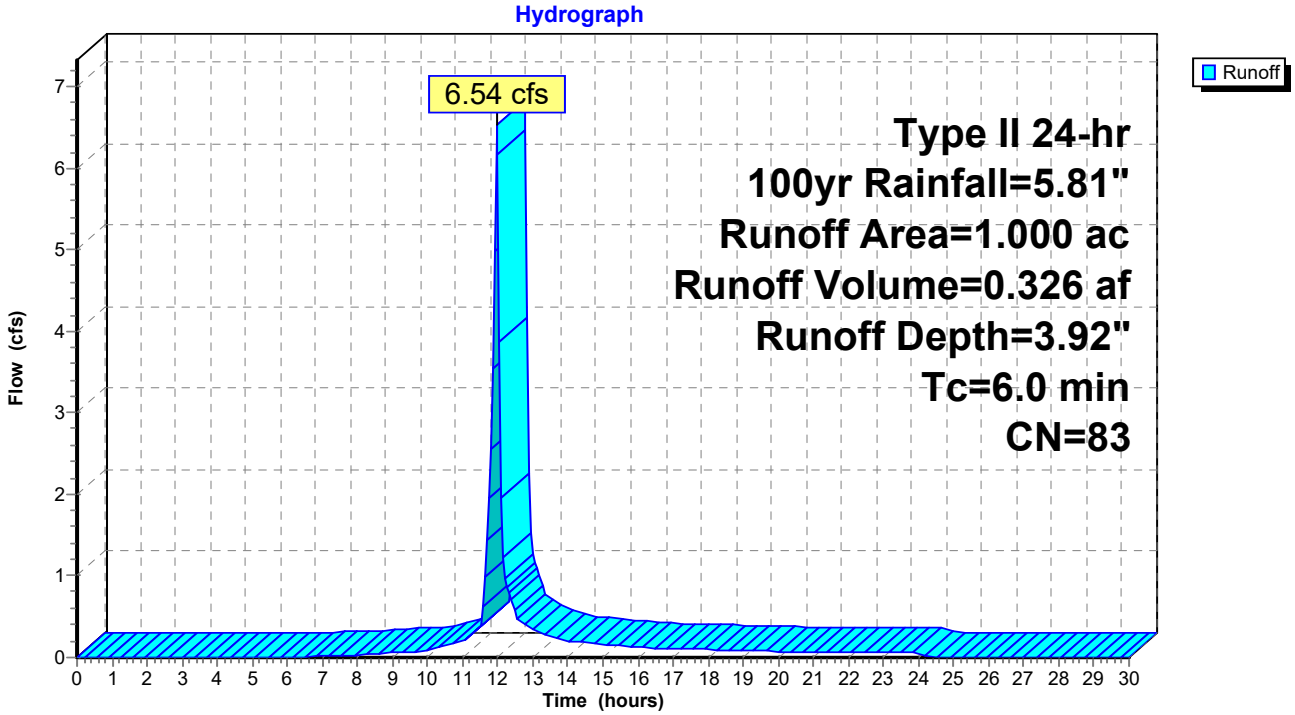
Runoff = 6.54 cfs @ 11.97 hrs, Volume= 0.326 af, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	1.000	83	WEIGHTED TR55
	1.000		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 5: DRAINAGE AREA 5



Summary for Subcatchment 6: DRAINAGE AREA 6

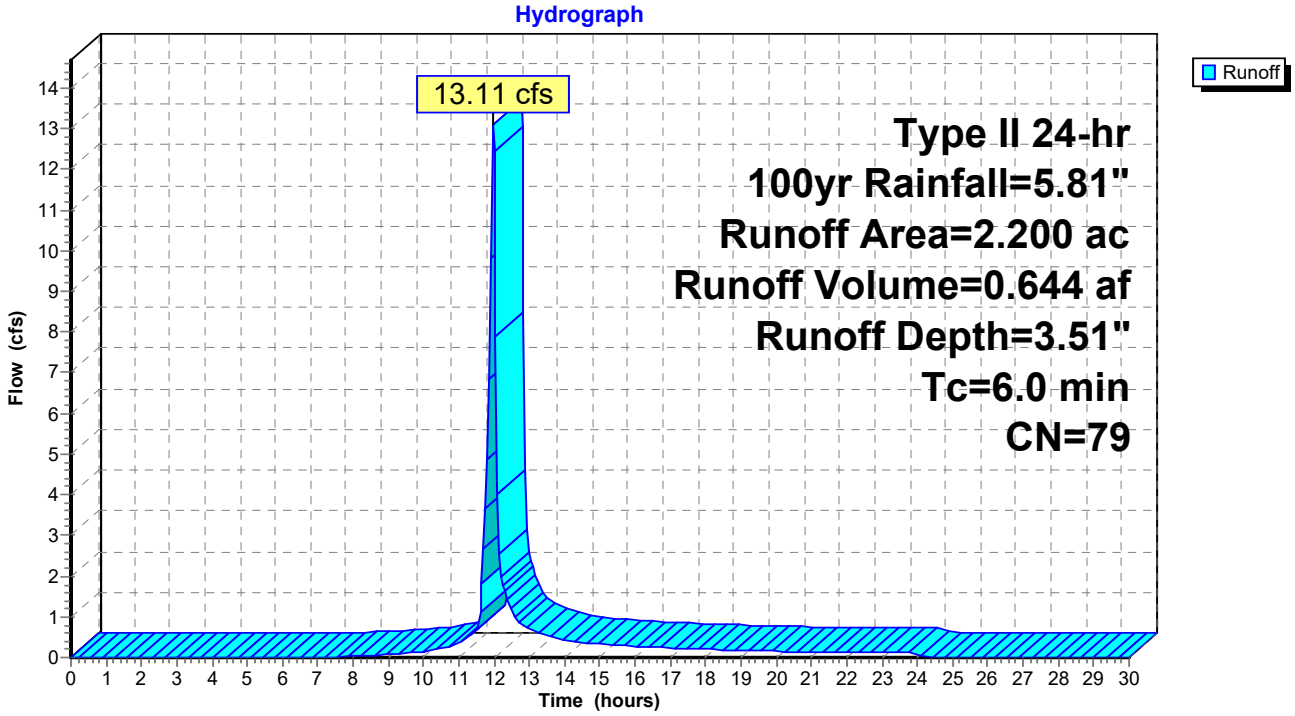
Runoff = 13.11 cfs @ 11.97 hrs, Volume= 0.644 af, Depth= 3.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	2.200	79	WEIGHTED FROM TR55
	2.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR55**

Subcatchment 6: DRAINAGE AREA 6

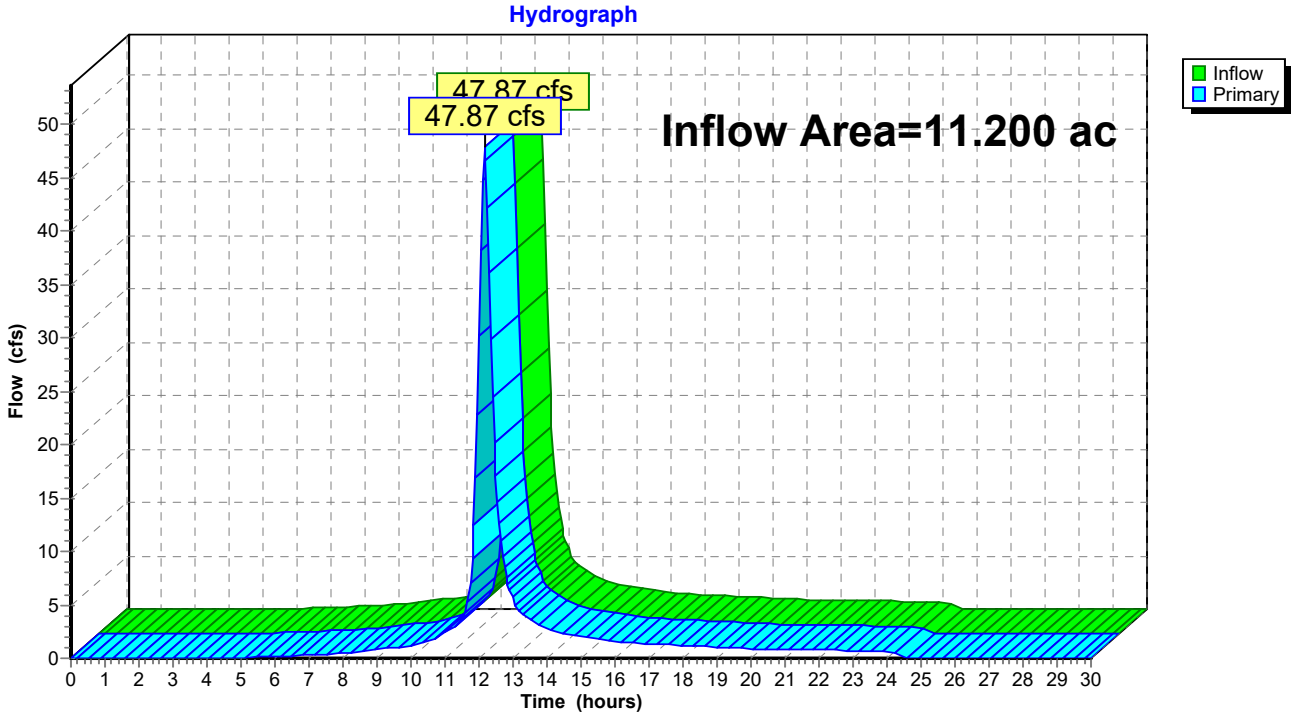


Summary for Link 1L: DP-1

Inflow Area = 11.200 ac, 0.00% Impervious, Inflow Depth = 4.34" for 100yr event
Inflow = 47.87 cfs @ 12.16 hrs, Volume= 4.047 af
Primary = 47.87 cfs @ 12.16 hrs, Volume= 4.047 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP-1

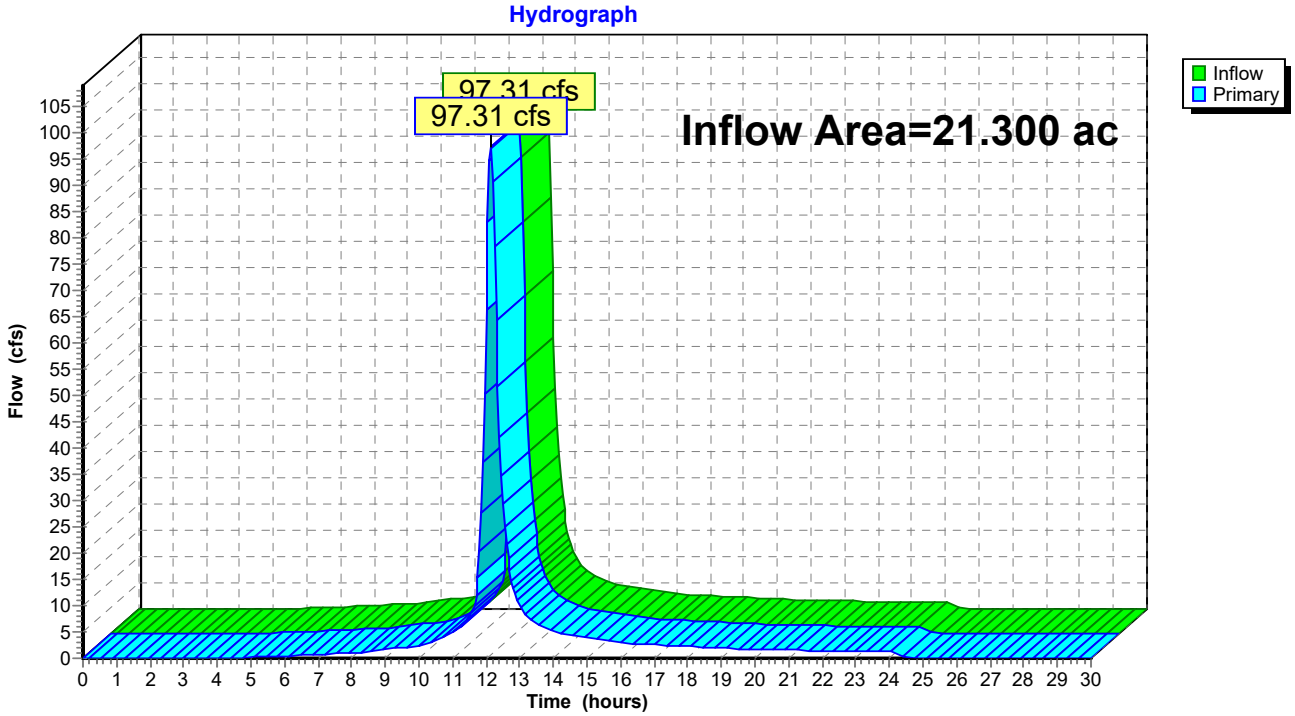


Summary for Link 2L: DP-2

Inflow Area = 21.300 ac, 0.00% Impervious, Inflow Depth = 4.44" for 100yr event
Inflow = 97.31 cfs @ 12.14 hrs, Volume= 7.886 af
Primary = 97.31 cfs @ 12.14 hrs, Volume= 7.886 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP-2

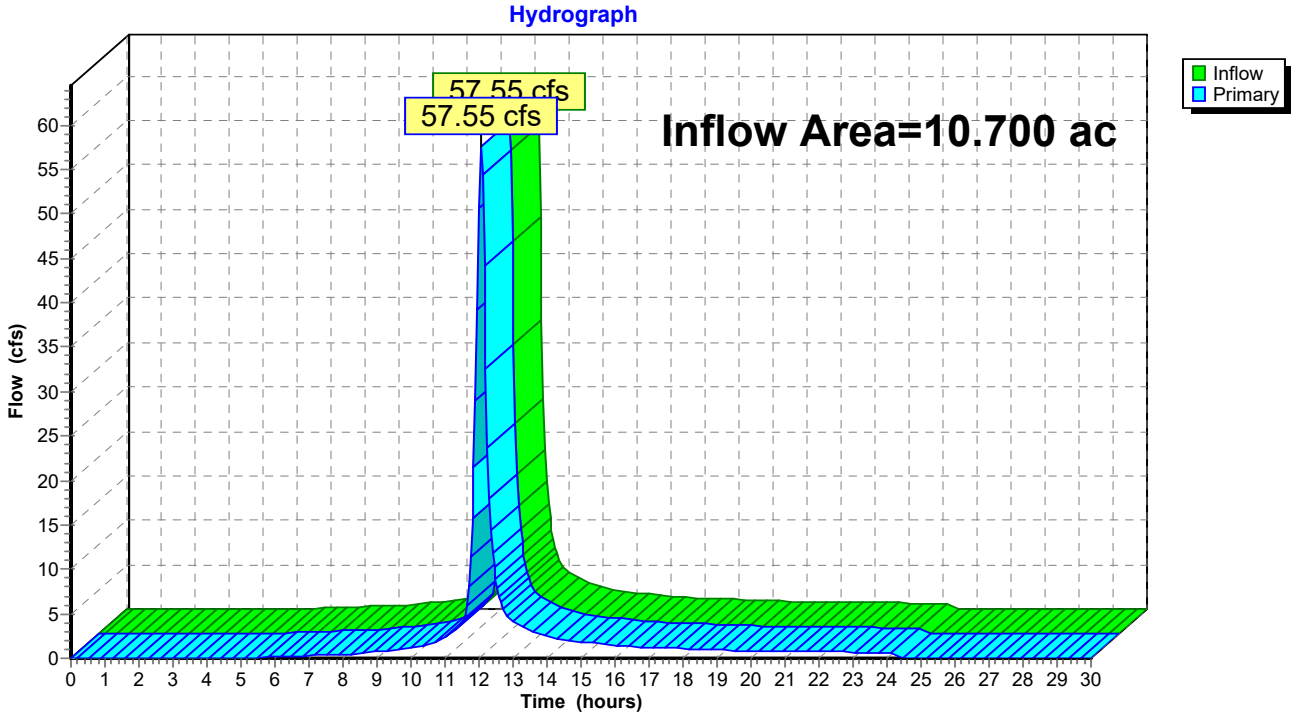


Summary for Link 3L: DP-3

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 4.23" for 100yr event
Inflow = 57.55 cfs @ 12.06 hrs, Volume= 3.771 af
Primary = 57.55 cfs @ 12.06 hrs, Volume= 3.771 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP-3

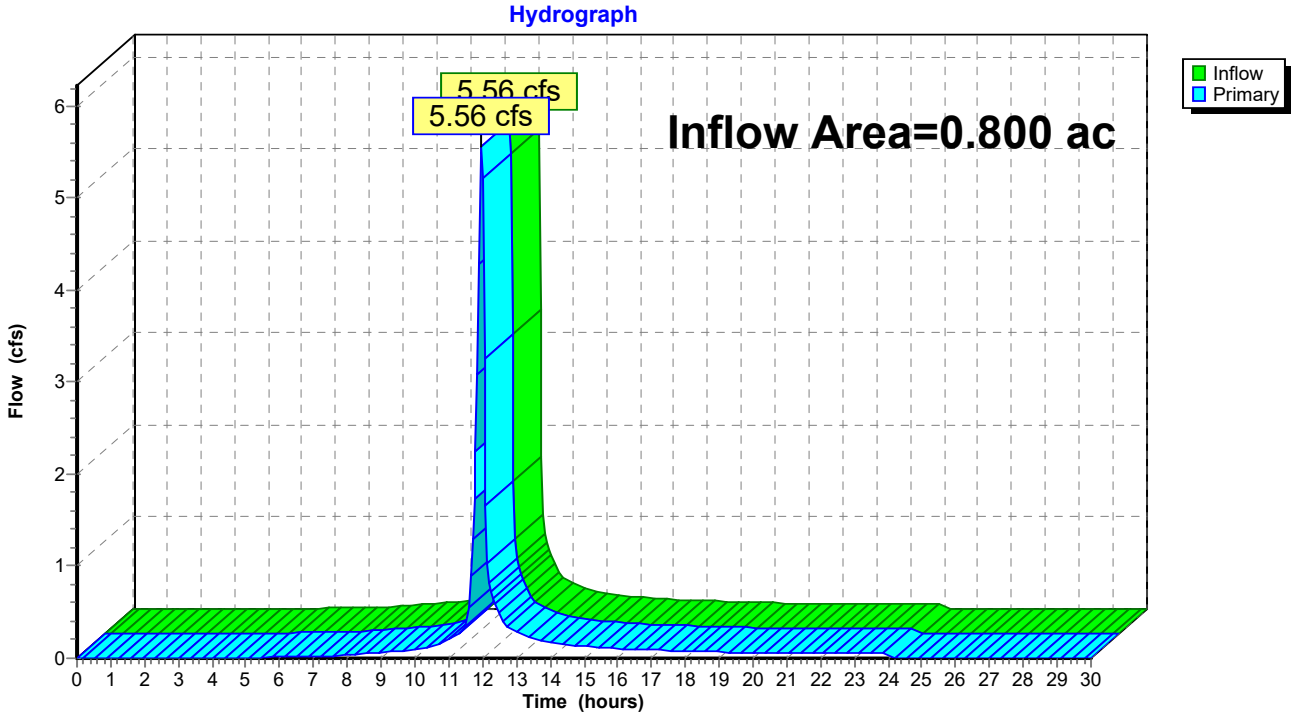


Summary for Link 4L: DP-4

Inflow Area = 0.800 ac, 0.00% Impervious, Inflow Depth = 4.23" for 100yr event
Inflow = 5.56 cfs @ 11.97 hrs, Volume= 0.282 af
Primary = 5.56 cfs @ 11.97 hrs, Volume= 0.282 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP-4

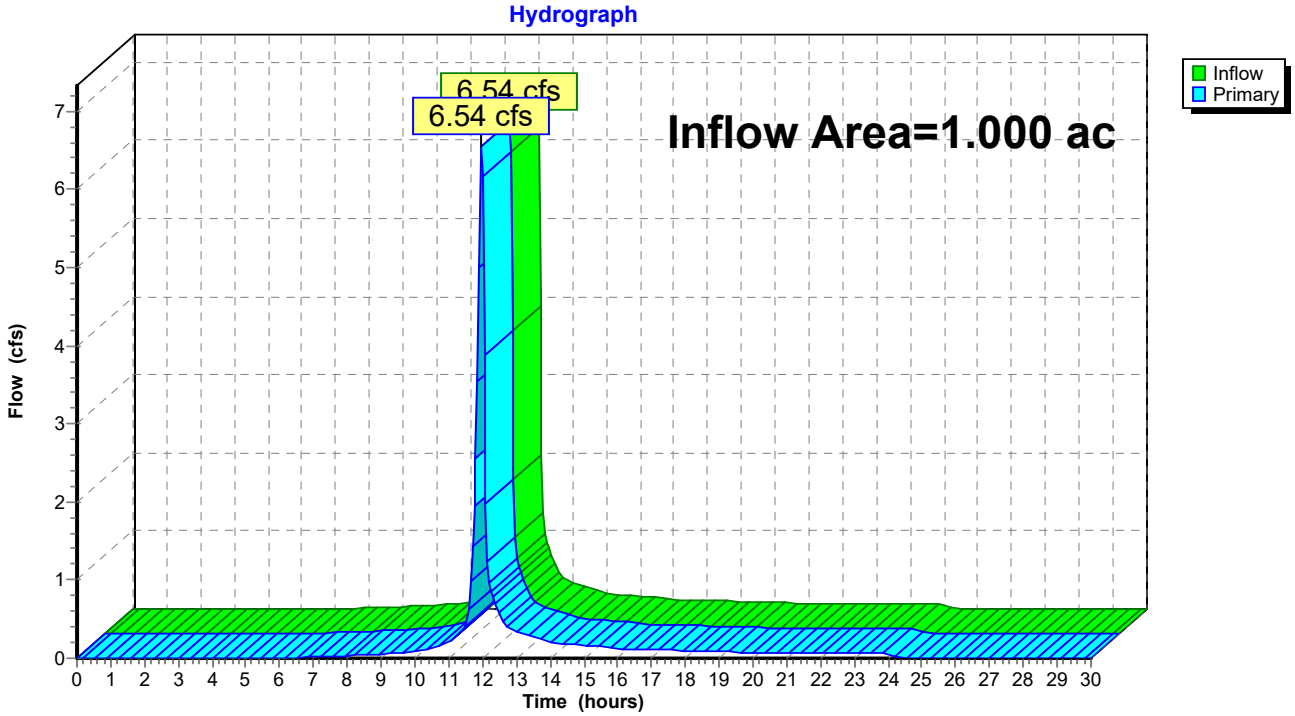


Summary for Link 5L: DP-5

Inflow Area = 1.000 ac, 0.00% Impervious, Inflow Depth = 3.92" for 100yr event
Inflow = 6.54 cfs @ 11.97 hrs, Volume= 0.326 af
Primary = 6.54 cfs @ 11.97 hrs, Volume= 0.326 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP-5

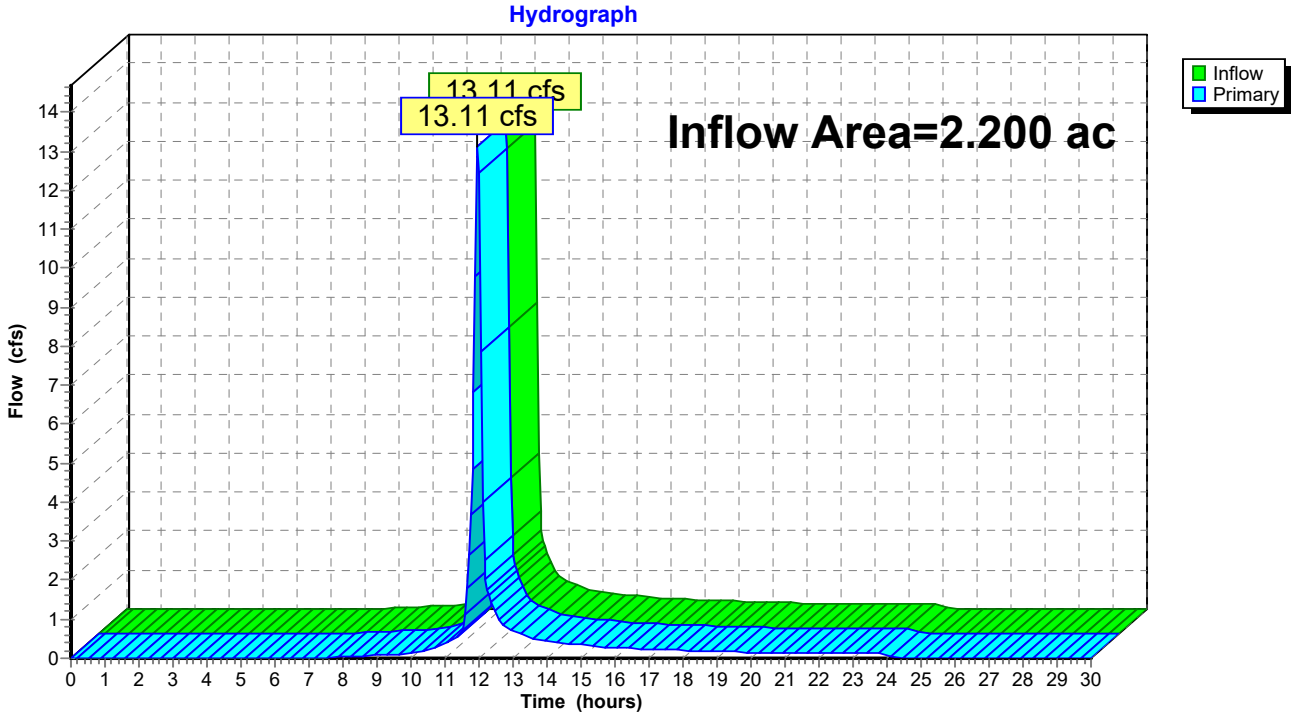


Summary for Link 6L: DP-6

Inflow Area = 2.200 ac, 0.00% Impervious, Inflow Depth = 3.51" for 100yr event
Inflow = 13.11 cfs @ 11.97 hrs, Volume= 0.644 af
Primary = 13.11 cfs @ 11.97 hrs, Volume= 0.644 af, Atten= 0%, Lag= 0.0 min

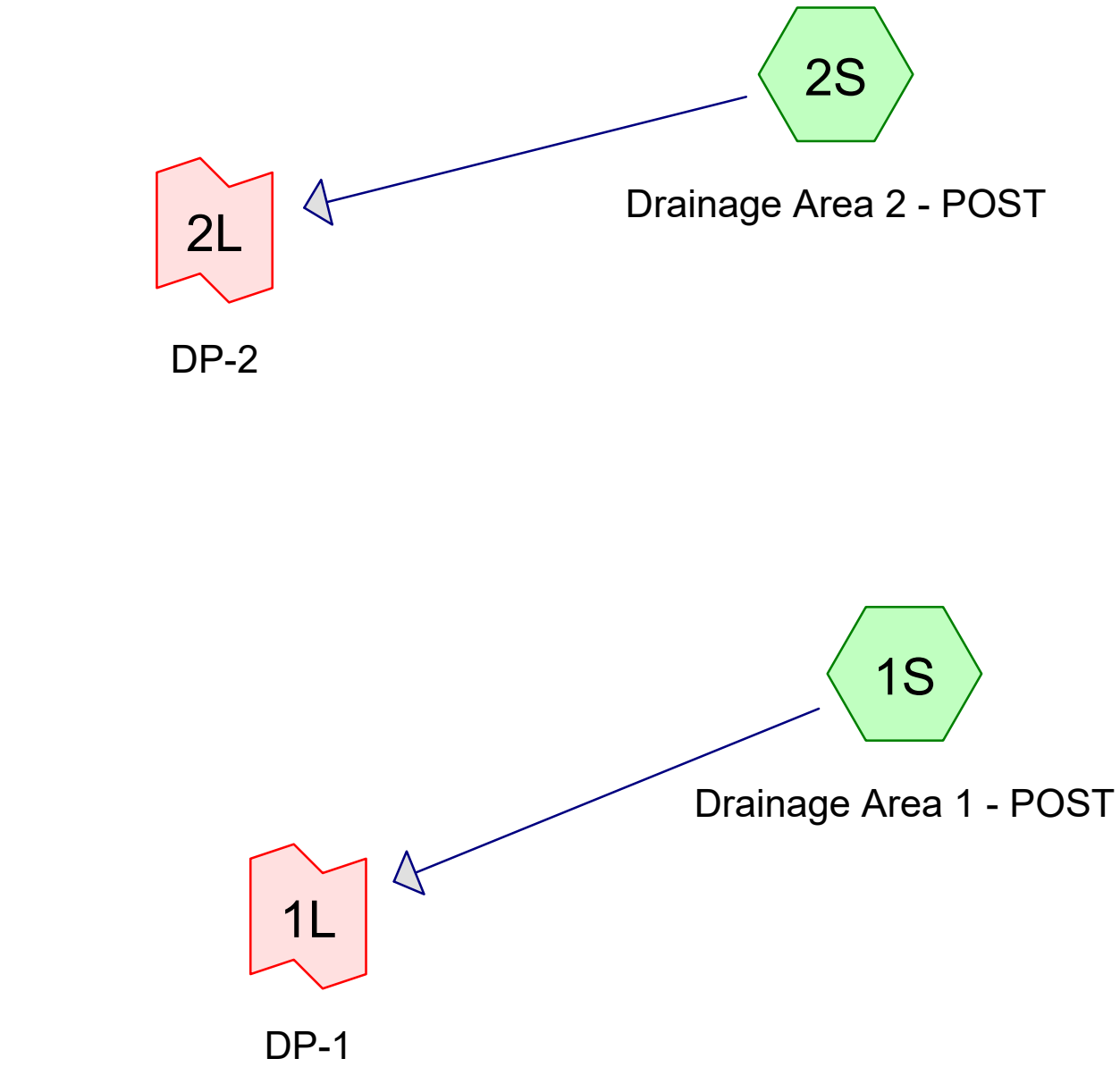
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP-6



APPENDIX I – POST-DEVELOPMENT ANALYSIS

Proposed Conditions



Routing Diagram for North Eagle Solar Post Development-Rev2
Prepared by Tetra Tech Inc, Printed 4/3/2020
HydroCAD® 10.00-24 s/n 04052 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.412	89	Roadway (1S, 2S)
10.990	71	Weighted CN from TR55 (1S)
21.080	75	Weighted CN from TR55 (2S)
0.018	98	concrete pads (2S)
32.500	**74**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
32.500	Other	1S, 2S
32.500		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.412	0.412	Roadway	1S, 2S
0.000	0.000	0.000	0.000	32.070	32.070	Weighted CN from TR55	1S, 2S
0.000	0.000	0.000	0.000	0.018	0.018	concrete pads	2S
0.000	**0.000**	**0.000**	**0.000**	**32.500**	**32.500**	**TOTAL AREA**	

Summary for Subcatchment 1S: Drainage Area 1 - POST

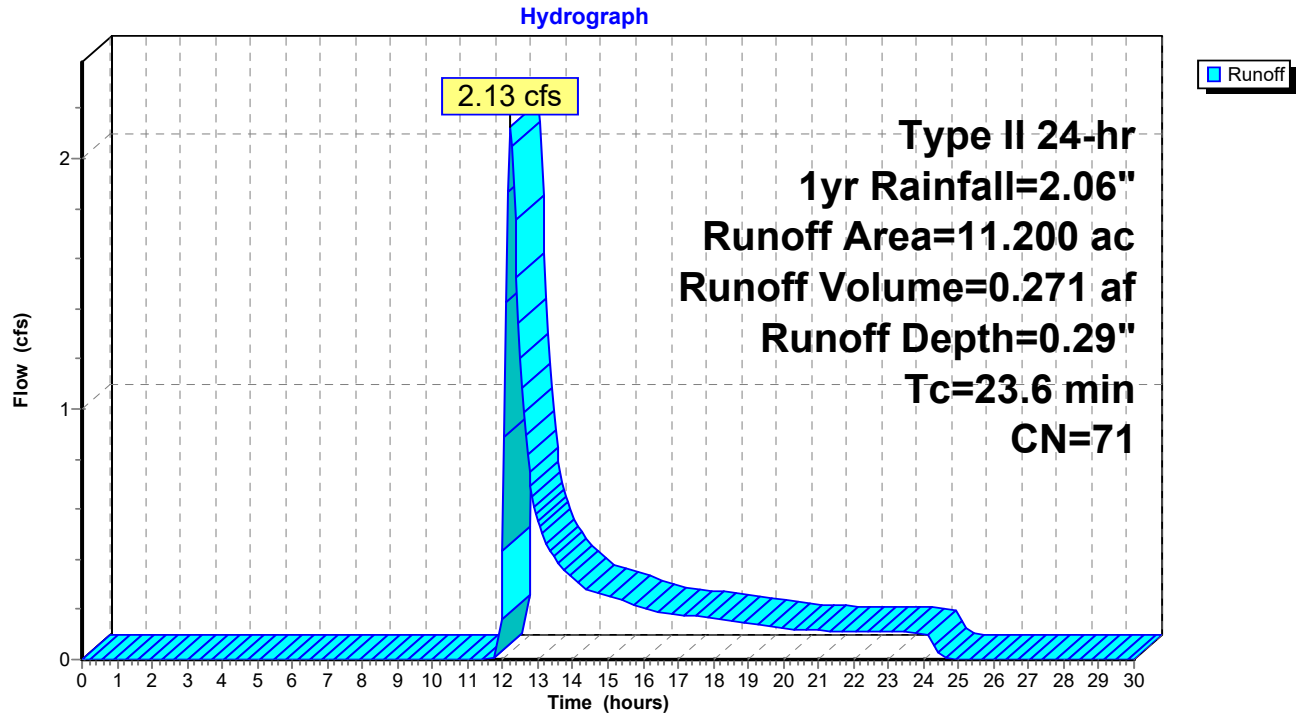
Runoff = 2.13 cfs @ 12.23 hrs, Volume= 0.271 af, Depth= 0.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	10.990	71	Weighted CN from TR55
*	0.210	89	Roadway
	11.200	71	Weighted Average
	11.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.6					**Direct Entry, TR55**

Subcatchment 1S: Drainage Area 1 - POST



Summary for Subcatchment 2S: Drainage Area 2 - POST

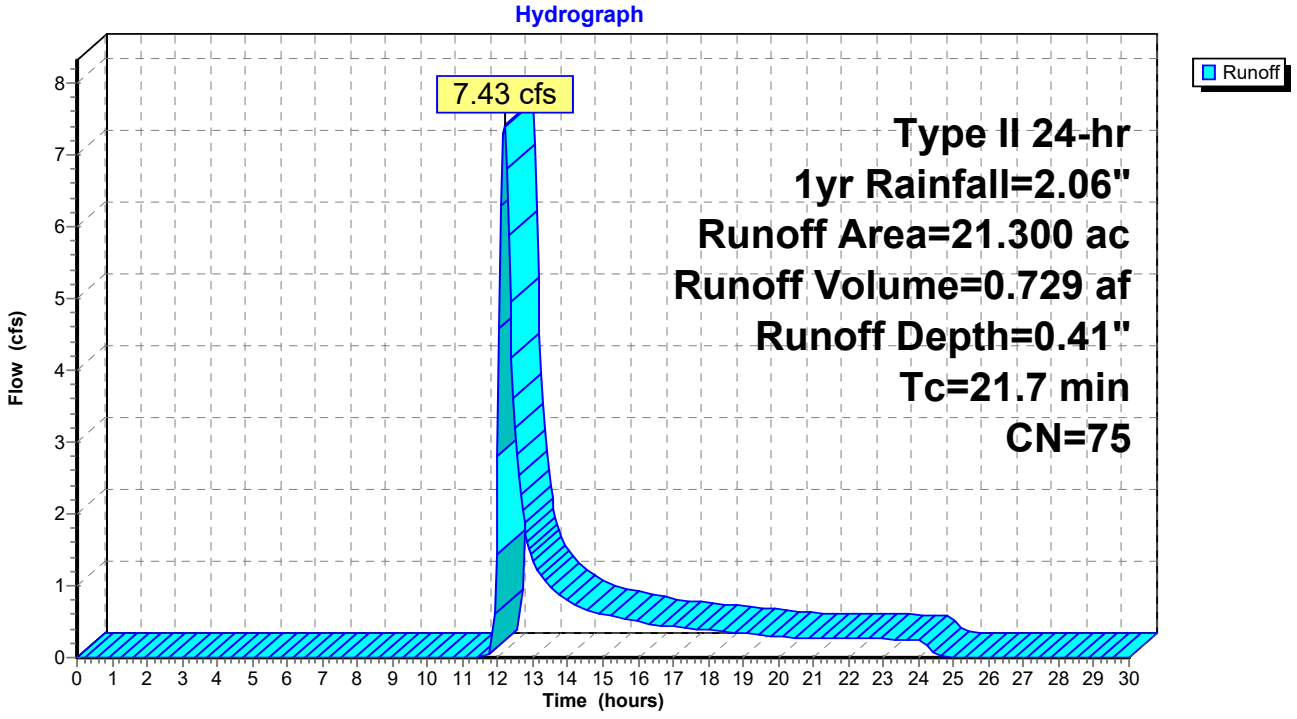
Runoff = 7.43 cfs @ 12.18 hrs, Volume= 0.729 af, Depth= 0.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1yr Rainfall=2.06"

	Area (ac)	CN	Description
*	21.080	75	Weighted CN from TR55
*	0.018	98	concrete pads
*	0.202	89	Roadway
	21.300	75	Weighted Average
	21.282		99.92% Pervious Area
	0.018		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7					**Direct Entry, TR55 Tc**

Subcatchment 2S: Drainage Area 2 - POST

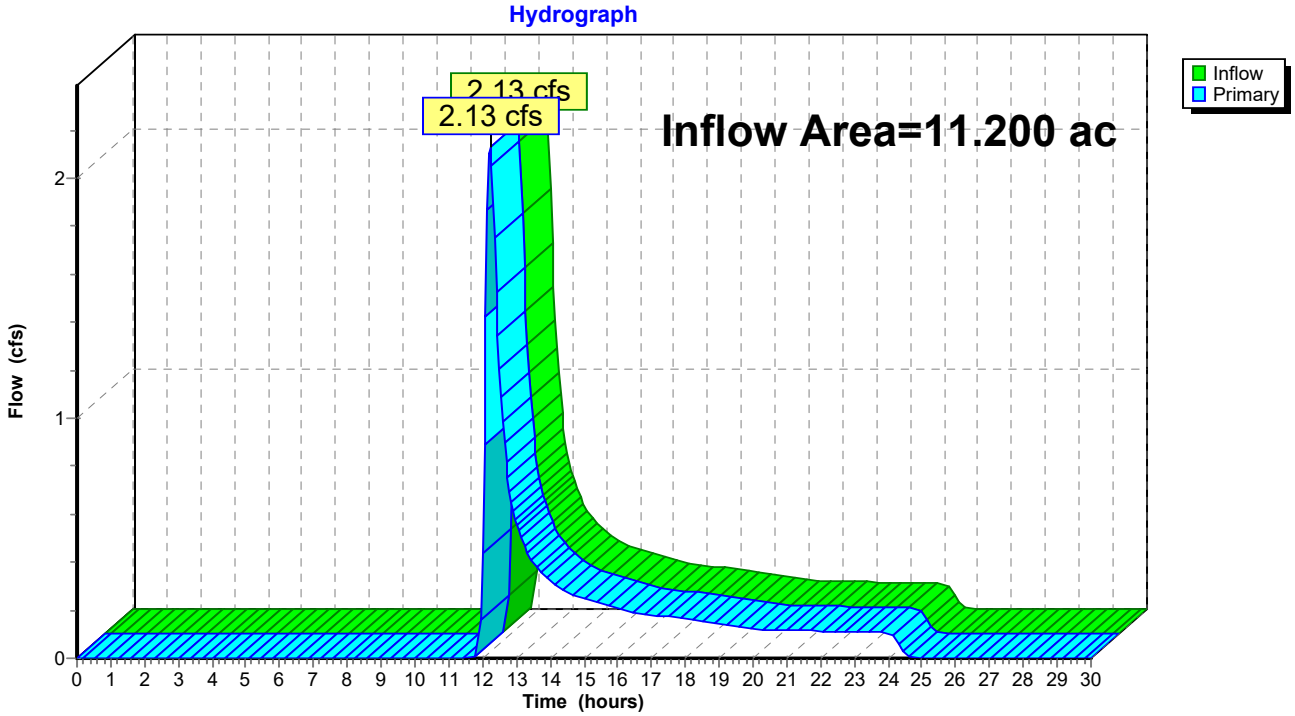


Summary for Link 1L: DP-1

Inflow Area = 11.200 ac, 0.00% Impervious, Inflow Depth = 0.29" for 1yr event
Inflow = 2.13 cfs @ 12.23 hrs, Volume= 0.271 af
Primary = 2.13 cfs @ 12.23 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP-1

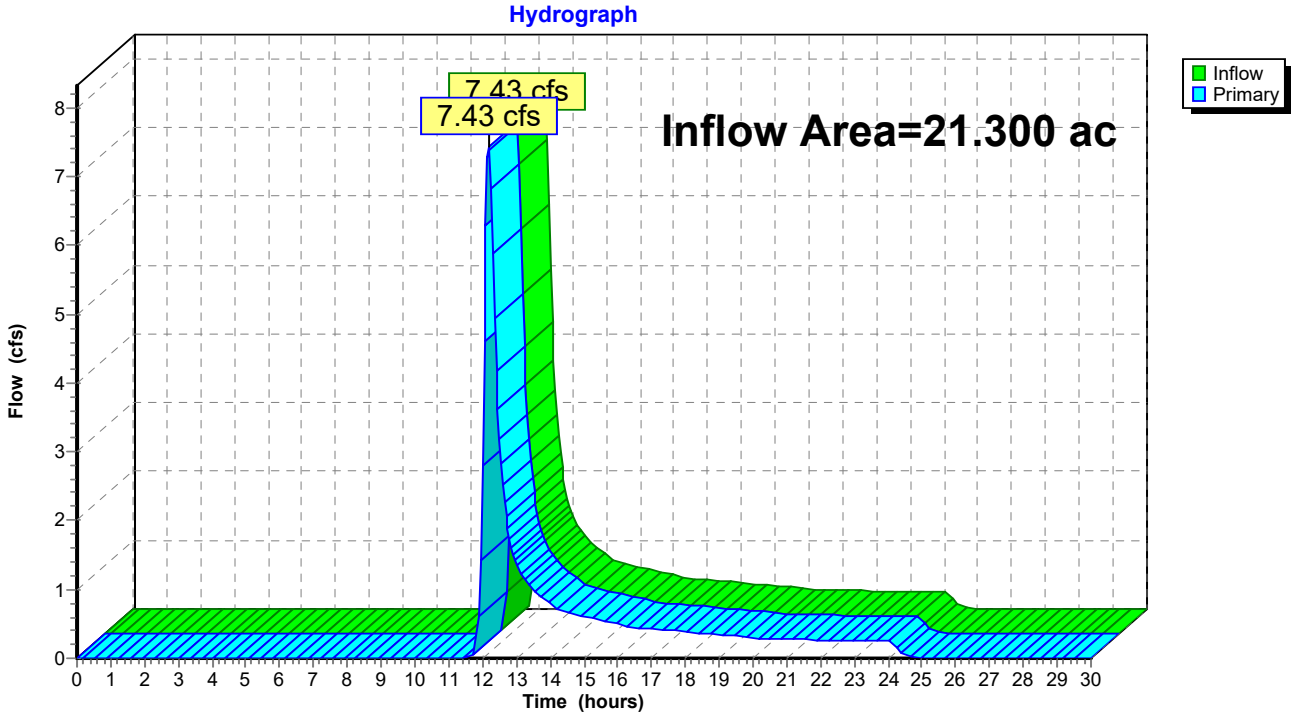


Summary for Link 2L: DP-2

Inflow Area = 21.300 ac, 0.08% Impervious, Inflow Depth = 0.41" for 1yr event
Inflow = 7.43 cfs @ 12.18 hrs, Volume= 0.729 af
Primary = 7.43 cfs @ 12.18 hrs, Volume= 0.729 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP-2



Summary for Subcatchment 1S: Drainage Area 1 - POST

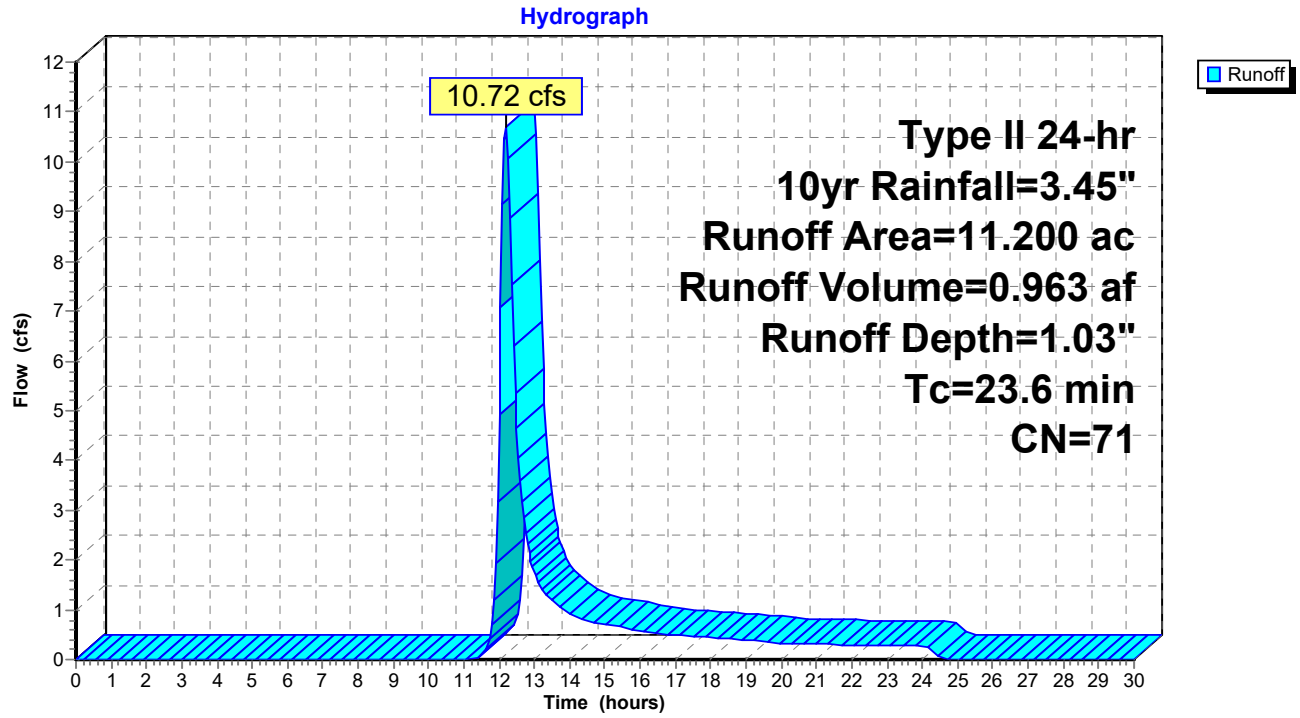
Runoff = 10.72 cfs @ 12.19 hrs, Volume= 0.963 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	10.990	71	Weighted CN from TR55
*	0.210	89	Roadway
	11.200	71	Weighted Average
	11.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.6					**Direct Entry, TR55**

Subcatchment 1S: Drainage Area 1 - POST



Summary for Subcatchment 2S: Drainage Area 2 - POST

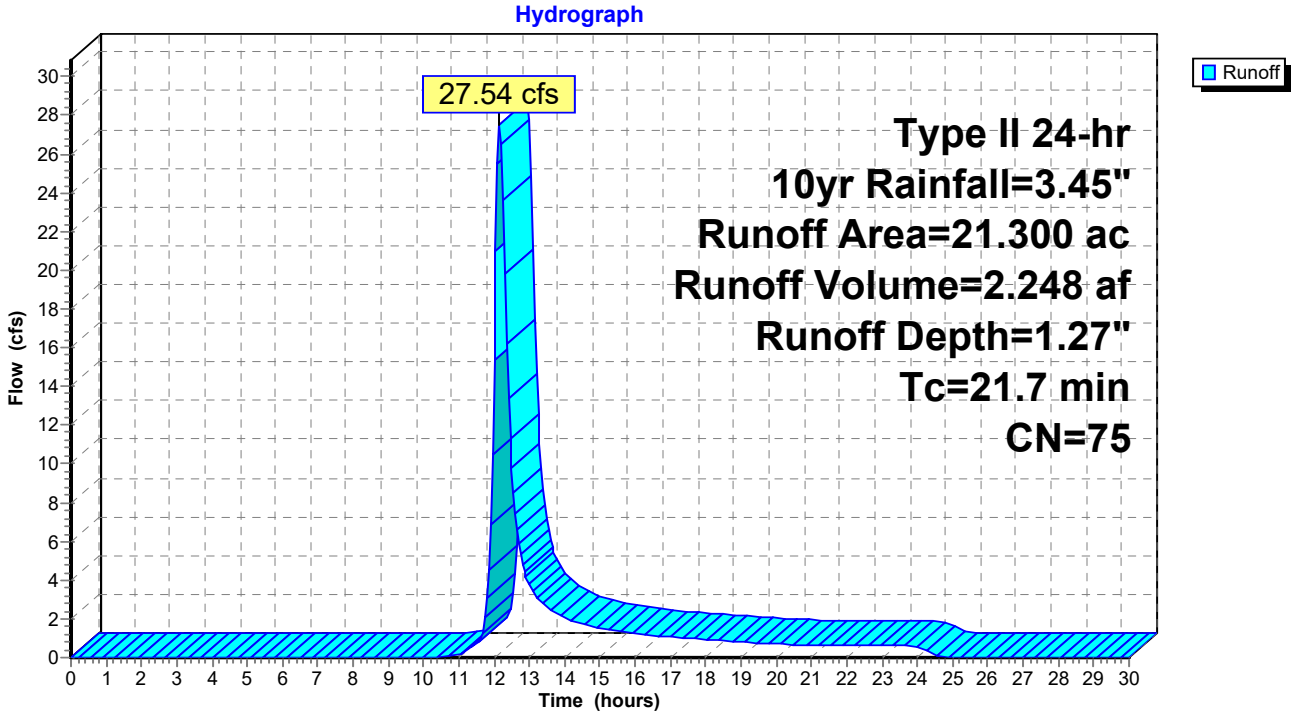
Runoff = 27.54 cfs @ 12.16 hrs, Volume= 2.248 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10yr Rainfall=3.45"

	Area (ac)	CN	Description
*	21.080	75	Weighted CN from TR55
*	0.018	98	concrete pads
*	0.202	89	Roadway
	21.300	75	Weighted Average
	21.282		99.92% Pervious Area
	0.018		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7					**Direct Entry, TR55 Tc**

Subcatchment 2S: Drainage Area 2 - POST

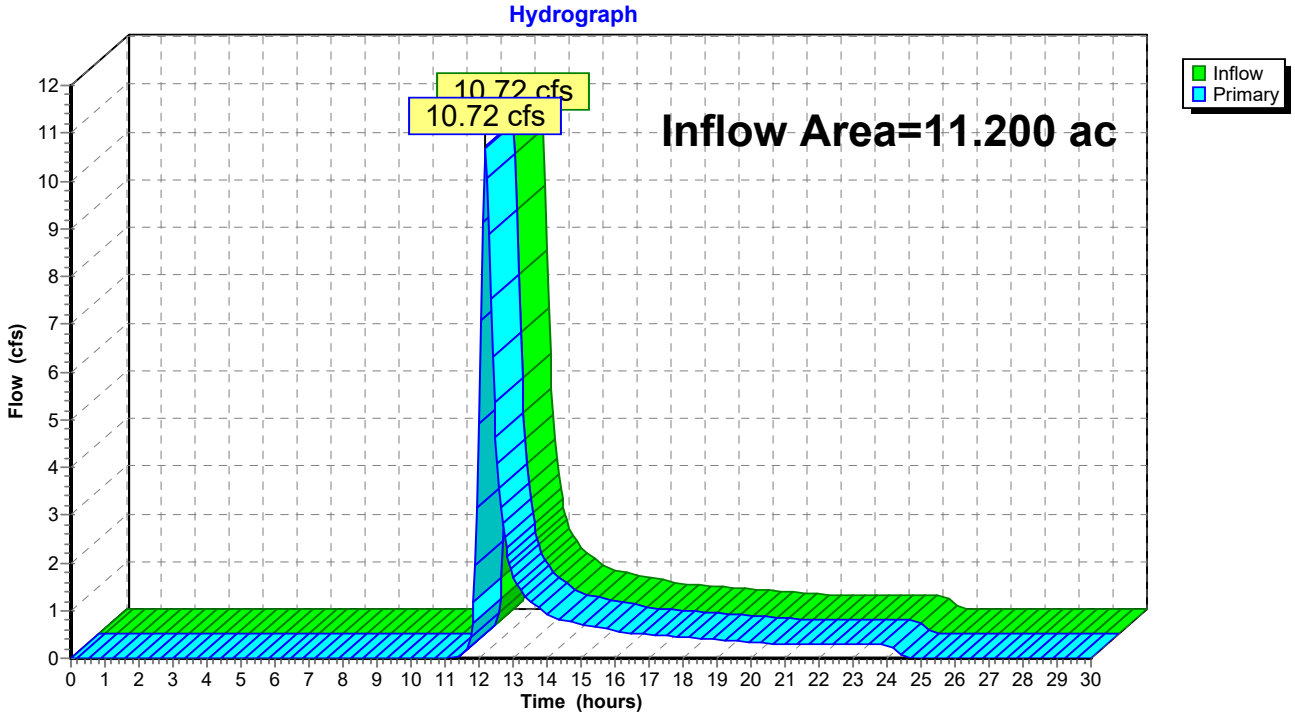


Summary for Link 1L: DP-1

Inflow Area = 11.200 ac, 0.00% Impervious, Inflow Depth = 1.03" for 10yr event
Inflow = 10.72 cfs @ 12.19 hrs, Volume= 0.963 af
Primary = 10.72 cfs @ 12.19 hrs, Volume= 0.963 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP-1

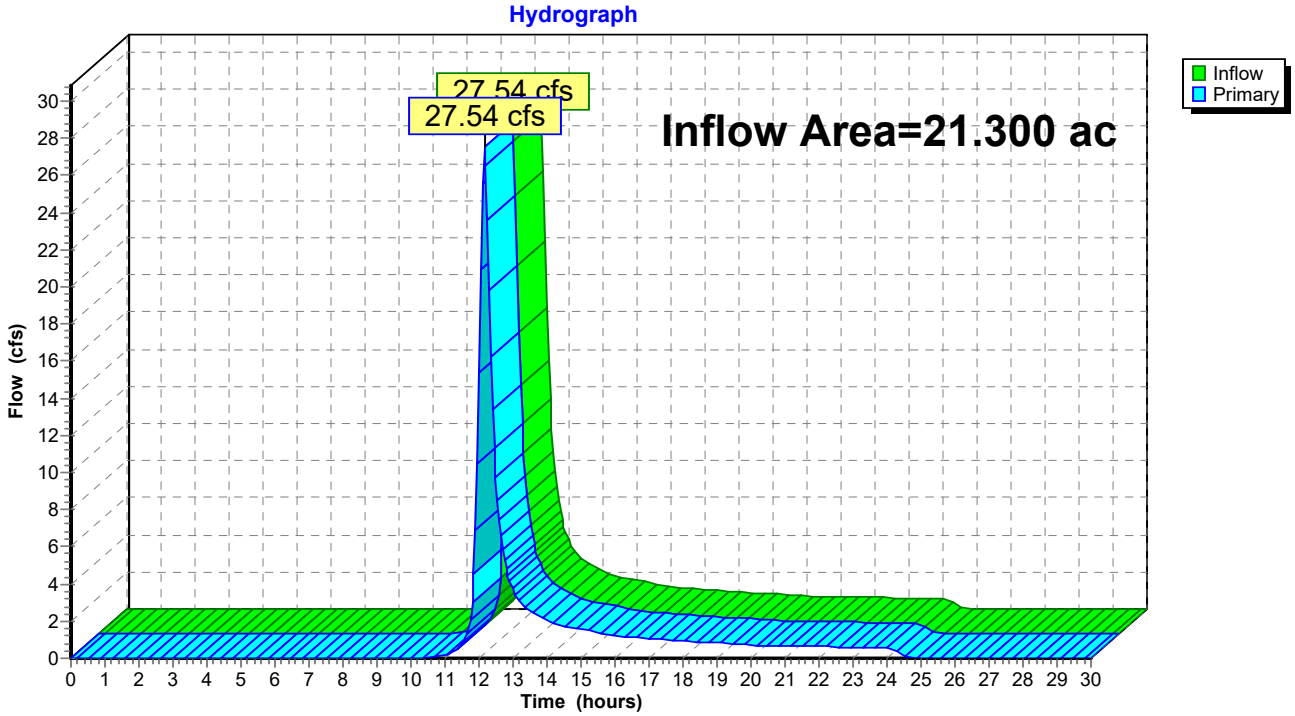


Summary for Link 2L: DP-2

Inflow Area = 21.300 ac, 0.08% Impervious, Inflow Depth = 1.27" for 10yr event
Inflow = 27.54 cfs @ 12.16 hrs, Volume= 2.248 af
Primary = 27.54 cfs @ 12.16 hrs, Volume= 2.248 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP-2



Summary for Subcatchment 1S: Drainage Area 1 - POST

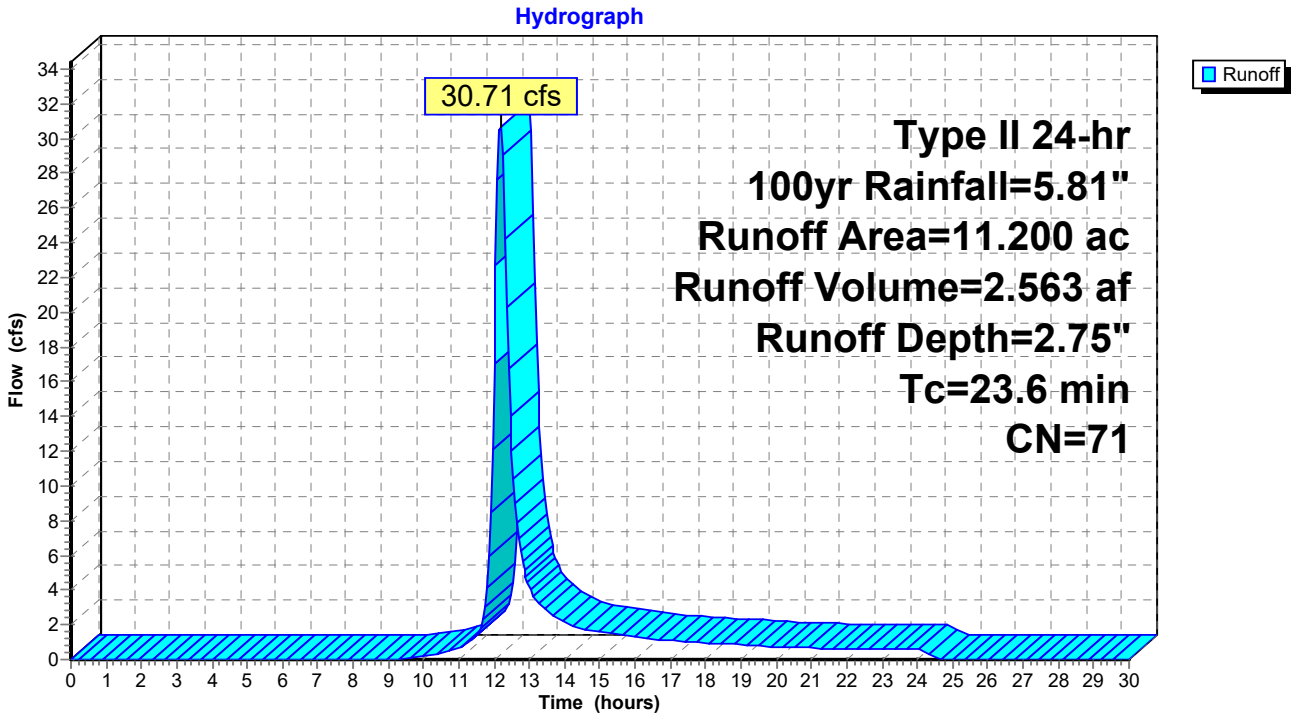
Runoff = 30.71 cfs @ 12.17 hrs, Volume= 2.563 af, Depth= 2.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	10.990	71	Weighted CN from TR55
*	0.210	89	Roadway
	11.200	71	Weighted Average
	11.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.6					**Direct Entry, TR55**

Subcatchment 1S: Drainage Area 1 - POST



Summary for Subcatchment 2S: Drainage Area 2 - POST

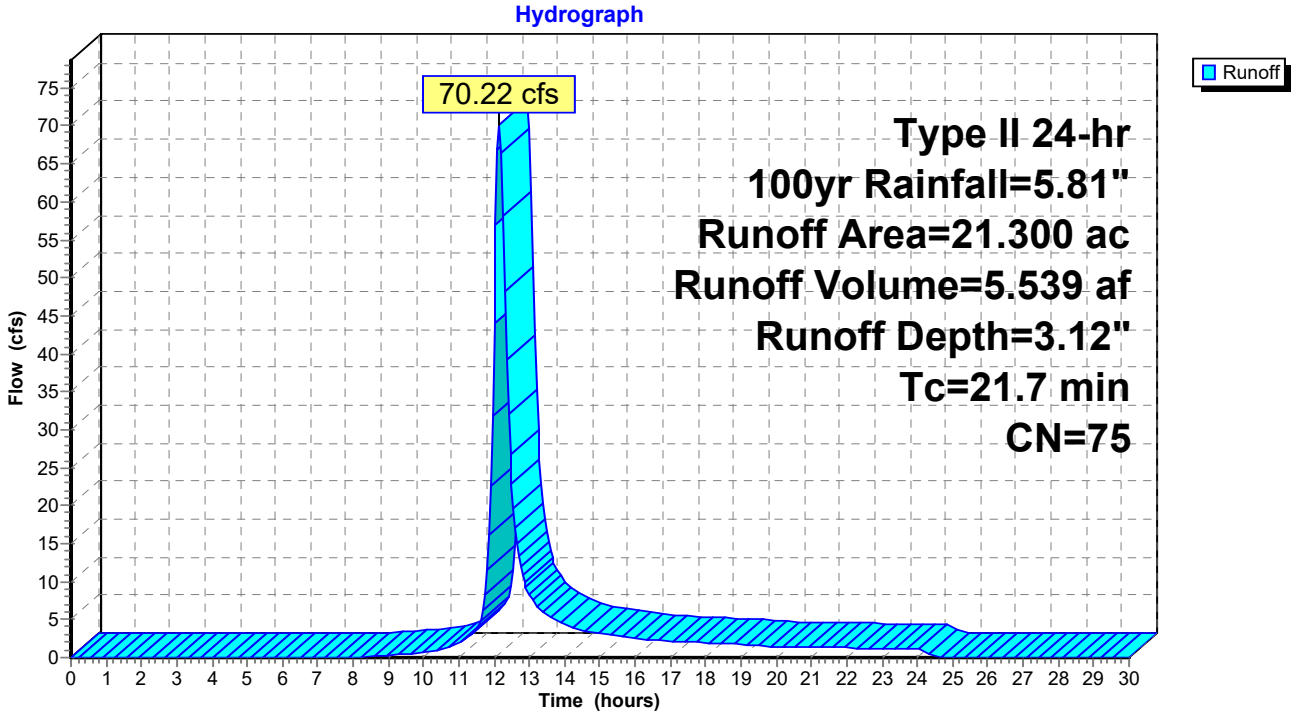
Runoff = 70.22 cfs @ 12.15 hrs, Volume= 5.539 af, Depth= 3.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100yr Rainfall=5.81"

	Area (ac)	CN	Description
*	21.080	75	Weighted CN from TR55
*	0.018	98	concrete pads
*	0.202	89	Roadway
	21.300	75	Weighted Average
	21.282		99.92% Pervious Area
	0.018		0.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.7					**Direct Entry, TR55 Tc**

Subcatchment 2S: Drainage Area 2 - POST

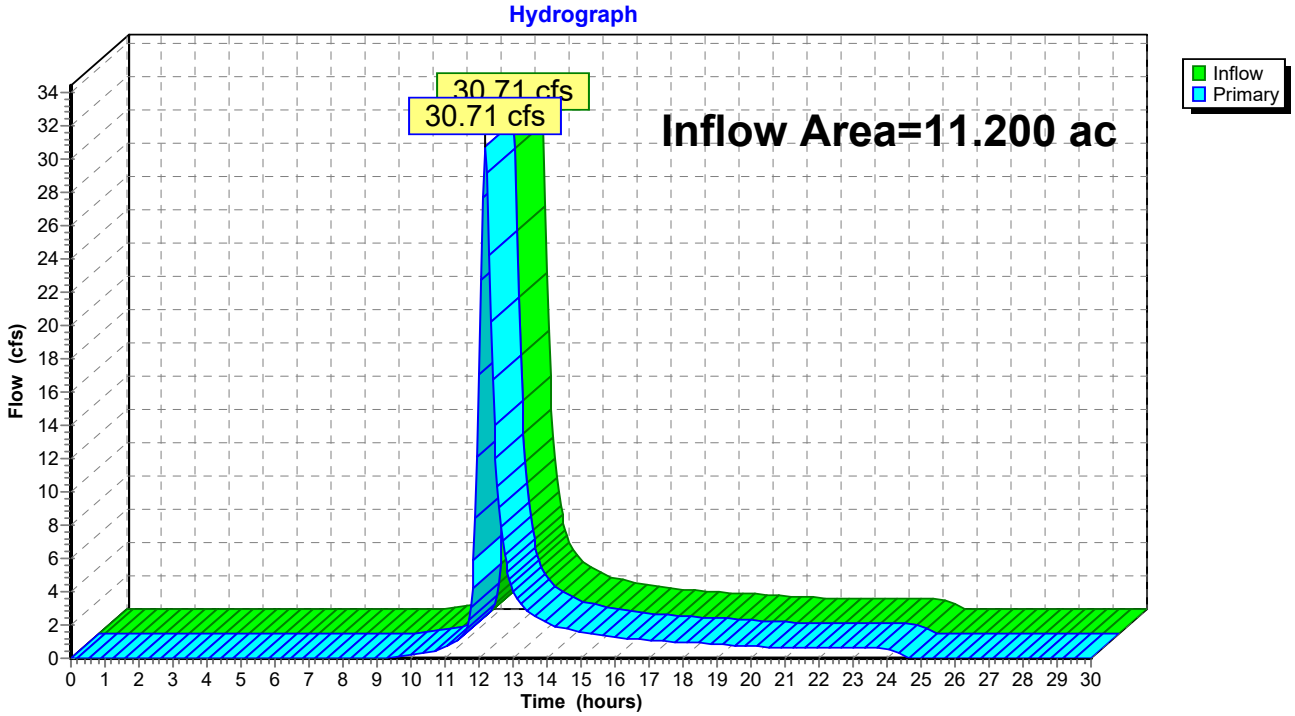


Summary for Link 1L: DP-1

Inflow Area = 11.200 ac, 0.00% Impervious, Inflow Depth = 2.75" for 100yr event
Inflow = 30.71 cfs @ 12.17 hrs, Volume= 2.563 af
Primary = 30.71 cfs @ 12.17 hrs, Volume= 2.563 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP-1

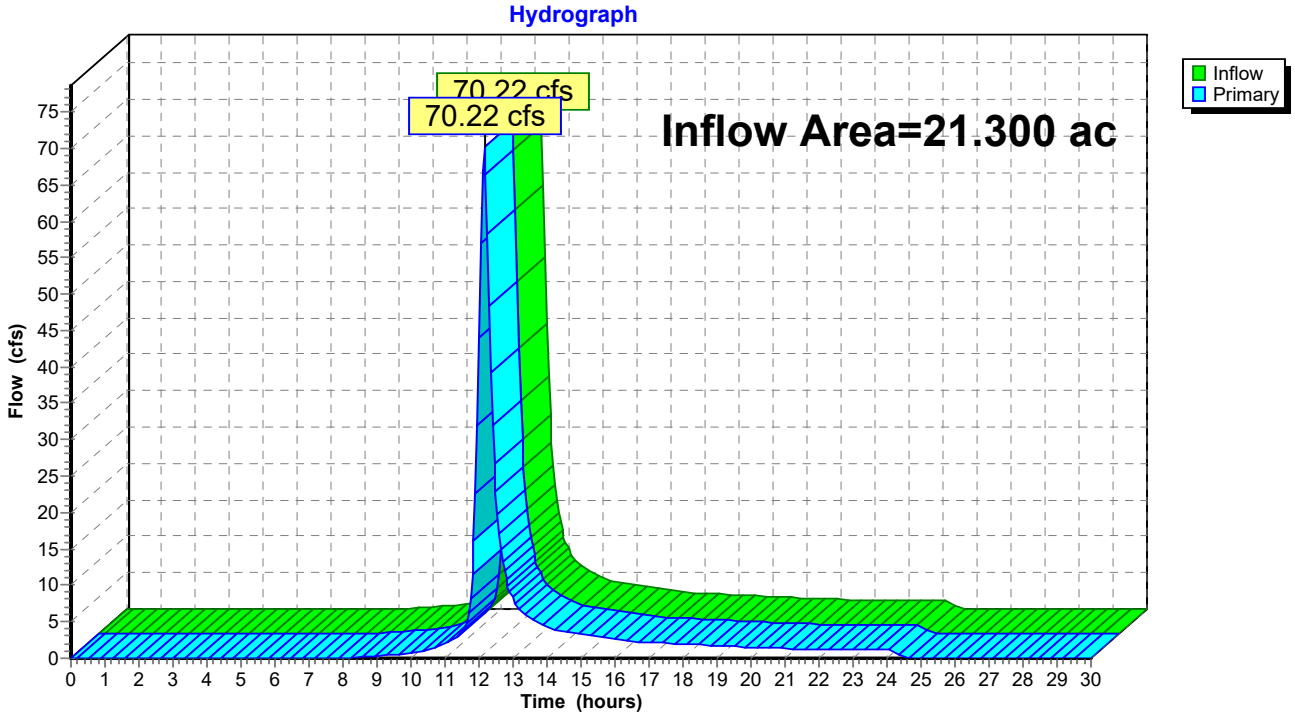


Summary for Link 2L: DP-2

Inflow Area = 21.300 ac, 0.08% Impervious, Inflow Depth = 3.12" for 100yr event
Inflow = 70.22 cfs @ 12.15 hrs, Volume= 5.539 af
Primary = 70.22 cfs @ 12.15 hrs, Volume= 5.539 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP-2



APPENDIX J – NOTICE OF INTENT (NOI)

0644089821

NOTICE OF INTENT

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

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

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

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Falck Renewables

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

Owner/Operator Contact Person First Name
Andrew

Owner/Operator Mailing Address
One Bridge Street, Suite 11

City
Irvington

State
NY

Zip
10533-

Phone (Owner/Operator)
201-286-2069

Fax (Owner/Operator)

Email (Owner/Operator)
andrew.d'amico@falckrenewables.com

FED TAX ID
--
(not required for individuals)

Project Site Information

Project/Site Name
NORTH EAGLE VILLAGE ROAD SOLAR

Street Address (NOT P.O. BOX)
5062 N. EAGLE VILLAGE ROAD

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

City/Town/Village (THAT ISSUES BUILDING PERMIT)
MANLIUS

State: NY
Zip: 13104-
County: ONANDOGA
DEC Region: 7

Name of Nearest Cross Street
Townsend Road

Distance to Nearest Cross Street (Feet)
1100

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

Tax Map Numbers
Section-Block-Parcel
098.-01-15.0

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
-7 5 9 5 8 2
Ex. -73.749

Y Coordinates (Northing)
4 3 0 2 2 9 1
Ex. 42.652

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

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

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

Pre-Development Existing Land Use

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

Post-Development Future Land Use

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

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

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

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
21.3	21.3	0.0	0.6

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

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

A	B	C	D
%	%	70 %	30 %

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

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

Start Date / / – **End Date** / /

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

Name

Wetland

9a. Type of waterbody identified in Question 9?

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

9b. How was the wetland identified?

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

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

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

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

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

.

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

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

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

Town of Manlius

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

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

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

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

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

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

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

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

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

SWPPP Preparer

Tetra Tech, Inc.

Contact Name (Last, Space, First)

Sielski, Brian

Mailing Address

6 Century Road, Suite 300

City

Parsippany

State Zip

NJ 07054-

Phone

973-630-8167

Fax

Email

brian.sielski@tetratech.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. 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.

First Name

MI

Last Name

Signature

Date / /

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

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

Temporary Structural

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

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

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

Permanent Structural

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

Other

VEGETATED SWALES

Post-construction Stormwater Management Practice (SMP) Requirements

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

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

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

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

- ○ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ● Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

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

Total WQv Required

0.043 **acre-feet**

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

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

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

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

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
○ Underground Infiltration System (I-4)			
○ Bioretention (F-5)			
● Dry Swale (O-1)			0.42
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

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

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

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

Name [ ]

Manufacturer [ ]

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

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

Total RRv provided

0.034 **acre-feet**

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

○ **Yes** ● **No**

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

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

Minimum RRv Required

0.010 **acre-feet**

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

● **Yes** ○ **No**

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

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

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

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

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

WQv Provided

0.008 **acre-feet**

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

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). 0.043

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

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

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

CPv Required . **acre-feet**

CPv Provided . **acre-feet**

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

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

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

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

Total Overbank Flood Control Criteria (Qp)

Pre-Development 114.21 **CFS**

Post-development 78.59 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development 227.94 **CFS**

Post-development 183.69 **CFS**

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

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

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

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

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

Soil types C & D on site limit the efficiency of the proposed vegetative swales. Non-rooftop disconnection was utilized for areas of the solar array where no impervious surfaces are proposed. The change in ground cover type from existing agricultural to permanent grass cover on site results in a runoff reduction.

Long term operations and maintenance plan for post-construction stormwater management practices will be implemented into the Owner/Operators overall operations and maintenance plan prior to construction.

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

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

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

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

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

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

Owner/Operator Certification

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

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

APPENDIX K – NOTICE OF TERMINATION (NOT)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

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

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

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

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

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

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

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

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

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

Printed Name:

Title/Position:

Signature:	Date:

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

VII. Qualified Inspector Certification - Final Stabilization:

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

Printed Name:	
Title/Position:	
Signature:	Date:

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

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

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

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

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

APPENDIX L – CERTIFICATION STATEMENTS

CONTRACTOR CERTIFICATION PAGE

North Eagle Solar Project

5062 North Eagle Village Road, Manlius, NY 13104

"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 Pollution 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 of Contractor/Subcontractor	Phone Number
Address	City, State, Zip Code
Signature of Person Completing this Form	Date
Printed Name	Title
Name of Trained Contractor	Title

Responsibilities (check all that apply):

Erosion and Sediment Control Practices:

- ❑ Installation and/or construction
- ❑ Repair
- ❑ Replacement
- ❑ Inspection
- ❑ Maintenance

Post-construction SMPs:

- ❑ Construction
- ❑ Repair
- ❑ Inspection
- ❑ Operation & Maintenance

CONTRACTOR CERTIFICATION PAGE

North Eagle Solar Project

5062 North Eagle Village Road, Manlius, NY 13104

"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 Pollution 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 of Contractor/Subcontractor	Phone Number
Address	City, State, Zip Code
Signature of Person Completing this Form	Date
Printed Name	Title
Name of Trained Contractor	Title

Responsibilities (check all that apply):

Erosion and Sediment Control Practices:

- ❑ Installation and/or construction
- ❑ Repair
- ❑ Replacement
- ❑ Inspection
- ❑ Maintenance

Post-construction SMPs:

- ❑ Construction
- ❑ Repair
- ❑ Inspection
- ❑ Operation & Maintenance

APPENDIX M – INSPECTION FORMS

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 inspector[1] conduct an assessment of the site prior to the commencement of construction[2] 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. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. 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.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] 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 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
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. 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 Access

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. 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 Inspector (print name)	**Qualified Inspector 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 at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] 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, debris and spoils 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.

3. Stabilized Construction Access

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?

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.

Runoff Control Practices (continued)

2. Flow 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

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. Silt Fence and Linear Barriers

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.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured 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.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. 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 trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

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:

APPENDIX N – INSPECTION REPORTS & PHOTO LOG

Exhibit E

LONG EAF

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. 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; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: North Eagle Solar		
Project Location (describe, and attach a general location map): 5062 North Eagle Village Road, Manlius, New York		
Brief Description of Proposed Action (include purpose or need): EF NY CDG 001, LLC (Falck Renewables) proposes the development of approximately 21.3 acres of a larger 44.71-acre parcel of private land in Onondaga County into a ground-mounted photovoltaic (PV) solar energy generating facility (North Eagle Solar). The proposed project would be capable of delivering about 7,5000 kilowatts (kW) of alternating electric current (AC) to the electrical power grid, which is sufficient to provide renewable energy to approximately 600 households. The PV panels proposed for this project are similar to solar panels utilized for typical residential roof top installations and would be placed on a racking system either pile driven or screw mounted to the ground surface. The PV project will be directly interconnected to, and provide energy to, National Grid's local electric distribution grid via either underground or overhead electrical service. Prior to utility interconnection, direct current (DC) electrical power generated by the solar panels will be transformed to AC power and modified as necessary to connect to National Grid's electrical power supply. The project would also include an equipment pad, a gravel access road and would be surrounded by a chain-linked security fence.		
Name of Applicant/Sponsor: Falck Renewables	Telephone: E-Mail:	
Address: One Bridge Street, Suite 11		
City/PO: Irvington	State: New York	Zip Code: 10533
Project Contact (if not same as sponsor; give name and title/role): Jonathan Koch	Telephone: E-Mail:	
Address:		
City/PO:	State:	Zip Code:
Property Owner (if not same as sponsor): Paul Shapero	Telephone: (315) 263-0597 E-Mail:	
Address: 5062 N. Eagle Village Road		
City/PO: Manlius	State: New York	Zip Code: 13104

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town of Manlius: Special Permit	4/16/2020
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town of Manlius: Special Permit Approval	4/16/2020
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSERDA Grant; NYS Ag & Markets Review, SPDES General Permit	4/16/2020
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☑Yes ☐No

If Yes, identify the plan(s):

Onondaga County Agriculture and Farmland Protection Plan

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Fayetteville-Manlius Central School District

b. What police or other public protection forces serve the project site?
Town of Manlius Police Department

c. Which fire protection and emergency medical services serve the project site?
Minoa Fire Department, Fayetteville Fire Department

d. What parks serve the project site?
Green Lakes State Park, Mill Run Park, Beard Park, Lewis Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?

b. a. Total acreage of the site of the proposed action? 21.3 acres
b. Total acreage to be physically disturbed? 44.71 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 23 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐Yes ☑No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase				
At completion of all phases				

g. Does the proposed action include new non-residential construction (including expansions)? ☑Yes ☐No

If Yes,

i. Total number of structures 7,500 kW

ii. Dimensions (in feet) of largest proposed structure: 7 to 10 height; 550 ft width; and 800 ft length

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐Yes ☑No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? ☐Yes ☑No
(Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite)

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

iv. Will there be onsite dewatering or processing of excavated materials? ☐Yes ☑No
If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐Yes ☐No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐Yes ☑No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☐No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☐No

If Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 0.63 acres (impervious surface)

_____ Square feet or 44.7 acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

_____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:

- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am-5pm
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: Daylight Hours
- Saturday: Daylight Hours
- Sunday: Daylight Hours
- Holidays: Daylight Hours

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

_____

_____

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

_____

_____

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

_____

_____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

_____

_____

_____

_____

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____

  _____
- Operation: _____

  _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____

  _____
- Operation: _____

  _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

Primarily used for agriculture with minimal residential development

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	0	0
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	21.3	0	-21.3
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: Ground mounted solar array, equipment pad, and gravel access road	0	21.3	+21.3

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☑ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☐ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 2-3 feet

b. Are there bedrock outcroppings on the project site? ☑ Yes ☐ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? 2.6 %

c. Predominant soil type(s) present on project site:

Benson silt loam	39.7 %
Benson-Wassaic Rock Outcrop	2.6 %
Wassaic silt loam	57.6 %

d. What is the average depth to the water table on the project site? Average: 2-6 feet

e. Drainage status of project site soils:
☑ Well Drained: 42.3 % of site
☑ Moderately Well Drained: 57.6 % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: _____ % of site
☐ 15% or greater: _____ % of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☑ Yes ☐ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification R4SBC
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters Approximate Size 0.52
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☑ Yes ☐ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____
Name - Pollutants - Uses:Limestone Creek, Lower, and minor tribs – Pathogens;D.O./Oxygen Demand;Aesthetics – Recreation;Aquatic...

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☐ Yes ☑ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____

_____ _____ _____

_____ _____ _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☑ Yes ☐ No

If Yes:

i. Species and listing (endangered or threatened): _____

Northern Long-eared Bat

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: _____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑ Yes ☐ No

If Yes, provide county plus district name/number: ONON003

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 21.3

ii. Source(s) of soil rating(s): Prime Farmland

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. 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 Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. 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? ☐ Yes ☑ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Greenlakes State Park, National Natural Landmark (Round Lake), and NYS State Trail (Bike Path)

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): State Parks and National Natural Lake

iii. Distance between project and resource: West and North 1- 2 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

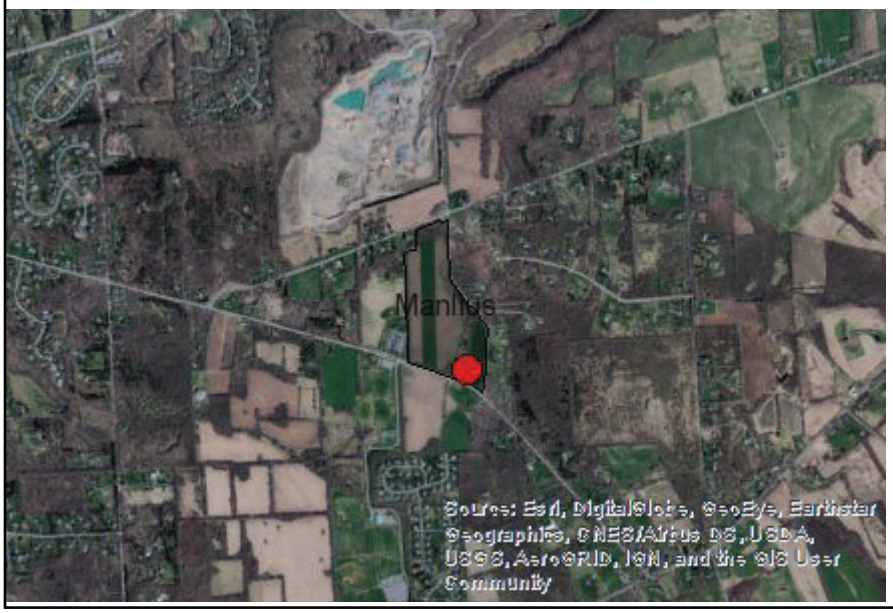
Applicant/Sponsor Name Jodi Hunt Date 4/16/2020

Signature Jodi2 Hunt Title Project Manager

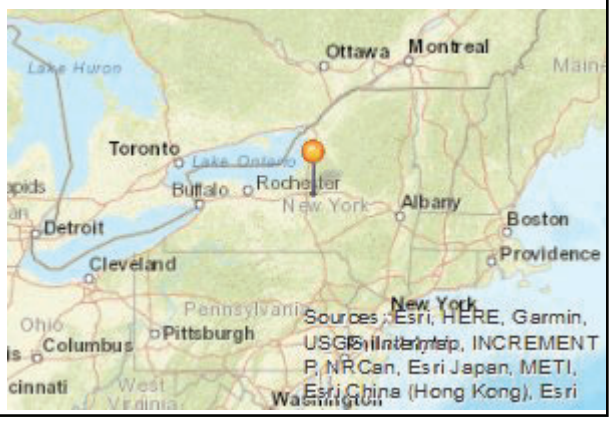
PRINT FORM

EAF Mapper Summary Report

Tuesday, March 31, 2020 8:13 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	Yes
E.2.h.v [Impaired Water Bodies - Name and Basis for Listing]	Name - Pollutants - Uses:Limestone Creek, Lower, and minor tribs – Pathogens;D.O./Oxygen Demand;Aesthetics – Recreation;Aquatic Life
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No

E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Northern Long-eared Bat
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ONON003
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

Exhibit F

WETLAND REPORT

Wetland Delineation Report

Proposed Green Lakes Solar Site

5062 North Eagle Village Road
Manlius, New York 13104

April 6, 2020

Prepared by:

Tetra Tech, Inc.
3136 South Winton Road, Suite 303
Rochester, NY 14623
Phone: (585) 417-4002

Prepared for:

Falck Renewables
One Bridge Street, Suite 11
Irvington, New York 10533

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Figure 2 Mapped Water Features
Figure 3 NRCS Soil Units
Figure 4 Delineated Wetlands and Streams

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Table 2. Wetlands Identified within the Survey Area

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Appendix B Wetland Data Forms
Appendix C Select Site Photographs

1.0 INTRODUCTION

EF NY CDG 001, LLC (Falck Renewables) is proposing to construct a ground-mounted solar facility located at 5062 North Eagle Village Road, Manlius, New York (hereafter referred to as the "Site"). The Site includes approximately 44.71 acres of land (Figure 1).

Tetra Tech, Inc. (Tetra Tech) was retained by Falck Renewables to delineate wetlands in support of potential state and federal wetland permits. This wetland delineation report summarizes the results of the wetland delineation effort and includes a description of the Site, methods used to delineate wetlands, information reviewed, field survey results, a summary and a references section. Attached appendices include data forms and select site photographs.

1.1 Regulatory Framework

In New York, wetlands are jointly regulated by the New York State Department of Environmental Conservation (NYSDEC) and the U.S. Army Corps of Engineers (USACE). New York State's freshwater wetlands are protected under Article 24 of the Environmental Conservation Law, commonly referred to as the Freshwater Wetlands Act. Pursuant to Article 24, New York regulates wetlands greater than 12.4 acres or wetlands of any size that possess unique qualities. In addition, to protect and preserve wetlands, New York regulates a wetlands adjacent area, which is defined as those areas of land or water that are outside a wetland and within 100 feet of the wetland boundary. The USACE has regulatory jurisdiction over waters of the United States including wetlands pursuant to Section 404 of the Clean Water Act, and jurisdiction over Navigable Waters of the United States pursuant to Section 10 of the 1899 Rivers and Harbors Act.

2.0 SITE DESCRIPTION

The Site is located in the central portion of New York, approximately 1.7 miles northeast of Manlius, New York. It is surrounded by agricultural fields, undeveloped forest, and residential properties. As identified above, the Site is located on a 44.71-acre parcel located adjacent to Townsend Road to the east, N. Eagle Village Road to the south, and Salt Springs Road to the north. The parcel is mainly comprised of agricultural fields (soybean), undeveloped forest, and residential property. There are several storage structures and a residential home located in the southeast corner of the Site.

3.0 METHODS

Wetland boundaries were delineated in the field using the Routine Onsite Determination Method, as described in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE, 1987), together with region-specific methods and guidelines provided in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (USACE, 2012). In addition, the Routine Delineation Procedure, as described in the New York State Freshwater Wetlands Delineation Manual (Browne et al., 1995) was also considered. These methods incorporate a three-parameter approach using vegetation, soils, and hydrology to identify the presence of freshwater wetlands.

The presence of a wetland was field-verified by analyzing dominant vegetation, soil classification, and hydrology at one sample station within each investigated area. Under the New York State method, the presence of hydrophytic vegetation characteristics (i.e., greater than 50 percent facultative wet (FACW) or wetter species, 10 percent or greater areal cover of obligate (OBL) perennial species, morphological adaptions, or expanses of peat mosses over persistently saturated soils) typically indicates a wetland, and an area that exhibits these indicators can generally be considered a wetland without detailed examination of hydrology and/or soils.

Dominant vegetation in each stratum (tree, shrub, herbaceous, and vine) was identified using appropriate regional field guides. Wetland indicator statuses for dominant species were obtained from the National Wetland Plant List (U.S. Army Corps of Engineers 2016). Wetlands were classified based on the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) classification hierarchy (USFWS 2018). Classifications were assigned by determining the most abundant type classification(s) in the wetland. A wetland was assigned multiple type classifications if more than one class comprised at least 30 percent areal coverage. Soil borings were obtained by using a hand-held augur, which was advanced to a depth of 20 inches, when possible. Soil profiles/characteristics were recorded in standard soil log format and soil colors were determined using a Munsell Soil Color Chart (Kollmorgen Corporation, 2000). Primary and secondary wetland hydrology indicators were also visually assessed and recorded.

The USGS National Hydrology Dataset (NHD) is a digital geospatial dataset that maps and models the surface water of the United States. It represents the water drainage networks of the Site and surrounding area, describing features such as rivers, streams, lakes, and ponds.

Data from the United States Department of Agriculture Natural Resource Conservation Service (USDA NRCS) provided soil maps and soil surveys for the counties of New York State, specifically Onondaga County. This data provides information on the soil types and series found within the region. Information and soil data for the Site could be found through the USDA Web Soil Survey (WSS).

Wetland boundary points and sample stations, and stream centerlines were recorded using a Trimble GeoExplorer 7X GPS handheld unit. This unit generally provides sub-meter accuracy; however, accuracy can range within three to five meters.

4.0 INFORMATION REVIEW

4.1 Mapped Wetlands and Streams

Federal and state data regarding mapped wetlands were reviewed for the Site (Figure 2). Data from the USFWS NWI identified one mapped freshwater riverine wetland within the parcel, making up approximately 0.52-acres within the Site, located along the southeastern corner of the Site. The NWI wetland was identified as riverine, intermittent, streambed, seasonally flooded (R4SBC).

NYSDEC regulated mapped wetlands were not identified within the Site boundaries. Although there were no mapped NYSDEC wetlands identified on the Site, the NYSDEC may also regulate any wetlands that are 12.4 acres or larger. This acreage includes all wetlands that are hydrologically connected, both on-Site and off-Site. The closest state regulated mapped freshwater wetland to the Site is located approximately 0.9 miles to the northeast (NYSDEC Wetland MAN-10). This state mapped wetland is listed as occupying 57.4-acres and is classified as a Class 1 wetland. The NYSDEC ranks wetlands in one of four classes ranging from Class 1, which provide the most benefits, to Class 4, which provide the fewest benefits.

USGS National Hydrography Dataset (NHD) stream was identified in the same locations as the NWI mapped riverine wetland described above. Approximately 1,131.12 linear feet of an NHD mapped stream occurs within the parcel and east of the Site.

4.2 Soil Survey

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey for Onondaga County, New York (2020), three mapped soil units were identified within the Site (Figure 3). The hydric rating indicates the percentage of a mapped soil unit's components that meets the criteria for hydric soils. None of the mapped soils have a hydric rating. Mapped soil units on-Site include the following:

- **Benson silt loam, undulating (BeB)** – BeB soils occupy approximately 18.8-acres of the Site or 39.7 percent. These soils include approximately 80 percent Benson components. The parent material of the Benson soil consists of channery loamy till underlain by limestone or calcareous shale. Benson soils are generally moderately well drained soils that occur on level to very steep benches, bedrock ridges, and till plains. There is no zone of water saturation for this component within a depth of 72 inches. These soils do not meet the hydric criteria.
- **Benson-Wassaic-Rock outcrop association, sloping (BNC)** – BNC soils occupy approximately 1.3-acres of the Site or 2.6 percent. These soils include approximately 30 percent Benson, 30 percent Wassaic, and 20 percent rock outcrop components. The parent material of the Benson soil consists of channery loamy till underlain by limestone or calcareous shale. Benson soils are generally moderately well drained soils. There is no zone of water saturation for this component within a depth of 72 inches. The parent material of the Wassaic soil consists of loamy till derived mainly from limestone, with varying amounts of sandstone, shale, and crystalline rock. Wassaic soils are generally moderately drained soils. There is no zone of water saturation for this component within a depth of 72 inches. This soil complex is found on the broad flat tops or the sides of limestone bedrock-controlled landforms. These soils do not meet the hydric criteria.
- **Wassaic silt loam, 0 to 8 percent slopes (WcB)** – WeB soils occupy approximately 27.2-acres of the Site or 57.6 percent. These soils include approximately 75 percent Wassaic components. The parent material of the Wassaic soil consists of loamy till derived mainly from limestone, with varying amounts of sandstone, shale, and crystalline rock. Wassaic soils are generally moderately drained soils, found on upland ridges, till plains and benches where the underlying bedrock affects the relief. There is no zone of water saturation for this component within a depth of 72 inches. These soils do not meet the hydric criteria.

5.0 SURVEY RESULTS

Observations of the vegetation communities within the Site can generally be broken down into three communities; landscaped field, agricultural field, and undeveloped forest/scrub shrub. The landscaped fields make up the residential lawn and a mowed field located in the southeastern corner adjacent to Townsend Road. Mainly consists of crab grass (*Digitaria* sp.), common plantain (*Plantago major*) white clover (*Trifolium repens*) and unidentifiable grass species.

The agricultural field community makes up the majority of the Site. It is comprised of soybean crops (*Glycine max*), Queen Anne's lace (*Daucus carota*), and pigweed (*Amaranthus retroflexus*).

The undeveloped forest/scrub shrub community is located centrally along the channelized streams and along the boundary of the Site. The forest community is dominated by green ash (*Fraxinus pennsylvanica*), sugar maple (*Prunus serotina*), black walnut (*Juglans nigra*) and staghorn sumac in the tree layer. A denser stand of trees occurred in the northern portion of the Site. Common hawthorn (*Crataegus monogyna*) and Morrow's honeysuckle (*Loricera morrowii*) dominated the shrub layer. The herbaceous community varied in densities throughout this habitat though mainly consisted of garlic mustard (*Alliaria petiolata*), burdock (*Arctium lappa*), and various grass species.

Land within the Site has been subjected to historic modification of landform and hydrology. Most of the modification was conducted to facilitate agriculture by altering the drainage contours and stormwater discharge through excavated drainage ditches and drainage tiles.

5.1 Delineated Wetlands

One wetland (W-1) was field delineated throughout the 44.71-acre Site on April 1, 2020 by Mr. Drew Timmis and Mr. Sean Meegan, both of Tetra Tech. Data from two sample stations, including one from the delineated wetland feature and one from the contiguous upland, were recorded in support of the delineations. Wetland data forms and select site photographs collected during the delineation effort are provided as Appendices A and C, respectively.

Delineated wetland features were classified as palustrine unconsolidated bottom (PUB) wetland. The wetland occurred in an area that was not mapped as wetlands by the NWI. As identified above in Section 3.1, there are no mapped NYSDEC wetlands on or within approximately 300 feet of the Site. A description of the delineated wetland is noted below. Table 1 summarizes the field results of the wetland delineation effort and Figure 4 depicts the location of the delineated wetland.

Wetland W-1 - This feature consists of a 0.09-acre freshwater pond located in the northern portion of the Site. Area appears to have had excavation in the past, with evidence of dumping along the southern portion of the pond. There appears to be no hydrological connection between wetland W-1 and any other waterbodies. Dominant vegetation within wetland W-1 included species of algae and leeches observed within the pond.

Wetland ID	Cowerdin Class[1]	Hydrology Indicator	Dominant Vegetation	Hydric Soils Indicator	Brief Wetland Description (Connectivity)	USACE Jurisdictional Status	Area within Site (acres)
W-1	PUB	• Surface Water • Aquatic Fauna	Algae species	•	Isolated freshwater pond found in depressional area.	Potentially Non-Jurisdictional	0.09

5.2 Delineated Waterbodies

Three waterbody features were delineated within the 44.71-acre Site, including two intermittent streams (S-1 and S-2), and one excavated ditch (S-3). Stream S-1 is the primary stream on Site originating off property with stream S-2 as a tributary. Stream S-1 flows into the roadside ditch S-3, which appears to have been excavated to direct the stream flow and collect stormwater flow from adjacent land and direct it west along N Eagle Village Road. Waterbodies on Site generally flowed to the southwest off-property.

Copies of the stream data forms and select site photographs are provided as Appendices B and C, respectively. Table 2 summarizes the field results of the stream delineation effort.

Table 2. Stream Delineation Summary

Stream ID	Water Present	Flow Regime	Water Type[1]	Wetland Present	Brief Stream Description (Connectivity)	USACE Jurisdictional Status	Length within the Site (feet)
S-1	Flowing Water	Intermittent	NRPW	None	A mapped NHD and NWI intermittent stream that flows south through the property and flows into the roadside ditch S-3.	Jurisdictional	1,145.98
S-2	Flowing Water	Intermittent	NRPW	None	An intermittent stream that flows west into stream S-1. Small dam made of stone and sheet metal observed near storage barn.	Jurisdictional	901.96
S-3	Flowing water	Ephemeral	NRPW	None	Roadside ditch created to direct streamflow from the Site west along N Eagle Village Road and off-property.	Jurisdictional	1,231.32
						Total Length within Site	**3,279.26**

[1]TNW =Traditional Navigable Waters, RPW = Relatively Permanent Waters, NRPW = Non-Relatively Permanent Waters

6.0 SUMMARY

According to the New York State Freshwater Wetlands Delineation Manual, the vegetative growing season is defined as the portion of the year when soil temperatures are above biological zero (41°F). For the Site, which is found in mesic soil temperature regime, the growing season months are assumed between late March and late October. The field delineation for the Site was conducted in early April in the early growing season. There were dead standing structures of herbaceous plants that were largely identifiable, with diagnostic features such as dried seed heads and leaves, and all woody vegetation was identifiable based on twigs and buds. Hydrology conditions at the time of observation were seasonably "wetter" with recent rain and snow melt. Soils examined within the Site were found to be similar to the described Benson and Wassaic Silt Loams but were restricted by low depth to limestone bedrock within the Site. Based on field observations of hydrology, soils, and identifiable vegetation, we described a freshwater pond (W-1) and three streams within the Site. Streams S-1 and S-3 appeared to match the NWI and NHD mapped riverine features. No NYSDEC regulated freshwater wetlands were identified within the Site. An official jurisdictional determination would need to be based on USACE and NYSDEC review of the Site.

7.0 REFERENCES

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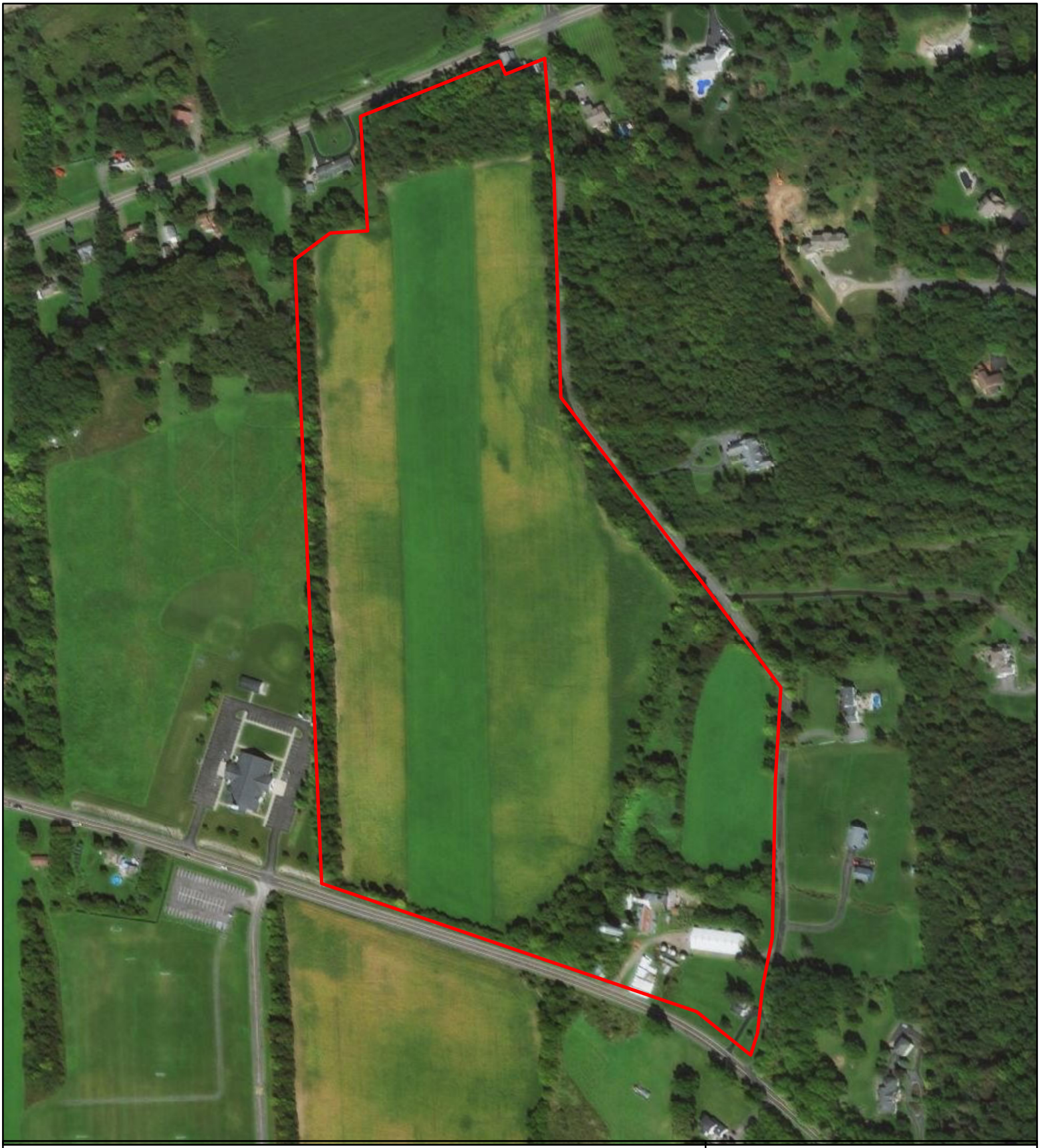
Figure 1

Site Location



Legend

Site Boundary

Approximate Scale:

0 0.05 0.1 0.2 Miles

TETRA TECH

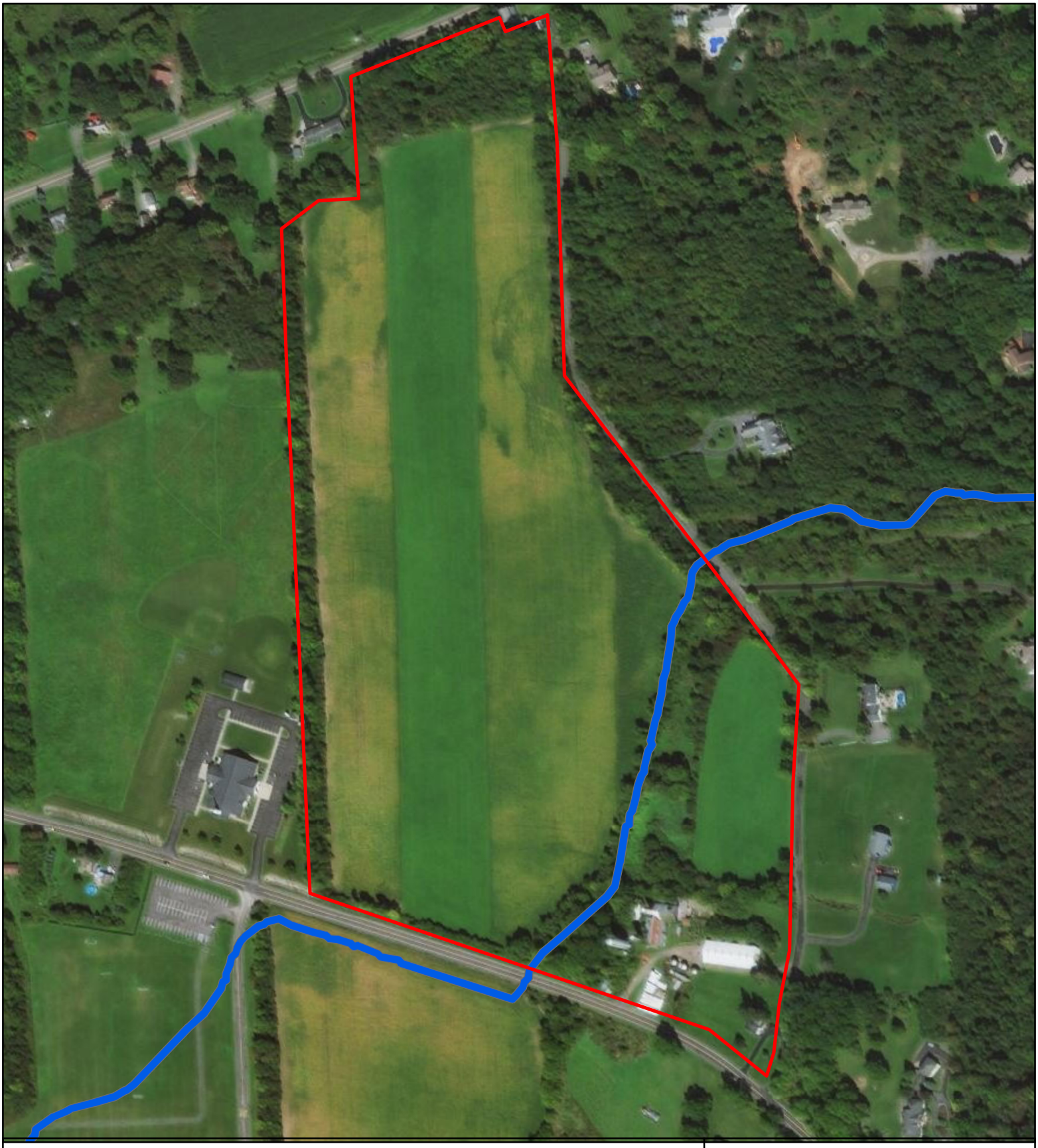
Figure 1
Site Location

North Eagle Solar
5062 North Eagle Village Road
Manlius, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Figure 2

NWI and NYDEC Mapped
Wetlands and NHD Mapped
Streams



Legend

Site Boundary

NWI Wetlands

Riverine

Approximate Scale:

0 0.05 0.1 0.2 Miles

TETRA TECH

Figure 2
Mapped Water Features

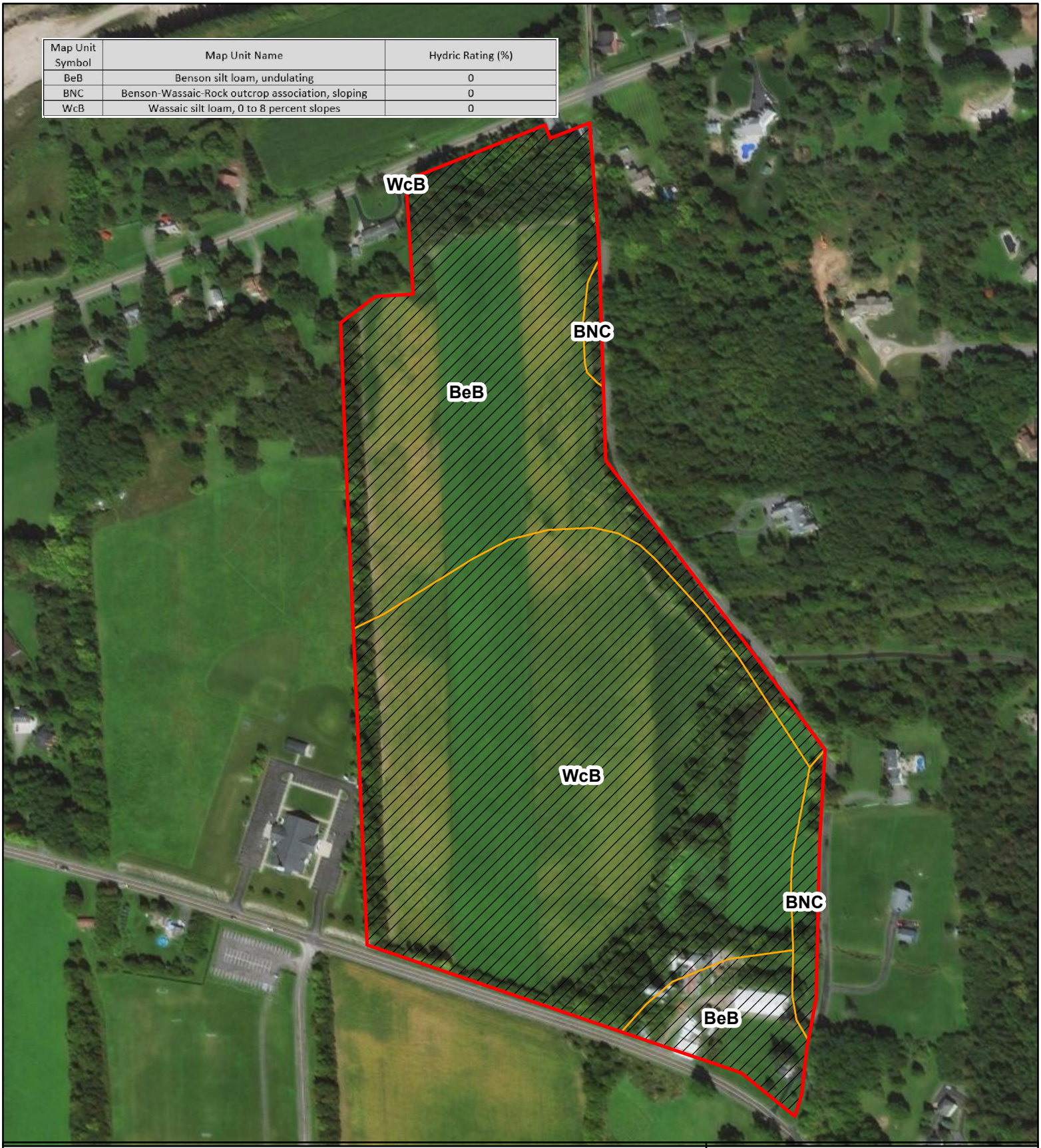
North Eagle Solar
5062 North Eagle Village Road
Manlius, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Figure 3

NRCS Soil Units

Map Unit Symbol	Map Unit Name	Hydric Rating (%)
BeB	Benson silt loam, undulating	0
BNC	Benson-Wassaic-Rock outcrop association, sloping	0
WcB	Wassaic silt loam, 0 to 8 percent slopes	0



Legend

Site Boundary

NRCS Soils

Approximate Scale:

0 0.05 0.1 0.2 Miles

TETRA TECH

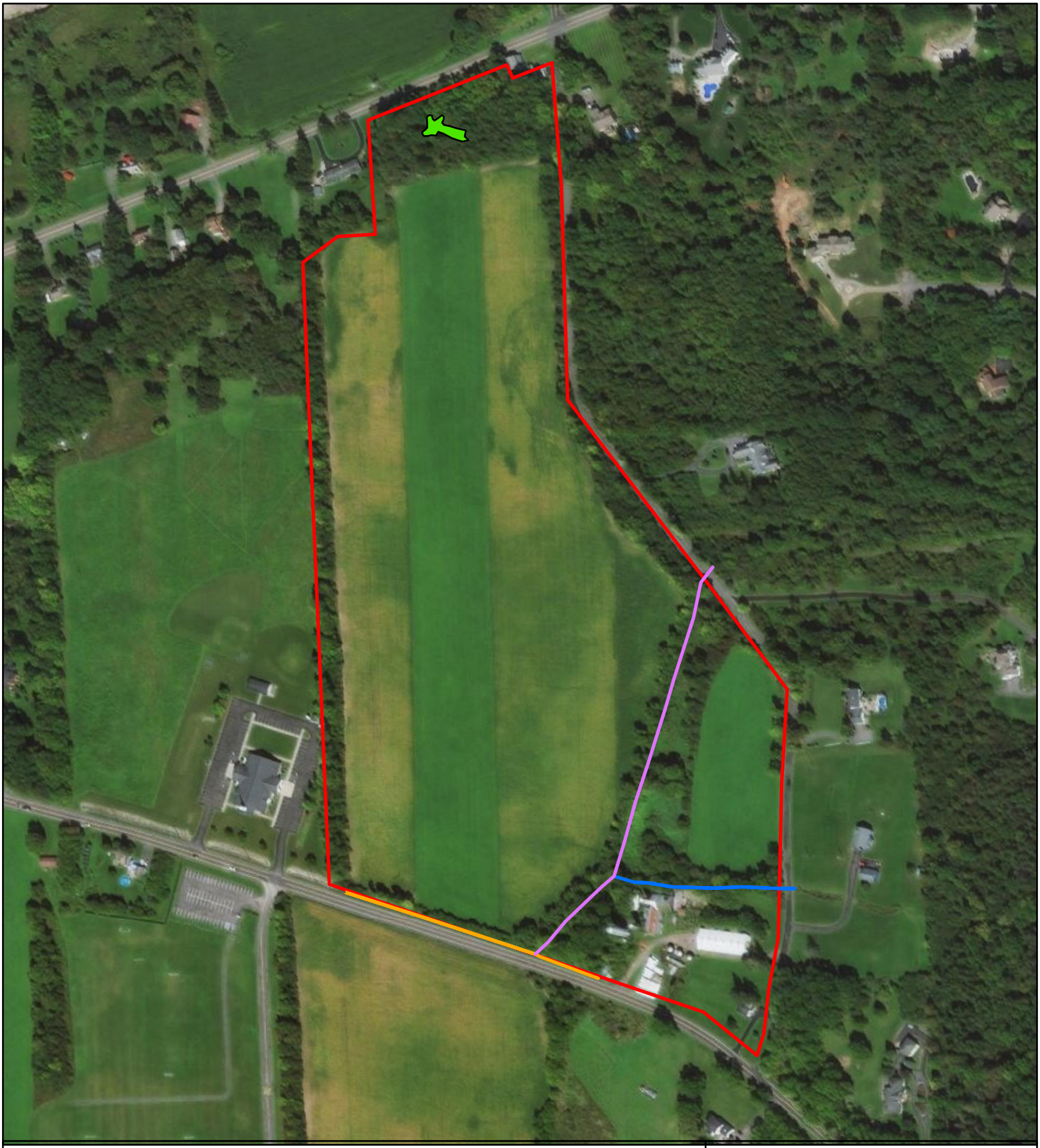
Figure 3
NRCS Soil Units

North Eagle Solar
5062 North Eagle Village Road
Manlius, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Figure 4

Field Observations



Legend

- Site Boundary
- W-1
- S-1
- S-2
- S-3

Approximate Scale:

0 0.05 0.1 0.2 Miles

TETRA TECH

Figure 4
Delineated Wetlands and Streams

North Eagle Solar
5062 North Eagle Village Road
Manlius, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Appendix A

Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: North Eagle Solar City/County: Manlius, Onondaga Sampling Date: 4/1/2020

Applicant/Owner: Falck Renewables State: NY Sampling Point: W-1

Investigator(s): Drew Timmis and Sean Meegan Section, Township, Range:

Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): concave

Slope (%): 2 Lat: 43.026424 Long: -75.958594 Datum:

Soil Map Unit Name: Benson silt loam, undulating (BeB) NWI classification: PUB

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	If yes, optional Wetland Site ID: ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks: (Explain alternative procedures here or in a separate report.)

Pond found in northern forested area, evidence of dumping within pond. Leaf litter and green algae within.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 24
Water Table Present?	Yes ____	No ____	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ____	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Standing water, leeches observed.

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Green Algae species	100	Y	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- [X] Rapid Test for Hydrophytic Vegetation
- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/1	100					silt loam	Restrictive layer hit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- X Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 2

Hydric Soil Present? **Yes** X **No** _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: North Eagle Solar City/County: Manlius, Onondaga Sampling Date: 4/1/2020

Applicant/Owner: Falck Renewables State: NY Sampling Point: Up-1

Investigator(s): Drew Timmis and Sean Meegan Section, Township, Range: _____

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave

Slope (%): 4 Lat: 43.026484 Long: -75.958615 Datum: _____

Soil Map Unit Name: Benson silt loam, undulating (BeB) NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____
Wetland Hydrology Present?	Yes _____	No X	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No _____	Depth (inches): 0
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No _____	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccharum	80	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Lonicera morrowii	15	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- [X] Rapid Test for Hydrophytic Vegetation
- [ ] Dominance Test is >50%
- [ ] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					silt loam	Restrictive layer hit

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 3

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

Area has little soil over exposed bedrock

Appendix B

Stream Data Forms

STREAM ID S-1	**STREAM NAME** unnamed tribuarty
LAT 43.022902 **LONG** -75.956257	**DATE** 04/01/2020
PROJEC North Eagle Solar	**CLIENT** Falck Renewables
INVESTIGATORS Drew Timmis and Sean Meegan	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 5.0 ft
Top of Bank Height:
LB 9.0 in RB 9.0 in
Water Depth: 8.00 in
Water Width: 4.0 ft
High Water Mark: 11.0 in
Flow Direction: South

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 100 %
Pool 0 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	10
Gravel	2-64 mm (0.1"-2.5")	30
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	60
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	10
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ___ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

STREAM ID S-2	**STREAM NAME** unnamed tributary
LAT 43.020960 **LONG** -75.955801	**DATE** 04/01/2020
PROJEC North Eagle Solar	**CLIENT** Falck Renewables
INVESTIGATORS Drew Timmis and Sean Meegan	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 10.0 ft
Top of Bank Height:
LB 6.0 in RB 6.0 in
Water Depth: 5.00 in
Water Width: 8.0 ft
High Water Mark: 9.0 in
Flow Direction: West

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ✓ Yes ___ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 100 %
Pool 0 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	15
Gravel	2-64 mm (0.1"-2.5")	35
Sand	0.06-2mm (gritty)	
Silt	0.004-0.06 mm	50
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	5
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
✓ Agricultural ___ Residential
___ Other:

Canopy Cover
___ Partly open ___ Partly shaded
✓ Shaded ___ Open

Indicate the dominant type (Check one)
✓ Trees ___ Shrubs
___ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ___ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Channelized stream with small man-made dam present at one section, made from stone.

STREAM ID S-2	**STREAM NAME** unnamed tributary
LAT 43.020758 **LONG** -75.958941	**DATE** 04/01/2020
PROJEC North Eagle Solar	**CLIENT** Falck Renewables
INVESTIGATORS Drew Timmis and Sean Meegan	
FLOW REGIME Perennial ___ Intermittent ✓ Ephemeral ___	**WATER TYPE** TNW ___ RPW ___ NRPW ✓

CHANNEL FEATURES

Estimate Measurements
Top of Bank Width: 6.0 ft
Top of Bank Height:
LB 4.0 ft RB 4.0 ft
Water Depth: 1.20 ft
Water Width: 3.5 ft
High Water Mark: 2.0 ft
Flow Direction: Northwest

Stream Erosion
✓ None ___ Moderate ___ Heavy

Artificial, Modified or Channelized
✓ Yes ___ No

Dam Present ___ Yes ✓ No

Sinuosity ✓ Low ___ Medium ___ High

Gradient
✓ Flat (0.5/100 ft) ___ Moderate (2 ft/100 ft) ___ Severe (10 ft/100 ft)

FLOW CHARACTERISTICS

Water Present
___ No water, stream bed dry
___ Stream bed moist
___ Standing water
✓ Flowing water

Velocity
___ Fast ___ Moderate
✓ Slow

Proportion of Reach Represented by Stream Morphology Types
Riffle 0 % Run 100 %
Pool 0 %

Turbidity
✓ Clear ___ Slightly turbid ___ Turbid
___ Opaque ___ Stained
___ Other_____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)

Substrate Type	Diameter	% Composition in Sampling Reach
Bedrock		
Boulder	> 256 mm (10")	
Cobble	64-256 mm (2.5"-10")	20
Gravel	2-64 mm (0.1"-2.5")	30
Sand	0.06-2mm (gritty)	10
Silt	0.004-0.06 mm	40
Clay	< 0.004 mm (slick)	

ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)

Substrate Type	Characteristic	% Composition in Sampling Area
Detritus	sticks, wood, coarse plant materials (CPOM)	15
Muck-Mud	black, very fine organic (FPOM)	
Marl	grey, shell fragments	

WATERSHED FEATURES

Predominant Surrounding Landuse
___ Forest ___ Commercial
___ Field/Pasture ___ Industrial
___ Agricultural ___ Residential
✓ Other: Public Road

Canopy Cover
___ Partly open ___ Partly shaded
___ Shaded ✓ Open

Indicate the dominant type (Check one)
___ Trees ___ Shrubs
✓ Grasses ___ Herbaceous

Floodplain Width
___ Wide > 30ft ___ Moderate 15-30ft
✓ Narrow <16ft

Wetland Present ___ Yes ✓ No
Wetland ID

AQUATIC VEGETATION

Indicate the dominant type and record the dominant species present
___ Rooted emergent ___ Rooted submergent ___ Rooted floating ___ Free floating
___ Floating algae ___ Attached algae

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES

Roadside ditch flowing across N Eagle Village Road.

Appendix C

Select Site Photography

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of wetland W-1 found in the northern forested area facing west.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of surrounding upland forested area around wetland W-1 facing west. Abundant exposed bedrock within the area.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of agricultural fields (soybean) that make up the majority of the Site facing northeast.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of stream S-1 looking downstream facing south.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of stream S-1 looking upstream facing north.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of stream S-2 looking upstream facing east. Stream originates off-site through culvert under Townsend Road.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of stream S-2 looking downstream facing west. Eventual confluence with stream S-1.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of small dam placed in stream S-2.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of maintained field in eastern portion of Site facing northeast. Townsend Road can be seen along the Site boundary.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of drainage ditch S-3 looking downstream off-property facing west.

Photograph taken by Drew Timmis on April 1, 2020.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7179.01.03
Site Name:	North Eagle Solar Site	**Location:**	Manlius, NY



Description:	View of drainage ditch S-3 looking upstream facing east. N Eagle Village Road is southern adjacent.

Exhibit G

PROFESSIONAL FEES REIMBURSEMENT AGREEMENT

TOWN OF MANLIUS

SPECIAL PERMIT APPLICATION – EXHIBIT "G"

PROFESSIONAL FEES REIMBURSEMENT AGREEMENT

As a condition of the application(s) to the Town of Manlius, its Zoning Board of Appeals, Planning Board, codes administration/planning office, and/or Town Board (the **"**Town**"**) for various zoning, land use, construction and related reviews, approvals, certificates, permits and related consideration(s) (including for any local governmental assisted funding) related to the request of EF NY CDG 001, LLC: (the "Application"), North Eagle Solar Facility [name], One Bridge Street, Suite 11, Irvington, New York 10533 [legal address] ("Applicant") relative to proposed development at 5062 North Eagle Road, Manlius, New York 13104 [project address], Tax Parcel # 098-01-15.0**,** Manlius, New York, and related matters (the "Project") agrees as follows:

The Application and Project may or will likely entail that the Town incur legal, engineering, architectural, administrative and related expense(s) including, without limitation, for both on staff and third party consultants involved in the consideration of the Application and Project, and including, without limitation, attendance at Zoning Board of Appeals, Planning Board, and Town Board meetings, consultation with the Applicant, its or the Town's engineer, architect, attorney, and/or other Town officers and employees, or consultants or professional service providers, incidental to the Application from the earlier of the filing of the Application for and/or first presentation of the Project to Town, and through final completion and issuance of all Town and other governmental permits, certifications and approvals.

In connection with and consideration of the foregoing, Applicant agrees to bear all cost and expense for such administrative, legal, engineering, architect and other professional and consulting assistance to the Town incidental to the Application and Project, and including that expense incurred by the Town for Town employees and officers performing reasonable and necessary work on behalf of the Town incident to the Application or Project.

In connection with the foregoing, Applicant shall reimburse the Town for time spent by outside consultants and professionals at the usual rate charged by them to private clientele, or if none, then the usual rate charged to municipalities. Reimbursement for the cost of Town employees and officers shall be based upon the cost to Town for the services of such persons, including salary and fringe benefits, reduced to an hourly rate and including overtime where directly attributable to the Application or Project.

Should the Town determine, in its sole discretion, that additional services are required to represent, supervise, inspect, evaluate and/or consult, including in order to protect the rights and/or interests of the Town such as relative to an enforcement or violation proceeding, the Applicant shall likewise bear all costs associated with such services.

This Agreement shall be effective as of _____, 20__. The Applicant shall deposit an initial sum of **$**_____, and such other amounts as from time to time the Town may determine, payable to and deposited with the Town and which sum or sums shall be applied against those sums reimbursable to the Town pursuant to the terms of this Agreement (the "Deposit"). Upon completion or discontinuance of the Application and Project and payment of all fees incurred, any unused Deposit shall be returned to the Applicant.

The Applicant shall receive periodically, one or more statements detailing charges for which reimbursement has been made against the Deposit, detailing unpaid amounts, if any, and setting forth any additional Deposit required by the Town. Failure to pay any amounts due the Town of Manlius within twenty (20) days of the date of statement may result in the termination of work/services by Town relative to the Application, the non-issuance suspension or revocation of any certificates, permits or approvals, and/or denial of applications, the Town's commencement of collection efforts, and/or the exercise of any other rights or remedies available to Town hereunder or pursuant to applicable law, including under the Town Code. No certificates, approvals or permits, including, without limitation, Certificates of Occupancy/Compliance, may be issued until all fees due hereunder are paid or sufficient Deposit for same made.

Notwithstanding any provision hereof to the contrary or otherwise, the intent of this Agreement is to subject all of those subject matter areas under applicable provisions of Federal, State, and County laws, rules and regulations whatsoever, the Town Code including as any of same may be amended from time to time, and without limitation, those provisions under Chapters 59, 63, 72, 83, 95, 96, 104, 119, 123, 125, 126, 127, 131, 147, and 155 of the Town Code to the provisions hereof; in addition any financing or funding applications incidental to the Application or Project and requiring sponsorship or support of Town, and review under the State Environmental Quality Review Act or other State or Federal environmental, historical or related laws, rules or regulations shall likewise be subject to the provisions hereof.

In addition, and notwithstanding any provisions hereof to the contrary or otherwise, any provisions of the Town Code or other laws, rules or regulations providing rights more favorable to and protective of Town shall be deemed incorporated herein by reference, and shall not be deemed superseded by less protective provisions herein.

In the event of a breach or default by Applicant, Town shall be entitled to pursue any and all legal rights and remedies pursuant to applicable law including, without limitation, the Town Code and shall be entitled to recover, in addition to any sums due, reasonable attorney's fees ,costs and disbursements incurred in any such efforts.

If any part of this Agreement or the application thereof to any person or entity or circumstance is adjudged invalid, illegal or unconstitutional by any court of competent jurisdiction, such order or judgment shall be confined in its operation to the part of this law or in its application directly involved in the controversy in which such judgment shall have been rendered and shall not affect or impair the validity of the remainder of this Agreement or the application thereof to other persons, entities or circumstances. Further, in adjudging such invalid, illegal or unconstitutional provision or part thereof, the court shall attempt to modify same to a provision or part which is not illegal, invalid or unconstitutional and which best achieves the intent of such illegal, invalid or unconstitutional provision or part thereof.

The Town Supervisor has executed this agreement pursuant to a blanket Resolution adopted by the Town Board at a meeting thereof held on _____, 20__, and is duly authorized and empowered to execute this instrument and enter into this Agreement on behalf of the Town of Manlius.

In the event Applicant is a closely held corporation, partnership or limited liability company, its three (3) largest principals shall be signatories to this Agreement, as joint and severable parties with Applicant and Town.

This instrument shall be executed in triplicate. At least one original shall be permanently filed, after execution thereof, in the office of the Town Clerk and one in the Code Enforcement Office.

Dated: 4/15/2020

_____	_____
Print Applicant Name	**Applicant's Authorized Signature/Title**

Applicant Address: One Bridge Street, Suite 11, Irvington, New York 10533

_____

_____	_____
Print Applicant (Principal) Name	**Applicant's Principal Signature**
_____	_____
Print Applicant (Principal) Name	**Applicant's Principal Signature**
_____	_____
Print Applicant (Principal) Name	**Applicant's Principal Signature**

TOWN OF MANLIUS

By: _____

Name: _____

Title: _____

Exhibit H

DISCLOSURE AFFIDAVIT

DISCLOSURE AFFIDAVIT

North Eagle Solar Facility Application
5062 North Eagle Village Road, Manlius, New York
13104

State of New York

Mr. Jonathan Koch, as a representative of the Applicant, EF NY CDG 001, LLC (Falck Renewables), who having been first duly sworn says:

I reviewed General Municipal Law §809 and am familiar with the provisions contained therein, that no state officer, or any officer or employee of the County of Onondaga or Town of Manlius has any interest in the person, partnership or association owning the premises subject of the application or making such application, and that no other violation of §809 shall result from such application

Jonathan Koch
Falck Renewables

Subscribed and sworn to before me this day 4/1/2020

Notary Public

ERIN Q. SANCHEZ
Notary Public, State of New York
No. 1SA6035943
Qualified in Dutchess County
Commission Expires January 10, 2022

My Commission Expires on: 1/10/22



Special Use Permit and Site Plan Approval Application

Proposed North Eagle Solar Site
5062 North Eagle Village Road
Manlius, New York 13104

Submitted April 16, 2020

Prepared by:

TETRA TECH

Tetra Tech, Inc.
3163 South Winton Road, Suite 303
Rochester, NY 14623
Phone: (585) 417-4007

Prepared for:

EF NY CDG 001, LLC
One Bridge Street, Suite 11
Irvington, New York 10533

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1.0 PROJECT OVERVIEW

EF NY CDG 001, LLC (Falck Renewables) is seeking a Special Use Permit and Site Plan approval for the construction of the North Eagle Solar 5 megawatt (MW) alternating current (AC) photovoltaic (PV) array located at 5062 North Eagle Village Road, Manlius, New York (hereafter referred to as the "Site"). Falck Renewables proposes the development of approximately 21.3 acres of a larger approximately 44.71-acre parcel of agricultural land in the Town of Manlius, Onondaga County into a ground-mounted PV solar farm.

The proposed PV solar farm would be capable of delivering about 5,000 kW AC into the local electrical distribution system, which is sufficient to provide renewable energy to approximately 600 households. The PV solar modules proposed for this project are fixed-tilt modules that would be placed on a racking system that is either pile driven or screw mounted to the ground surface. The PV solar modules will be directly interconnected to and provide energy to the local electric distribution system via a typical 13.2 kilovolt, overhead electrical service. Prior to utility interconnection, direct current (DC) electric power generated by the PV solar modules will be transformed to AC electric power by inverters and modified as necessary to safely supply the local electrical distribution system. The PV solar farm would also include an equipment pad, a gravel access road, a vegetative soil cover, and it will be surrounded by a chain-linked security fence per code.

The following sections and Exhibits provide information 1) about the proposed PV solar farm and 2) required as part of the Special Permit application criteria and Section 155-27.2 of the Town Code.

2.0 SITE DESCRIPTION

The Site located 5062 North Eagle Village Road, Manlius, New York, consists of an approximately 44.71-acre parcel assigned Assessor Parcel Number (APN) 313889-098-000-0001-015-000-0000 and Property Identifier 098.-01-15.0. According to the Onondaga County Image Mate Online database the property class is listed as "field crops" and is zoned as restricted agricultural.

The Site includes agricultural and wooded land with several farm related buildings and a residential home. The Site is bounded by wooded land followed by residential properties and Salt Springs Road to the north, Townsend Road followed by wooded land and residential properties to the east, North Eagle Village Road followed by agricultural land to the south, and wooded land followed by agricultural land and a church to the west.

A map showing the location of the Site is presented in *Attachment A*.

3.0 COMMUNITY CHARACTER AND SURROUNDING LAND USE

The general area at the Site consists of agricultural and undeveloped land. The Site is located within a rural residential area in the Village of Manlius in Onondaga County, New York. The Site is bounded by wooded land followed by residential properties and Salt Springs Road to the north, Townsend Road followed by wooded land and residential properties to the east, North Eagle Village Road followed by agricultural land to the south, and wooded land followed by agricultural land and a church to the west.

Table 4-1 Adjacent Properties and Addresses

Direction from the Site	Street Address	Description
North	N/A 8204 Salt Spring Road 8232 Salt Spring Road	Wooded and Agricultural Land Residential Residential
East	N/A 5240 Townsend Road	Wooded and Agricultural Land Residential
Southeast	5062 North Eagle Village Road	Farm and Residence
South	N/A	Agricultural Land
West	5070 North Eagle Village Road	Church and Agricultural Land

The installation and operation of a solar facility is consistent with the Town's vision to *"...promote the safe, effective and efficient use of solar photovoltaic energy systems that reduce on-site and off-site consumption of utility-supplied energy while protecting the health, safety and welfare of adjacent and surrounding land uses and properties."* (Section 155-27.2 of the Town Code).

Falck Renewables and its affiliates have worked closely with the landowner to locate the Site in the least productive area of farmland on the designated land parcel. In addition, the PV solar farm will be decommissioned after its useful life (designed for 40 years) and the land may be readily reused for agriculture. During the PV solar farm's useful life, native nutrient-rich plant blends can be used as ground cover to enhance soil erosion measures and increase future farm production.

The proposed PV solar farm is harmonious with the Site's adjoining parcels' existing agricultural use, will not depreciate or alter those properties' essential character, and presents no conflict with residentially zoned areas of Town of Manlius.

While research is limited on the effect of ground-mounted PV solar farms on surrounding land values, a 2013 nationwide study of wind farms and surrounding property values within viewing range showed no evidence of affected property values. Due to PV solar farms' smaller profile and lack of flicker and shadow potential on surrounding lands, PV solar farms are anticipated to have even less of an impact than wind farms on surrounding land values.

4.0 NATURAL AND CULTURAL RESOURCES

4.1 Threatened and Endangered Species

Tetra Tech, on behalf of Falck Renewables, consulted with the New York State Department of Environmental Conservation (NYSDEC) online Environmental Assessment Form (EAF) Mapper on March 31, 2020. The NYSDEC review stated that there is no record of unique geological features, wetlands or waterbodies, State listed rare species of plant or animal, or critical environmental areas on the project Site. The review did identify Northern Long-eared Bat as a listed endangered or threatened species that could potentially be contained or have identified habitat for the species within the Site. The proposed work will not include tree clearing and will not affect Northern Long-eared Bat or its potential habitat. The NYSDEC EAF Form is included as Exhibit E to the Special Permit Application.

Tetra Tech submitted a consultation request to the United States Department of the Interior Fish and Wildlife Service (USFWS) on March 4, 2020. The USFWS responded that there are no critical habitats for threatened or endangered species in the vicinity of the Site (*Attachment B)*.

4.2 Cultural Resources

Tetra Tech, on behalf of Falck Renewables, submitted a consultation request to the New York State Office of Parks, Recreation, and Historic Preservation's (OPRHP) Cultural Resource Information System (CRIS) database to identify properties listed on the State and National Register of Historic Places (NRHP) on or in the vicinity of the Project Site. OPRHP responded to the consultation by issuing a "No Effect" letter dated March 17, 2020 (*Attachment C*) stating that no archaeological surveying was required, and the proposed solar facility would have no effect on historic cultural resources.

5.0 OPERATION AND MAINTENANCE CONSIDERATIONS

While PV solar farms of this capacity are typically considered to be fairly low-maintenance, routine operation and maintenance services, including locally contracted vegetation management, will be performed per industry codes and manufacturers' specifications, ensuring the safe and efficient operation of equipment. The PV solar farm will be continuously monitored such that unexpected issues may be addressed immediately.

5.1 Noninterference

The Site will not produce an electromagnetic interference in the existing microwave communications operation.

5.2 Proximity to radio, television and telephone systems

The Site will not interfere with existing fixed broadcast, retransmission, or reception antennae for radio, television or wireless phone.

5.3 Fencing and security

The Site will be surrounded by a chain-link fence in compliance with all Federal, State, and Municipal codes.

5.4 Lighting

No artificial lighting will be needed for the normal operations at the Site.

5.5 Utility Interconnection and Considerations

In general, the greatest challenge in siting economically viable PV solar farm is associated with utility interconnection capacity and requirements. Falck Renewables and its affiliates have been working in close coordination with the National Grid and the 25% interconnection down payment associated with the Site has been paid per D. Payment and Construction Milestones of the New York State Standardized Interconnection Requirements and Application Process For New Distributed Generators and Energy Storage Systems 5 MW or Less Connected in Parallel with Utility Distribution Systems.

5.6 Traffic Impacts

Traffic impacts are generally limited to the PV solar farm construction period, which is estimated to last approximately three months. Once the PV solar farm is operational, traffic is typically limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

5.7 Noise

There may be some noise associated with PV solar farm construction – truck entry/exit, earthmoving equipment, etc. – but it is expected to be temporary in duration and limited to normal working hours.

The solar collection modules themselves are quiet. The greatest potential source of noise is anticipated to be from the power inverter at the Site. The inverter will be located central to the array of solar modules and more than 700 feet from the nearest residential receptor. Noise levels at a typical inverter will be approximately 55 decibels at a distance of three feet and the noise will dissipate quickly as distance from the inverter increases. As a point of comparison, engaging in normal face-to-face conversation generates a noise level of approximately 60 decibels, and typical city traffic inside a car has a noise level of approximately 80 decibels (Center for Disease Control and Prevention, 2017). At a distance of 40 feet, which is closer than the nearest receptors, the inverter's noise level calculates to approximately 35 decibels, which is comparable to a soft whisper. Thus, noise impacts from the facility's operation are expected to be insignificant.

5.8 Solid Waste

Some minor amount of solid waste generation may occur during the construction process, but it will be disposed of off-site at an appropriate location. Once operational, the PV solar farm will not generate an appreciable amount of solid waste.

5.9 Fire Protection and Emergency Access

Coordination with emergency services is an important part of any PV solar farm development process and this coordination will be conducted as part of the Building Permit application process. Local emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site. Equipment specifications will be provided to responders during the building permit application and implementation process.

The following measures will be taken regarding response to potential emergencies at the proposed facility:

- Local emergency responders will be invited to tour the Site during construction and after construction is completed. The Site tour will agenda will include descriptions of the system components, emergency shut-down, system isolation, etc.;
- The facility will be provided with a 'Knox-Box" or other similar locking mechanism to provide Site access to emergency responders;
- Emergency telephone numbers will be posted on the perimeter fence;
- System components will be marked in order to provide emergency responders with appropriate warning and guidance with respect to isolating the electrical systems;
- A Site access road will be constructed in a way that allows for the passage of emergency vehicles in the event of an emergency; and
- A Site access road will be maintained to allow emergency vehicle access to the Site.

6.0 VISUAL IMPACTS ANALYSES

6.1 Viewsheds and screening

Tetra Tech, on behalf of Falck Renewables conducted a full dimensional viewshed analysis and developed a conceptual landscape/screening plan to address concerns of visibility from residences in proximity to the proposed Site. The viewshed map analyzes the potential visibility of the solar modules and screening provided by topography as well as existing vegetation. A profile that depicts the terrain and other existing features that may influence visibility of the Site was developed to provide a graphical representation of the line of sight from points selected along Salt Springs Road, Townsend Road, and North Eagle Village Road. The viewshed map is provided in *Attachment D* and the Landscaping plan is included in *Attachment E*.

6.2 Federal Aviation Administration & Glare Analysis

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint and glare from photovoltaic modules is receiving increased attention. The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010 (FAA Guidance). The FAA Guidance recommends that glare analyses should be performed on a site-specific basis using the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT). This guidance applies to PV solar farm located on/near airport property but is also considered to be an industry best practice for solar facilities in general.

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The calculations and methods are based on analyses, test data, a database of different photovoltaic module surfaces (e.g. anti-reflective coating, texturing), and models developed over several years at Sandia. The results are presented in a simple easy-to-interpret plot that specifies when glare will occur throughout the year, with color indicating the potential ocular hazard (Sandia Laboratories, 2016).

The SGHAT (GlareGauge) was utilized to evaluate the potential for glare at several locations along nearby roads, residences, and any commercial facilities. The modules to be used on the Site are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The modules will be on a south-facing fixed-tilt array with an approximate height not to

exceed nine feet from the ground surface. The modules will have a maximum 25-degree tilt. Two separate glare analyses were conducted for a module height of nine feet (maximum height) with applicable panel specifications. The SGHAT Report is included as *Attachment F.*

The Federal Aviation Administration (FAA) Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility would require formal filing to the FAA. The FAA Notice Criteria Tool Report is included as *Attachment G.*

7.0 REFERENCES

Adolf Goetzberger and Volker Hoffman (2005). "Photovoltaic Solar Energy Generation." Springer, New York.

The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010

Fthenakis, V.M. (2003). Practical Handbook of Photovoltaics: Fundamentals and Applications: Overview of Potential Hazards. Available at http://www.bnl.gov/pv/files/pdf/art_170.pdf .

U.S. Dept. of Energy (2010). "Photovoltaic Basics." Available at http://www1.eere.energy.gov/solar/pv_basics.html .

Vasilis Fthenakis, Hyung Chul Kim and Erik Alsema (2008). "Emissions from Photovoltaic Life-Cycles." *Environmental Science and Technology* 2008 42 (6):2168-2174. Available at: http://pubs.acs.org/doi/full/10.1021/es071763q .

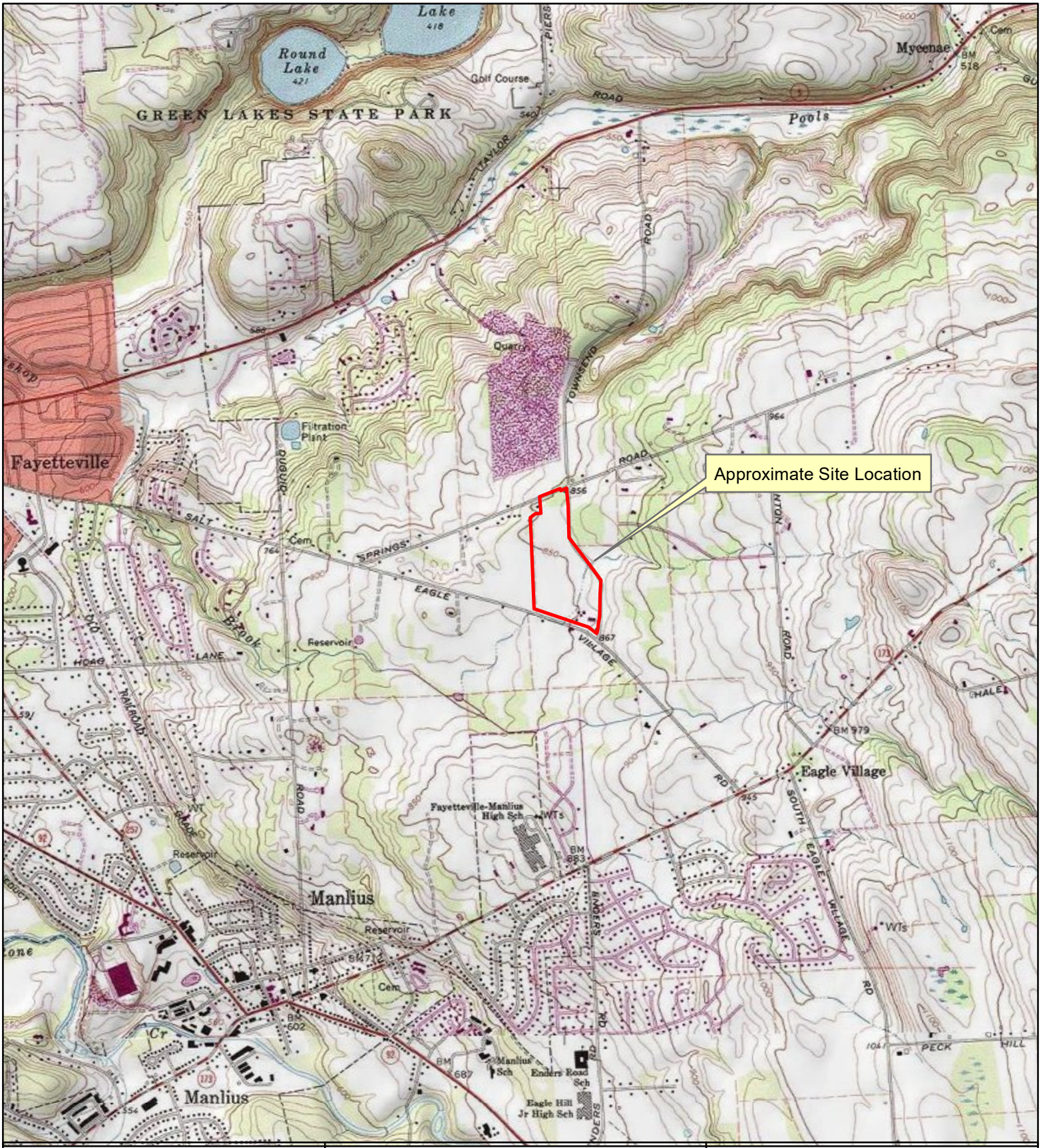
Hoen et al. (2013). "A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States". Ernest Orlando Lawrence Berkeley National Laboratory.

8.0 ATTACHMENTS

ATTACHMENT A – SITE LOCATION MAP
ATTACHMENT B – USFWS THREATENED AND ENDANGERED SPECIES
ATTACHMENT C – SHPO CONSULTATION LETTER
ATTACHMENT D – VIEWSHED ANALYSIS
ATTACHMENT E – LANDSCAPING PLAN
ATTACHMENT F – GLARE ANALYSIS
ATTACHMENT G – FEDERAL AVIATION ADMINSTRATION SCREEN

ATTACHMENT A

SITE LOCATION MAP





Legend

Approximate Site Boundary

Approximate Scale:

0 0.25 0.5 1 Miles

TETRA TECH

Attachment A
Site Location

North Eagle Solar
5062 North Eagle Village Road
Manlius, NY

Service Layer Credits: Esri, HERE, Garmin, © OpenStreetMap contributors

ATTACHMENT B

USFWS THREATENED AND ENDANGERED SPECIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 04, 2020
Consultation Code: 05E1NY00-2020-SLI-1929
Event Code: 05E1NY00-2020-E-05800
Project Name: North Eagle Solar Site

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/

eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2020-SLI-1929

Event Code: 05E1NY00-2020-E-05800

Project Name: North Eagle Solar Site

Project Type: POWER GENERATION

Project Description: Potential area for ground-mounted solar project on current agricultural field

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.02331470901816N75.95813217765661W



Counties: Onondaga, NY

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

ATTACHMENT C

SHPO CONSULTATION LETTER

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

March 17, 2020

Charles Vandrei
Agency Historic Preservation Officer
NYS Environmental Conservation
625 Broadway
Albany, NY 12233

Re: DEC
North Eagle Solare Site/44.71 Acres
5062 N Eagle Rd., Manlius Onondaga County
20PR01564

Dear Charles Vandrei:

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

We note that the proposed project at 5062 N Eagle Village Road is within a half mile of 8142 Salt Springs Road, which is eligible for listing in the State and National Registers of Historic Places. We have reviewed the submission received on March 4, 2020. Based on that review, it is the OPRHP's opinion that the project, as described, will have No Adverse Impact on historic resources. If you have any questions, I can be reached at (518) 268-2170.

Sincerely,

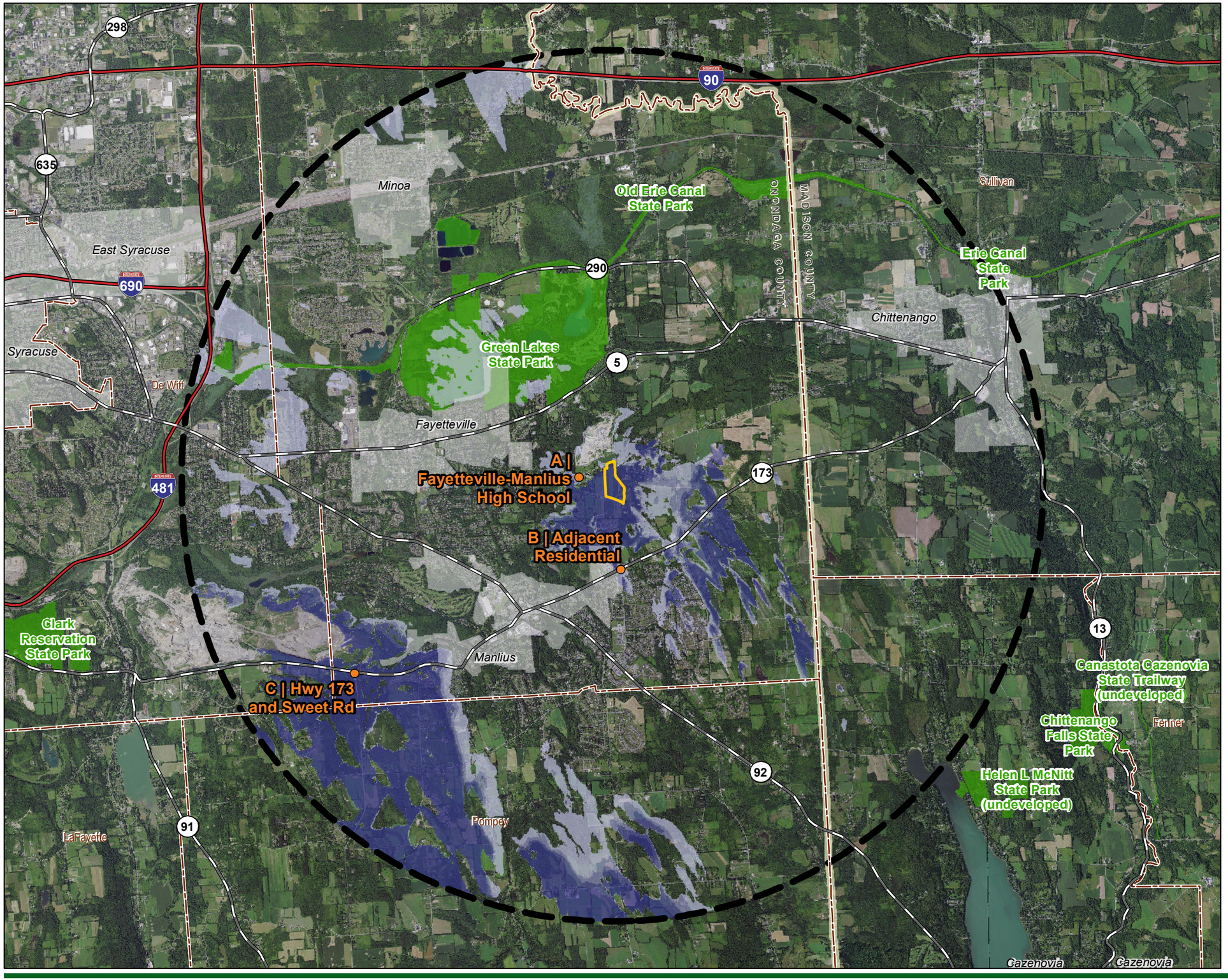
Robyn Sedgwick
Historic Site Restoration Coordinator
e-mail: robyn.sedgwick@parks.ny.gov via e-mail only

cc: D. Timmis – Tetra Tech

ATTACHMENT D

VIEWSHED ANALYSIS

North Eagle Solar Project | Onondaga County, NY



Project Area | **Viewshed Analysis**

- Line-of-Sight Location
- Project Area
- State Park

Transportation

- Interstate Highway
- U.S. Highway
- State Highway

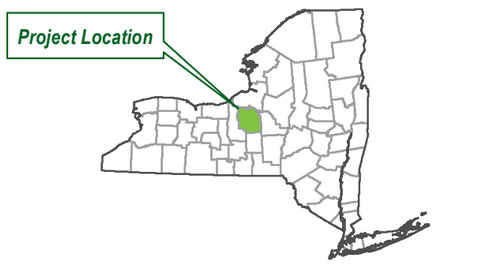
% of PV Panels Potentially Visible

- < 25%
- 25% - 50%
- 50% - 75%
- > 100%

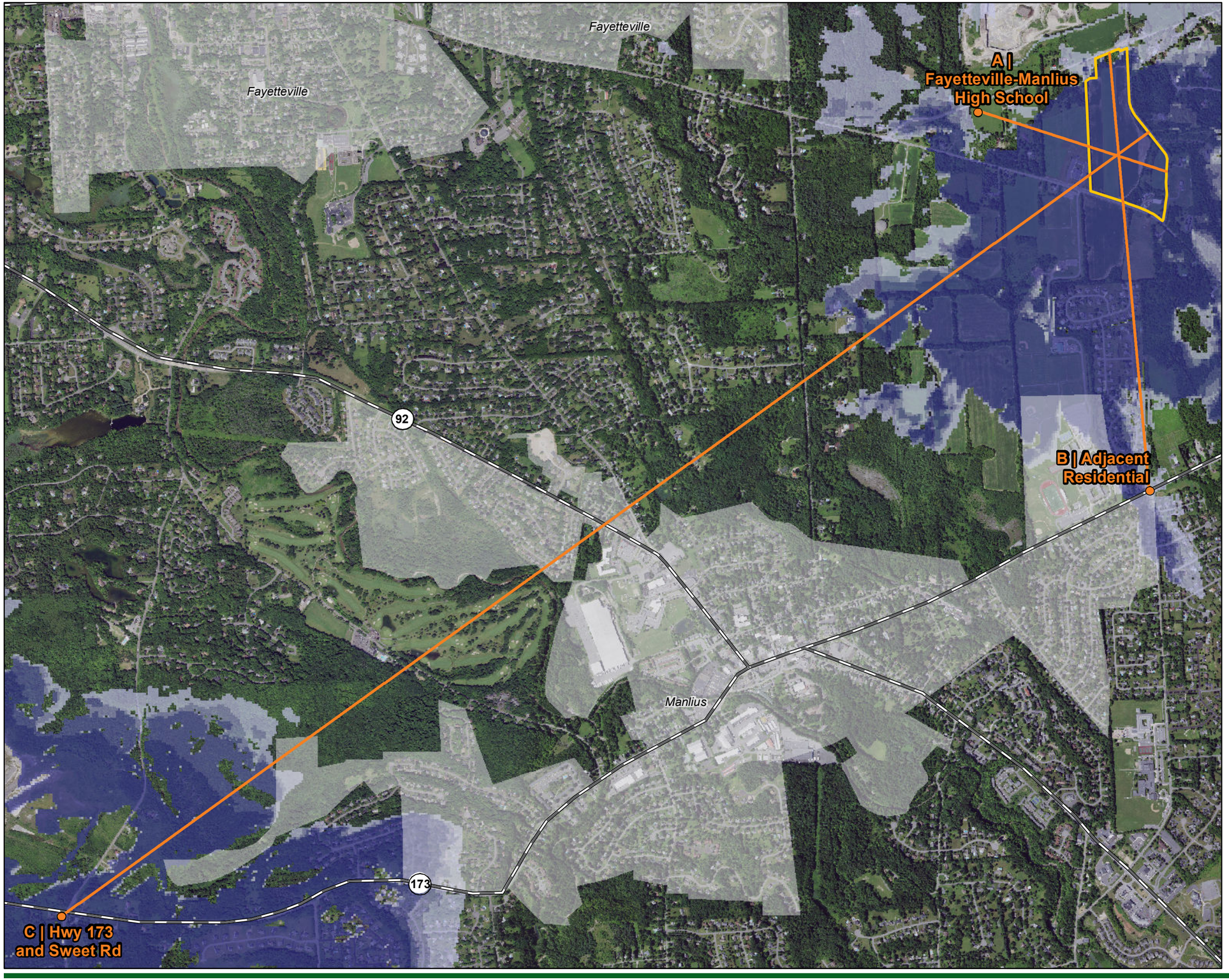
*Viewshed analysis is based on topography (bare earth; no vegetation or intervening structures) and a maximum 10' height of solar panels to evaluate the potential visibility of the proposed project. Areas that are not shaded in purple indicate that there is likely no visibility.

NOT FOR CONSTRUCTION

0 1.5 3 Miles



North Eagle Solar Project | Onondaga County, NY



Project Area | Viewshed Analysis

- Line-of-Sight Location
- Line of Sight
- Project Area
- State Park

Transportation

- State Highway

% of PV Panels Potentially Visible

- < 25%
- 25% - 50%
- 50% - 75%
- > 100%

*Viewshed analysis is based on topography (bare earth; no vegetation or intervening structures) and a maximum 10' height of solar panels to evaluate the potential visibility of the proposed project. Areas that are not shaded in purple indicate that there is likely no visibility.

NOT FOR CONSTRUCTION

0 0.375 0.75 Miles

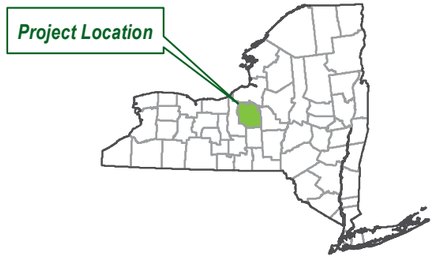


Figure 1: Line of Sight A | Fayetteville-Manlius High School

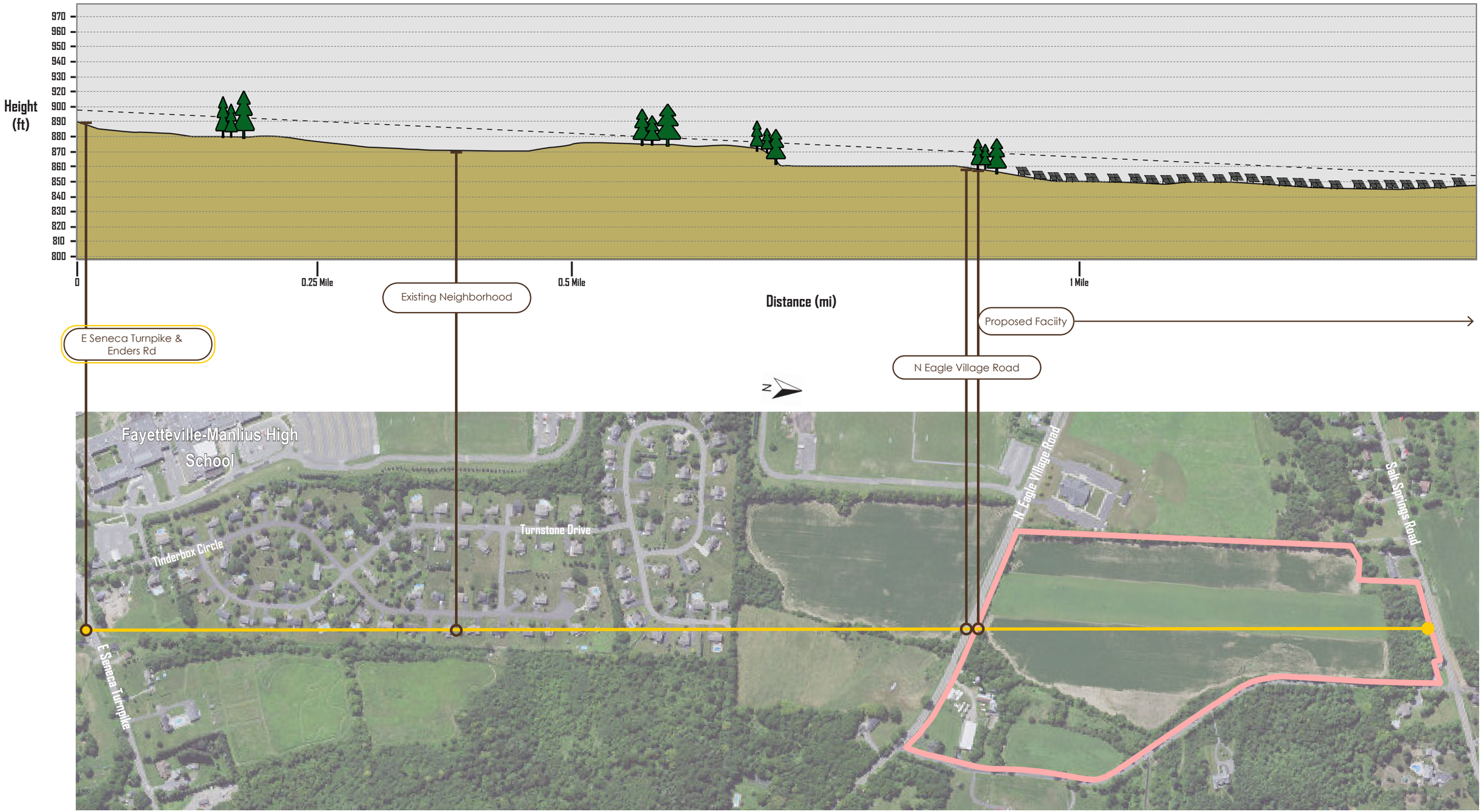


Figure 2: Line of Sight B | Adjacent Residential

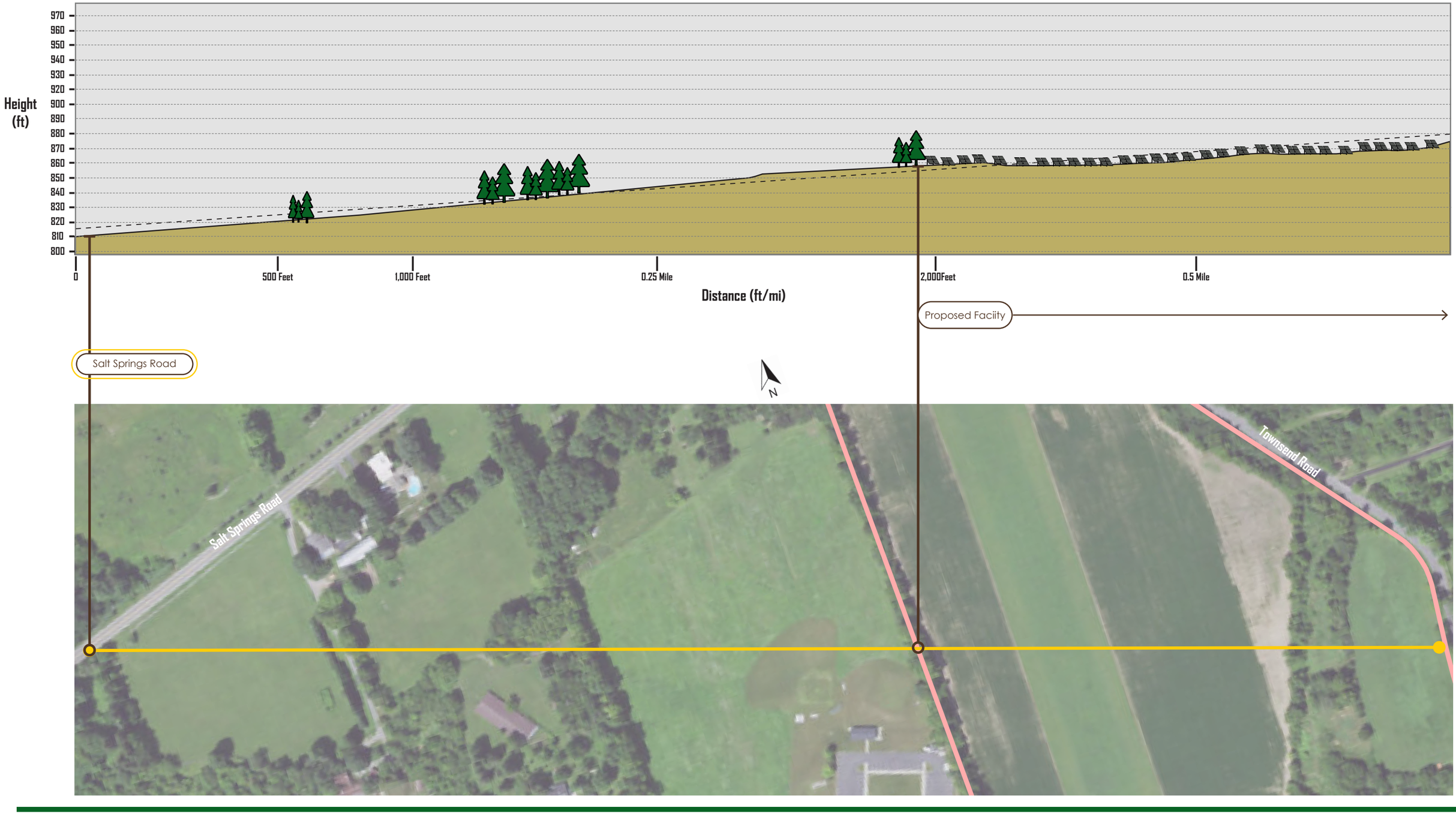
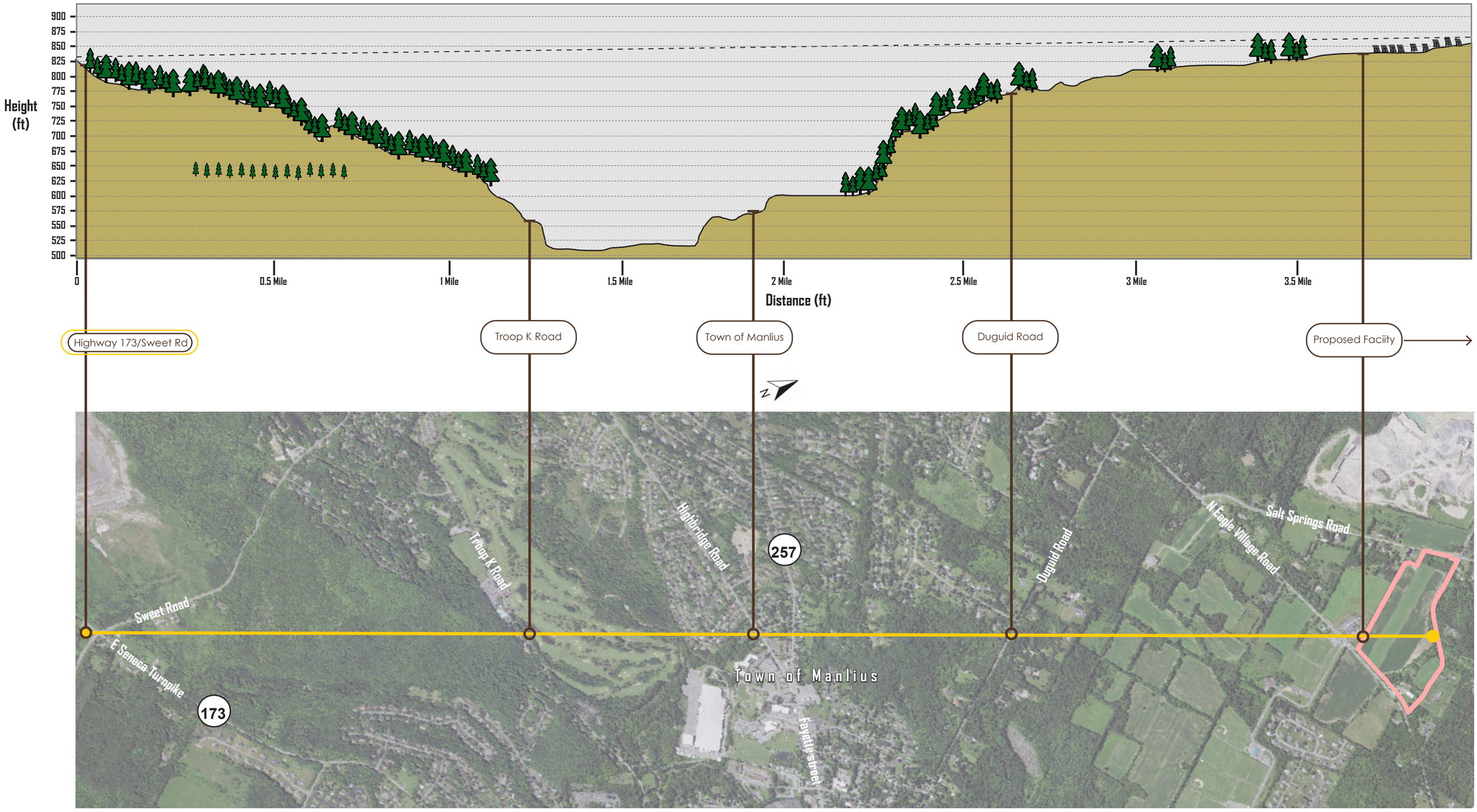


Figure 3: Line of Sight C | State Highway 173/Sweet Road



ATTACHMENT E

LANDSCAPING PLAN

TETRA TECH
ARCHITECTS & ENGINEERS

April 10, 2020

Mrs. Jodi L. Hunt, Project Manager
Tetra Tech Engineering Corporation, P.C.
3136 South Winton Road, Suite 303
Rochester, New York 14623

Re: North Eagle Solar Project
5062 North Eagle Village Road
Manlius, New York 13104
Tt Project Number 194-7179

Dear Mrs. Hunt:

On April 8, 2020 I visited the above referenced project for the purposes of determining whether landscape materials are recommended to be installed to screen the proposed solar array development from North Eagle Village Road, Salt Springs Road and Townsend Road as shown on the Sheet C-201.

I evaluated the existing site against the proposed site plan in order to determine where the solar units might be visible from North Eagle Village Road and Salt Springs Road. Views onto the property from these roads were primarily from the adjacent Church property to the west corner of the proposed site. It appears the Church property extends to Salt Springs Road. The property boundary separating the Church property including Salt Springs Road was heavily screened with vegetation ranging from approximately 10 feet to 20 feet in width. The property areas along Eagle Village Road which front the property consisted of open field and Fayetteville Manlius athletic fields.

The visibility to the solar development from the intersection of North Eagle Village Road and Townsend Street is extremely limited. The development is located behind an existing farm and is heavily vegetated between the farm and proposed solar development. Townsend Road is heavily vegetated on either side of the road creating a buffer between the development and residences along the roadway. The development terminates approximately 625 feet from Salt Springs Road.

The placement of this solar development on this site utilizes existing vegetation to limit overall visibility to the solar development. Given the vegetative buffer distance surrounding the solar development overall visibility is limited to the point where placing additional plant material to enhance screening of this development will not be effective. Attached photographs will offer a perspective onto the property illustrating the existing vegetative buffering surrounding the site.

Tetra Tech Architects & Engineers
Cornell Business & Technology Park
10 Brown Road, Ithaca, New York 14850
Tel 607.277.7100 Fax 607.277.1410 www.tetratech-ae.com

If you should have any questions on the enclosed, please do not hesitate to contact me at our **Ithaca** Office.

Sincerely,

James R. Stephenson

James R. Stephenson
Senior Landscape Architect
jim.stephenson@TetraTech.com

JRS:adm

cc: Project 194-7179, File 46b



SITE PHOTOGRAPHS



View to the south along North Eagle Village



View from the Church property onto the solar development.
Typical vegetated buffer surrounding the property.

ATTACHMENT F

GLARE ANALYSIS

TETRA TECH

MEMO

To:	EF NY CDG 001, LLC
From:	Tetra Tech, Inc.
Date:	March 13, 2020
Subject:	Glint and Glare Analysis of the North Eagle Solar Project in Onondaga County, Manlius, NY

At the request of EF NY CDG 001, LLC (Falck Renewables), Tetra Tech, Inc. (Tetra Tech) conducted a glint and glare analysis of the proposed North Eagle Solar Project (Project) located in Onondaga County, New York. The Project site consists of approximately 21 acres of undeveloped land approximately 1.4 miles northeast of downtown Manlius, New York. The Project is bounded by rural residential land to the north and east; undeveloped land and sport fields to the south and a church to the west. Topography throughout the Project site is relatively flat and ranges from approximately 854 to 844 feet above mean sea level with the highest elevations along the northern Project site boundary, gradually sloping down to the southwest.

This memorandum provides a description of the glint and glare anticipated from use of the Project site as a solar energy generating facility. Included are a Site Plan (Attachment A), the Sandia glare analysis reports (Attachment B), and the Federal Aviation Administration (FAA) Notice Criteria Tool Output (Attachment C).

GLARE ANALYSIS METHOD

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glare (a continuous source of bright light) from photovoltaic modules is receiving increased attention. As an industry standard, the term “glint and glare” analysis is typically used to describe an analysis of potential ocular impacts to defined receptors. As a point of clarification ForgeSolar defines glint and glare in the following statement:

> *Glint is typically defined as a momentary flash of bright light, often caused by a reflection off a moving source. A typical example of glint is a momentary solar reflection from a moving car. Glare is defined as a continuous source of bright light. Glare is generally associated with stationary objects, which, due to the slow relative movement of the sun, reflect sunlight for a longer duration.*

Based on the ForgeSolar definitions of glint and glare and the stationary nature of the Project modules (tracking arrays do not rotate faster than the relative movement of the sun), the potential reflectance from the Project modeled throughout this report will be referred to as glare.

The Federal Aviation Administration (FAA) developed Technical Guidance for Evaluating Selected Solar Technologies on Airports in 2010 (FAA Guidance). The FAA Guidance recommends that glare analyses should be performed on a site-specific basis using the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT). This guidance applies to solar facilities located on federally-obligated airport property but is also considered to be an industry best practice for solar facilities in general. The SGHAT complies with FAA 78 FR 63276. Tetra Tech

utilized the SGHAT technology as part of an online tool (GlareGauge) developed by Sandia National Laboratories and hosted by ForgeSolar. GlareGauge provides a quantitative assessment of the following:

- When and where glare has the potential to occur throughout the year for a defined solar array polygon; and
- Potential effects on the human eye at locations where glare is predicted.

Based on the predicted retinal irradiance (intensity) and subtended angle (size/distance) of the glare source to receptor, the GlareGauge categorizes potential glare where it is predicted by the model to occur in accordance with three tiers of severity (ocular hazards) that are shown by different colors in the model output:

- Red glare: glare predicted with a potential for permanent eye damage (retinal burn)
- Yellow glare: glare predicted with a potential for temporary after-image
- Green glare: glare predicted with a low potential for temporary after-image

The following statement was issued by Sandia Laboratories regarding the SGHAT technology:

> *Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The calculations and methods are based on analyses, test data, a database of different photovoltaic module surfaces (e.g. anti-reflective coating, texturing), and models developed over several years at Sandia. The results are presented in a simple easy-to-interpret plot that specifies when glare will occur throughout the year, with color indicating the potential ocular hazard (Sandia Laboratories, 2016).*

According to the Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports (78 FR 63276), the FAA has determined that "glint and glare from solar energy systems could result in an ocular impact to pilots and/or air traffic control (ATC) facilities and compromise the safety of the air transportation system." The FAA has developed the following criteria analyzed by SGHAT as it pertains to the Project:

- No potential for glint or glare in the existing or planned Airport Traffic Control Tower (ATCT) cab; and
- No potential for glare or "low potential for after-image" along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds) as shown on the current FAA-approved Airport Layout Plan (ALP). The final approach path is defined as two miles from 50 feet above the landing threshold using a standard three-degree glidepath.

The SGHAT was utilized to evaluate the potential for glint and glare at Syracuse Hancock International (SYR) as noted in the FAA Notice Criteria Tool Output (Attachment C). SYR contains 4 two-mile final approach path runways (RWY 10/28 and RWY 15/33) which were modeled according to the direction, threshold crossing height and glide path noted in the FAA Airport Database. In addition, 4 representative surrounding observation points (OPs) and segmented routes along North Eagle Village Road and Townsend Road were modeled to provide a representation of potential impacts to the surrounding viewshed. The SGHAT input parameters are noted in Table 1 and Table 2.

Table 1: SGHAT Input Parameters - Surrounding Properties

Racking Type	Module Type	Module Orientation[1]	Tilt	Panel Centroid Height[2]	Observation Point Height[2]	Route Receptor Height[2]
Fixed Tilt	Smooth Glass with Anti-Reflective Coating	180˚	25˚	5 feet	6 feet	5 feet

1. South-facing modules throughout Project
2. Height above ground surface: OP height of 6 feet represents standing on ground or first story views; route receptor height represents average views from a standard vehicle.

Table 2: SGHAT Input Parameters - Syracuse Hancock International

Module Orientation[1]	Tilt	Panel Centroid Height[2]	Air Traffic Control Tower Height[2]	Runway Direction (true direction)	Runway Threshold Crossing Height[2]	Runway Glide Path[3]
180˚	25˚	5 feet	50 feet	RWY 10: 87˚ RWY 28: 267˚ RWY 15: 134˚ RWY 33: 314˚	RWY 10: 55 feet RWY 28: 60 feet RWY 15: 53 feet RWY 33: 53 feet	RWY 10: 3˚ RWY 28: 3˚ RWY 15: 3˚ RWY 33: 3˚

1. Fixed-tilt, south-facing, smooth glass modules with anti-reflective coating throughout the Project.
2. Height above ground surface: ATCT height assumed to be approximately 50 feet.
3. Glide path is the angle of aircraft decent along the two-mile final approach path into the designated runway.

GLARE ANALYSIS RESULTS

The SGHAT GlareGauge modeled the results for the Project. Based on conservatisms and assumptions in the software, the Project was split into two photovoltaic (PV) array areas (PV 1 and PV 2) and Townsend Road was split into three segments. The SGHAT did not produce any results for glare along the two-mile final approach paths into SYR nor at the SYR ATCT; therefore, the Project complies with the minimum standards set for solar projects on airport property (FAA 78 FR 63276, as outlined above).

In addition, red glare and green glare were not predicted at any surrounding OPs or route receptors modeled in the SGHAT; however, yellow glare was predicted at the OPs and route receptors as outlined in Table 3.

Table 3: Glare Analysis Summary

Receptor	Annual Green Glare Minutes	Annual Yellow Glare Minutes	Annual Red Glare Minutes
SYR RWY 10	0	0	0

SYR RWY 28	0	0	0
SYR RWY 15	0	0	0
SYR RWY 33	0	0	0
SYR ATCT	0	0	0
North Eagle Village Road	0	349	0
Townsend Road - 1	0	0	0
Townsend Road - 2	0	3,723	0
Townsend Road - 3	0	3,617	0
OP 1 (northern residential)	0	0	0
OP 2 (church)	0	5,569	0
OP 3 (southeastern farm)	0	1,304	0
OP 4 (eastern residential)	0	8,190	0

It is important to note that the SGHAT is bound by conservative limitations. The SGHAT does not consider obstacles (either man-made or natural) between the defined Project and the observer during analysis such as vegetative screening (existing or proposed), buildings, rolling topography, etc. In addition, the SGHAT does not account for varying ambient conditions (i.e. cloudy days, precipitation, etc.). The Project is located in an agricultural field that is surrounded by existing vegetation on all sides. The glare analysis results summarized in Table 3 are a conservative representation as it is anticipated that many (if not all) of these predicted annual glare minutes will be obstructed by existing vegetation and topography.

FAA NOTICE CRITERIA CONSULTATION

The FAA Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility is recommended to formally file to the FAA based on the Project's central location and height above ground surface. The FAA Notice Criteria Tool Report (Attachment C) stated that a formal filing with the FAA Obstruction Evaluation Group is recommended due to the Project's proximity to SYR. As demonstrated by the results of the SGHAT, the Project is not anticipated to have adverse effects on SYR's two-mile final approach paths or ATCT. Formal filing of the Project to the FAA is recommended with the SGHAT output appended to demonstrate no adverse effects.

SUMMARY

The Project Site layout was modeled on the SGHAT GlareGauge in order to evaluate the potential extent of glare the proposed Project may have upon the two-mile final approach paths to SYR, approximately 9 miles northwest of the Project as well as on the surrounding properties and roadways. The final approach paths were generally defined as 2 miles from approximately 50 feet above the landing thresholds (78 FR 63276) using a standard 3-degree glide path. The land thresholds were defined from Runway 10/28 and 15/33 as noted in the FAA Airport

Database and summarized in Table 2. In addition, the SGHAT was used to model potential extents of glare at representative residential properties to the north and east; a farm to the southeast; a church to the west; and segmented vehicular traffic routes along North Eagle Village Road and Townsend Road. Based on the results noted in Table 3, no glare was predicted at the SYR receptors and, therefore, the Project is in compliance with FAA 78 FR 63276. Since the Project was recommended to formally file to the FAA OEG from the results of the FAA Notice Criteria Tool, Tetra Tech recommends that this formal filing be conducted with the glare analysis appended to demonstrate no adverse effects on navigable airspace.

Yellow glare (glare predicted with a potential for temporary after-image) was predicted at North Eagle Village Road, Townsend Road - 2, Townsend Road - 3, OP 2, OP 3 and OP 4. In general, the yellow glare predicted at these receptors occurs in the evening hours (from 5:00 PM to 7:00 PM) from March through mid-October. The greatest amount of predicted glare (8,190 annual minutes) is at OP 4 totaling no more than 40 minutes per day, which equates to approximately 3.1% of annual daylight minutes. As noted above, the SGHAT is a conservative model and does not account for varying ambient conditions and/or screening due to existing or proposed vegetative cover or other objects, rolling topography between the Project and receptor, etc. Based on the Project location surrounded by existing mature vegetation and undeveloped land, it is anticipated that many (if not all) of the predicted annual glare minutes will be obstructed by existing vegetation and rolling topography.

REFERENCES

Sandia Solar Glare Hazard Analysis Tool, GlareGauge hosted by ForgeSolar. Accessed online https://www.forgesolar.com/.

Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports. 78 FR 63276. October 23, 2013.

Federal Aviation Administration. CFR Title 14 Part 77.9 Notice of Proposed Construction or Alteration Requiring Notice. 2010.

Federal Aviation Administration. Technical Guidance for Evaluating Selected Solar Technologies on Airports. 2010.

Federal Aviation Administration Notice Criteria Tool. Obstruction Evaluation Version 2018.1.4. Accessed online https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm

Federal Aviation Administration Airport Database. Accessed online on March 9, 2020. https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Airport_Data/

FORGESOLAR GLARE ANALYSIS

Project: **Falck Renewables - New York**
Site configuration: **North Eagle - Surrounding**
Analysis conducted by Josh Burdett (joshua.burdett@tetratech.com) at 17:04 on 09 Mar, 2020.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	N/A	No flight paths analyzed
ATCT(s)	N/A	No ATCT receptors designated

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 36585.6727



PV Array(s)

Name: PV 1
Description: Northern
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.024640	-75.959609	849.50	5.00	854.50
2	43.023801	-75.959556	844.23	5.00	849.23
3	43.022609	-75.959491	843.74	5.00	848.74
4	43.022052	-75.959470	844.08	5.00	849.08
5	43.022123	-75.956906	851.37	5.00	856.37
6	43.022758	-75.956691	852.25	5.00	857.25
7	43.023291	-75.956713	852.48	5.00	857.48
8	43.024217	-75.957775	851.01	5.00	856.01
9	43.024727	-75.957839	853.48	5.00	858.48

Name: PV 2
Description: Southern
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.022048	-75.959473	844.08	5.00	849.08
2	43.021264	-75.959443	842.51	5.00	847.51
3	43.021060	-75.958692	844.37	5.00	849.38
4	43.020952	-75.958209	844.71	5.00	849.71
5	43.020938	-75.957609	846.55	5.00	851.55
6	43.021279	-75.957249	847.03	5.00	852.03
7	43.022113	-75.956909	851.38	5.00	856.38

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	43.026085	-75.959600	851.79	6.00
OP 2	2	43.021697	-75.960491	846.23	6.00
OP 3	3	43.020505	-75.956704	855.51	6.00
OP 4	4	43.022125	-75.954676	885.25	6.00

Route Receptor(s)

Name: N. Eagle Village Road
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.019932	-75.956339	860.26	5.00	865.26
2	43.020113	-75.956822	855.19	5.00	860.19
3	43.020242	-75.957261	851.05	5.00	856.05
4	43.020379	-75.957760	848.23	5.00	853.23
5	43.020497	-75.958216	847.01	5.00	852.01
6	43.020673	-75.958935	845.02	5.00	850.02
7	43.020819	-75.959557	844.55	5.00	849.55
8	43.020995	-75.960308	844.05	5.00	849.05
9	43.021273	-75.961435	843.71	5.00	848.71

Name: Townsend Road - 1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.026189	-75.957497	861.77	5.00	866.77
2	43.025801	-75.957455	862.48	5.00	867.48
3	43.025326	-75.957422	859.20	5.00	864.20
4	43.024958	-75.957428	856.35	5.00	861.35
5	43.024750	-75.957406	855.40	5.00	860.40

Name: Townsend Road - 2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.024725	-75.957417	855.24	5.00	860.24
2	43.024478	-75.957337	856.46	5.00	861.46
3	43.024238	-75.957186	856.51	5.00	861.51
4	43.023940	-75.956891	862.08	5.00	867.08

Name: Townsend Road - 3
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.023909	-75.956859	862.46	5.00	867.46
2	43.023666	-75.956591	862.48	5.00	867.48
3	43.023140	-75.956033	862.92	5.00	867.92
4	43.022807	-75.955679	864.10	5.00	869.10
5	43.022497	-75.955379	870.05	5.00	875.05

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV 1	25.0	180.0	0	17,427	-
PV 2	25.0	180.0	0	5,325	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
OP 1	0	0
OP 2	0	5569
OP 3	0	1304
OP 4	0	8190
N. Eagle Village Road	0	349
Townsend Road - 1	0	0
Townsend Road - 2	0	3723
Townsend Road - 3	0	3617

Results for: PV 1

Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	2413
OP 3	0	0
OP 4	0	7595
N. Eagle Village Road	0	79
Townsend Road - 1	0	0
Townsend Road - 2	0	3723
Townsend Road - 3	0	3617

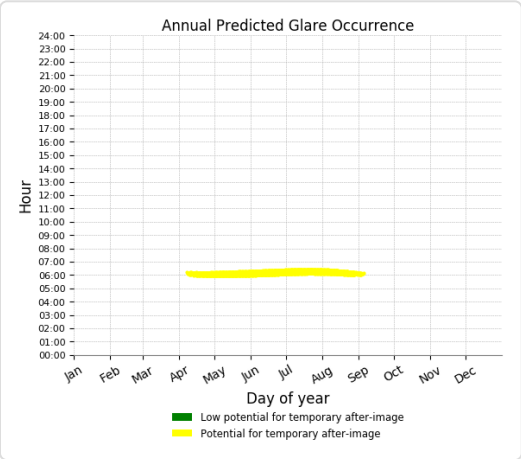
Point Receptor: OP 1

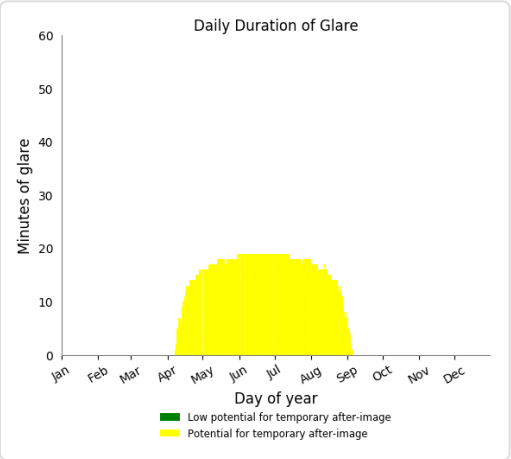
0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

2413 minutes of yellow glare

0 minutes of green glare





Point Receptor: OP 3

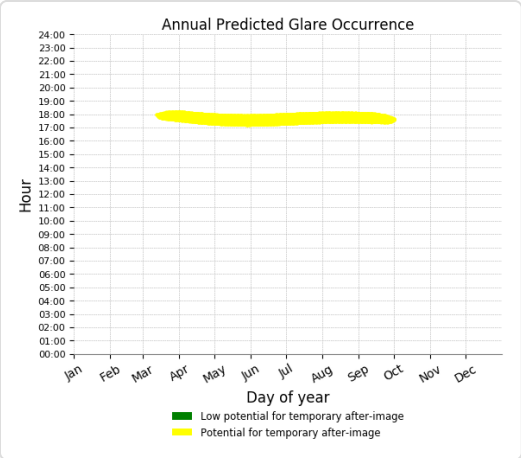
0 minutes of yellow glare

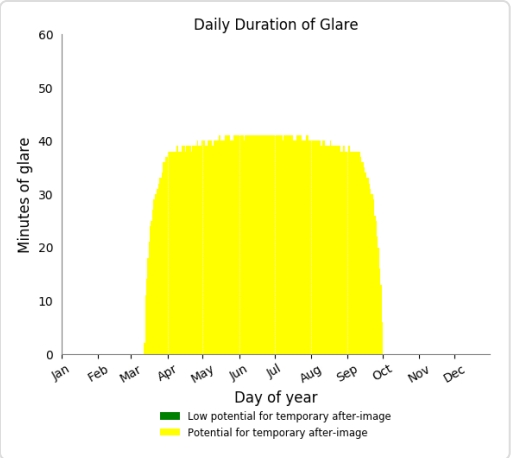
0 minutes of green glare

Point Receptor: OP 4

7595 minutes of yellow glare

0 minutes of green glare

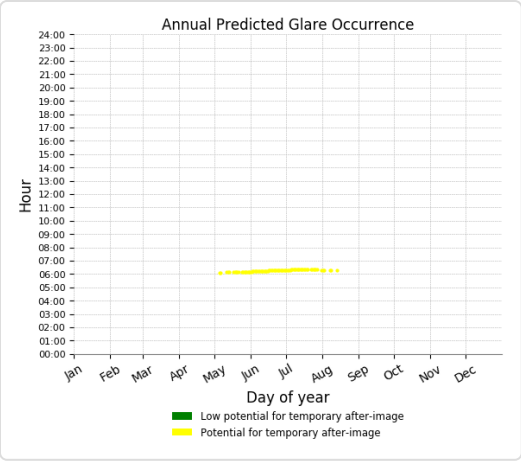




Route: N. Eagle Village Road

79 minutes of yellow glare

0 minutes of green glare

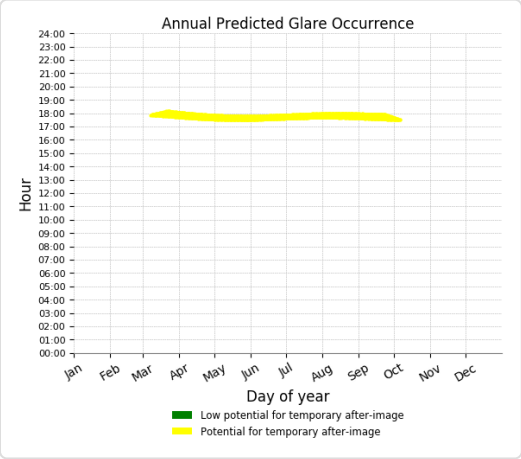


Route: Townsend Road - 1

0 minutes of yellow glare
0 minutes of green glare

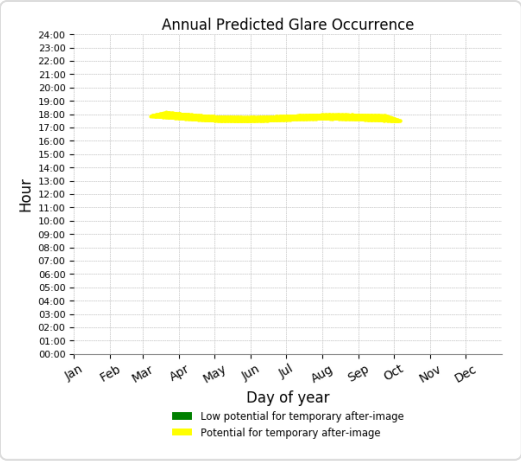
Route: Townsend Road - 2

3723 minutes of yellow glare
0 minutes of green glare



Route: Townsend Road - 3

3617 minutes of yellow glare
0 minutes of green glare



Results for: PV 2

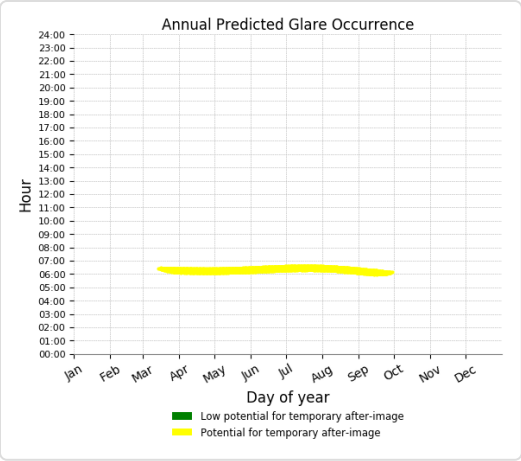
Receptor	Green Glare (min)	Yellow Glare (min)
OP 1	0	0
OP 2	0	3156
OP 3	0	1304
OP 4	0	595
N. Eagle Village Road	0	270
Townsend Road - 1	0	0
Townsend Road - 2	0	0
Townsend Road - 3	0	0

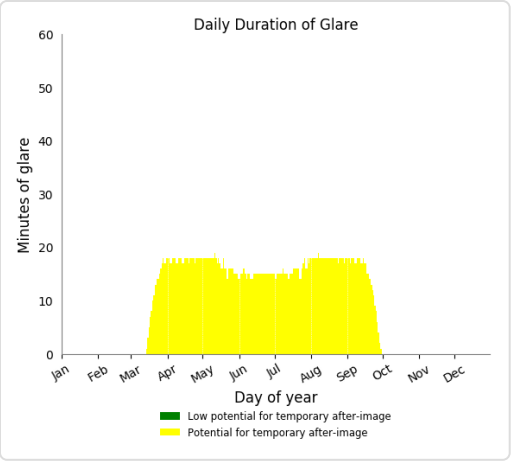
Point Receptor: OP 1

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

3156 minutes of yellow glare
0 minutes of green glare

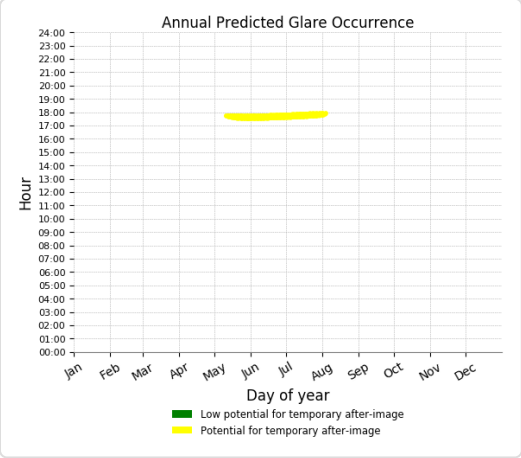


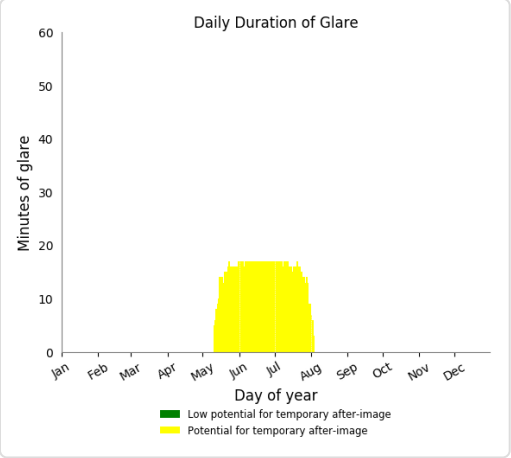


Point Receptor: OP 3

1304 minutes of yellow glare

0 minutes of green glare

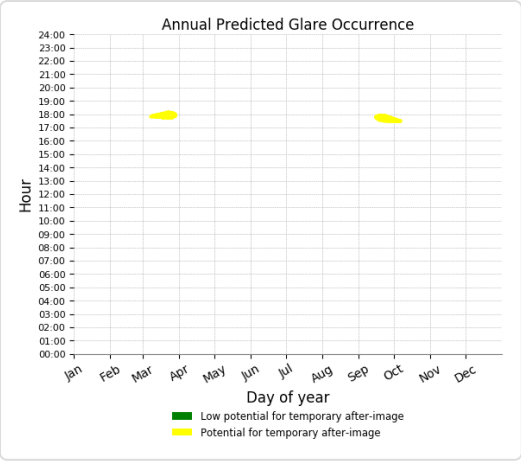


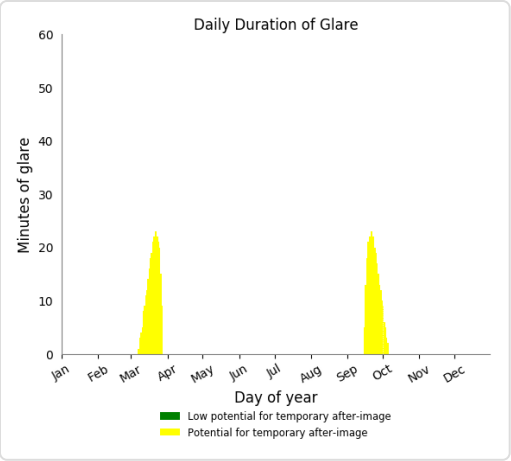


Point Receptor: OP 4

595 minutes of yellow glare

0 minutes of green glare

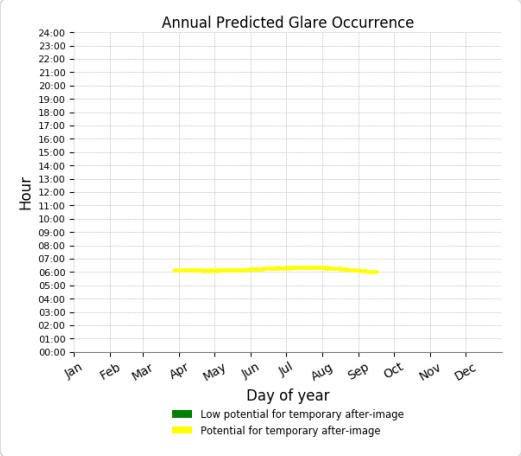




Route: N. Eagle Village Road

270 minutes of yellow glare

0 minutes of green glare



Route: Townsend Road - 1

0 minutes of yellow glare

0 minutes of green glare

Route: Townsend Road - 2

0 minutes of yellow glare

0 minutes of green glare

Route: Townsend Road - 3

0 minutes of yellow glare

0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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FORGESOLAR GLARE ANALYSIS

Project: **Falck Renewables - New York**
Site configuration: **North Eagle - FAA**
Analysis conducted by Josh Burdett (joshua.burdett@tetratech.com) at 16:11 on 09 Mar, 2020.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 36585.6727



PV Array(s)

Name: PV 1
Description: Northern
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.024640	-75.959609	849.50	5.00	854.50
2	43.023801	-75.959556	844.23	5.00	849.23
3	43.022609	-75.959491	843.74	5.00	848.74
4	43.022052	-75.959470	844.08	5.00	849.08
5	43.022123	-75.956906	851.37	5.00	856.37
6	43.022758	-75.956691	852.25	5.00	857.25
7	43.023291	-75.956713	852.48	5.00	857.48
8	43.024217	-75.957775	851.01	5.00	856.01
9	43.024727	-75.957839	853.48	5.00	858.48

Name: PV 2
Description: Southern
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.022048	-75.959473	844.08	5.00	849.08
2	43.021264	-75.959443	842.51	5.00	847.51
3	43.021060	-75.958692	844.37	5.00	849.38
4	43.020952	-75.958209	844.71	5.00	849.71
5	43.020938	-75.957609	846.55	5.00	851.55
6	43.021279	-75.957249	847.03	5.00	852.03
7	43.022113	-75.956909	851.38	5.00	856.38

Flight Path Receptor(s)

Name: RWY 10
Description:
Threshold height: 55 ft
Direction: 87.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.108223	-76.125583	415.27	55.00	470.27
Two-mile	43.106710	-76.165178	431.53	592.20	1023.73

Name: RWY 15
Description:
Threshold height: 53 ft
Direction: 134.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.120898	-76.112378	410.71	53.00	463.71
Two-mile	43.140982	-76.140905	399.19	617.97	1017.16

Name: RWY 28
Description:
Threshold height: 60 ft
Direction: 267.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.109292	-76.093172	397.59	60.00	457.59
Two-mile	43.110805	-76.053576	406.93	604.12	1011.05

Name: RWY 33
Description:
Threshold height: 53 ft
Direction: 314.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

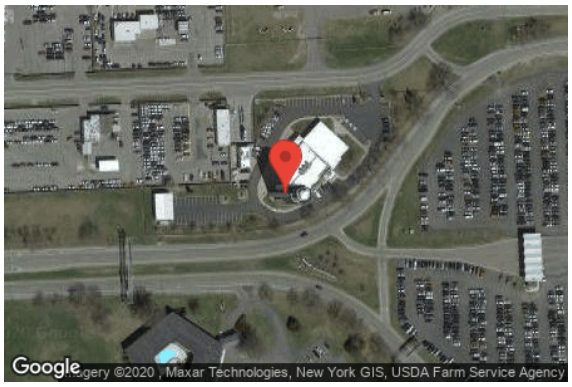


Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.107299	-76.093052	399.17	53.00	452.17
Two-mile	43.087214	-76.064531	416.71	588.91	1005.62

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
1-ATCT	1	43.114199	-76.117231	419.16	50.00

Map image of 1-ATCT



GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV 1	25.0	180.0	0	0	-
PV 2	25.0	180.0	0	0	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
RWY 10	0	0
RWY 15	0	0
RWY 28	0	0
RWY 33	0	0
1-ATCT	0	0

Results for: PV 1

RWY 10	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
RWY 15	0	0
RWY 28	0	0
RWY 33	0	0
1-ATCT	0	0

Flight Path: RWY 10

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY 15

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY 28

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: 1-ATCT

0 minutes of yellow glare
0 minutes of green glare

Results for: PV 2

Receptor	Green Glare (min)	Yellow Glare (min)
RWY 10	0	0
RWY 15	0	0
RWY 28	0	0
RWY 33	0	0
1-ATCT	0	0

Flight Path: RWY 10

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY 15

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY 28

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY 33

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: 1-ATCT

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
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ATTACHMENT G

FEDERAL AVIATION ADMINSTRATION SCREEN

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

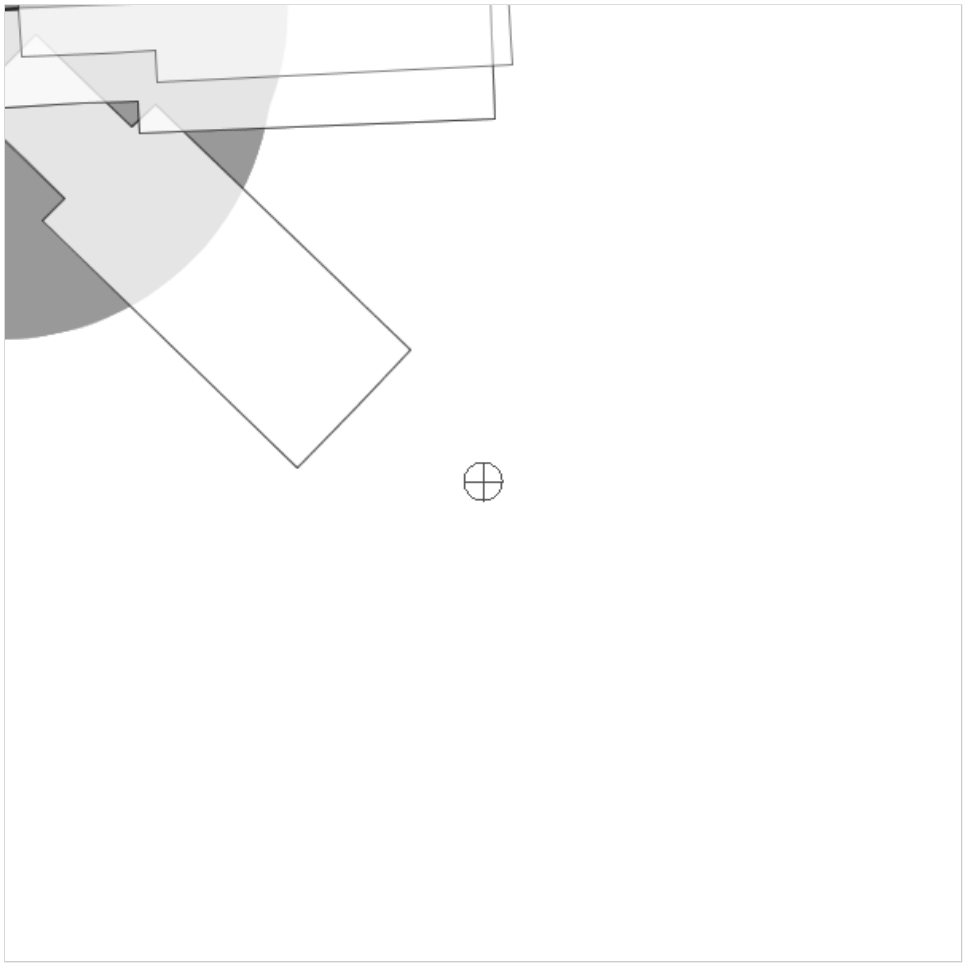
Latitude:	43 Deg 1 M 21.5 S N ▼
Longitude:	75 Deg 57 M 30.62 S W ▼
Horizontal Datum:	NAD83 ▼
Site Elevation (SE):	854 (nearest foot)
Structure Height :	7 (nearest foot)
Traverseway:	No Traverseway ▼ (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(•) No ( ) Yes

Results

You exceed the following Notice Criteria:

Your proposed structure is in proximity to a navigation facility and may impact the assurance of navigation signal reception. The FAA, in accordance with 77.9, requests that you file.

The FAA requests that you file



Obstruction Evaluation
Version 2020-MAR

Home
FAA OE/AAA Offices
View Determined Cases
View Interim Cases
View Proposed Cases
View Supplemental Notices (Form 7460-2)
View Circularized Cases
Search Archives
Download Archives
Download Correspondence
Circle Search for Cases
Circle Search for Airports
General FAQs
Marking/Lighting FAQs
Wind Turbine FAQs
Discretionary Review FAQs
Notice Criteria Tool
DoD Preliminary Screening Tool
Wind Turbine Build Out
Distance Calculation Tool

OE/AAA Account

Portal Page
My Cases (Off Airport)
My Cases (On Airport)
My Sponsors
My Circ Comments
Add New Case (Off Airport)
Add New Case (On Airport)
Add Supplemental Notice (7460-2 Form)
Add Multiple Cases (Off Airport)
My Case Transfer History
My Landing Area Proposals (LAP)

Project Submission Success
Project Name: FALCK-000573769-20

faa.gov Tools: Print this page

Project FALCK-000573769-20 has been submitted successfully to the FAA.

Your filing is assigned Aeronautical Study Number (ASN):
2020-AEA-4038-OE

Please refer to the assigned ASN on all future inquiries regarding this filing.

Please return to the system at a later date for status updates.

It is the responsibility of each e-filer to exercise due diligence to determine if coordination of the proposed construction or alteration is necessary with their state aviation department. Please use the link below to contact your state aviation department to determine their requirements:
State Aviation Contacts

To ensure e-mail notifications are delivered to your inbox please add noreply@faa.gov to your address book. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or forwarded for review. Each system generated e-mail will contain specific FAA contact information in the text of the message.

Return to Portal

9:15 AM
4/2/2020

TOWN OF MANLIUS
SPECIAL PERMIT APPLICATION
(Original or Renewal)

DATE: April 16, 2020 Tax Map # 082-02-15.1

I Jonathan Koch , as applicant relative to property located at 8507 Green Lakes Road, Manlius (Fayetteville), New York, hereby request/apply for issuance of a **SPECIAL PERMIT** from the Town of Manlius Town Board as required by the Town of Manlius Code, submit the following application and documentary evidence and/or information, including comprising the Exhibits in support of this request and certify that it is correct, true and accurate to the best of my/our knowledge and after reasonable due diligence and investigation. I further knowledge and agree that should any such evidence or information be later determined as false or not credible in any material respect, any special permit issued/renewed based thereon may be determined by the Town Board as void from the start or revocable.

Applicant's Signature

A 1 Owner(s) of property: JRT Properties LLC

A 2 Status (Owner, Lessee) of each applicant: An affiliated entity of Falck Renewables, which has the option to lease the property

A 3 Present Zoning of Property: Restricted Agricultural

A 4 Present Use of Property (describe in detail as best as reasonably possible- add additional pages as needed): The property located at 8507 Green Lakes Road, Manlius, New York was being utilized as farm land through the end of the 2016 growing season. Most recently, the area of the proposed solar project was used as a corn field. The project site is currently vacant land.

A 5 Describe property condition at present: The project site consists of vacant land. The Site is located within a rural area and is bounded by wooded area to the north and south; farmland and wooded area to the east; and Pool's Creek, farmland, wooded area, and an agricultural warehouse to the west. The proposed project site occupies approximately 23.4 acres of the larger 147 acre parcel.

B 1 Proposed use of property: EF NY CDG 002, LLC (an affiliate of Falck Renewables) proposes the development of approximately 23.4 acres of a larger 146-acre parcel of private land in Onondaga County into a ground-mounted photovoltaic (PV) solar energy generating facility (Green Lakes Solar). The proposed project would be capable of delivering about 5,000 kilowatts (kW) of alternating electric current (AC) to the electrical power grid, which is sufficient to provide renewable energy to approximately 600 households. The PV panels proposed for this project are similar to solar panels utilized for typical residential roof top installations and would be placed on a racking system either pile driven or screw mounted to the ground surface. The PV project will be directly interconnected to, and provide energy to, National Grid's local

electric distribution grid via either underground or overhead electrical service. Prior to utility interconnection, direct current (DC) electrical power generated by the solar panels will be transformed to AC power and modified as necessary to connect to National Grid's electrical power supply. The project would also include an equipment pad, a gravel access road and would be surrounded by a chain-linked security fence.

B 2 Anticipated number of employees, guests, customers on property: The PV project, after construction is completed, will not require continuous supervision, maintenance or support. The PV Arrays are monitored using a GPS/Telemetry system and maintenance personnel would respond to indications that the arrays were not functioning properly. Landscaping, mowing, and snow removal would occur on an as-needed basis.

B 3 Hours of Proposed Operation:

During Construction:		During Operations:	
Monday – Friday	7 a.m. – 5 p.m.	Monday – Friday	Daylight Hours
Saturday	N/A	Saturday	Daylight Hours
Sunday	N/A	Sunday	Daylight Hours
Holidays	N/A	Holidays	Daylight Hours

B 4. Anticipated Automobile Parking: The proposed PV project includes an access road to provide ingress/egress and temporary parking during construction and for maintenance personnel. There is no designated parking area.

B 5. Parking Area Buffer/Screening: Automobile parking is prohibited on the project site except for temporary parking for maintenance personnel.

B 6. Anticipated Vehicle Traffic Volume/Flow: Traffic impacts are generally limited to the construction period which lasts approximately three months for a 5,000 kW ground mounted solar project. Once the facility is operational, traffic is typically limited to less than 10 visits per year to monitor operation and provide facility maintenance.

B 7. Proposed Site Lighting: In general, lighting is not required for the proposed solar energy project. Security for the solar energy project is provided by security fencing.

B 8. Anticipated noise sources, known decibel levels: Electrical inverters, which convert power from DC to AC, and associated electrical equipment can generate noise at a solar energy site. The low him of the electrical equipment is not generally heard at distances greater than 100 feet from the electrical equipment. The proposed inverter is located more than 100 feet from the nearest property line. Noise can also be generated during periodic mowing and trimming of the facility during operation.

B 9. Landscape:

a) Existing landscaping: The project area consists of a mixture of cultivated crops and pastureland, the northern portion of the Site is bordered by hardwood forest to the north and northwest, cultivated farm fields to the south, and Green Lakes Road to the west.

b) Proposed landscaping: The Project area will have approximately 50 rows of solar panels. The height of the solar panels are typically seven to ten feet above the ground surface. The project site would also include an equipment pad, a gravel access road and

would be surrounded by a chain-linked security fence. The proposed security fencing is located more than 50 feet from Green Lakes Road.

B 10. Proposed Signage: Signs demarcating the solar energy facility will be located on the security fence and no larger than 24 inches in diameter.

B 11. Level of municipal and other services required to support the proposed activity (i.e., water supply sanitary sewage facilities): The PV project will be directly interconnected to, and provide energy to, National Grid's local electric distribution grid via either underground or overhead electrical service. No municipal water supply or sanitary sewage services will be required.

B 12.

Specific Requirements:	**Town Code (District) Requirements:**	**Proposal:**
Parking Spaces	Not Specified	N/A
Lot Coverage	Not Specified	~15%
Front Yard Setback	40	50 feet min.
Side Yard Setback	20	50 feet min.
Rear Yard Setback	40	50 feet min.
Maximum Height of Building	Not Specified	7-10 feet

EXHIBITS TO SPECIAL PERMIT APPLICATION:

1. Detailed site plan of any proposed construction anticipated (attach as Exhibit "A"). The Town Board requires that drawings be certified by the appropriate design professional, i.e. a licensed engineer, architect, or surveyor, and include, except as may be permitted at #10 below, at time of application such detail as required per Town Zoning Code §155-28A(1)(13) for site plan submission.

2. Survey Map (Exhibit "B") Certified by a licensed surveyor within two years of date of application. Survey should show all existing state of facts, improvements, structures, easements, rights-of-way, appropriations, landscape features, encroachments and existing pavement on site. Any survey map last redated prior to 60 days before the application filing date shall be accompanied by an affidavit from the applicant, owner or occupant, i.e. someone with personal knowledge, that the survey map accurately shows the state of facts of the survey map as of the date of the application filing or if it does not the affidavit should describe any change features.

3. Legal description of proposed site (Exhibit "C"). The legal description must be in a form sufficient to follow the legal description on the survey map submitted.

4. Drainage, SWPPP if applicable, sanitary sewer, water service plans and specifications for proposed site (certified by a licensed professional engineer). Attach as Exhibit "D" and as applicable, numbered sub-exhibits e.g. "D-1", "D-2" etc.

5. Environmental Assessment Form (Exhibit "E"). A short environmental assessment form(see attached form) may be provided with any application for an unlisted action, however acceptance of same shall not be deemed a waiver by the Town of its right to require a long EAF with appropriate documentary substantiation of answers provided (including without limitation #6 following). For Type One Actions a long EAF must be submitted at time of application.

6. Freshwater Wetlands Letter. Pursuant to 6 NYCRR 663.4(a), where the application involves conduct of regulated activity on freshwater wetlands or adjacent areas, the applicant must obtain either a permit or letter of permission from the DEC or the authorized local government having jurisdiction over the wetland. Any delineation such determination is based on shall likewise be provided. Attach as Exhibit "F" and as applicable, with numbered sub-exhibits.

7. Professional Fees Reimbursement Agreement (Exhibit "G").

8. Disclosure Affidavit. The applicant shall submit an affidavit attesting it has reviewed General Municipal Law §809 and is familiar with the provisions contained therein, that no state officer, or any officer or employee of the County of Onondaga or Town of Manlius has any interest in the person, partnership or association owning the premises subject of the application or making such application, and that no other violation of §809 shall result from such application (Exhibit "H").

9. Filing and Professional Review Fees. At the time of application filing, applicant shall submit $100.00 in the form of cash or check payable to the Town of Manlius for Special Permit filing or renewal fees. Site Plan filing and Professional Review fees must be paid per Town Code Fee Schedule prior to commencement of Planning Board advisory review.

10. NOTE: THE ABOVE ARE NOT INTENDED AS AN EXHAUSTIVE LISTING OF THE APPLICATION REQUIREMENTS. THE APPLICANT SHALL BE RESPONSIBLE FOR FAMILIARIZING ITSELF WITH ALL TOWN CODE ZONING, SITE PLAN REVIEW, AND SPECIAL PERMIT REQUIREMENTS, AND THE REQUIREMENTS OF OTHER INVOLVED AND PERMITTING AGENCIES INCLUDING RELATIVE TO SEQRA, GENERAL MUNICIPAL LAW SECTION 239 REVIEW, STATE/COUNTY DOT, DOH AND THE LIKE.

11. THE FOREGOING NOTWITHSTANDING IT IS ACKNOWLEDGED THAT UPON INITIAL APPLICATION CERTAIN OF THE ABOVE MAY NOT, WITHOUT INITIAL INPUT FROM THE TOWN BOARD OR PLANNING BOARD, BE REASONABLY CAPABLE OF FINAL

COMPLETION, AND ACCORDINGLY MAY BE WAIVED OR SUCH REQUIREMENTS RELAXED TEMPORARILY AND UNTIL SUFFICIENT SPECIFIC DIRECTION FROM THE RESPECTIVE BOARDS HAS BEEN GIVEN. AT TIME OF SUBMISSION THE APPLICANT SHALL SPECIFICALLY REFERENCE ANY SUCH REQUEST(S) AND ITS REASON(S) FOR SAME IN A DETAILED ENCLOSURE LETTER DESCRIBING THE SUBMISSION AND EXHIBITS.

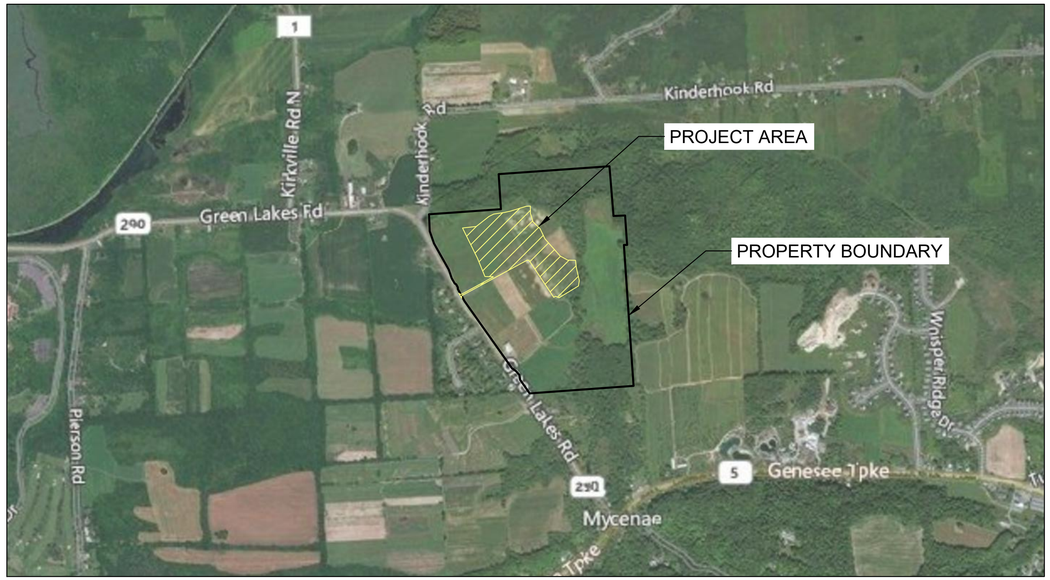
RENEWAL APPLICATIONS SHALL REQUIRE ONLY SUCH OF THE FOREGOING INFORMATION AND EXHIBITS AS ARE DEEMED NECESSARY FOR CONSIDERATION OF A RENEWAL PERMIT INVOLVING NO MATERIAL CHANGES FROM OR VIOLATIONS UNDER THE PRIOR ISSUED SPECIAL PERMIT.

APPLICATIONS SHALL BE SUBMITTED IN BOUND TABBED BOOKLET FORM WITH A COVER LETTER, TABLE OF CONTENTS REFERENCING EXHIBITS, AND LEGIBLE 11"by 17" MINIMUM DRAWINGS FOLDED TO LETTER SIZE THEREIN. TWENTY COPIES SHALL BE DELIVERED TOGETHER WITH SEVEN(7) FULL SIZE PRINTS OF ALL DRAWINGS. SUBSEQUENT SUBMISSIONS OF MINOR MODIFICATIONS MAY BE SUBMITTED IN THE SAME MANNER WITH A LETTER REFERENCING THE SPECIFICS OF THE SUBSTITUTION, HOWEVER IF NUMEROUS OR MATERIAL IN NATURE ENTIRE REPLACEMENT SUBMISSIONS MAY BE REQUESTED.

Exhibit A

SITE PLAN

FALCK RENEWABLES
GRUPPOFALCK



LOCATION MAP
SCALE 1"=1000'

PROJECT DEVELOPER

FALCK RENEWABLES NORTH AMERICA
DEVELOPMENT SERVICES &
CONSTRUCTION MANAGEMENT, LLC
1 BRIDGE STREET
IRVINGTON, NEW YORK 10533
+1 (914) 340-4740

PROJECT SCOPE

THIS PERMITTING PACKAGE PROVIDES DRAWINGS AND DETAILS FOR THE INSTALLATION OF A SOLAR PHOTOVOLTAIC SYSTEM IN THE STATE OF NEW YORK. THIS DRAWING SET IS FOR DISCRETIONARY PERMITTING PURPOSES ONLY, NOT FOR CONSTRUCTION.

CIVIL ENGINEER

TETRA TECH
ENGINEERING CORPORATION, P.C.
CERT #0015490
3136 SOUTH WINTON RD, SUITE 303
ROCHESTER, NEW YORK 14624
(585) 417-4009

APPLICABLE CODES & STANDARDS

- NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
- NFPA 855 (REFERENCE ONLY)
- 2015 INTERNATIONAL BUILDING CODE (IBC) AND NEW YORK AMENDMENTS
- 2015 INTERNATIONAL FIRE CODE (IFC) AND NEW YORK AMENDMENTS
- 2016 NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL
- 2015 NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL
- 2016 TOWN OF MANLIUS NEW YORK SOLAR ZONING CODE

PROPERTY OWNER

CHARLES L. HAFNER
8507 GREEN LAKES ROAD
MANLIUS, NY 13066

GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

DISCRETIONARY PERMITTING

DRAWING INDEX	
SHEET NUMBER	SHEET TITLE
C-001	CIVIL TITLE SHEET
C-101	EXISTING CONDITIONS
C-201	SITE PLAN
C-202	EROSION & SEDIMENT CONTROL PLAN
C-401	SITE DETAILS
C-402	FENCE & GATE DETAILS
C-403	EROSION & SEDIMENT CONTROL DETAILS

PROJECT SUMMARY	
PARCEL NUMBER	82.-2-15.1
PARCEL ACREAGE	APPROX. 147.5 ACRES
ZONING CLASSIFICATION	RESTRICTED AGRICULTURAL (R-A)
FRONT SETBACK	50 FT MIN.
REAR SETBACK	50 FT MIN.
SIDE SETBACK	50 FT MIN.
PROJECT AREA	23.4 ACRES (INCLUDES ACCESS ROAD)
LATITUDE/LONGITUDE	43.0596°/-75.9379°
SYSTEM SIZE (DC)	7.87 MW
SYSTEM SIZE (AC)	5.00 MW
ROW SPACING	24.9 FT (CENTER TO CENTER)
TREE CLEARING	0.00 ACRES
ROAD LENGTH	±2,265 FT
PERIMETER FENCE LENGTH	±4,960 FT
SILT FENCE LENGTH	±2,910 FT

NOT FOR CONSTRUCTION

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TETRA TECH
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ROCHESTER, NY 14623

STAMP:



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GREEN LAKES ROAD SOLAR PROJECT
8507 GREEN LAKES ROAD MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

SHEET TITLE:
CIVIL TITLE SHEET

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.
A	PERMITTING	03/31/2020	KMG
B	FLOODPLAIN DATA	04/13/2020	KMG

DATE:	03/05/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-001

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LEGEND

- PROPERTY LINE (APPROX.)
- ZONING SETBACKS
- 500 EXISTING TOPO (5 FT CONTOURS)
- EXISTING FENCE
- EXISTING FIRE HYDRANT
- SURVEY CONTROL POINT
- EXISTING TREE LINE
- NYSDEC WETLAND
- 100' NYSDEC WETLAND BUFFER
- EXISTING UTILITY POLE
- OHU OHU EXISTING OVERHEAD ELECTRIC
- GAS GAS EXISTING NATURAL GAS LINE
- EXISTING CULVERT
- 100 YEAR FLOODPLAIN
- REGULATORY FLOODWAY

GENERAL NOTES:

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2. TREE LINES SHOWN HEREON ARE APPROXIMATE. SOURCE: GOOGLE EARTH.
3. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.
4. ORTHOIMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, 2018 ONE FOOT FOUR BAND CENTRAL ZONE INDEX.

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GRUPPOFALCK
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IRVINGTION, NY 10533
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WWW.FALCKRENEWABLES.COM

TETRA TECH
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ROCHESTER, NY 14623

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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

SHEET TITLE:
EXISTING CONDITIONS

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NO.	REVISION	DATE	INIT.
A	PERMITTING	03/31/2020	KMG
B	FLOODPLAIN DATA	04/13/2020	KMG

DATE:	03/27/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-101

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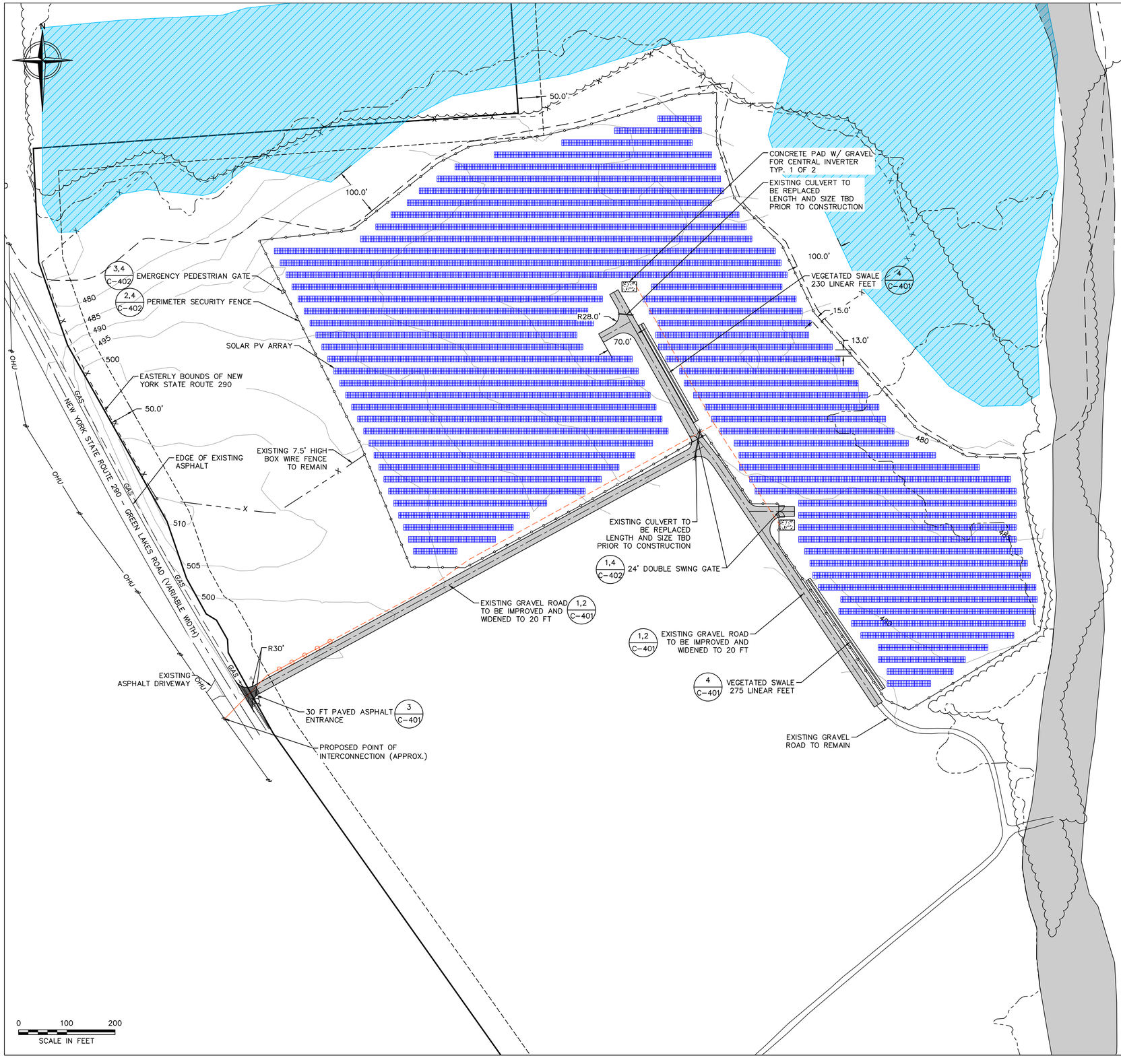

LEGEND

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- EXISTING FIRE HYDRANT
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- EXISTING TREE LINE
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- EXISTING UTILITY POLE
- OHU OHU EXISTING OVERHEAD ELECTRIC
- GAS GAS EXISTING OVERHEAD ELECTRIC
- PROPOSED GRAVEL ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED CONCRETE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED UTILITY POLE
- PROPOSED CULVERT
- PROPOSED PAVED ASPHALT APRON
- 100 YEAR FLOODPLAIN
- REGULATORY FLOODWAY

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3. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.
4. MAINTAIN MINIMUM 2 FOOT DISTANCE BETWEEN GROUND ELEVATION AND BOTTOM OF SOLAR PANEL. DISTANCE BETWEEN GROUND ELEVATION AND TOP OF SOLAR PANEL NOT TO EXCEED 20 FEET.
5. PERMANENT PAVED ASPHALT ENTRANCE TO BE DESIGNED IN ACCORDANCE WITH NYSDOT.

NOT FOR CONSTRUCTION

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TETRA TECH
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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

SHEET TITLE:
SITE PLAN

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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B	FLOODPLAIN DATA	04/13/2020	KMG

DATE:	03/05/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-201

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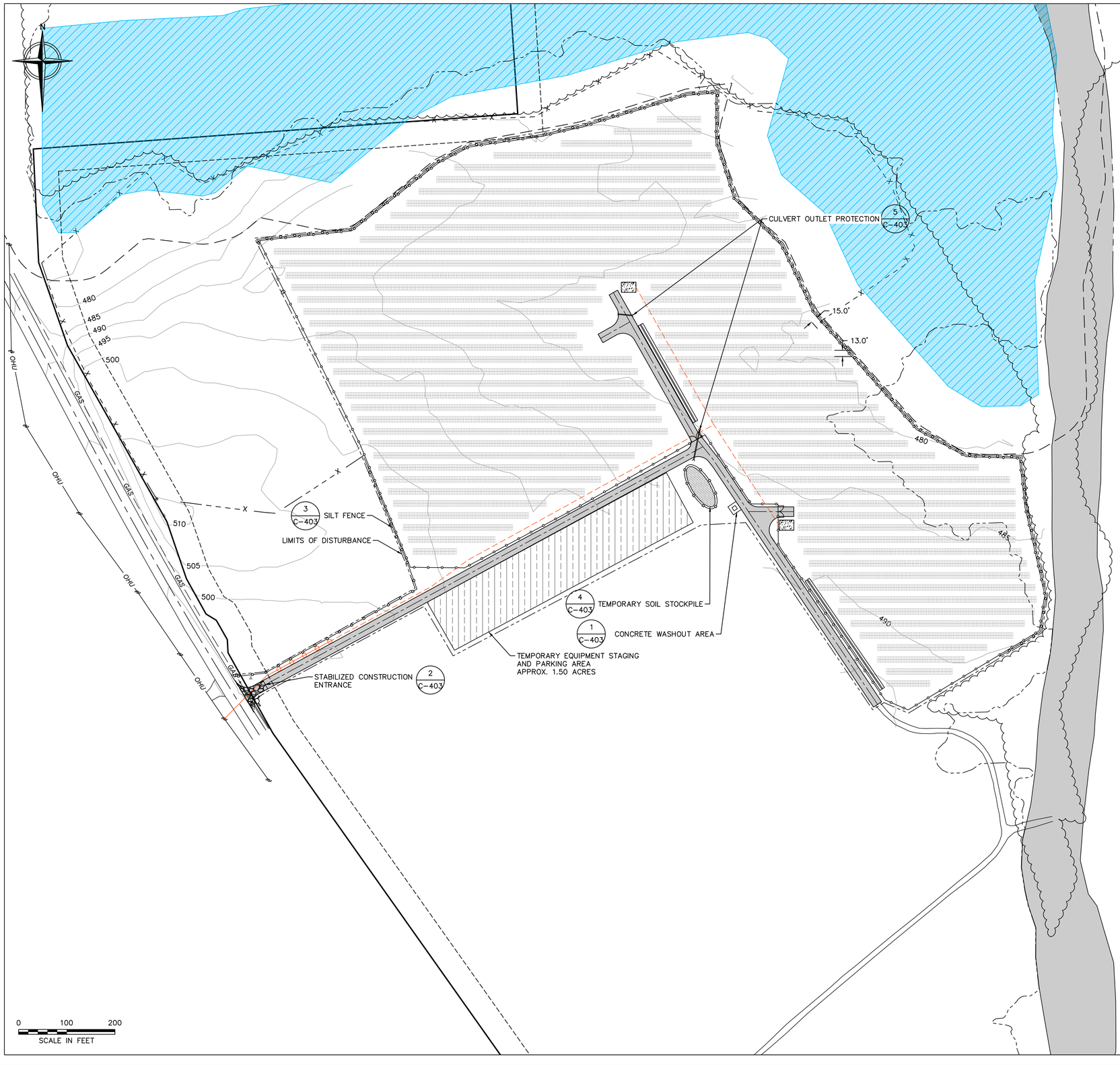

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- PROPOSED SECURITY FENCE
- PROPOSED CONCRETE
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED OVERHEAD ELECTRIC
- PROPOSED UTILITY POLE
- TEMPORARY EQUIPMENT LAYDOWN AREA
- TEMPORARY SOIL STOCKPILE AREA
- PROPOSED SILT FENCE
- LIMITS OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED CULVERT
- PROPOSED CONCRETE WASHOUT AREA
- 100 YEAR FLOODPLAIN
- REGULATORY FLOODWAY

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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

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EROSION & SEDIMENT CONTROL PLAN

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ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
C-202

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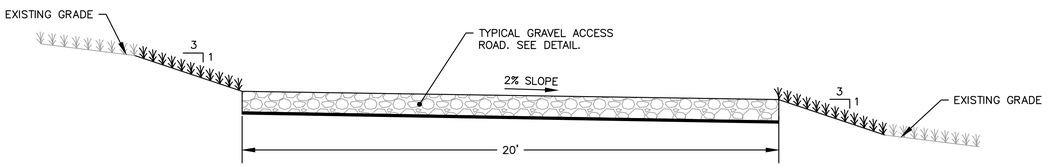


TYPICAL ACCESS ROAD

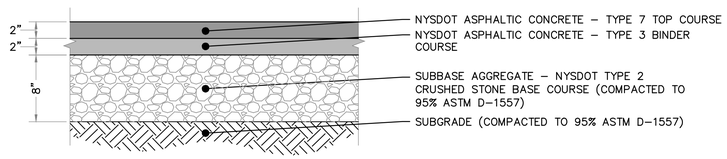
DETAIL 1 / C-401

SCALE: NTS

TYPICAL GRAVEL ACCESS ROAD SECTION

DETAIL 2 / C-401

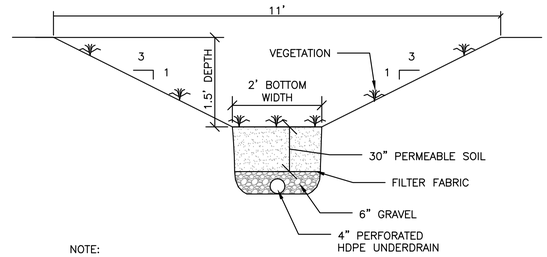
SCALE: N.T.S.



PAVED ASPHALT ROAD SECTION

DETAIL 3 / C-401

SCALE: N.T.S.



NOTE:

1. PERMEABLE SOIL SHALL CONSIST OF A MINIMUM OF 6 INCHES OF TOPSOIL OVERLYING A 50/50 MIX OF TOPSOIL AND SAND.
2. GRAVEL SHALL BE AASHTO M-43 SIZE NO. 57.

TYPICAL VEGETATED SWALE

DETAIL 4 / C-401

SCALE: N.T.S.

NOT FOR CONSTRUCTION

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TETRA TECH ENGINEERING CORPORATION, P.C.
CERT# 0015490
3136 SOUTH WINTON ROAD, SUITE 303
ROCHESTER, NY 14623

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GREEN LAKES ROAD
SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

SHEET TITLE:
SITE DETAILS

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)

0 ½" 1"

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NO.	REVISION	DATE	INIT.
A	PERMITTING	03/31/2020	KMG
B	FLOODPLAIN DATA	04/13/2020	KMG

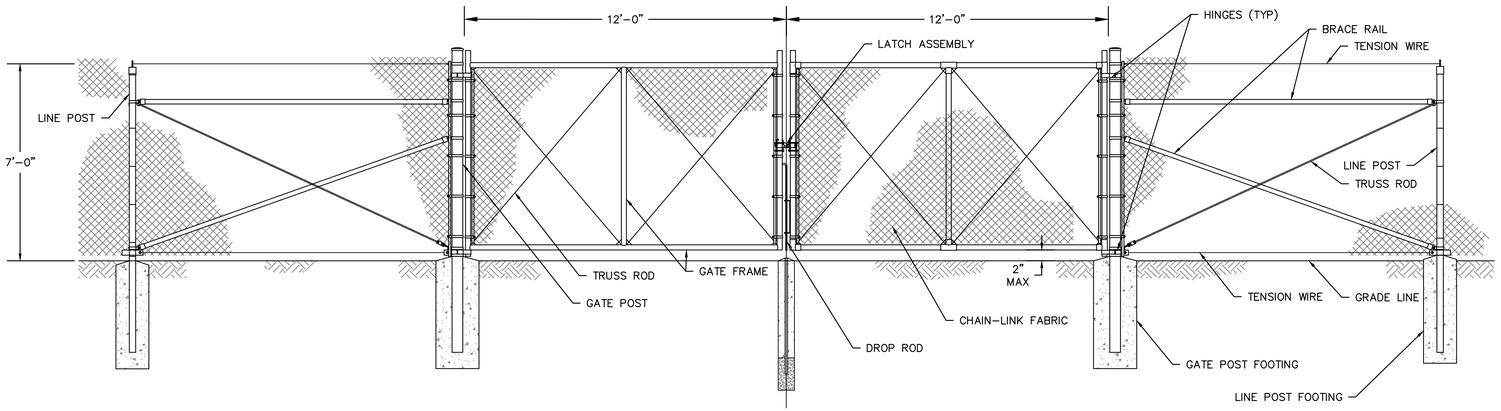
DATE:	03/05/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

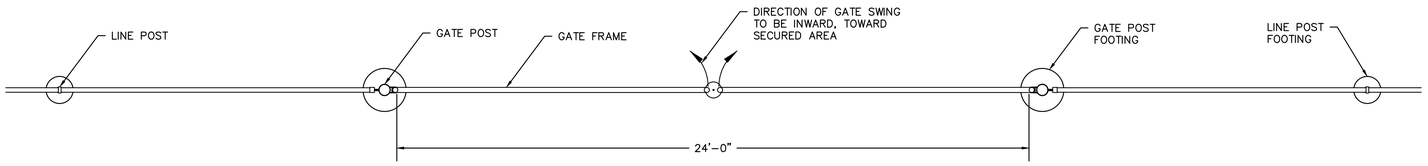
SCALE:
AS SHOWN

SHEET NO.:
C-401

P:\Falck Renewables\01-Green Lakes Solar\06-Design\05-Plan Set\GREENLAKES-C-401-SITE DETAILS-02.dwg
Printed: 4/13/2020 4:31 PM
GESTAMP FTGM SHEET SET R1.0.4



ELEVATION



PLAN VIEW

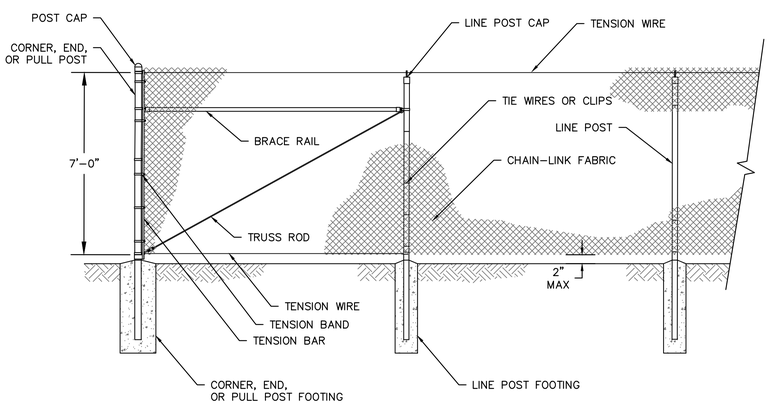
TYPICAL 24' DOUBLE SWING ACCESS GATE

DETAIL 1 / C-402

SCALE: NTS

FENCE & GATE NOTES:

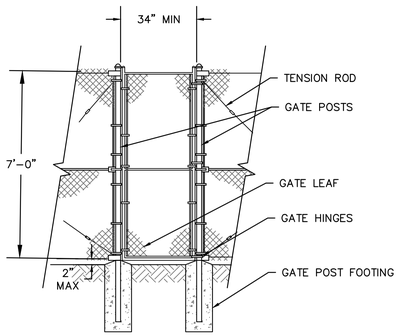
1. SIZE AND DIMENSIONS OF THE FENCE AND GATE COMPONENTS SHOWN HEREON SHALL BE IN ACCORDANCE WITH THE CHAIN-LINK FENCE MANUFACTURER SPECIFICATIONS UNLESS OTHERWISE NOTED ON THIS DRAWING.
2. GROUNDING AND BONDING OF THE SECURITY FENCE SYSTEM SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC), AND ALL OTHER APPLICABLE STATE AND LOCAL CODE REQUIREMENTS.
3. DOUBLE SWING GATE TO OPEN INWARD, TOWARD SECURED AREA AS SHOWN ON THE SITE PLAN.
4. INSTALL WIRE TIES, RAILS, POSTS, AND BRACES ON THE SECURE SIDE OF THE FENCE ALIGNMENT. PLACE CHAIN-LINK FABRIC ON THE OPPOSITE SIDE OF THE SECURE AREA.
5. DESIGN AND INSTALL GATE, LINE, CORNER, END, AND PULL POST CONCRETE FOOTINGS, AS REQUIRED, PER APPLICABLE CODES AND CHAIN-LINK FENCE MANUFACTURER SPECIFICATIONS.
6. TOP SELVAGES TO BE TWISTED, BOTTOM SELVAGES TO BE KNUCKLED.
7. SIGNAGE SHALL BE AS REQUIRED BY CODE WITH DETAILS INCLUDING FACILITY NAME, OWNER, AND CONTACT PHONE NUMBER. WARNING SIGNAGE TO BE PLACED AT BASE OF ALL PAD-MOUNTED TRANSFORMERS AND SUBSTATIONS.



TYPICAL SECURITY PERIMETER FENCE

DETAIL 2 / C-402

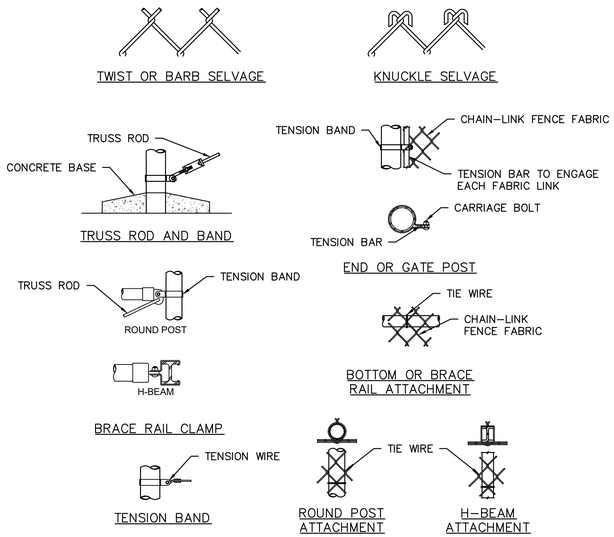
SCALE: NTS



TYPICAL EMERGENCY PEDESTRIAN GATE

DETAIL 3 / C-402

SCALE: NTS



TYPICAL CHAIN LINK FENCE FASTENING

DETAILS 4 / C-402

SCALE: NTS

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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

SHEET TITLE:
FENCE & GATE DETAILS

SHEET SIZE:
ARCH "D"
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0 ½" 1"

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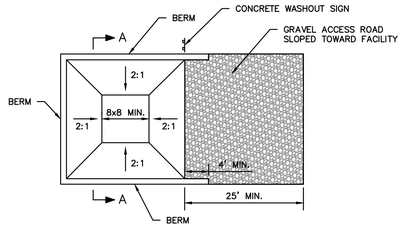
DATE:	03/05/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

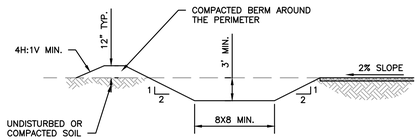
SCALE:
AS SHOWN

SHEET NO.:
C-402

P:\Falck Renewables\01-Green Lakes Solar\06-Design\05-Plan Set\GREENLAKES-C-402-FENCE & GATE DETAILS-01.dwg
Printed: 4/13/2020 4:33 PM
GESTAMP FTGM SHEET SET R1.0.4



PLAN



SECTION A-A

CONCRETE TRUCK WASHOUT AREA NOTES:

1. LOCATE THE FACILITY A MINIMUM OF 100 FEET FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATER.
2. PREVENT SURFACE WATER FROM ENTERING THE STRUCTURE EXCEPT FOR THE ACCESS ROAD.
3. PROVIDE A GRAVEL ACCESS ROAD TO FACILITY THAT IS SLOPED DOWN TO FACILITY.
4. SIGNS SHALL BE PLACED TO DIRECT DRIVERS TO THE FACILITY AFTER THEIR LOAD IS DISCHARGED.
5. ALL WASHOUT FACILITIES SHALL BE LINED TO PREVENT LEACHING OF LIQUIDS INTO THE GROUND. THE LINER SHALL BE PLASTIC SHEETING HAVING A MINIMUM THICKNESS OF 10 MILS WITH NO HOLES OR TEARS, AND ANCHORED BEYOND THE TOP OF THE PIT WITH AN EARTHEN BERM, SAND BAGS, STONE, OR OTHER STRUCTURAL APPURTENANCES EXCEPT AT THE ACCESS POINT.
6. PREFABRICATED WASHOUT FACILITIES CAN BE USED BUT THEY MUST CAPTURE AND CONTAIN CONCRETE WASH AND BE SIMILARLY SIZED AS SHOWN ABOVE AND LOCATED AS NOTED ABOVE.
7. WASH WATER IS ESTIMATED TO BE 7 GALLONS PER CHUTE AND 50 GALLONS PER HOPPER OF A PUMP TRUCK AND/OR DISCHARGING DRUM.

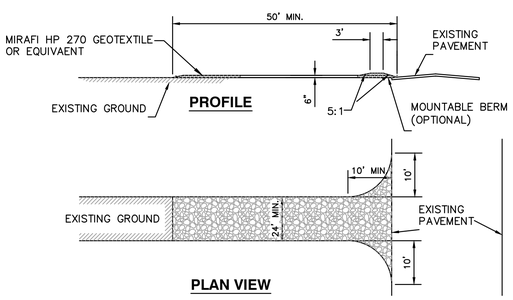
MAINTENANCE:

1. ALL FACILITIES MUST BE INSPECTED DAILY.
2. DAMAGED OR LEAKING FACILITIES SHALL BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
3. EXCESS ACCUMULATED RAINWATER OVER HARDENED CONCRETE SHALL BE PUMPED TO A STABILIZED AREA, SUCH AS A GRASS FILTER STRIP.
4. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF THE STORAGE CAPACITY OF THE FACILITY IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFF-SITE AT A PERMITTED C&D LANDFILL. NO ONSITE DISPOSAL WILL BE ALLOWED.
5. THE PLASTIC LINER SHALL BE REPLACED WITH EACH CLEANING OF THE FACILITY.
6. INSPECT PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.

CONCRETE WASHOUT

DETAIL 1 / C-403

SCALE: N.T.S.



PLAN VIEW

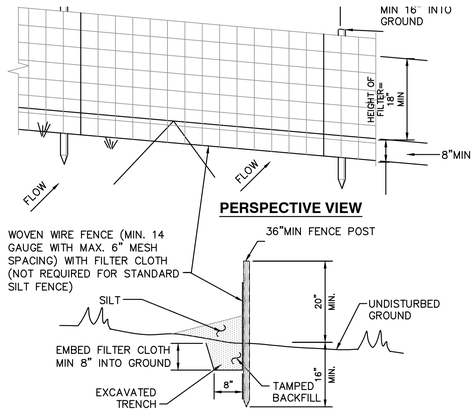
STABILIZED CONSTRUCTION ENTRANCE NOTES:

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. THICKNESS – NOT LESS THAN SIX (6) INCHES.
3. WIDTH –TWENTY (20) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY FOUR FEET (24) FOOT IF SINGLE ENTRANCE TO SITE.
4. LENGTH – AS REQUIRED, BUT NOT LESS THAN 50'.
5. GEOTEXTILE – PLACE OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – MAINTAIN THE ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING – CLEAN WHEELS TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PROVIDE WEEKLY INSPECTION AND NEEDED MAINTENANCE.

STABILIZED CONSTRUCTION ENTRANCE

DETAIL 2 / C-403

SCALE: N.T.S.



SECTION

SILT FENCE NOTES:

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N OR APPROVED EQUAL.
4. PERFORM MAINTENANCE AS NEEDED AND REMOVE MATERIALS WHEN "BULGES" DEVELOP IN THE SILT FENCE.
5. USE SILT FENCE WHERE EROSION COULD OCCUR IN THE FORM OF SHEET EROSION.
6. DO NOT USE SILT FENCE WHEN A CONCENTRATION OF WATER IS FLOWING TO THE BARRIER AND SOIL CONDITIONS DO NOT ALLOW FOR PROPER KEYING OF FABRIC, OR OTHER ANCHORAGE, TO PREVENT BLOWOUTS.
7. THE TYPE OF SILT FENCE SHALL NOT EXCEED THE MAXIMUM SLOPE LENGTH AND MAXIMUM FENCE LENGTH REQUIREMENTS SHOWN IN THE FOLLOWING TABLE.

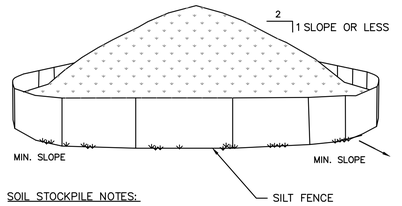
SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT)		
		STANDARD	REINFORCED	SUPER
<2%	<50:1	300/1500	N/A	N/A
2-10%	50:1 TO 10:1	125/1000	250/2000	300/2500
10-20%	10:1 TO 5:1	100/750	150/1000	200/1000
20-33%	5:1 TO 3:1	60/500	80/750	100/1000
33-50%	3:1 TO 2:1	40/250	70/350	100/500
>50%	>2:1	20/125	30/175	50/250

8. STANDARD SILT FENCE DOES NOT REQUIRE WOVEN WIRE FENCE. SUPER SILT FENCE REQUIRES CHAIN LINK FENCE IN-LIEU OF WOVEN WIRE FENCE AND THE POSTS MUST BE STANDARD CHAIN LINK FENCE POSTS AND BE DRIVEN 3 FEET INTO THE GROUND.

SILT FENCE

DETAIL 3 / C-403

SCALE: N.T.S.



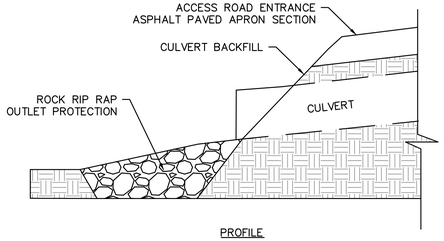
SOIL STOCKPILE NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, SURROUND EACH PILE WITH SILT FENCING, THEN STABILIZE WITH VEGETATION OR COVER THE STOCKPILE IN ACCORDANCE WITH THE SITE SPECIFIC SWPPP.
4. SEE DETAILS FOR INSTALLATION OF SILT FENCE.
5. STOCKPILE HEIGHT SHOULD GENERALLY NOT EXCEED 20 FEET.

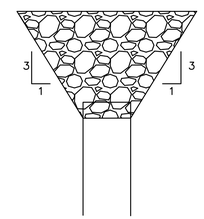
TEMPORARY SOIL STOCKPILE

DETAIL 4 / C-403

SCALE: N.T.S.



PROFILE



PLAN VIEW

NOTES:

1. RIP-RAP APRON DIMENSIONS WILL VARY DEPENDING UPON THE GRADING CONFIGURATION.
2. STONE RIP-RAP SHALL BE PLACED ON NON-WOVEN GEOTEXTILE HAVING A THICKNESS OF 60 MILS (MIN.), GRAB STRENGTH NO LESS THAN 120 LBS: AND SHALL CONFORM TO ASTM D-1777 AND ASTM D-1682.

CULVERT OUTLET PROTECTION

DETAIL 5 / C-403

SCALE: N.T.S.

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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD MANLIUS, NY 13066

PROJECT NUMBERS: 194-7119

SHEET TITLE: EROSION & SEDIMENT CONTROL DETAILS

SHEET SIZE: ARCH "D" 24" X 36" (610 x 914)

0 ½" 1"

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B	FLOODPLAIN DATA	04/13/2020	KMG

DATE:	03/05/2020
DRAWN BY:	KMG
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE: DISCRETIONARY PERMITTING

SCALE: AS SHOWN

SHEET NO.: C-403

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Exhibit B

SURVEY MAPS

Now or Formerly
Property of
Oliver Paul Mabie
Liber 4830 - Page 759

Tax Parcel No. 082.-02-17.1

Approximate Property Line

5' High Page Wire Fence

Property of
Charles L. Hafner
Liber 2829 - Page 191

Tax Parcel No. 082.-02-15.1

County Route 257 - State Route 290

New York State Route 290 - Green Lakes Road (variable width)

Gravel Road

Edge of Gravel

Edge of Asphalt

Power Pole

Mailbox "9465"

Gas Test Pipe

Asphalt Driveway

Gravel Area

"40 MPH" Zone

CP-1
N: 1,115,148.77'
E: 992,214.10'
Elev: 510.60'
5/8-inch rebar with a 1 1/4-inch orange plastic cap marked "THEW BASELINE"

CP-2
N: 1,114,810.84'
E: 992,493.87'
Elev: 497.91'
5/8-inch rebar with a 1 1/4-inch orange plastic cap marked "THEW BASELINE"

Site Benchmark No. 1
Elev. 500.80'

E 992,200
N 1,115,800
E 992,700
N 1,115,800
E 993,200
N 1,115,800
E 992,200
N 1,114,800
E 992,700
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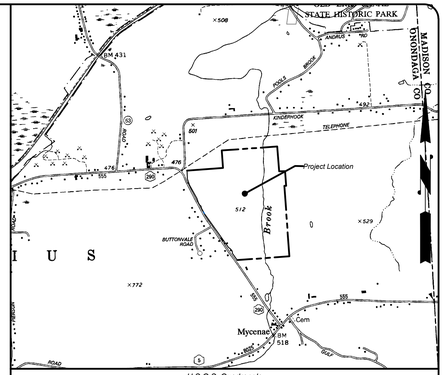
E 993,200
N 1,114,800

Match to Sheet 2



U.S.G.S. Quadrangle
Manlius, New York
Not to Scale

General Notes:

1. This survey is referenced horizontally to the North American Datum of 1983, 2011 adjustment (NAD83/2011), projected on the New York State Plane Coordinate System (Central Zone) and vertically to the North American Vertical Datum of 1988 (NAVD88).
2. North arrow as shown indicates Grid North referenced to NAD83/2011, projected on the New York State Plane Coordinate System (Central Zone).
3. The reference horizontal and vertical control station is a GPS Continuously Operating Reference Station (CORS). Designated as "North Syracuse CORS ARP" (CORS ID: NYNS), NYNS was established by the New York State Department of Transportation in 2011. Elevation 433.84 feet.
4. The property lines shown hereon are approximate and should not be relied upon. The location of the property lines were derived from record documents (i.e. deeds, filed maps, and tax maps).
5. Location of spot elevation is indicated by the tick "+" mark located adjacent to the elevation.
6. The subsurface utilities shown hereon are of Quality Level "C" as defined by the American Society of Civil Engineers (ASCE) in the "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data". The subsurface utilities shown hereon are based on physical evidence located during the field survey and existing utility drawings. The surveyor further does not warrant or certify that the subsurface utilities are in the exact location indicated although he does certify that they are depicted as accurately as possible from the information available. This surveyor has not physically located the subsurface utilities.
7. Elevations and contours shown reference the North American Vertical Datum of 1988 (NAVD88-Geoid12B).
8. Contours shown hereon were generated from a Digital Terrain Model utilizing AutoCAD Civil 3D Land Surveying and Engineering software.
9. The information shown hereon is based on an instrument survey completed on March 9, 2020.

Tax Parcel Number:

Town of Manlius, Onondaga County, New York
Section 82. Block 2 Lot 15.1.

Deed References:

Gilbert S. Button and Dorothy A. Button
to
Charles L. Hafner
Liber 2829 - Page 191
Dated: 10. September 1980
Recorded: 15. October 1980

Reference Drawings:

1. Acquisition Map No. 91, Parcel Nos.145, 163 & 173, Onondaga County, Sheets 1-7. Prepared by Fisher Associates and Bryan A. Merritt, LS.
2. "East Syracuse - Chittenango State Highway No. 555", designated as Map No. 91 Parcel Nos. 145, 163, & 173. Sheet 2 of 7, and is on file at the New York State Department of Transportion Office (Region 3), located in Syracuse New York.
3. "Map Showing Existing Topography, 8507 Green Lakes Road, SunEdison Project No. NY-14-0035", dated February 10, 2016, prepared by Thew Associates PE-LS, PLLC, and is distinguished as Drawing No. UK566B-01-16.

Project Control:

CP-1

CP-1 is 5/8-inch by 30-inch rebar with a 1 1/4-inch diameter orange plastic cap marked "Thew Baseline", set flush with grade. CP-1 is located 63.3 feet easterly of the centerline of Green Lakes Road, 14.2 feet northerly of a concrete highway monument, and 37.7 feet southerly of a break in a wire fence.
N: 1,115,148.77'
E: 992,214.10'
Elev: 510.60'

CP-2

CP-2 is 5/8-inch by 30-inch rebar with a 1 1/4-inch diameter orange plastic cap marked "Thew Baseline", set flush with grade. CP-2 is located 47.9 feet easterly of the centerline of Green Lakes Road, 49.4 feet northwesterly of a fire hydrant, and 70.9 feet southerly of a concrete highway monument.
N: 1,114,810.84'
E: 992,493.87'
Elev: 497.91'

Benchmarks:

Site Benchmark No. 1: Chiseled "X" on the most northeasterly bonnet bolt of the hydrant located on the easterly side of New York State Route 28 and being approximately 1287.0 feet southeasterly from the centerline intersection of New York State Route 28 with Kinderhook Road. Elevation = 500.80'

Legend:

- Approximate Property Line
- Centerline of Road
- Edge of Gravel
- Wire Fence
- Found Concrete Highway Monument
- Fire Hydrant
- Waterline
- Natural Gas Line
- Sign
- RCP — Reinforced Concrete Pipe
- HDPE — High-Density Polyethylene
- + 499.1 — Spot Elevation
- MH / PIN / FEE — Highway Appropriation Map Reference
- Liber 2829 - Page191 — Deed Book and Page

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

REV	DESCRIPTION	DATE

PROJECT NUMBER: CK4025-03-20

DRAWN: JLS
CHECKED: JST
SCALE: 1" = 50'
DATE: 03/18/2020

Map Showing Existing Topography
8507 Green Lakes Road
Proposed Green Lakes Solar
Sheet 1 of 2

Town of Manlius
County of Onondaga
State of New York

Thew Associates LAND SURVEYORS
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Unauthorized alteration or addition to a survey map bearing a licensed land surveyors seal is a violation of Section 7209, Subdivision 2 of the New York State Education Law.

Only copies from the original of this survey marked with an original of the surveyor's inked seal or his embossed seal shall be considered to be valid and true copies.

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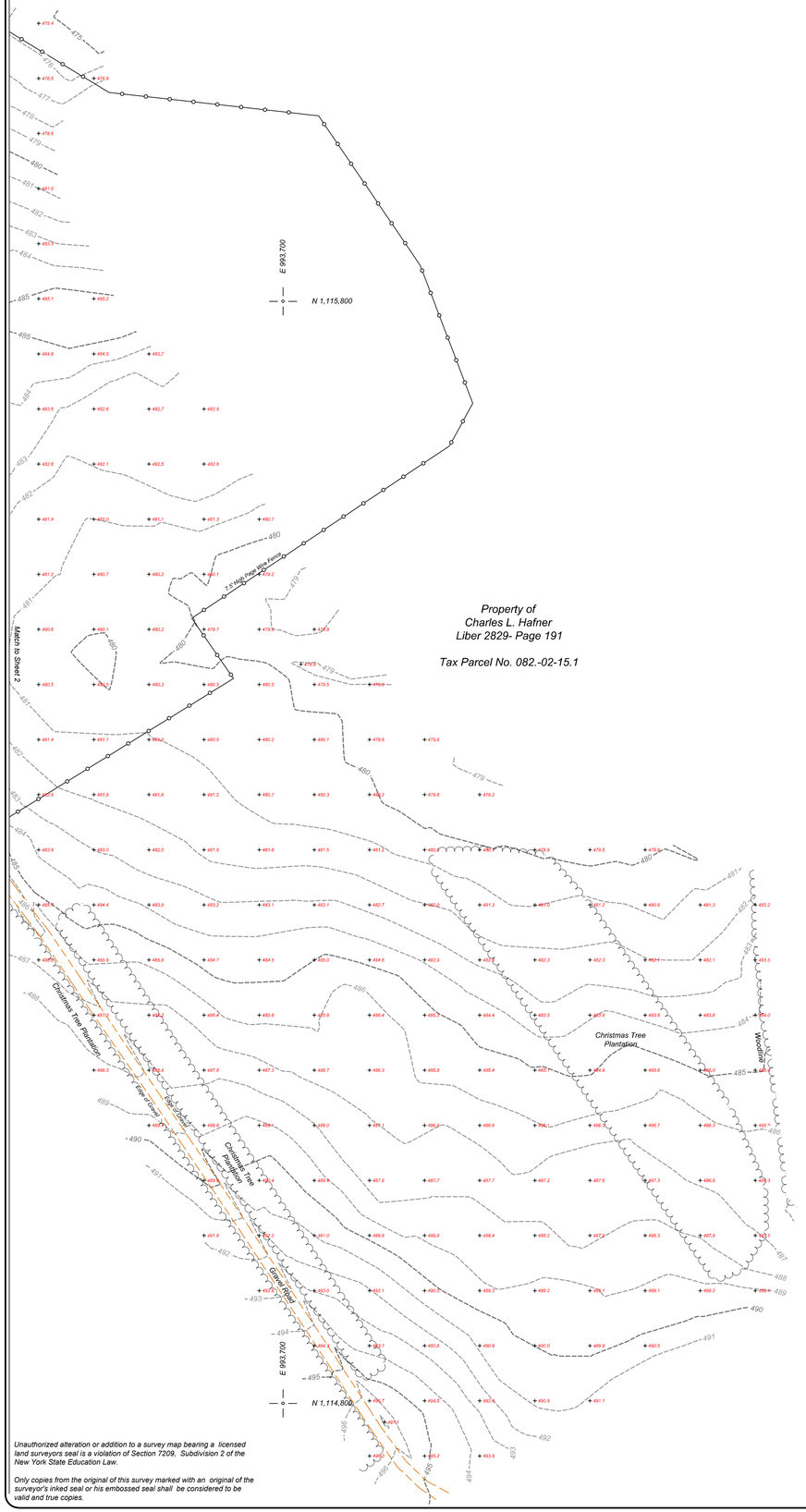

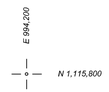

Legend:

- Approximate Property Line
- Centerline of Road
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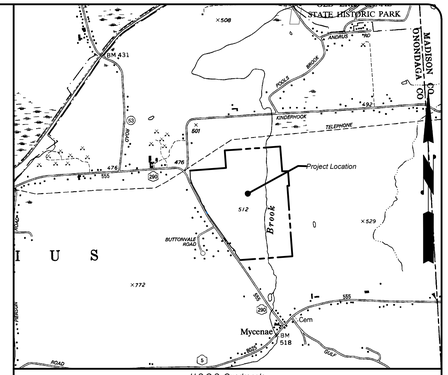
- Found Concrete Highway Monument
- Fire Hydrant
- W — Waterline
- GAS — Natural Gas Line
- Sign
- RCP — Reinforced Concrete Pipe
- HDPE — High-Density Polyethylene
- 489.1 — Spot Elevation
- 9901 P156 FEE — Highway Appropriation Map Reference
- Liber 2829 - Page191 — Deed Book and Page





U.S.G.S. Quadrangle
Manlius, New York
Not to Scale

General Notes:

1. *This survey is referenced horizontally to the North American Datum of 1983, 2011 adjustment (NAD83/2011), projected on the New York State Plane Coordinate System (Central Zone) and vertically to the North American Vertical Datum of 1988 (NAVD88).*
2. *North arrow as shown indicates Grid North referenced to NAD83/2011, projected on the New York State Plane Coordinate System (Central Zone).*
3. *The reference horizontal and vertical control station is a GPS Continuously Operating Reference Station (CORS). Designated as "North Syracuse CORS ARP" (CORS ID: NYNS), NYNS was established by the New York State Department of Transportation in 2011. Elevation 433.84 feet*
4. *The property lines shown hereon are approximate and should not be relied upon. The location of the property lines were derived from record documents (i.e. deeds, filed maps, and tax maps).*
5. *Location of spot elevation is indicated by the tick "+" mark located adjacent to the elevation.*
6. *The subsurface utilities shown hereon are of Quality Level "C" as defined by the American Society of Civil Engineers (ASCE) in the "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data". The subsurface utilities shown hereon are based on physical evidence located during the field survey and existing utility drawings. The surveyor further does not warrant or certify that the subsurface utilities are in the exact location indicated although he does certify that they are depicted as accurately as possible from the information available. This surveyor has not physically located the subsurface utilities.*
7. *Elevations and contours shown reference the North American Vertical Datum of 1988 (NAVD88-Geoid12B).*
8. *Contours shown hereon were generated from a Digital Terrain Model utilizing AutoCAD Civil 3D Land Surveying and Engineering software.*
9. *The information shown hereon is based on an instrument survey completed on March 9, 2020.*

Tax Parcel Number:

Town of Manlius, Onondaga County, New York
Section 82. Block 2 Lot 15.1.

Deed References:

Gilbert S. Button and Dorothy A. Button
to
Charles L. Hafner
Liber 2829 - Page 191
Dated: 10, September 1980
Recorded: 15, October 1980

Reference Drawings:

1. *Acquisition Map No. 91, Parcel Nos.145, 163 & 173, Onondaga County, Sheets 1-7. Prepared by Fisher Associates and Bryan A. Merritt, LS.*
2. *"East Syracuse - Chittenango State Highway No. 555", designated as Map No. 91 Parcel Nos. 145, 163, & 173, Sheet 2 of 7, and is on file at the New York State Department of Transportion Office (Region 3), located in Syracuse New York.*
3. *"Map Showing Existing Topography, 8507 Green Lakes Road, SunEdison Project No. NY-14-0035", dated February 10, 2016, prepared by Thew Associates PE-LS, PLLC, and is distinguished as Drawing No. UK566B-01-16.*

Project Control:

CP-1

CP-1 is 5/8-inch by 30-inch rebar with a 1 1/4-inch diameter orange plastic cap marked "Thew Baseline", set flush with grade. CP-1 is located 63.3 feet easterly of the centerline of Green Lakes Road, 14.2 feet northerly of a concrete highway monument, and 37.7 feet southerly of a break in a wire fence.
N: 1,115,148.77'
E: 992,314.10'
Elev: 510.60'

CP-2

CP-2 is 5/8-inch by 30-inch rebar with a 1 1/4-inch diameter orange plastic cap marked "Thew Baseline", set flush with grade. CP-2 is located 47.9 feet easterly of the centerline of Green Lakes Road, 49.4 feet northwesterly of a fire hydrant, and 70.9 feet southerly of a concrete highway monument.
N: 1,114,810.84'
E: 992,493.87'
Elev: 497.91'

Benchmarks:

Site Benchmark No. 1: Chiseled "X" on the most northeasterly bonnet bolt of the hydrant located on the easterly side of New York State Route 28 and being approximately 1287.0 feet southeasterly from the centerline intersection of New York State Route 28 with Kinderhook Road. Elevation = 500.80'

GRAPHIC SCALE

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(IN FEET)

1 inch = 50 ft.

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8507 Green Lakes Road
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Sheet 2 of 2

Town of Manlius
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Marcy, New York 13403
T: 315/733-7278
F: 315/797-1957

Exhibit C

LEGAL SITE DESCRIPTION

Surveyor's Measured Description
Proposed Solar Lease Area
Contains: 24.125 acres

All that tract or parcel of land situate in the Town of Manlius, County of Onondaga, State of New York, and being more precisely described as follows:

Beginning at a 5/8-inch rebar with a 1 1/4-inch diameter red plastic cap marked "THEW ASSOCIATES - UTICA NY" (herein after referred to as a 5/8-inch rebar) set on the easterly bounds of New York State Route 290 (variable width), said rebar having New York State plane coordinates (NAD83/2011 - Central Zone) of 1,114,797.85 feet North and 992,483.19 feet East;

thence through a parcel of land conveyed by Charles L. Hafner to JRT Properties, LLC by deed dated June 30, 2017 and recorded in the Onondaga County Clerk's Office on June 30, 2017 in Liber 5432 of Deeds at Page 175, the following 25 courses and distances:

1. North 61 degrees 26 minutes 39 seconds East a distance of 406.22 feet to a set 5/8-inch rebar;
2. North 22 degrees 16 minutes 31 seconds West a distance of 325.33 feet to a set 5/8-inch rebar;
3. North 26 degrees 21 minutes 49 seconds West a distance of 481.00 feet to a set 5/8-inch rebar;
4. North 83 degrees 55 minutes 38 seconds East a distance of 199.60 feet to a set 5/8-inch rebar;
5. North 51 degrees 52 minutes 55 seconds East a distance of 225.71 feet to a set 5/8-inch rebar;
6. North 62 degrees 29 minutes 49 seconds East a distance of 75.14 feet to a set 5/8-inch rebar;
7. North 81 degrees 35 minutes 33 seconds East a distance of 156.00 feet to a set 5/8-inch rebar;
8. North 76 degrees 47 minutes 39 seconds East a distance of 84.19 feet to a set 5/8-inch rebar;
9. North 73 degrees 14 minutes 19 seconds East a distance of 227.94 feet to a set 5/8-inch rebar;
10. North 85 degrees 44 minutes 25 seconds East a distance of 64.37 feet to a set 5/8-inch rebar;
11. South 00 degrees 14 minutes 32 seconds West a distance of 106.19 feet to a set 5/8-inch rebar;
12. South 17 degrees 43 minutes 01 seconds East a distance of 121.85 feet to a set 5/8-inch rebar;
13. South 45 degrees 26 minutes 47 seconds East a distance of 136.85 feet to a set 5/8-inch rebar;
14. South 25 degrees 36 minutes 50 seconds East a distance of 157.74 feet to a set 5/8-inch rebar;
15. South 41 degrees 29 minutes 35 seconds East a distance of 320.48 feet to a set 5/8-inch rebar;
16. South 61 degrees 22 minutes 22 seconds East a distance of 114.92 feet to a set 5/8-inch rebar;

17. South 88 degrees 13 minutes 53 seconds East a distance of 114.09 feet to a set 5/8-inch rebar;

18. South 06 degrees 29 minutes 18 seconds East a distance of 107.13 feet to a set 5/8-icn rebar;

19. South 12 degrees 43 minutes 00 seconds East a distance of 186.73 feet to a set 5/8-inch rebar;

20. South 08 degrees 46 minutes 04 seconds West a distance of 78.98 feet to a set 5/8-inch rebar;

21. South 58 degrees 54 minutes 02 seconds West a distance of 322.60 feet to a set 5/8-inch rebar;

22. North 66 degrees 38 minutes 28 seconds West a distance of 56.59 feet to a set 5/8-inch rebar;

23. South 56 degrees 13 minutes 56 seconds West a distance of 25.51 feet to a set 5/8-inch rebar;

24. North 34 degrees 01 minutes 22 seconds West a distance of 637.26 feet to a set 5/8-inch rebar;

25. South 61 degrees 26 minutes 39 seconds West a distance of 1,059.14 feet to a 5/8-inch rebar set on the easterly bounds of New York State Route 290;

thence North 29 degrees 08 minutes 30 seconds West, along the easterly bounds of New York State Route 290, a distance of 32.50 feet to the **Point of Beginning**.

To contain 24.125 acres of land, more or less, as surveyed by Jeremy L. Sweeney, Licensed Land Surveyor No. 050863.

The above described lease parcel of land is intended to be a portion of the same premises conveyed by Charles L. Hafner to JRT Properties, LLC by deed dated June 30, 2017 and recorded in the Onondaga County Clerk's Office on June 30, 2017 in Liber 5432 of Deeds at Page 175.

The above-mentioned coordinates, bearings, and distances are referenced to the North American Datum of 1983, 2011 adjustment (NAD83/2011), projected on the New York State Plane Coordinate System (Central Zone).

Exhibit D

SWPPP

Preliminary Stormwater Pollution Prevention Plan (Prelim SWPPP)

Green Lakes Road Solar Project
8507 Green Lakes Road
Manlius, New York 13066

April 6, 2020

PREPARED FOR:

Falck Renewables
1 Bridge Street
Irivington, New York 10533

FALCK RENEWABLES
GRUPPOFALCK

PREPARED BY:

Tetra Tech, Inc.
3136 South Winton Road, Suite 303
Rochester, NY 14623

TETRA TECH



SIGNATORY REQUIREMENTS

The owner or operator has signed this document as acknowledgement that they have read and understand this SWPPP; and shall ensure that the provisions of this SWPPP are implemented as defined by the NYSDEC SPDES General Permit No. GP-0-20-001 and outlined herein.

Owner/Operator Signature	Date
Owner/Operator Printed Name	Title

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
CWA	Clean Water Act
ECL	Environmental Conservation Law
FIRM	Flood Insurance Rate Map
NTS	Not to Scale
NYS	New York State
NYSDEC	New York State Department of Environmental Conservation
OPRHP	Office of Parks, Recreation and Historic Preservation
PV	Photovoltaic
SCS	Soil Conservation Service
SHPA	State Historic Preservation Act
SMDM	Stormwater Management Design Manual (NYS)
SMP	Stormwater Management Practice
SPDES	State Pollutant Discharge Elimination System
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture

1.0 INTRODUCTION

This Preliminary Stormwater Pollution Prevention Plan (SWPPP) has been prepared for Falck Renewables North America Development Services & Construction Management, LLC (Falck Renewables) for proposed activities associated with construction of the Green Lakes Road Solar Project (the Project) located on Green Lakes Road, Manlius, Onondaga County, New York. The property on which the Project is located comprises approximately 148 acres of land. The Project will encompass an approximately 23.4-acre subset of that property (the Site).

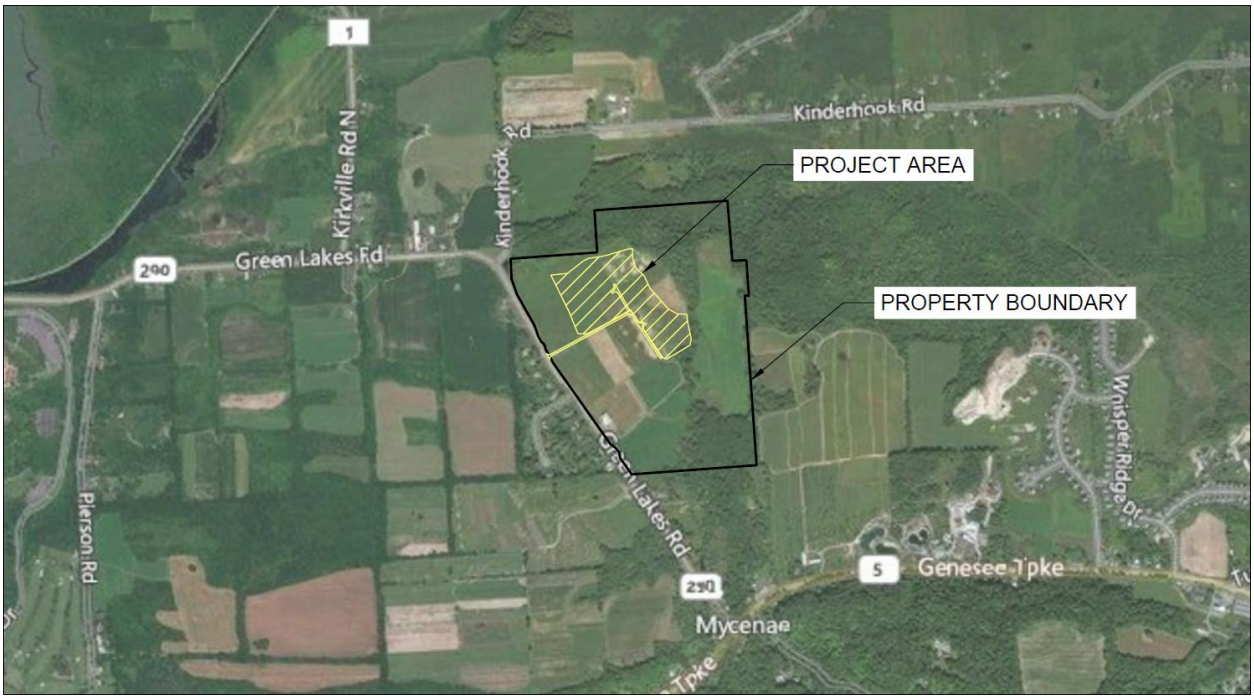

Figure 1 – Property Boundary & Project Area

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. The New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) permit program is a NPDES-approved program with permits issued in accordance with the Environmental Conservation Law (ECL). The General Permit for Stormwater Discharges from Construction Activity, General Permit Number GP-0-20-001 (the Permit) is issued pursuant to Article 17, Titles 7, 8 and Article 70 of the ECL.

The Permit authorizes stormwater discharges to surface waters of the State from construction activities involving soil disturbances of one or more acres, provided all of the eligibility provisions of the Permit are met. Part III.C of the Permit states that construction activities identified in Table 1 of Appendix B (of the Permit) are required to prepare a SWPPP that only includes erosion and sediment control practices. Construction activities identified in Table 2 of Appendix B (of the Permit) are required to prepare a SWPPP that also includes post-construction stormwater management practices.

The Project involves construction of a ground-mounted solar photovoltaic (PV) array, a permanent gravel access road, and concrete equipment pads. Although the overall impervious area is relatively small and a majority of the site will consist of a permanent vegetative cover, Table 2 of the Permit requires post-construction stormwater management practices be included in this preliminary SWPPP.

The total area to be disturbed is shown by the limits of disturbance on the discretionary permitting drawings for this Project. The gravel access roads, concrete & gravel equipment pads, racking posts and fence footings are all considered to be impervious surfaces. Table 1 shows the total impervious area to be 1.09 acres. Please note that the area contributing to impervious surface from the racking posts is considered negligible but has been shown for illustrative purposes.

Table 1 – Areas of Impervious Surface

Gravel Access Road	1.06 acres
Equipment Pads	0.03 acres
Racking Posts	0.001 acres
Fence Post Footings	0.01 acres
Total Impervious Surface	**1.10 acres**

It is not expected that more than 5 acres of the Project area will be disturbed at one given time. **If more than 5 acres of the Project area will be disturbed at one given time, the following are required by the Owner and Contractor**:

- Obtain written authorization from the NYSDEC prior to construction.
- Conduct at least two site inspections in accordance with Part IV.C of the General Permit every seven calendar days, for as long as greater than five acres of soil remain disturbed. The two inspections shall be separated by a minimum of two full calendar days.
- Initiate soil stabilization measures by the end of the next business day in areas where soil disturbance has temporarily or permanently ceased and complete within seven days from the date the current soil disturbance activity ceased.
- Prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
- Install additional site-specific practices needed to protect water quality.

Refer to Appendix B for a copy of the Permit.

2.0 SITE DESCRIPTION

2.1 PROPERTY

The Site, as previously noted, covers approximately 23.4 acres of a larger parcel located within Manlius, New York. The Site is located in a rural area on the north east side of the Town of Manlius. The general area around the Site consists of rural residential/agricultural properties. The Site is bound by woods to the north; by woods and agricultural fields to the east; by woods and a residential property to the south; and Green Lakes Road to the west. The Site is primarily used for agricultural purposes.

2.2 TOPOGRAPHY

The maximum elevation of the Site is approximately 500 feet above mean sea level. The Site generally slopes from the south west to the north east. Areas within the Site have slopes ranging from 1-5%.

2.3 SOILS

The United States Department of Agriculture (USDA) Soil Conservation Service (SCS) Soil Survey for Onondaga County was reviewed and provided surficial soil conditions for the Site. The SCS identified the presence of four (4) soil types within the Project area. Figure 2 shows the soil map for the Site.

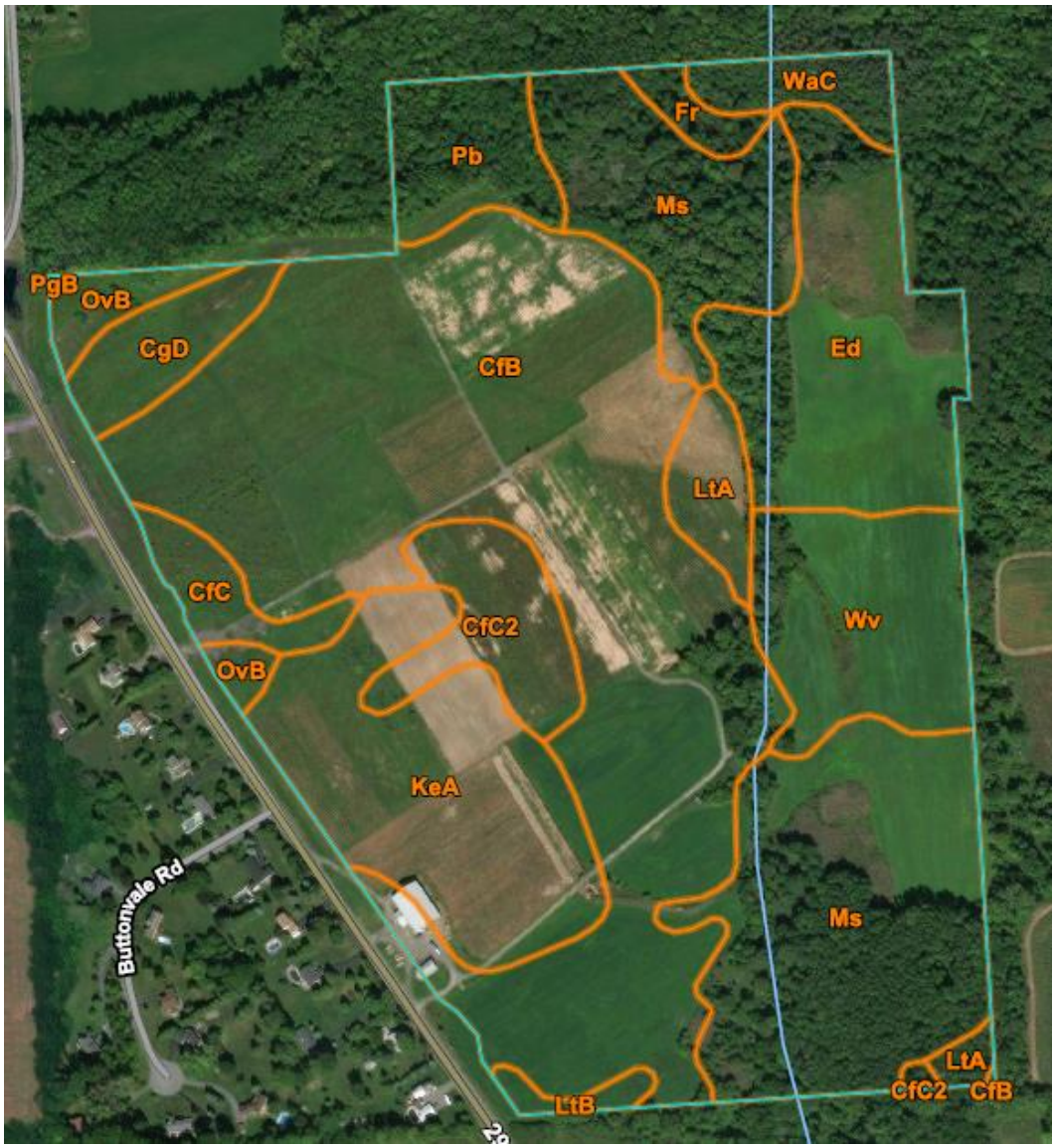

Figure 2 – Soil Map (NTS)

Soil data as provided by the SCS is presented in Table 2.

Table 2 – Soils Data for the Site

MAP SYMBOL/ DESCRIPTION	HYDROLOGIC SOIL GROUP	SLOPE (%)	SOIL PROFILE		K VALUE	DEPTH TO WATER TABLE (INCHES)
			DEPTH (IN)	USDA TEXTURE		
Cazenovia Soils (CgD)	C	15 – 25	0 – 12	Silt Loam	0.28	24 – 48
			12 – 36	Silty Clay Loam		
			36 –60	Gravelly Silty Clay Loam		
Cazenovia Silt Loam (CfB)	C	2 – 8	0 – 12	Silt Loam	0.28	24 - 48
			12 – 36	Silty Clay Loam		
			36 – 60	Gravelly Silty Clay Loam		
Lima Silt Loam (LtA)	B/D	0 – 3	0 – 9	Silt Loam	0.32	18 – 24
			9 – 12	Loam		
			12 – 16	Loam		
			16 – 25	Gravely Loam		
			25 - 79	Gravely Loam		
Weaver Silt Loam (Wv)	C	0 – 3	0 – 17	Silt Loam	0.24	18 - 30
			17 – 29	Silty Clay Loam		
			29 – 60	Silt Loam		

The SCS defines the hydrologic soil groups as follows:

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

Type B Soils: Soils having a moderate infiltration rate when thoroughly wet and consists mainly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately course textures. These soils have a moderate rate of water transmission.

Type C Soils: Soils having a low infiltration rate when thoroughly wet. These soils consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine-to-fine texture. These soils have a low rate of water transmission.

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

The complete USDA Soil Survey (including the soil map to scale) for the Site can be found in Appendix E.

2.4 COVER CONDITIONS

The existing Site cover condition is pasture/grassland with some wooded area and wetlands. The Site cover condition post-construction is to be a permanent grassed vegetative cover, a gravel access road, and concrete equipment pads with a portion of the Site remaining as pasture/grassland with the wooded area and wetlands. Disturbed areas to be vegetated will receive topsoil and seeding for final stabilization.

Runoff curve numbers for the various cover types and descriptions used in the stormwater evaluation for this project were obtained from Tables 2-2a-d of the *Urban Hydrology for Small Watersheds Technical Release 55* by the USDA. A summary of the curve numbers is provided in Table 2.

Table 3 – Curve Numbers for Hydrologic Soil Group

Cover Type	A	B	C	D
Woods (Good)	30	55	70	77
Straight Row Crop (Good)	67	78	85	89
Pasture, grassland, or range – continuous forage for grazing (Good)	39	61	74	80
Meadow – continuous grass, protected from grazing and generally mowed for hay	30	58	71	78
Gravel	96	96	96	96
Paved parking lots, roofs, driveways, etc.	98	98	98	98

2.5 WETLANDS

There is a NYSDEC wetland mapped to the north of the Site. The design includes a 100-foot buffer around the wetland. The proposed Project avoids the wetland and its associated buffer.

2.6 HISTORIC PRESERVATION

The NYSDEC and NYS Office of Parks, Recreation and Historic Preservation (OPRHP) have developed a process for construction projects to identify and address potential impacts on archeological and historic resources. This process is documented in a Letter of Resolution (LOR) that was developed between the NYSDEC and OPRHP. A letter from the Office concluded that the Project will have No Adverse Impact on historic resources. A copy of the letter from the State Historic Preservation Act (SHPA) Review is included in Appendix C.

2.7 SURFACE WATERS & FLOOD PLAINS

The Site is located in the Chittenango Creek Watershed as part of the Oswego River/Finger Lakes Basin (East) that ultimately outlets to Lake Ontario. The Chittenango Creek watershed is not identified in Appendix C of the Permit; as such, enhanced phosphorous removal standards are

not required. Runoff from the Site flows over agricultural areas (currently row crop), infiltrates into surface soils and leaves via overland flow to wetlands to the north and a stream to the east. The stream is a tributary of Chittenango Creek. The tributaries are not listed in the 303(d) segments listed in Appendix E of the Permit.

Using the map service center provided by the Federal Emergency Management Agency (FEMA), a portion of two Flood Insurance Rate Maps (FIRMs) for the Town of Manlius, panel numbers 36067CO262F and 36067CO266F, were printed for the Site as a FIRMette. A majority of the Site is located within Zone X (Area of Minimal Flood Hazard). Portions of the Site are considered a Special Flood Hazard Area, that is defined as areas subject to flooding by the 1% annual chance flood (100-year flood). Sensitive components of the Project such as concrete equipment pads and gravel access roads have been located outside of the 100-year flood plain. The Project components within the 100-year flood plain are limited to driven panel posts and fence post footings. A copy of the FIRMette can be found in Appendix D.

2.8 RAINFALL DATA

In accordance with the *2016 New York State Standards and Specifications for Erosion and Sediment Control*, hydrologic data and rainfall distributions published by the Northeast Regional Climate Center (NRCC) on their website (http://precip.eas.cornell.edu/) are used in the stormwater hydrology calculations herein. The rainfall data for various 24-hour storm events anticipated at the Site is presented in Table 4.

Table 4 – Rainfall Data

Storm Event	24-Hour Rainfall
1-year	2.07–inches
2-year	2.40-inches
10-year	3.45–inches
100-year	5.82–inches

3.0 EROSION & SEDIMENT CONTROL

This section of the SWPPP and the associated construction drawings identify the temporary and permanent erosion and sediment control (ESC) measures that have been incorporated into the design of this Project. These measures will be implemented during construction to protect the waters of the State from sediment loads during runoff events.

The anticipated order of construction activities is outlined along with the ESC measures to be implemented for each construction activity that will result in soil disturbance. The SWPPP and construction drawings provide a description of the temporary and permanent ESC measures including limitations on the duration of soil exposure, criteria and specifications for placement and installation of the ESC measures, and a maintenance schedule.

An emphasis was placed on the preservation of natural features, conserving existing drainage patterns and vegetation, minimizing impervious surfaces, slowing down runoff, increasing infiltration, and utilizing green infrastructure techniques throughout the design process.

3.1 CONSTRUCTION SEQUENCE

Construction is anticipated to start in 2020. Operation is targeted for 2020. The Project's construction will be approximately four months in duration. The construction will begin with the initial site preparation, preliminary site grading, installation of access roadway, erection of arrays, electrical installation, and commissioning/startup.

The following is a typical sequence of operations and phasing plan describing the intended order of construction activities:

Initial Phase

1. Hold a pre-construction meeting on-site attended by the qualified inspector, and any involved subcontractors to discuss responsibilities as they relate to the implementation of the SWPPP, identify the secure location where the SWPPP will be kept on the Site (must be accessible during normal business hours), and review appropriate measures to avoid and minimize impacts to protected species during remediation, demolition and construction. If contractors and subcontractors have not already done so, the certification statements in Appendix L shall be signed at this time.

2. Delineate limits of work disturbance, proposed infrastructure areas for the Project, and resources to protect.

3. Install and stabilize temporary ESC measures (i.e., sediment control barrier, stabilized construction entrance)..

4. Minimally clear areas as required for the following:

    a. Rough grading; and
    b. Placement of construction office trailer and parking areas.

5. Install temporary infrastructure (e.g., construction office trailer, interim road, fence, security measures).

6. Establish equipment staging (laydown area), topsoil stockpile, and concrete truck washout areas.

7. Identify post-construction stormwater management practice areas to be protected in order to preserve native soil permeability.

Interim Phase

1. Perform grading, additional clearing, grubbing for the remainder of the site per approved construction drawings.

2. Mount and install the supporting structure and racking system.

3. Install solar panels, string inverters and connections.

4. Construct equipment pads (transformer, central inverters, battery storage systems, etc.).
5. Install underground electric wiring and/or above ground cable management systems.

Final Phase

1. Install permanent ESC measures.
2. Install permanent access road and paved access road entrance (if required).
3. Install permanent post-construction stormwater management practices (if required)
4. Install permanent perimeter fencing.
5. Conduct soil restoration (as required).
6. Complete fine grading, landscaping, seeding and soil stabilization.
7. Remove temporary ESC measures.
8. Restore and stabilize any disturbed areas remaining upon removal of temporary ESC measures

If the disturbed area exceeds 5 acres at any given time, prior written acceptance of this plan from the Regional NYSDEC office must be received and attached.

3.2 TEMPORARY EROSION & SEDIMENT CONTROL MEASURES

Temporary erosion and sediment control measures are included as part of the construction drawings and described herein.

3.2.1 Stabilized Construction Entrance

During the initial phase, a stabilized construction entrance shall be installed, as shown on the construction drawings, to reduce the tracking of sediment onto public roadways.

Construction traffic must enter and exit the Site at the stabilized construction entrance. The intent is to trap dust and mud that would otherwise be carried off-Site by construction traffic.

The entrance shall be maintained in a condition that will control tracking of sediment onto the local roadway. When necessary, the placement of additional aggregate atop the filter fabric will be done to assure the minimum thickness is maintained. All sediments and soils spilled, dropped, or washed onto any public right-of-way must be removed immediately. Periodic inspection and needed maintenance shall be provided after each substantial rainfall event.

3.2.2 Dust Control

Water trucks may be used as needed during construction to reduce dust generated on the Site. Dust control must be provided by the Contractor to a degree that is acceptable to the Owner, and in compliance with the applicable local and state dust control requirements.

3.2.3 Material Storage & Equipment Staging Areas

Construction materials shall be stored in a dedicated staging area. The staging area shall be located in an area that minimizes the impacts of the construction materials affecting stormwater quality and protected by a temporary sediment control barrier.

Chemicals, paints, solvents, fertilizers, and other toxic material must be stored in waterproof containers. Except during application, the contents must be kept in trucks or within storage facilities. Runoff containing such material must be collected, removed from the Site, treated and disposed at an approved solid waste or chemical disposal facility.

Material resulting from the clearing and grubbing operation shall be stockpiled up slope from adequate sedimentation controls or at an off-site location with appropriate protections for re-use during the restoration stage.

3.2.4 Concrete Wash Area

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in a specifically designated diked and impervious washout area which has been prepared to prevent contact between the concrete wash and stormwater. Waste generated from concrete wash water shall not be allowed to flow into drainage ways, inlets, receiving waters or highway right of ways, or any location other than the designated Concrete Wash Areas. Proper signage designating the “Concrete Wash Area” shall be implemented. The Concrete Wash Area shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters.

The hardened residue from the Concrete Wash Area shall be disposed of in the same manner as other non-hazardous construction waste materials. Maintenance of the wash area shall include removal of hardened concrete. The Facility shall have sufficient volume to contain all the concrete waste resulting from washout and a minimum freeboard of 12 inches. The Facility shall not be filled beyond 95 percent capacity and shall be cleaned out once 75 percent full unless a new facility is constructed. The Contractor will be responsible for seeing that these procedures are followed.

Saw-cut Portland Cement Concrete (PCC) slurry shall not be allowed to enter storm drains or watercourses. Saw-cut residue should not be left on the surface of pavement or be allowed to flow over and off pavement.

All concrete washout areas shall be inspected daily and repaired or replaced as necessary. The Site shall be inspected frequently to ensure that no concrete discharges are taking place in non-designated areas.

3.2.5 Sediment Control Barrier

Prior to the initiation of and during construction activities, a geotextile filter fabric (or silt fence) or compost filter sock will be established along the perimeter of areas to be disturbed as a result of the construction that lies upgradient of water courses or adjacent properties. These barriers may extend into non-impact areas to ensure adequate protection of adjacent lands.

Clearing and grubbing will be performed only as necessary for the installation of the sediment control barrier. To ensure effectiveness of the sediment control barrier, daily inspections and inspections immediately after significant storm events will be performed by Site personnel. Maintenance of the fence will be performed as needed.

3.2.6 Dewatering

Dewatering shall be used to intercept sediment-laden stormwater or pumped groundwater and allow it to settle out of the pumped discharge prior to being discharged from the Site, as needed. Water from dewatering operations shall be treated to eliminate the discharge of sediment and other pollutants. Water resulting from dewatering operations shall be directed to the temporary sediment traps, or dewatering devices, such as the Dandy Dewatering Bag, manufactured by Mirafi Geosynthetics or approved equivalent. Temporary sediment traps and dewatering bags shall be provided, installed and maintained at down-gradient locations to control sediment deposits to wetlands.

3.2.7 Temporary Soil Stockpile

Materials, such as topsoil or removed soil for special handling, shall be temporarily stockpiled (if necessary) on the Site during the grading and construction process. Stockpiles shall be located in an area away from storm drainage, water bodies and/or courses, and shall be properly protected from erosion by a surrounding sediment control barrier.

3.2.8 Preservation of Natural Areas

During the initial phase, the limits of construction and resources to protect shall be identified in accordance with the construction drawings. Sturdy fences or other protective materials shall be placed around valuable vegetation for protection from construction equipment. Soil placement over existing tree and shrub roots shall be limited to a maximum of 3 inches.

3.2.9 Temporary Seeding

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.

3.2.10 Temporary Diversion Swales

Temporary diversion swales shall be used to divert off-site runoff around the construction Site, divert runoff from stabilized areas around disturbed areas, and direct runoff from disturbed areas into sediment traps.

3.2.11 Temporary Slope Protection

Erosion control blankets shall be installed on all slopes exceeding 3H:1V. Erosion control blankets provide temporary erosion protection, rapid vegetative establishment, and long-term erosion resistance to shear stresses associated with high runoff flow velocities associated with steep slopes.

3.2.12 Stone Check Dams

Stone check dams shall be installed within drainage ditches to reduce the velocity of stormwater runoff, to promote settling of sediment, and to reduce sediment transport offsite.

The stone check dams shall be inspected after each runoff event. Damage shall be repaired upon discovery. If significant erosion has occurred between structures, a liner of stone or other suitable material shall be installed in that portion of the channel.

Sediment accumulated behind the stone check dam shall be removed as needed to allow the channel to drain through the stone check dam and prevent large flows from carrying sediment over or around the dam. Stones shall be replaced as needed to maintain the design cross section of the structures.

3.2.13 Temporary Soil Stabilization

In areas where soil disturbance activity has temporarily or permanently ceased, the application of temporary soil stabilization measures shall 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. Appendix A of the Permit defines “temporarily ceased” as an existing disturbed area that will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary soil stabilization can be achieved by covering exposed soil with mulch, seed and mulch, and/or erosion control mats (e.g., jute twisted yarn, excelsior wood fiber mats) to prevent the exposed soil from eroding until permanent soil stabilization has been implemented and achieved.

3.3 PERMANENT EROSION & SEDIMENT CONTROL MEASURES

Permanent erosion and sediment control measures are included as part of the construction drawings provided in Appendix A and described herein.

3.3.1 Permanent Soil Stabilization

Disturbed areas that will be vegetated must be seeded in accordance with the construction drawings.

All areas at final grade must be seeded and mulched within 14 days after completion of the major construction activity. All seeded areas should be protected with mulch.

Final Site stabilization is achieved when all soil-disturbing activities at the Site have been completed and a uniform, perennial vegetative cover with a density of 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.

3.3.2 Riprap Weir

A riprap weir is utilized at the outlet of proposed vegetated swales to prevent erosion of the downstream face of the outlet during rainfall events. Outlet types and specifications are identified in the construction drawings.

3.3.3 Rock Outlet Protection

Outlet protection will be utilized as necessary using rock riprap at culvert outlets, new channels constructed as outlets for culverts and conduits, and pipe conduits from sediment basins, dry storm water ponds, and permanent ponds. Rock for riprap shall consist of field rock or rough unhewn quarry rock. The rock shall be hard and angular, and of a quality that will not disintegrate on exposure to water or weathering. The specific gravity of the individual rocks shall be at least 2.5. A filter shall be placed under the rock riprap as specified in the construction drawings. Permanent sections of rock protection at outlets reduce the depth, velocity, and energy of the water in order to prevent the flow from eroding the downstream reach.

3.3.4 Soil Restoration

The structure of healthy soil is permeable, with spaces between solid particles where water, air, and soil organisms can move. Soil compaction occurs when weight on the soil surface collapses these spaces, creating a hard, solid mass. Water, air, and roots may be completely unable to penetrate compacted soil, reducing or destroying its capacity to sustain life. Soil restoration promotes greater stormwater infiltration in areas with pervious cover and, therefore, helps to reduce runoff volume.

Soil restoration is achieved by aeration through mechanical loosening, and addition of organic matter and soil amendments. In areas where significant soil disturbance has occurred outside of pavement areas, the disturbed sub-soils shall be returned to rough grade and soils restoration steps applied, in accordance with Table 4.6, Soil Restoration Requirements of the NYS Standards and Specifications for Erosion and Sediment Control dated July 2016 and amended in November 2016 and Section 5.1.6, Soil Restoration of the NYS Stormwater Management Design Manual, dated January 2015.

Table 5 provides the soil restoration requirements for various types of soil disturbance. Grading and soil restoration requirements shall be in accordance with the construction drawings.

Table 5 – Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No Soil Disturbance	Restoration not permitted.		Preservation of natural features.
Minimal Soil Disturbance	Restoration not required.		Clearing and grubbing.
	HSG A & B	HSG C & D	

<table>
<tr><td>Areas where topsoil is stripped only – no change in grade</td><td>Apply 6 inches of topsoil</td><td>Aerate* and apply 6 inches of topsoil</td><td>Protect areas from any ongoing construction activities.</td></tr>
<tr><td rowspan="2">Areas of cut or fill</td><td>HSG A & B</td><td>HSG C & D</td><td rowspan="2"></td></tr>
<tr><td>Aerate and apply 6 inches of topsoil</td><td>Apply full soil restoration**</td></tr>
<tr><td>Heavy traffic areas on site (especially within 5-25 feet of buildings but not within a 5-foot perimeter around foundation walls)</td><td colspan="2">Apply full soil restoration (de-compaction and compost enhancement)</td><td></td></tr>
<tr><td>Areas where runoff reduction and/or infiltration practices are applied</td><td colspan="2">Restoration not required but may be applied to enhance the reduction specified for appropriate practices.</td><td>Keep construction equipment away from crossing these areas.</td></tr>
</table>

***** Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per “Deep Ripping and De-compaction, DEC 2008”

4.0 STORMWATER MANAGEMENT DESIGN

The design described herein is in conformance with the sizing criteria outlined in the Permit, and the performance criteria provided in New York State Stormwater Management Design Manual (SMDM). The SMDM outlines provisions for water quality, runoff reduction, channel protection, overbank flood control, and extreme flood management in the State of New York.

The design objectives are focused on water quality and quantity. Utilization of green infrastructure techniques to the maximum extent possible reduces the total water quality volume and the overall site runoff volume. Additional structural SMPs may be required to maintain the pre-development rate of runoff in order to minimize impacts to adjacent or downstream properties, but only after all other techniques to reduce runoff have been exhausted or deemed infeasible.

4.1 STORMWATER MANAGEMENT PRACTICES (SMPS)

The SWPPP and construction drawings identify the stormwater management practices that have been incorporated into the design of this Project. Stormwater runoff from the proposed development will be collected and conveyed to the quantity and quality control systems described herein.

4.1.1 Preservation of Undisturbed Areas & Buffers

Important natural features and areas such as undisturbed forested and native vegetated areas, natural terrain, riparian corridors, wetlands and other important site features have been delineated and placed outside the limits of construction. These areas are shown on the construction drawings. Permanently protected natural areas that have been placed into conservation easements can be used to reduce the area required for treatment by structural stormwater management measures.

4.1.2 Reduction of Clearing & Grading

Clearing and grading of the site has been limited to the minimum amount needed for the development function, road access, and infrastructure. Limits of disturbance have been established for all development activities.

4.1.3 Locating Development in Less Sensitive Areas

The site layout has been located to avoid sensitive resource areas such as steep slopes (> 15%), erodible soils, mature forests and critical habitat areas. The entire 100-year floodplain should be avoided for clearing and should be preserved in a natural, undisturbed state. The Project components within the floodplains are limited to pile drive posts and fence post footings. The floodplains are shown on the construction drawings, where applicable.

4.1.4 Reduction of Impervious Cover

Reduction of impervious cover utilized in this design includes methods to reduce the amount of parking lots, roadways, and other surfaces that do not allow rainfall to infiltrate the soil, in order

to reduce the volume of stormwater runoff, increase groundwater recharge, and reduce pollutant loadings that are generated from a site.

The length and width of the proposed access road have been minimized to reduce overall imperviousness. The design of the access road is based on minimum lengths and widths required to meet applicable federal, state and local codes and support the necessary equipment accessing the Site.

4.1.5 Sheetflow to Riparian Buffers or Filter Strips

An existing riparian buffer exists around the stream to the north and east boundaries of the Site that is avoided by the Project and is to be preserved. The water quality calculations in this SWPPP do not take credit for the additional benefits that the buffer will provide for runoff from the Site entering the stream.

4.1.6 Disconnection of Non-rooftop Runoff

Due to the nature of ground mounted solar system installation, the solar panels themselves are not considered to contribute to the amount of impervious area by acting as a pervious cover. The memorandum from the NYSDEC dated Februarry 21, 2020 provides guidance for solar panel construction stormwater permitting. This project falls under scenario 2, which requires post-construction stormwater practices to be designed in accordance with chapter 4 of the SMDM. However, the water quality volume and runoff reduction volume sizing criteria can be addressed by design and constructing the solar panels in accordance with the criteria in items 1-4, which are summarized below.

1. Solar panels are constructed on post or rack systems elevated off the ground surface.
2. The panels are spaced apart so that rainwater can flow off the down gradient side of the panel and continue as sheet flow across the ground surface.
3. For solar panels constructed on slopes, the individual rows of solar panels are generally installed along the contour so rainwater sheet flows down slope.
4. The ground surface below the panels consist of a well-established vegetative cover (see “Final Stabilization” definition in Appendix A of the General Permit).

This guidance is consistent with the rationale behind solar panels acting as a pervious cover. By providing adequate row spacing, enough distance below the racking system to allow for natural sheet flow, and a well-established vegetative cover, the infiltration rate into the ground beneath the panels will be equal to the rate of infiltration prior to construction or better. An important component of this rationale is that the existing cultivated row crops and agricultural field within the Site will be seeded and brought to a permanent vegetation for the life of the system. Ground cover is one of the most important factors for erosion.

Items 2 & 3 in the above criteria refer to the Maryland Department of the Environment’s stormwater design guidance for solar panel installations. This guidance suggests the use of level spreaders for areas where slopes exceed 5%. The Site does not have slopes that exceed 5% and therefore no level spreaders are proposed.

4.1.7 Vegetated Swales

Vegetated swales have been implemented in the design to convey stormwater at a low velocity, promoting natural treatment and infiltration of the runoff from the proposed access road. The vegetated swales provide a runoff reduction for the water quality volume calculations. The swale must also be a minimum of 100 feet, a bottom width between 2-6 feet, have side slopes no steeper than 3 feet horizontal to 1 foot vertical, have a slope between 0.5-4%.

See the construction drawings and Drainage Maps for the location and design requirements of the proposed vegetated swales.

As per 6 New York Code of Rules and Regulations (NYCRR) Chapter V – Resource Management Services, Subchapter E, Water Regulation, Part 608, Use and Protection of Waters, Section608.3, Dams, a dam permit is not required for the Project as none of the stormwater management facilities have been designed with a height greater than 15 feet.

4.2 DRAINAGE AREAS

The study area for this Project consists of drainage areas that encompass approximately 38.5 acres. These drainage areas discharge to five different outfall locations, each defined as a Design Point (DP).

The separation of the drainage areas was dictated by watershed conditions, methods of collection, conveyance, and points of discharge. Watershed characteristics for each drainage area were assessed using aerial photographs, a topographical survey, soil surveys, Site investigations, and land use maps.

Table 6 summarizes the location and acreage for each of the drainage areas.

Table 6 – Summary of Drainage Areas

Drainage Area	Acreage	Description
1	5.28	Drainage occurs from the south west to the north and discharges at the tree line of the northern wetland.
2	1.02	Drainage occurs from the south to the north and discharges at the tree line of the northern wetland.
3	3.19	Drainage occurs from the west to the northeast at a point within the forested wetland.
4	2.35	Drainage occurs from the north and east and enters an existing roadside swale off the property.
5	21.08	Most of the Site runoff occurs in drainage area 5 with drainage occurring from the west to the east and discharging within the wetland buffer.
5A	15.08	This area is a segment of drainage area 5 that includes the proposed access road. This drainage area will ultimately discharge to the same discharge point as drainage area 5 but is calculated separately in order to properly size the proposed vegetated swale.

Drainage Area	Acreage	Description
6	5.63	Drainage occurs from the south to the north east and discharges within the wetland buffer.
6A	0.26	This area is a segment of drainage area 6 that includes the proposed access road. This drainage area will ultimately discharge to the same discharge point as drainage area 6 but is calculated separately in order to properly size the proposed vegetated swale.

Drainage maps are provided in Appendix F and depict the extent of the drainage areas, the locations of the design points, the flow paths and routing, and the soils within each drainage area for both pre-development and post-development conditions.

Note that the locations of proposed stormwater features (e.g., vegetated swales) have been identified on the post-development drainage map. These features shall be designed by a New York State Professional Engineer and sized in accordance with the NYS SMDM and the General Permit prior to construction.

4.3 STORMWATER QUALITY CONTROL

Stormwater runoff from impervious surfaces is recognized as a significant contributor of pollution that can adversely affect the quality of the receiving water bodies. Therefore, treatment of stormwater runoff is important since most runoff related water quality contaminants are transported from land, particularly the impervious surfaces, during the initial stages of storm events.

The objective for this design in accordance with the Permit is to reduce the total water quality volume of the Site by application of runoff reduction techniques and standard SMPs with runoff reduction volume capacity. The NYS SMDM provides a unified approach for calculating the water quality volume, runoff reduction volumes, and sizing green infrastructure and SMPs to meet pollutant removal goals.

4.3.1 Water Quality Volume (WQ_v)

The Water Quality Volume (WQ_v) is intended to improve water quality by capturing and treating runoff from small, frequent storm events that tend to contain higher pollutant levels. New York has defined the WQ_v as the volume generated from the 90th percentile rain event.

The following equation is used to determine the water quality volume (in acre-feet of storage):

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

Where:

WQ_v = Water Quality Volume (acre-feet)
P = 90% Rainfall Event Number (Figure 4.1 in NYS SMDM)
R_v = 0.05 + 0.009(I), where I is percent impervious cover
A = Site contributing area (acres)

The WQ_v is calculated in the Runoff Reduction Worksheet provided by NYSDEC for each sub-drainage area (5A and 6A). The remaining drainage areas described above containing only solar panels and fence (i.e., no impervious surfaces) or where existing conditions do not change post development (portions of access road in drainage areas 4 & 5) have been left out of these calculations as the area reduction technique for disconnection of non-rooftop runoff and guidance discussed in section 4.1.6 satisfies the water quality volume requirement.

Full calculations are provided in Appendix G. Runoff reduction techniques previously discussed that help to reduce the overall contributing area have been accounted for in this calculation and are summarized in Table 7.

4.3.2 Runoff Reduction Volume (RR_v)

The NYS SMDM states that runoff reduction shall be achieved by infiltration, groundwater recharge, reuse, recycle, or evaporation/evapotranspiration of 100 percent of the post-development water quality volume to the maximum extent practical. If the runoff reduction volume (RR_v) is greater than the WQ_v, then the Project has already met the requirement for WQ_v by applying runoff reduction techniques.

Projects that do not achieve runoff reduction requirements must, at a minimum, reduce a percentage of the runoff from impervious areas to be constructed on the Site. In no case shall the runoff reduction achieved be less than the minimum RR_v.

The percent reduction is based upon the Hydrologic Soil Group (HSG) of the Site and is defined as the Specific Reduction Factor (S). Section 4.3 of the NYS SMDM defines the minimum Runoff Reduction Volume ($RR_{v\ min}$) as:

$$RR_{vmin} = \frac{(P)(\overline{R}_V{}^*)(A_{ic})(S)}{12}$$

Where:

RR_{vmin} = Minimum Runoff Reduction Volume required (acre-feet)

P = 90 percent Rainfall Event Number

$\overline{R}_V{}^*$ = 0.05 + 0.009 (I), where I is 100% impervious

A_{ic} = Total Area of New Impervious Cover (Acres)

S = Hydrologic Soil Group (HSG) Specific Reduction Factor where:

HSG A = 0.55 HSG C = 0.30

HSG B = 0.40 HSG D = 0.20

The RR_v provided and the RR_{vmin} are calculated in the Runoff Reduction Worksheet provided by NYSDEC. Full calculations are provided in Appendix G.

The minimum runoff reduction volume is 1,004 cubic feet. The runoff reduction volume for each of the SMPs utilized in this project are summarized in Table 7.

4.3.3 Summary

The following table summarizes the water quality volume, the runoff reduction volume provided by the implemented green infrastructure practices and the total water quality volume that has been treated for each drainage area.

As shown, the water quality requirements have been satisfied through the implementation of runoff reduction techniques and standard SMPs.

Table 7 – Summary of the Water Quality Volume (WQ_v) Calculations

Drainage Area	Total Area (acres)	Impervious Surface (acres)	WQ_v (cf)	Runoff Reduction Technique(s)	RR_v (cf)	WQ_v Treated (cf)
1	5.28	--	--	Non-Rooftop Disconnection	--	--
2	3.19	--	--	Non-Rooftop Disconnection	--	--
3	2.35	--	--	Non-Rooftop Disconnection	--	--
4	21.08	--	--	Non-Rooftop Disconnection	--	--
5	15.08	--	--	Non-Rooftop Disconnection	--	--
5A	0.30	0.17	610	Vegetated Swale	461	149
6	0.26	--	--	Non-Rooftop Disconnection	--	--
6A	5.28	0.13	472	Vegetated Swale	472	0

4.4 STORMWATER QUANTITY CONTROL

This section presents the methodology and analysis performed for the pre- and post-development conditions of the Site to address erosion and flood control during specified storm events.

4.4.1 Hydrologic & Hydraulic Analysis

The methodology Hydrocad® Storm and Sanitary Analysis, a comprehensive hydrology and hydraulic analysis application, was used to compute the stormwater peak discharge rate at the drainage area outfalls for each storm event. A stormwater network model was produced consisting of three types of components as described below:

- Subbasin: Hydrologic areas of land whose topography and drainage system elements direct surface runoff to a single discharge point.
- Conveyance Link: Channels, pipes and culverts used to route the stormwater runoff to various features.
- Storage Nodes: Catchbasins, detention ponds, reservoirs and lakes associated with storage volume.

A comparison of the pre- and post-development watershed conditions was performed for all design points and storm events evaluated herein.

The hydrologic and hydraulic analysis considers the SCS Type II 24-hour storm events and uses TR-20 methodology. The TR-55 method is used for calculating the time of concentration (T_c). Input data required to perform the analysis includes acreages and curve numbers for the associated drainage areas, and slopes and flow lengths for the time of concentration calculations.

The analyses demonstrate that the peak rate of runoff will not be increased post-development for each design point and design storm. Therefore, the Project will not have a significant adverse impact on the adjacent or downstream properties or receiving water courses.

The results of the computer modeling used to analyze the pre- and post-development conditions are presented in Appendix H and Appendix I, respectively. Table 8 summarizes the results.

Table 8 – Summary of Pre-Development & Post-Development Peak Discharge Rates

Design Point (DP #)	24-Hour Storm Event (cfs)					
	1-year		10-year		100-year	
	Pre	Post	Pre	Post	Pre	Post
1	4.69	3.97	12.13	11.10	26.32	25.06
2	1.20	1.07	2.80	2.65	5.73	5.60
3	3.34	1.71	7.86	5.44	16.16	13.14
4	1.89	1.89	4.91	4.91	10.69	10.69
5	12.85	6.09	31.87	20.28	67.55	50.14
6	4.26	2.33	11.47	8.34	25.44	21.16
Total	**28.23**	**17.06**	**71.04**	**52.72**	**151.89**	**125.79**

Table 9 – Summary of Pre-Development & Post-Development Runoff Volume

Design Point (DP #)	24-Hour Storm Event (acre-feet)					
	1-year		10-year		100-year	
	Pre	Post	Pre	Post	Pre	Post
1	0.306	0.266	0.766	0.703	1.682	1.592
2	0.072	0.063	0.168	0.154	0.351	0.334
3	0.225	0.129	0.524	0.370	1.099	0.883
4	0.136	0.136	0.341	0.341	0.748	0.748
5	1.394	0.854	3.327	2.448	7.076	5.836
6	0.305	0.195	0.783	0.594	1.745	1.468
Total	**2.438**	**1.643**	**5.909**	**4.610**	**12.701**	**10.861**

Table 8 & 9 shows that the overall discharge leaving the site has decreased from the pre-development condition. This is mostly due to the improved ground cover for a large portion of the Site from the pre-developed condition.

4.4.2 Stream Channel Protection Volume (Cp_v)

The stream channel protection volume requirement is designed to protect stream channels from erosion. This is accomplished by providing 24 hours of extended detention for the 1 year, 24-hour storm event, remaining from runoff reduction. The NYS SMDM defines the Cp_v detention time as the center of mass detention time through each stormwater management practice.

The Cp_v requirement does not apply when the reduction of the entire Cp_v is achieved at a site through green infrastructure or infiltration systems. This reduction is shown in Table 9.

4.4.3 Overbank Flood Control (Q_p)

The overbank flood control requirement is designed to prevent an increase in the frequency and magnitude of flow events that exceed the bank-full capacity of a channel, and, therefore, must spill over into the floodplain. The control requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Q_p) to pre-development rates.

Tables 8 & 9 show the results of the 24-hour, 10-year storm event for pre- and post-development.

4.4.4 Extreme Flood Control (Q_f)

The extreme flood control requirement is designed to prevent the increased risk of flood damage from large storm events, to maintain the boundaries of the pre-development 100-year floodplain, and to protect the physical integrity of stormwater management practices. The control requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Q_f) to pre-development rates.

Tables 8 & 9 show the results of the 24-hour, 100-year storm event for pre- and post-development.

5.0 SPILL PREVENTION & SOLID WASTE MANAGEMENT

The following describes other control measures to be employed during all phases of construction.

5.1 SPILL PREVENTION & RESPONSE

A Spill Prevention and Response Plan shall be developed for the Site by the Contractor. The plan shall detail the steps needed to be followed in the event of an accidental spill identify contact names and phone numbers of people and agencies that must be notified.

The plan shall include Safety Data Sheets (SDS) for materials to be stored on-Site. Workers on-Site will be required to be trained on safe handling and spill prevention procedures for all materials used during construction.

The use of detergents for large scale washing is prohibited (e.g., vehicles, buildings, pavement surfaces, etc.)

5.2 SOLID & LIQUID WASTE DISPOSAL

Solid or liquid waste, including building materials, are not allowed to be discharged from the Site with stormwater. All solid waste, including disposable materials incidental to the major construction activities, must be collected and placed in containers. The containers shall be emptied periodically by a licensed solid waste disposal service and hauled away from the Site and disposed of a permitted facility.

Substances that have the potential for polluting surface and/or groundwater must be controlled by whatever means necessary in order to ensure that they do not discharge from the Site. As an example, special care must be exercised during equipment fueling and servicing operations. A designated refueling area will be provided that will allow for appropriate containment; however, if a spill occurs, it must be contained and disposed so that it will not flow from the Site or enter groundwater, even if this requires removal, treatment, and disposal of soil. In this regard, potentially polluting substances should be handled in a manner consistent with the impact they represent.

5.2.1 Sanitary Facilities

Temporary sanitary facilities will be provided throughout the construction phase. These facilities will be utilized by construction personnel and will be serviced by an outside contractor. These facilities shall comply with state and local sanitary or septic system regulations.

5.2.2 Water Source

Non-stormwater components of Site discharge must be clean water. Water used for construction, when discharged from the Site, must originate from a public water supply or private well approved by the Onondaga County Health Department. Water used for construction that does not originate from an approved public supply must not discharge from the Site. It can be retained until it infiltrates and evaporates.

6.0 INSPECTION & MAINTENANCE REQUIREMENTS

6.1 PRE-CONSTRUCTION INSPECTION

Prior to the commencement of construction, 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 (1) person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the Trained Contractor, who shall be on site on a daily basis when soil disturbance activities are being performed.

The responsible Contractor or Subcontractor shall sign the form included in Appendix L.

A Qualified Inspector shall conduct an assessment of the Site and certify that the appropriate erosion and sediment control structures have been adequately installed and implemented. Refer to the inspection forms in Appendix M.

6.2 CONSTRUCTION PHASE INSPECTIONS & MAINTENANCE

A Qualified Inspector, as defined in Appendix A of the General Permit GP-0-020-001, shall conduct weekly Site inspections between the time the SWPPP is implemented and final site stabilization. To ensure the stability and effectiveness of all protective measures and practices during construction, all erosion and sediment control measures employed will be inspected by the Qualified Inspector at least every 7 calendar days. If disturbance exceeds 5 acres, the Qualified Inspector shall conduct at least two inspections every 7 calendar days. The two inspections shall be separated by a minimum of two full calendar days.

The purpose of Site inspections is to assess performance of pollutant controls. Based on these inspections, the Qualified Inspector shall decide whether it is necessary to modify this SWPPP, add or relocate sediment barriers, or whatever else may be needed in order to prevent pollutants from leaving the Site via stormwater runoff. The Construction Contractor has the duty to cause pollutant control measures to be repaired, modified, maintained, supplemented, or whatever else is necessary in order to achieve effective pollutant control.

Examples of particular items to evaluate during Site inspections are listed below. This list is not intended to be comprehensive. During each inspection the Qualified Inspector must evaluate overall pollutant control system performance as well as particular details of individual system components. Additional factors should be considered as appropriate to the circumstances.

- Locations where vehicles enter and exit the Site must be inspected for evidence of off-site sediment tracking. A stabilized construction entrance will be constructed where vehicles enter and exit. This entrance will be maintained or supplemented as necessary to prevent sediment from leaving the Site on vehicles.

- Sediment barriers must be inspected and, if necessary, they must be enlarged or cleaned in order to provide additional capacity. All material from behind sediment barriers will be stockpiled on the up-slope side. Additional sediment barriers must be constructed as needed.

- Inspections will evaluate disturbed areas and areas used for storing materials that are exposed to rainfall for evidence of, or the potential for, pollutants entering the drainage system. If necessary, the materials must be covered, or original covers must be repaired or supplemented. Also, protective berms must be constructed, if needed, in order to contain runoff from material storage areas.

- Grassed areas will be inspected to confirm that a healthy stand of grass is maintained. The Site will be considered to have achieved final stabilization once all areas are covered with building foundation, pavement, or gravel, or have a stand of grass with at least 80 percent density, which is considered stabilized or mulched. Areas must be watered, fertilized, and reseeded as needed to achieve this goal.

- All discharge points must be inspected to determine whether erosion control measures are effective in preventing significant impacts to receiving waters.

Within 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 (or subcontractor) shall begin implementing corrective actions within 1 business day of this notification and shall complete the corrective actions in a reasonable time frame.

In addition to the inspections performed by the Qualified Inspector, the Contractor shall perform routine inspections that include a visual check of all erosion and sediment control measures. All inspections and maintenance shall be performed in accordance with the inspection and maintenance schedule provided on the Drawings. Sediment removed from erosion and sediment control measures will be exported from the Site, stockpiled for later use, or used immediately for general non-structural fill.

It is the responsibility of the Contractor to assure the adequacy of Site pollutant discharge controls. Actual physical Site conditions or contractor practices could make it necessary to install more erosion and sediment controls than shown on the attached Drawings. (For example, localized concentrations of runoff could make it necessary to install additional sediment barriers.) Assessing the need for additional controls and implementing them or adjusting existing controls will need to be addressed throughout all aspects of this Project, and until the Site achieves final stabilization.

6.3 INSPECTION & MAINTENANCE REPORTS

Inspection reports must be completed for every inspection conducted and include additional remarks if needed to fully describe a situation. An important aspect of the inspection report is the description of additional measures that need to be taken to enhance plan effectiveness. The inspection report must identify whether the Site was in compliance with the SWPPP at the time of inspection and specifically identify all incidents of non-compliance.

Sample inspection forms are included in Appendix M. At a minimum, the inspection report shall include and/or address the following:

- Date and time of inspection;
- Name and title of person(s) performing inspection;
- A description of the weather and soil conditions (e.g., dry, wet, saturated) at the time of the inspection;
- 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 (e.g., pipes, culverts, ditches, etc.) and overland flow;
- Identification of all erosion and sediment control practices that need repair or maintenance;
- Identification of all erosion and sediment control practices that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
- Description and sketch of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection;
- 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;
- Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices, and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s); and
- Include color photographs with date stamp, taken with a digital camera that clearly show the condition of all practices that have been identified as needing corrective actions. Color copies of photographs shall be attached to the inspection report within 7 calendar days of inspection. Color photographs with date stamp, taken with a digital camera must clearly show the condition of practice(s) after the corrective action has been completed. Color copies of the photographs, that document completion of the corrective action work within 7 calendar days of inspection, shall be attached to inspection report.

All inspection reports shall be signed by the Qualified Inspector and shall be maintained on Site with the SWPPP, kept in Appendix N.

6.4 TEMPORARY SUSPENSION OF CONSTRUCTION ACTIVITIES

For constructions areas where soil disturbance activities have been temporarily suspended (e.g., winter shutdown) and temporary stabilization measures have been applied to all disturbed areas, the frequency of Qualified Inspector inspections can be reduced to once every 30 calendar days.

Prior to reducing the frequency of inspections, the Owner/Operator shall notify the NYSDEC Division of Water in writing.

6.5 PARTIAL PROJECT COMPLETION

For construction areas 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 NYSDEC Region 7 Water (SPDES) Program contact 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 Notice of Termination (NOT).

6.6 POST-CONSTRUCTION OR PLANNED SHUTDOWN INSPECTION

The Owner or Operator shall have the Qualified Inspector perform a final Site inspection prior to submitting the NOT when all disturbed areas are stabilized, and all stormwater management systems are in place and operable. The Qualified Inspector shall 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.

Prior to submitting the Notice of Termination, the Owner or Operator must have a deed restriction in place to ensure that the Operation and Maintenance Plan is implemented for the post-construction stormwater management practices.

6.7 RETENTION OF RECORDS

The owner or operator shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, and any inspection reports that were prepared in conjunction with this permit for a period of at least 5 years from the date that the Site achieves final stabilization. This period may be extended by the NYSDEC, in its sole discretion, at any time upon written notification.

With the exception of the NOI, and NOT, all written correspondence requested by the NYSDEC, including individual permit applications, shall be sent to the following NYSDEC address:

NYSDEC Region 7 Office
615 Erie Blvd. West Road
Syracuse, NY 13204-2400

7.0 CONCLUSION

This Project is not subject to the requirements of a regulated Municipal Separate Storm Sewer System (MS4), and this SWPPP has been prepared in conformance with the New York State (NYS) Stormwater Design Manual 2015. As such, it is anticipated that GP-0-20-001 coverage will be effective 5 business days from the date the NYSDEC receives the complete electronic version of the NOI (eNOI) or 10 business days from the date the NYSDEC receives the complete paper version of the NOI, unless notified otherwise by the NYSDEC.

The proposed stormwater collection system consisting of pipes and open drainage ways will adequately collect and convey the stormwater generated by the proposed activities during construction.

Following construction of the project, the Site soils shall be restored in accordance with Section 5.1.6 of the NYS SMDM, and re-vegetation shall be implemented.

The post-construction stormwater management practice(s) will be owned by the landowner. Policies and procedures will be put in place that ensure that operation and maintenance of the practice(s) are in accordance with the operation and maintenance plan.

As demonstrated within this SWPPP, the proposed Project will not adversely impact adjacent or downstream properties.

8.0 LIMITATIONS

The work product included in this report was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and, thus, should be relied upon and used by our client recognizing these considerations and limitations. Tetra Tech shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

9.0 REFERENCES

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, Permit No. GP-0-20-001 (effective January 29, 2020, expires January 28, 2025).

New York State Department of Environmental Conservation, Stormwater Toolbox, from World Wide Web: http://www.dec.ny.gov/.

New York State Department of Environmental Conservation, Memorandum “Solar Panel Construction Stormwater Permitting/SWPPP Guidance”, April 5, 2018.

New York State Stormwater Management Design Manual (January 2015).

New York State Standards and Specifications for Erosion and Sediment Control, NYSDEC (November 2016).

Maryland Department of the Environment Stormwater Design Guidance – Solar Panel Installations.

APPENDIX A – CONSTRUCTION DRAWINGS

Refer to the discretionary permitting civil drawing set.
Construction level drawings will be attached and included with the final SWPPP.

APPENDIX B – NYSDEC GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITY PERMIT NO. GP-0-20-001

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

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

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

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

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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

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

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

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

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

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

   (ii) Control stormwater *discharge*s, 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 *discharge*s from the site;

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

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

   (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**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

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

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

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, 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 *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

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

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

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

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

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

C. Post-construction Stormwater Management Practice Requirements

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

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

a. Sizing Criteria for New Development

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

c. Sizing Criteria for Redevelopment Activity

(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 *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

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

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

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

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

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

E. Eligibility Under This General Permit

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

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; 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 *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

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

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

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

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

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

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

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

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.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
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

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

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

d. Documentation that:

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

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

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

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

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

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

B. Notice of Intent (NOI) Submittal

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

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

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

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

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

C. Permit Authorization

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

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

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

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

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

c. the final SWPPP has been prepared, and

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

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

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

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

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

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

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

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

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

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

D. General Requirements For Owners or Operators With Permit Coverage

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

F. Change of Owner or Operator

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

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

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

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

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

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

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

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

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

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

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

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

d. to document the final construction conditions.

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

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

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

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

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

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

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

B. Required SWPPP Contents

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

e. Infiltration test results, when required; and

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

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

C. Required SWPPP Components by Project Type

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

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

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

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

B. Contractor Maintenance Inspection Requirements

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

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

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

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

C. Qualified Inspector Inspection Requirements

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

a. Date and time of inspection;

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

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

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

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

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

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

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

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

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

k. Identification and status of all corrective actions that were required by previous inspection; and

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

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

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

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. 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 source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

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

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

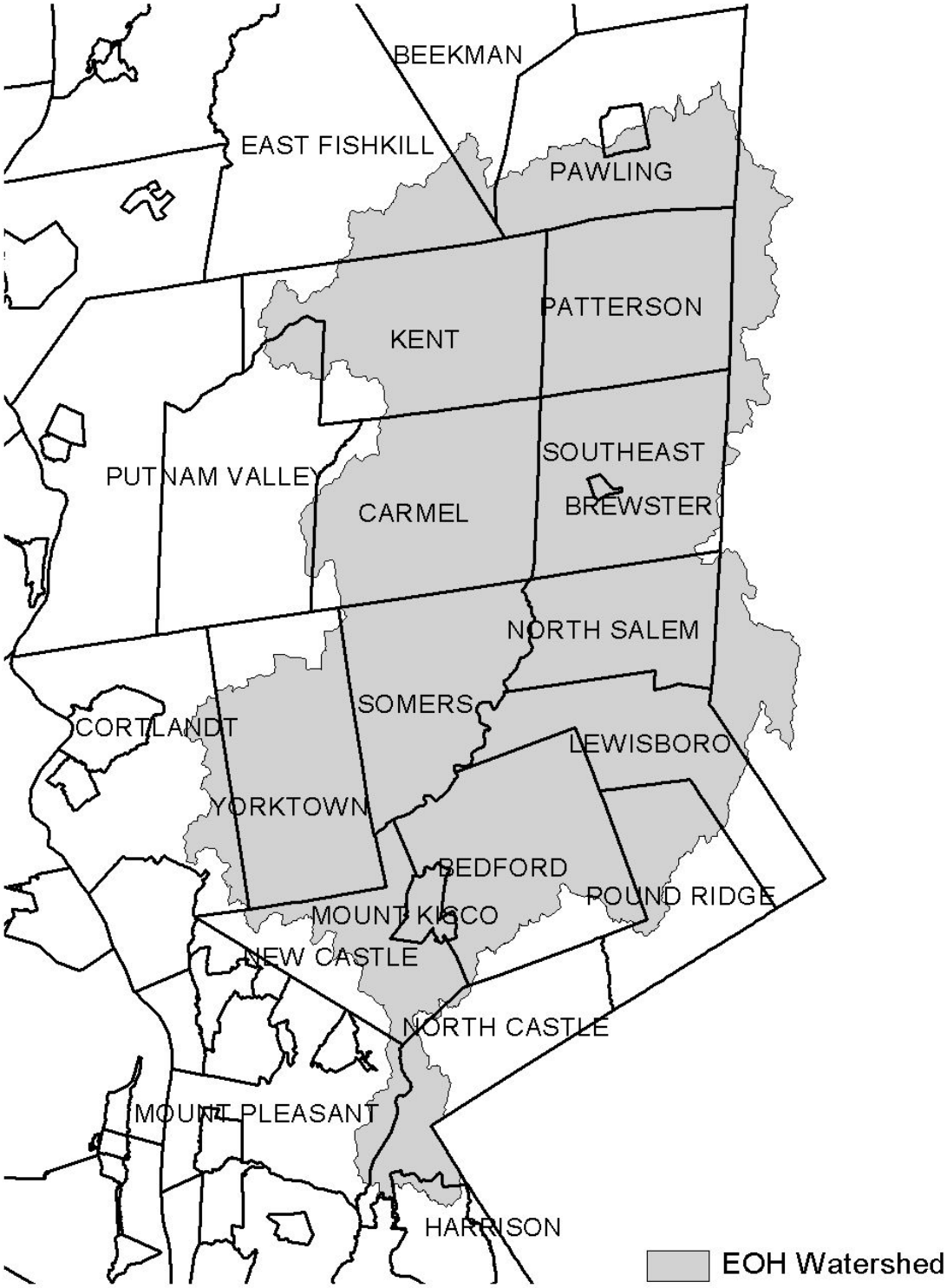


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

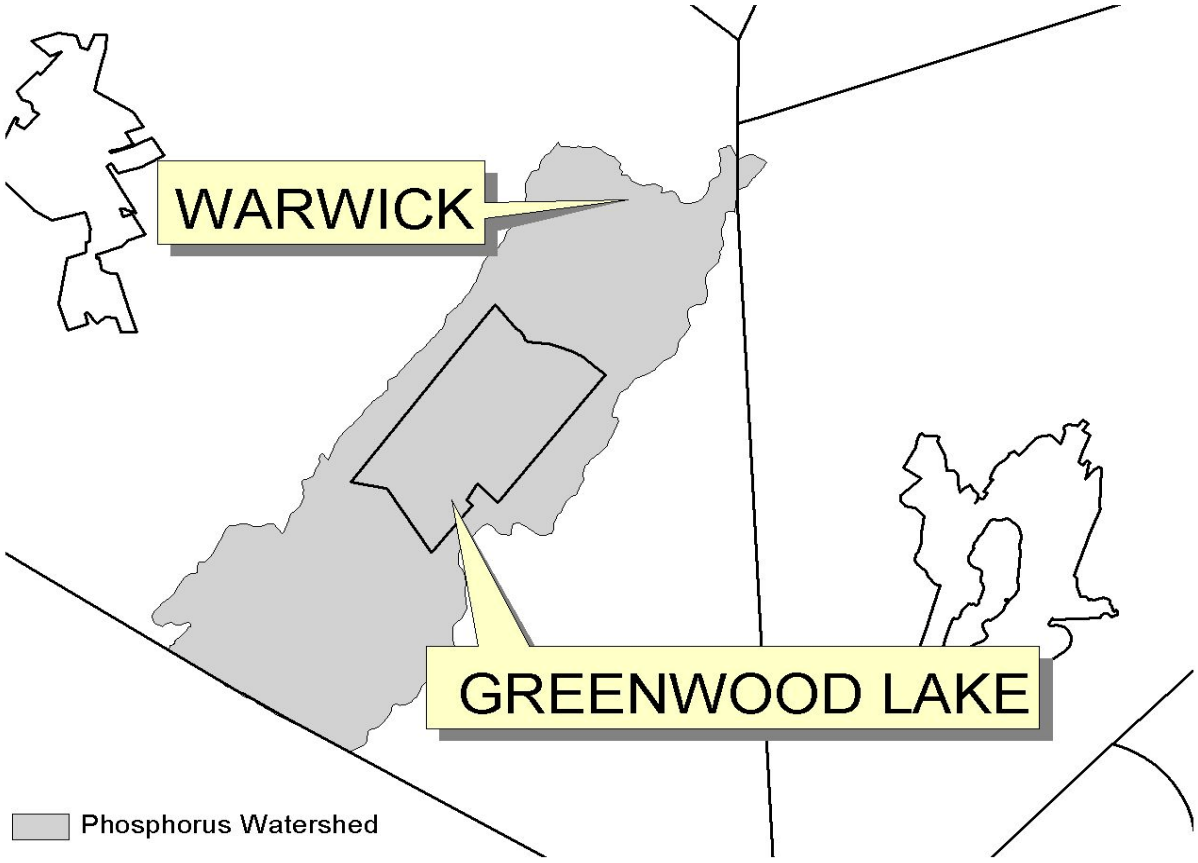


Figure 4 - Oscawana Lake Watershed

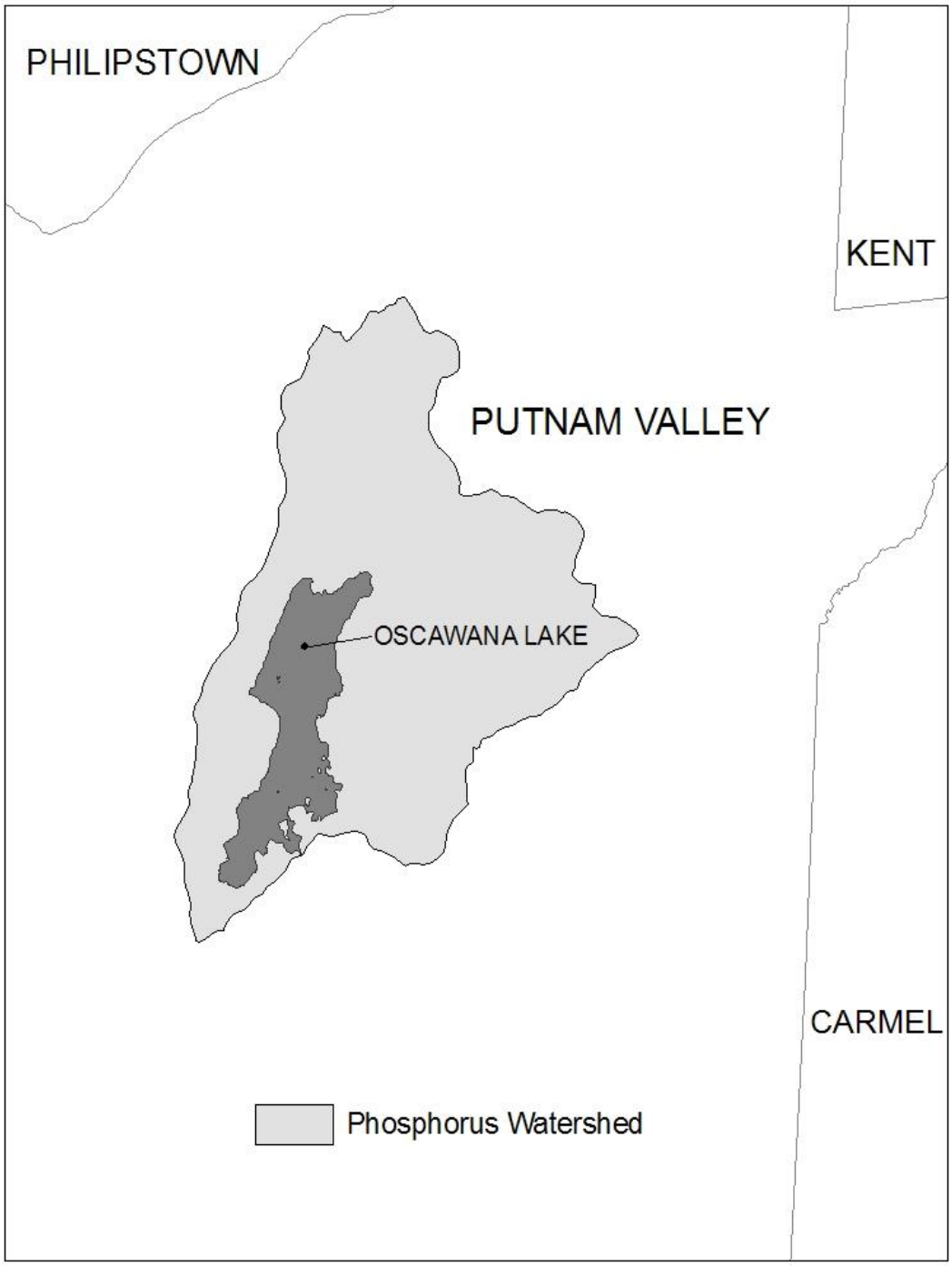
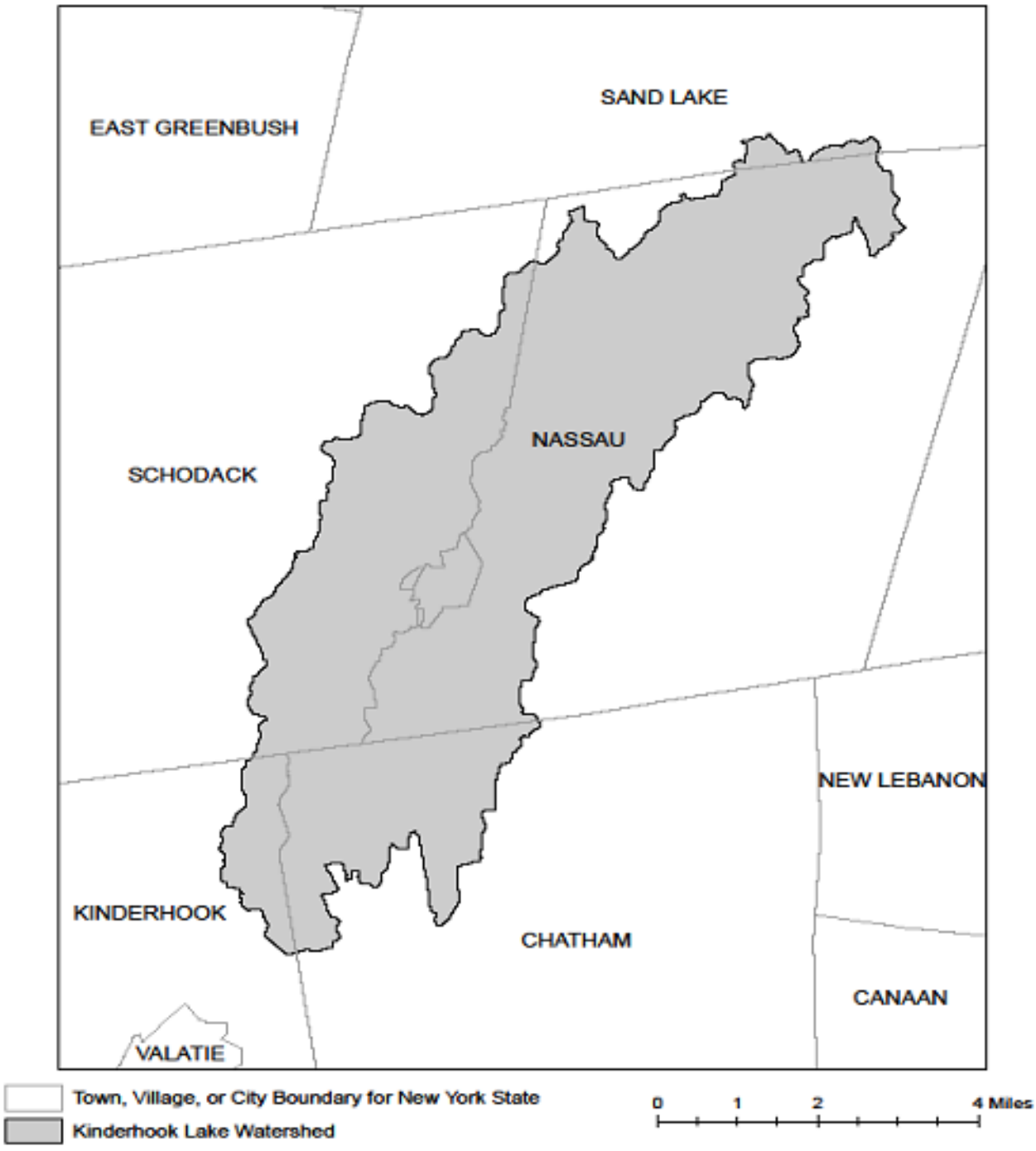


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

APPENDIX C – LETTER FROM NYS OPRHP

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

March 19, 2020

Jodi Hunt
Project manager
Tetra Tech, Inc.
3136 South Winton Road
Suite 303
Rochester, NY 14623

Re: DEC
Green Lakes Solar/7 MW/23.5 of 147 Acres
8507 Green Lakes Rd, Town of Manlius, Onondaga County, NY
20PR01565

Dear Jodi Hunt:

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

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

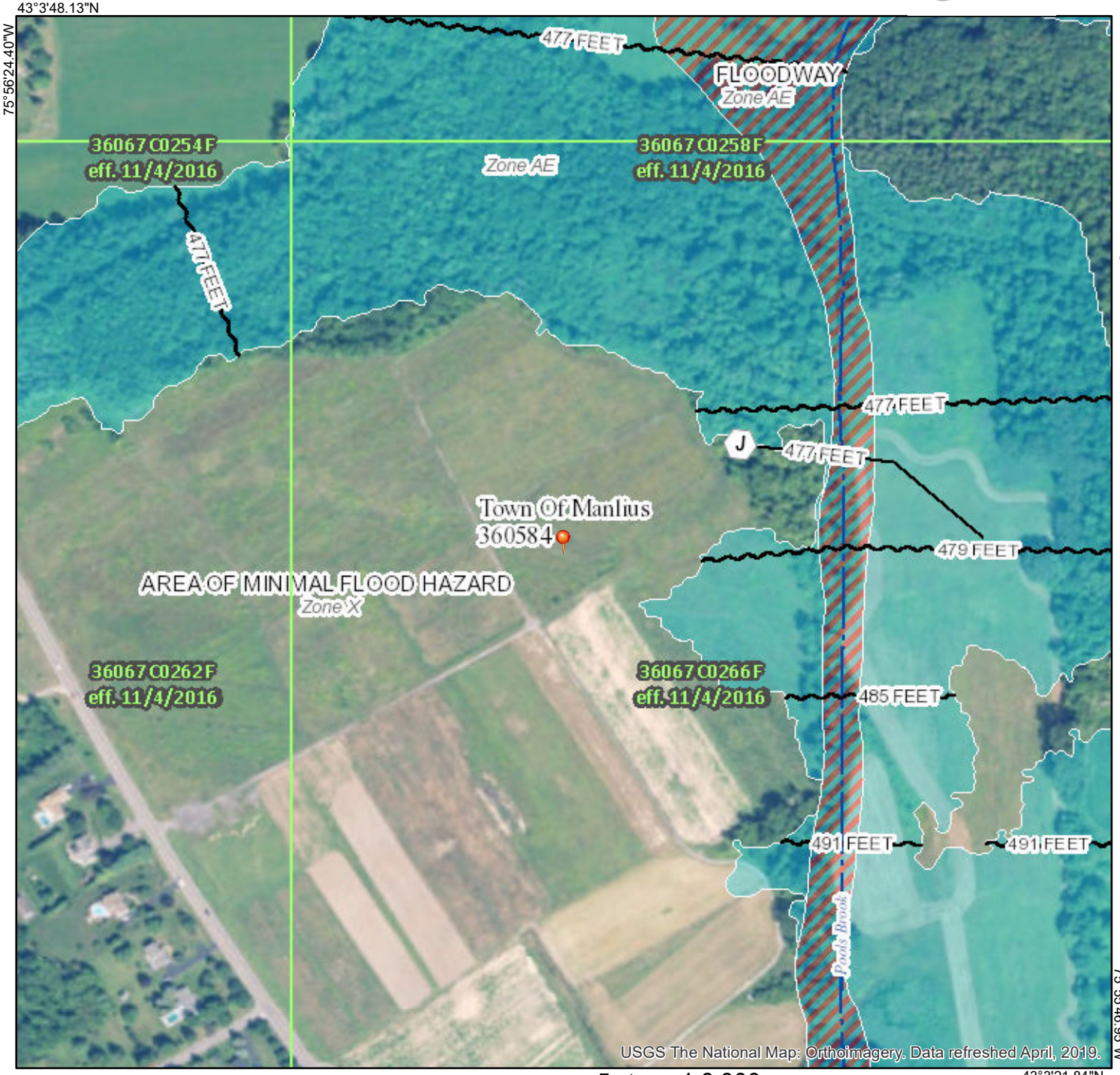
R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

APPENDIX D – FLOOD INSURANCE RATE MAP (FIRM)

National Flood Hazard Layer FIRMette

FEMA



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 — Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/6/2020 at 11:01:02 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX E – NRCS SOILS REPORT

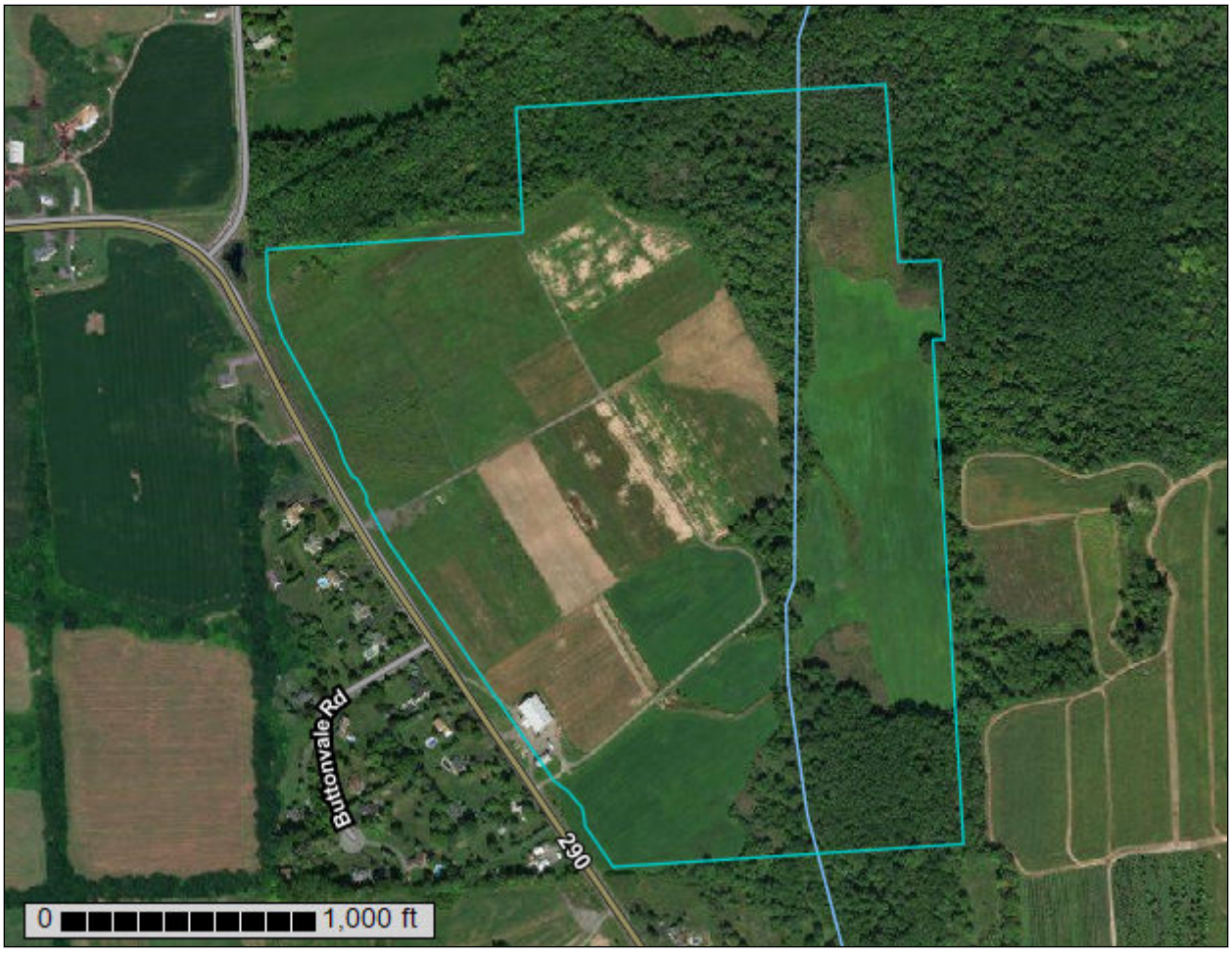
United States Department of Agriculture

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 Onondaga County, New York



March 25, 2020

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.

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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.

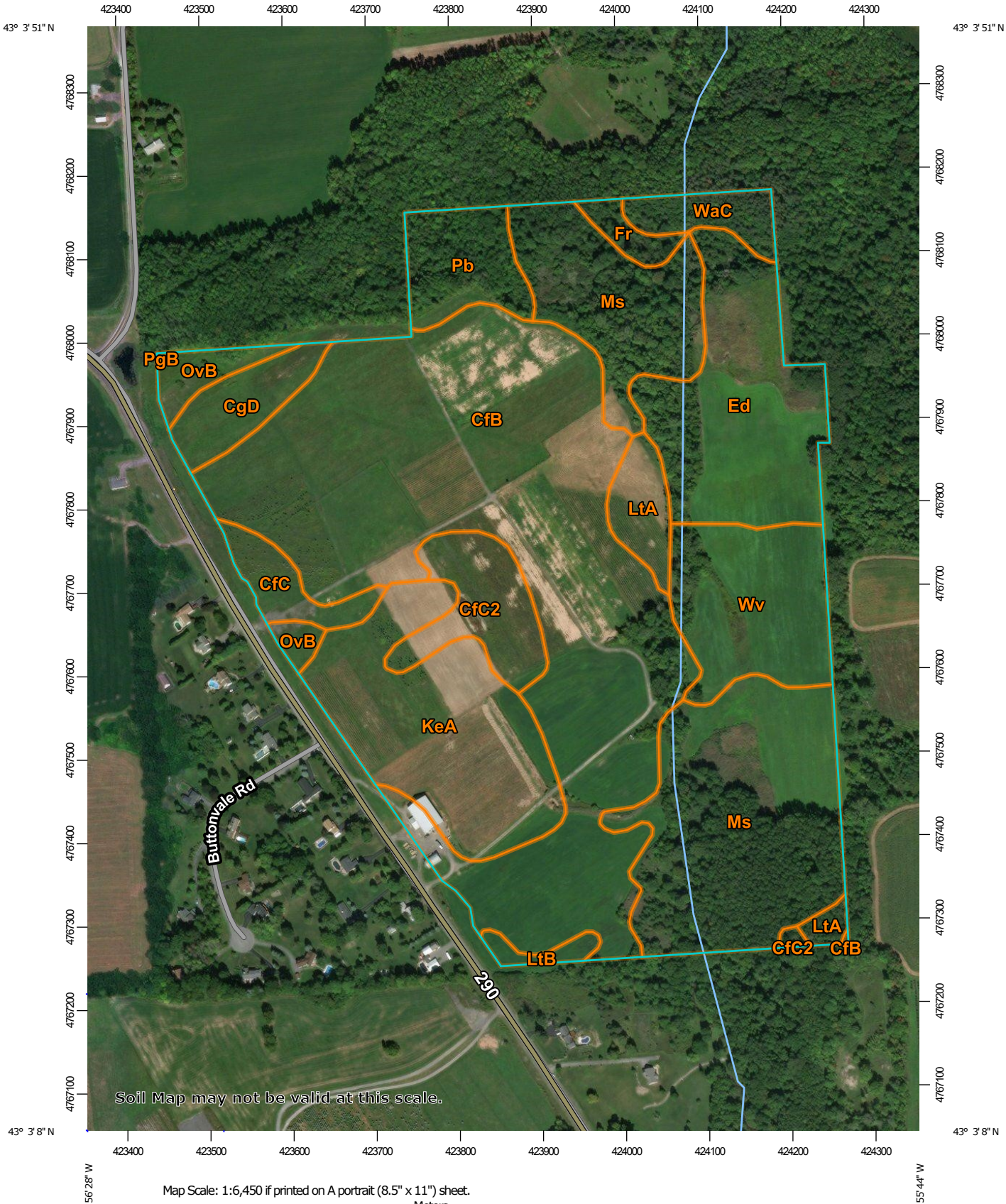
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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.

Custom Soil Resource Report
Soil Map (Green Lakes Solar)



Map Scale: 1:6,450 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 14, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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

Map Unit Legend (Green Lakes Solar)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CfB	Cazenovia silt loam, 2 to 8 percent slopes	49.1	36.3%
CfC	Cazenovia silt loam, 8 to 15 percent slopes	2.4	1.8%
CfC2	Cazenovia silt loam, 8 to 15 percent slopes, eroded	5.0	3.7%
CgD	Cazenovia soils, 15 to 25 percent slopes	3.2	2.4%
Ed	Edwards muck	13.0	9.6%
Fr	Fredon loam	1.1	0.8%
KeA	Kendaia silt loam, 0 to 3 percent slopes	14.3	10.6%
LtA	Lima silt loam, 0 to 3 percent slopes	2.9	2.1%
LtB	Lima silt loam, 3 to 8 percent slopes	0.8	0.6%
Ms	Martisco and Warners soils	26.3	19.4%
OvB	Ovid silt loam, 3 to 8 percent slopes	2.2	1.6%
Pb	Palms muck	4.3	3.2%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	0.0	0.0%
WaC	Wampsville gravelly silt loam, rolling	2.3	1.7%
Wv	Weaver silt loam	8.7	6.4%
Totals for Area of Interest		**135.4**	**100.0%**

Map Unit Descriptions (Green Lakes Solar)

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.

Onondaga County, New York

CfB—Cazenovia silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9vg5
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Cazenovia

Setting

Landform: Reworked lake plains, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 36 inches: silty clay loam
H3 - 36 to 60 inches: gravelly silty clay loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ovid

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

Unnamed soils

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

CfC—Cazenovia silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9vg6
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Cazenovia

Setting

Landform: Reworked lake plains, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 36 inches: silty clay loam
H3 - 36 to 60 inches: gravelly silty clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

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

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

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

CfC2—Cazenovia silt loam, 8 to 15 percent slopes, eroded

Map Unit Setting
National map unit symbol: 9vg7
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Cazenovia, eroded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cazenovia, Eroded

Setting
Landform: Reworked lake plains, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale

Typical profile
H1 - 0 to 12 inches: silt loam
H2 - 12 to 36 inches: silty clay loam
H3 - 36 to 60 inches: gravelly silty clay loam

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ovid

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

Unnamed soils

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

Schoharie

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

CgD—Cazenovia soils, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9vg8
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Cazenovia

Setting

Landform: Reworked lake plains, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale

Typical profile

H1 - 0 to 12 inches: silt loam
H2 - 12 to 36 inches: silty clay loam
H3 - 36 to 60 inches: gravelly silty clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Ovid

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

Ontario

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

Schoharie

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

Honeoye

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

Ed—Edwards muck

Map Unit Setting

National map unit symbol: 9vgl
Elevation: 600 to 1,000 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Edwards

Setting

Landform: Swamps, marshes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Organic material over marl

Typical profile

H1 - 0 to 24 inches: muck
H2 - 24 to 60 inches: marl

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 90 percent
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Halsey

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

Carlisle

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Canandaigua

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

Palms

Percent of map unit: 5 percent
Landform: Swamps, marshes

Hydric soil rating: Yes

Martisco

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Fr—Fredon loam

Map Unit Setting

National map unit symbol: 9vgq
Elevation: 250 to 1,200 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Fredon, somewhat poorly, and similar soils: 50 percent
Fredon, poorly, and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fredon, Somewhat Poorly

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 27 inches: sandy loam
H3 - 27 to 60 inches: stratified very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Description of Fredon, Poorly

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 27 inches: sandy loam
H3 - 27 to 60 inches: stratified very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Phelps

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

Unnamed soils

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

Palmyra

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

Halsey

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

Minoa

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

KeA—Kendaia silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2w5j0
Elevation: 460 to 1,640 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: Prime farmland if drained

Map Unit Composition

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

Description of Kendaia

Setting

Landform: Drumlins, ridges, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: silt loam
Bw - 8 to 15 inches: silt loam
Bg - 15 to 20 inches: gravelly silt loam
BCg - 20 to 24 inches: gravelly loam
C - 24 to 79 inches: gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Lima

Percent of map unit: 6 percent
Landform: Drumlins, till plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Lyons

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Churchville

Percent of map unit: 2 percent
Landform: Till plains, lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, rise, talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ovid

Percent of map unit: 2 percent
Landform: Reworked lake plains, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

LtA—Lima silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2w3kh
Elevation: 410 to 1,640 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: All areas are prime farmland

Map Unit Composition

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

Description of Lima

Setting

Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt/E - 9 to 12 inches: loam
Bt1 - 12 to 16 inches: loam
Bt2 - 16 to 25 inches: gravelly loam
C - 25 to 79 inches: gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Honeoye

Percent of map unit: 6 percent
Landform: Drumlins, hills, till plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 3 percent
Landform: Drumlins, ridges, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landform: Drumlins, ridges, till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cazenovia

Percent of map unit: 2 percent
Landform: Reworked lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Lyons

Percent of map unit: 1 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

LtB—Lima silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3kk
Elevation: 380 to 1,680 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: All areas are prime farmland

Map Unit Composition

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

Description of Lima

Setting

Landform: Drumlins, ridges, till plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt/E - 9 to 12 inches: loam
Bt1 - 12 to 16 inches: loam
Bt2 - 16 to 25 inches: gravelly loam
C - 25 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Available water storage in profile: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Honeoye

Percent of map unit: 6 percent
Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Appleton

Percent of map unit: 3 percent
Landform: Till plains, drumlins, ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cazenovia

Percent of map unit: 2 percent
Landform: Reworked lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Lyons

Percent of map unit: 1 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Ms—Martisco and Warners soils

Map Unit Setting

National map unit symbol: 9vjm
Elevation: 50 to 1,200 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Martisco and similar soils: 40 percent
Warners and similar soils: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Martisco

Setting

Landform: Swamps, marshes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave

Across-slope shape: Concave
Parent material: A thin mantle of organic material over marl

Typical profile
H1 - 0 to 13 inches: muck
H2 - 13 to 60 inches: marl

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural 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 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Description of Warners

Setting
Landform: Depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey alluvium over marl

Typical profile
H1 - 0 to 12 inches: mucky silt loam
H2 - 12 to 30 inches: silt loam
H3 - 30 to 60 inches: marl

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: Low (about 5.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Edwards
Percent of map unit: 8 percent
Landform: Marshes, swamps
Hydric soil rating: Yes

Weaver
Percent of map unit: 8 percent
Hydric soil rating: No

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

Saprists
Percent of map unit: 2 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

OvB—Ovid silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9vk7
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

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

Description of Ovid

Setting
Landform: Till plains, reworked lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till with a significant component of reddish shale or reddish glaciolacustrine clays, mixed with limestone and some sandstone

Typical profile
H1 - 0 to 13 inches: silt loam
H2 - 13 to 30 inches: silty clay loam
H3 - 30 to 76 inches: silty clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Hydric soil rating: No

Minor Components

Lyons

Percent of map unit: 7 percent
Landform: Depressions
Hydric soil rating: Yes

Cazenovia

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

Schoharie

Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 3 percent
Hydric soil rating: No

Pb—Palms muck

Map Unit Setting

National map unit symbol: 9vkf
Elevation: 250 to 1,500 feet
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Palms

Setting

Landform: Swamps, marshes
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Organic material over loamy glacial drift

Typical profile

H1 - 0 to 24 inches: muck
H2 - 24 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 20 percent
Available water storage in profile: Very high (about 16.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Canandaigua

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

Carlisle

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

Lamson

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

Edwards

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

PgB—Palmyra gravelly loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9vkh
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Palmyra

Setting

Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks

Typical profile

H1 - 0 to 14 inches: gravelly loam
H2 - 14 to 31 inches: gravelly loam
H3 - 31 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

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

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

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

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

WaC—Wampsville gravelly silt loam, rolling

Map Unit Setting
National map unit symbol: 9vl6
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Wampsville, rolling, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wampsville, Rolling

Setting
Landform: Valley trains, terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from reddish shale intermixed with limestone, sandstone, and gray shale

Typical profile
H1 - 0 to 13 inches: gravelly silt loam
H2 - 13 to 36 inches: gravelly silty clay loam
H3 - 36 to 72 inches: stratified very gravelly sand

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches

Natural 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 in profile: 15 percent
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

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

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

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

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

Wv—Weaver silt loam

Map Unit Setting
National map unit symbol: 9vlc
Mean annual precipitation: 38 to 42 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

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

Description of Weaver

Setting
Landform: Flood plains
Landform position (two-dimensional): Summit

Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy calcareous alluvium

Typical profile

H1 - 0 to 17 inches: silt loam
H2 - 17 to 29 inches: silty clay loam
H3 - 29 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Warners

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

Teel

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

Unnamed soils

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

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Erosion Factors

Soil Erosion Factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

K Factor, Rock Free (Green Lakes Solar)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kf (rock free)" indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.


75° 56' 28" W
75° 55' 44" W
43° 3' 51" N
43° 3' 8" N
423400
423500
423600
423700
423800
423900
424000
424100
424200
424300
4768300
4768200
4768100
4768000
4767900
4767800
4767700
4767600
4767500
4767400
4767300
4767200
4767100
WaC
Fr
Pb
Ms
PgB
OvB
CgD
CfB
Ed
LtA
CfC
CfC2
Wv
OvB
KeA
Ms
LtA
CfC2
CfB
LtB
Buttonvale Rd
290
Soil Map may not be valid at this scale.
Map Scale: 1:6,450 if printed on A portrait (8.5" x 11") sheet.
Meters
0 50 100 200 300
Feet
0 300 600 1200 1800
N
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 14, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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

Table—K Factor, Rock Free (Green Lakes Solar)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CfB	Cazenovia silt loam, 2 to 8 percent slopes	.28	49.1	36.3%
CfC	Cazenovia silt loam, 8 to 15 percent slopes	.28	2.4	1.8%
CfC2	Cazenovia silt loam, 8 to 15 percent slopes, eroded	.28	5.0	3.7%
CgD	Cazenovia soils, 15 to 25 percent slopes	.28	3.2	2.4%
Ed	Edwards muck		13.0	9.6%
Fr	Fredon loam	.28	1.1	0.8%
KeA	Kendaia silt loam, 0 to 3 percent slopes	.28	14.3	10.6%
LtA	Lima silt loam, 0 to 3 percent slopes	.32	2.9	2.1%
LtB	Lima silt loam, 3 to 8 percent slopes	.32	0.8	0.6%
Ms	Martisco and Warners soils		26.3	19.4%
OvB	Ovid silt loam, 3 to 8 percent slopes	.28	2.2	1.6%
Pb	Palms muck		4.3	3.2%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	.17	0.0	0.0%
WaC	Wampsville gravelly silt loam, rolling	.24	2.3	1.7%
Wv	Weaver silt loam	.24	8.7	6.4%
Totals for Area of Interest			**135.4**	**100.0%**

Rating Options—K Factor, Rock Free (Green Lakes Solar)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

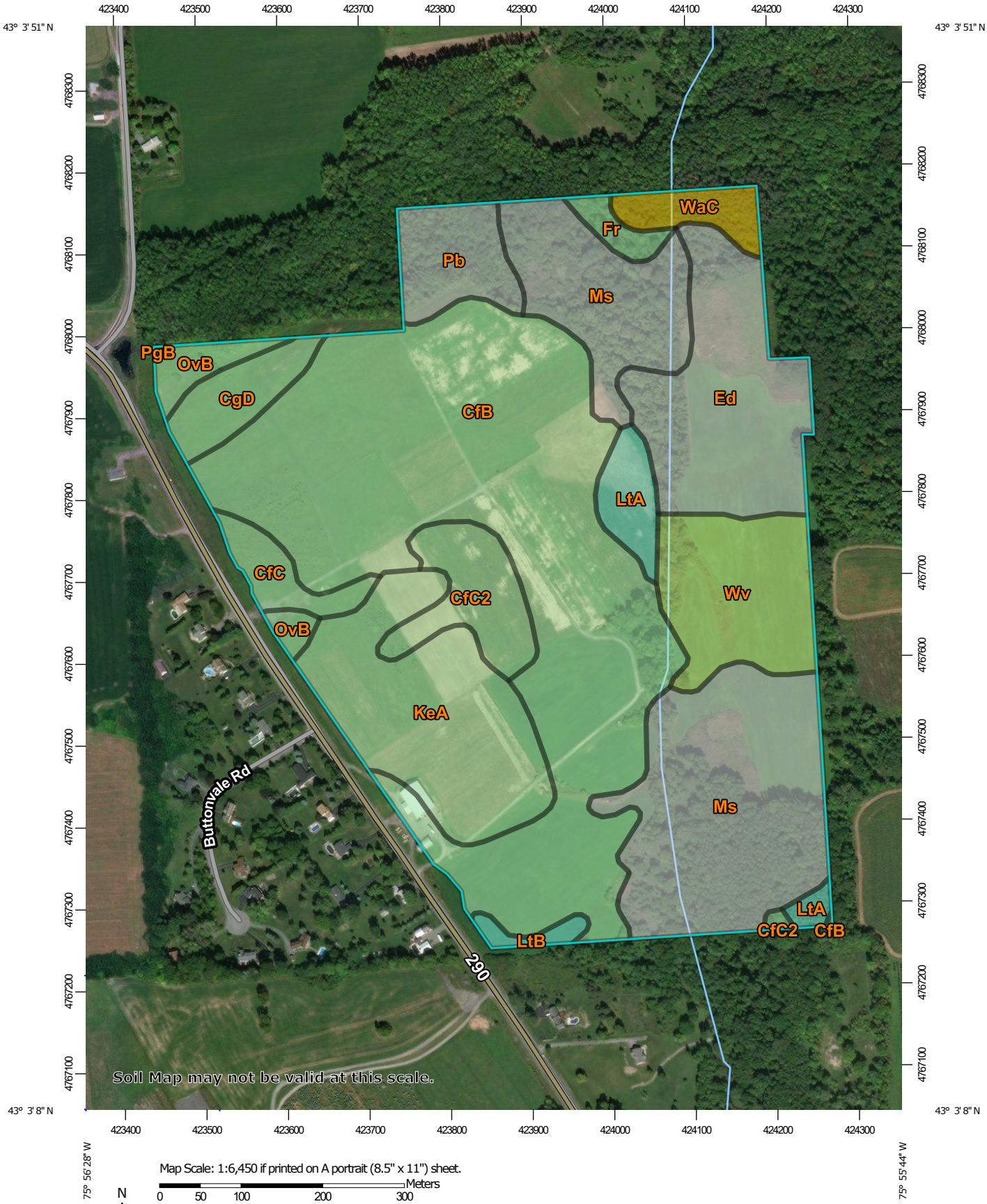
K Factor, Whole Soil (Green Lakes Solar)

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the

average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Custom Soil Resource Report
Map—K Factor, Whole Soil (Green Lakes Solar)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Lines

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Soil Rating Points

.02
.05
.10
.15
.17
.20
.24
.28
.32
.37
.43
.49
.55
.64
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

Soil Survey Area: Onondaga County, New York
Survey Area Data: Version 14, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 18, 2011—Oct 10, 2016

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

Table—K Factor, Whole Soil (Green Lakes Solar)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
CfB	Cazenovia silt loam, 2 to 8 percent slopes	.28	49.1	36.3%
CfC	Cazenovia silt loam, 8 to 15 percent slopes	.28	2.4	1.8%
CfC2	Cazenovia silt loam, 8 to 15 percent slopes, eroded	.28	5.0	3.7%
CgD	Cazenovia soils, 15 to 25 percent slopes	.28	3.2	2.4%
Ed	Edwards muck		13.0	9.6%
Fr	Fredon loam	.28	1.1	0.8%
KeA	Kendaia silt loam, 0 to 3 percent slopes	.28	14.3	10.6%
LtA	Lima silt loam, 0 to 3 percent slopes	.32	2.9	2.1%
LtB	Lima silt loam, 3 to 8 percent slopes	.32	0.8	0.6%
Ms	Martisco and Warners soils		26.3	19.4%
OvB	Ovid silt loam, 3 to 8 percent slopes	.28	2.2	1.6%
Pb	Palms muck		4.3	3.2%
PgB	Palmyra gravelly loam, 3 to 8 percent slopes	.10	0.0	0.0%
WaC	Wampsville gravelly silt loam, rolling	.15	2.3	1.7%
Wv	Weaver silt loam	.24	8.7	6.4%
Totals for Area of Interest			**135.4**	**100.0%**

Rating Options—K Factor, Whole Soil (Green Lakes Solar)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

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APPENDIX F – DRAINAGE MAPS

DRAINAGE AREA 1
5.28 ACRES

DRAINAGE AREA 2
1.02 ACRES

DRAINAGE AREA 3
3.19 ACRES

DRAINAGE AREA 4
2.35 ACRES

DRAINAGE AREA 5
21.08 ACRES

DRAINAGE AREA 6
5.63 ACRES

DISCHARGE POINT 1
DISCHARGE POINT 2
DISCHARGE POINT 3
DISCHARGE POINT 4
DISCHARGE POINT 5
DISCHARGE POINT 6

DA 1 TOTAL FOREST AREA: 1.06 ACRES
DA 1 TOTAL ROWED CROP AREA: 3.78 ACRES
DA 1 TOTAL TREE/GRASS AREA: 0.44 ACRES
DA 2 TOTAL ROWED CROP AREA: 1.02 ACRES
DA 3 TOTAL FOREST AREA: 0.06 ACRES
DA 3 TOTAL ROWED CROP AREA: 3.13 ACRES
DA 4 TOTAL TREE/GRASS AREA: 0.80 ACRES
DA 4 TOTAL ROWED CROP AREA: 1.55 ACRES
DA 5 TOTAL ROWED CROP AREA: 18.82 ACRES
DA 5 TOTAL TREE/GRASS AREA: 2.26 ACRES
DA 6 TOTAL TREE/GRASS AREA: 2.54 ACRES
DA 6 TOTAL ROWED CROP AREA: 3.09 ACRES

Tc LENGTH=221 FT AVG. SLOPE=2.7%
Tc LENGTH=520 FT AVG. SLOPE=2.7%
Tc LENGTH=717 FT AVG. SLOPE=4.7%
Tc LENGTH=1,661 FT AVG. SLOPE=1.9%
Tc LENGTH=631 FT AVG. SLOPE=2.9%
Tc LENGTH=649 FT AVG. SLOPE=1.7%

0 100 200
SCALE IN FEET

LEGEND

- PROPERTY LINE
- Tc LENGTH=1,408 FT — LONGEST FLOW PATH
- DRAINAGE AREA
- MdB / OgB — SOIL TYPE BOUNDARY
- WETLANDS JURISDICTIONAL TO NYSDEC
- FORESTED ARA
- DIRECTION OF RUNOFF
- DISCHARGE POINT
- 515 — EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- 100-YEAR FLOODPLAIN

GENERAL NOTES:

1. CONTOUR DATA AND EXISTING CONDITIONS INFORMATION OBTAINED FROM SURVEY BY THEW ASSOCIATES, PLLC DATED MARCH 18, 2020. THIS DATA IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83)(2011) NEW YORK CENTRAL ZONE, US FOOT AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEIOD 12B, US FOOT.
2. TREE LINES SHOWN HEREON ARE APPROXIMATE. SOURCE: GOOGLE EARTH.
3. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.
4. ORTHOIMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, 2018 ONE FOOT FOUR BAND CENTRAL ZONE INDEX.

NOT FOR CONSTRUCTION

THIS PERMITTING PACKAGE, AND THE DATA HEREIN, IS INTENDED FOR PERMITTING PURPOSES ONLY, AND IS NOT TO BE USED FOR CONSTRUCTION.

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ROCHESTER, NY 14623

STAMP:

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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

PROJECT NUMBERS:
194-7119

SHEET TITLE:
PRE-DEVELOPMENT DRAINAGE MAP

SHEET SIZE:
ARCH "D"
24" X 36" (610 x 914)
0 ½" 1"

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NO.	REVISION	DATE	INIT.

DATE:	03/27/2020
DRAWN BY:	AJF
ENGINEER:	KMG
APPROVED BY:	BMS

PROJECT PHASE:
DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
1

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Printed: 4/11/2020 7:03 PM
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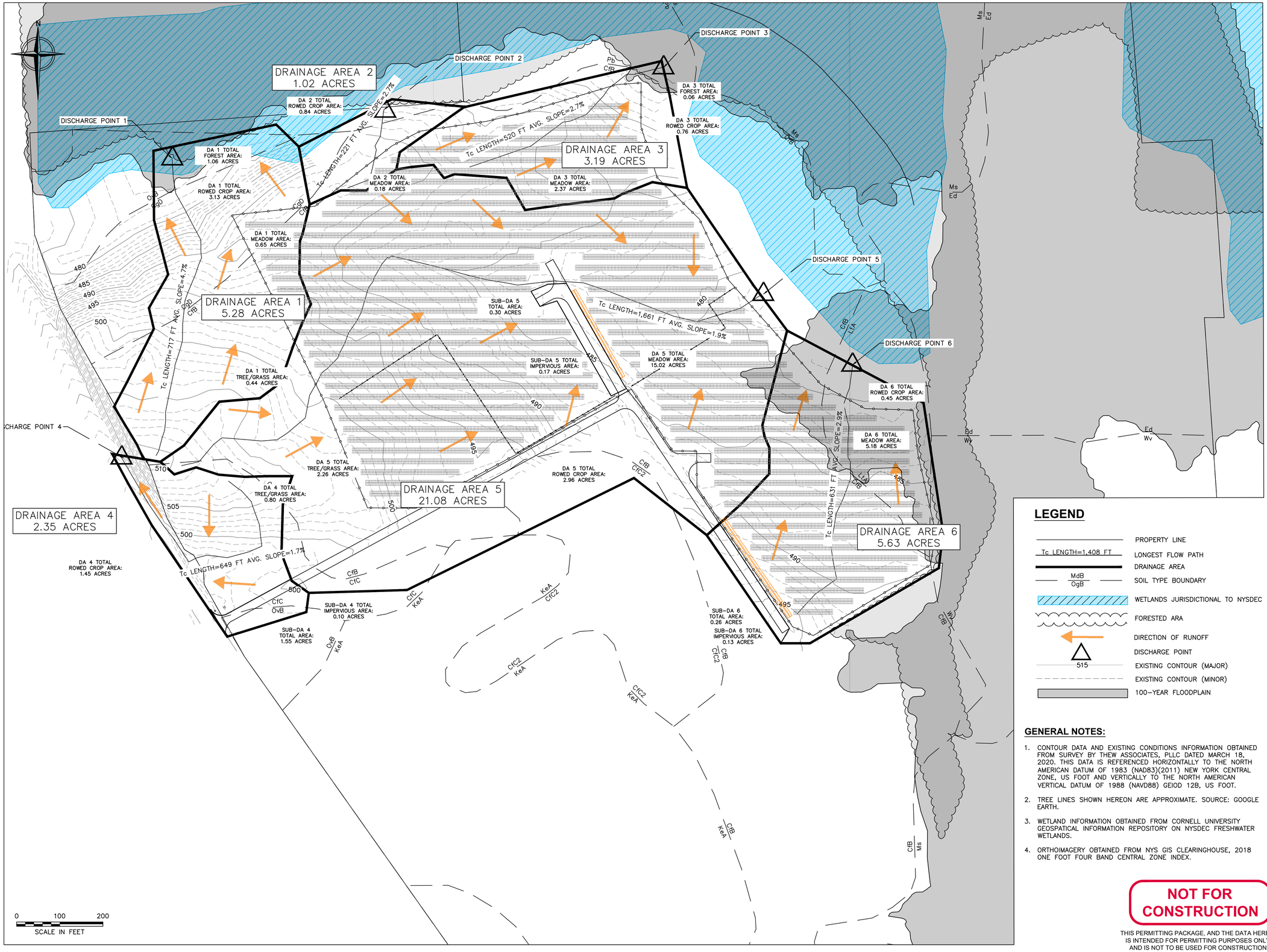

LEGEND

- PROPERTY LINE
- Tc LENGTH=1,408 FT — LONGEST FLOW PATH
- DRAINAGE AREA
- MdB / OgB — SOIL TYPE BOUNDARY
- WETLANDS JURISDICTIONAL TO NYSDEC
- FORESTED ARA
- DIRECTION OF RUNOFF
- DISCHARGE POINT
- 515 — EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- 100-YEAR FLOODPLAIN

GENERAL NOTES:

1. CONTOUR DATA AND EXISTING CONDITIONS INFORMATION OBTAINED FROM SURVEY BY THEW ASSOCIATES, PLLC DATED MARCH 18, 2020. THIS DATA IS REFERENCED HORIZONTALLY TO THE NORTH AMERICAN DATUM OF 1983 (NAD83)(2011) NEW YORK CENTRAL ZONE, US FOOT AND VERTICALLY TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEIOD 12B, US FOOT.
2. TREE LINES SHOWN HEREON ARE APPROXIMATE. SOURCE: GOOGLE EARTH.
3. WETLAND INFORMATION OBTAINED FROM CORNELL UNIVERSITY GEOSPATICAL INFORMATION REPOSITORY ON NYSDEC FRESHWATER WETLANDS.
4. ORTHOIMAGERY OBTAINED FROM NYS GIS CLEARINGHOUSE, 2018 ONE FOOT FOUR BAND CENTRAL ZONE INDEX.

NOT FOR CONSTRUCTION

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GREEN LAKES ROAD SOLAR PROJECT

8507 GREEN LAKES ROAD
MANLIUS, NY 13066

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0 ½" 1"

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DISCRETIONARY PERMITTING

SCALE:
AS SHOWN

SHEET NO.:
2

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APPENDIX G – DESIGN CALCULATIONS

Version 1.8
Last Updated: 11/09/2015

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

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....	No

Design Point:		
P=	1.00	*inch*

Manually enter P, Total Area and Impervious Cover.

Breakdown of Subcatchments

Catchment Number	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Rv	WQv *(ft^3)*	Description
1	0.30	0.17	57%	0.56	610	
2	0.26	0.13	50%	0.50	472	
3						
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	0.56	0.30	54%	0.53	**1,082**	**Subtotal 1**
Total	0.56	0.30	54%	0.53	**1,082**	**Initial WQv**

Identify Runoff Reduction Techniques By Area

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

Recalculate WQv after application of Area Reduction Techniques

	Total Area *(Acres)*	Impervious Area *(Acres)*	Percent Impervious *%*	Runoff Coefficient Rv	WQv *(ft^3)*
"<<Initial WQv"	0.56	0.30	54%	0.53	1,082
Subtract Area	0.00	0.00			
WQv adjusted after Area Reductions	**0.56**	**0.30**	54%	0.53	1,082
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	0.56	0.30	54%	0.53	**1,082**
WQv reduced by Area Reduction techniques					0

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**cf**	**cf**
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.00	0.00		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4				
	Bioretention & Infiltration Bioretention	F-5	0.00	0.00	0	0
	Dry swale	O-1	0.56	0.30	933	149
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction		→	0.00	0.00	0	
Totals by Volume Reduction		→	0.00	0.00	0	
Totals by Standard SMP w/RRV		→	0.56	0.30	933	149
Totals by Standard SMP		→	0.00	0.00		0
Totals (Area + Volume + all SMPs)		→	0.56	0.30	933	149
	Impervious Cover √	okay				

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C	15.34	30%
D		20%
Total Area	15.34	
Calculate the Minimum RRv		
S =	**0.30**	
Impervious =	0.30	*acre*
Precipitation	1	*in*
Rv	0.95	
Minimum RRv	**310**	***ft3***
	0.01	af

NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	1082	*0.025*
30	Total RRV Provided	933	*0.021*
31	Is RRv Provided ≥WQv Required?	No	
32	Minimum RRv	310	*0.007*
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	
33a	Total WQv Treated	149	*0.003*
34	Sum of Volume Reduced & Treated	1082	*0.025*
34	Sum of Volume Reduced and Treated	1082	*0.025*
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	

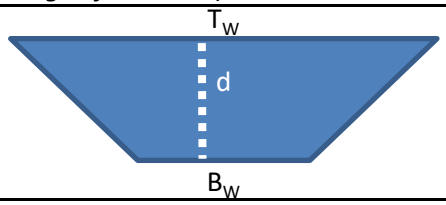
Apply Peak Flow Attenuation			
36	Channel Protection	*Cpv*	
37	Overbank	*Qp*	
37	Extreme Flood Control	*Qf*	
	Are Quantity Control requirements met?	*Yes*	Plan Completed

Dry Swale Worksheet

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	0.30	0.17	0.57	0.56	609.84	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops			57%	0.56	610	<<WQv after adjusting for Disconnected Rooftops	

Pretreatment Provided			Pretreatment Technique
Pretreatment (10% of WQv)	61	ft^3	

Calculate Available Storage Capacity			
Bottom Width	2	*ft*	Design with a bottom width no greater than eight feet to avoid potential gullying and channel braiding, but no less than two feet
Side Slope (X:1)	3	*Okay*	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope
Longitudinal Slope	2%	*Okay*	*Maximum longitudinal slope shall be 4%*
Flow Depth	1.5	*ft*	*Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Top Width	11	*ft*	
Area	9.75	*sf*	
Minimum Length	56	*ft*	
Actual Length	230	*ft*	
End Point Depth check	1.50	*Okay*	*A maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Storage Capacity	2,303	ft^3	
Soil Group (HSG)		C	

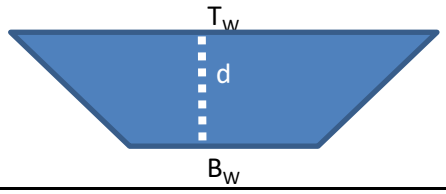
Runoff Reduction				
Is the Dry Swale contributing flow to another practice?		No	Select Practice	
RRv	**461**	**ft^3**	**Runnoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv**	
Volume Treated	149	ft^3	This is the difference between the WQv calculated and the runoff reduction achieved in the swale	
Volume Directed	0	ft^3	This volume is directed another practice	
Volume √	*Okay*		Check to be sure that channel is long enough to store WQv	

Dry Swale Worksheet

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
2	0.26	0.13	0.50	0.50	471.90	1.00	
Enter Impervious Area Reduced by Disconnection of Rooftops			50%	0.50	472	<<WQv after adjusting for Disconnected Rooftops	

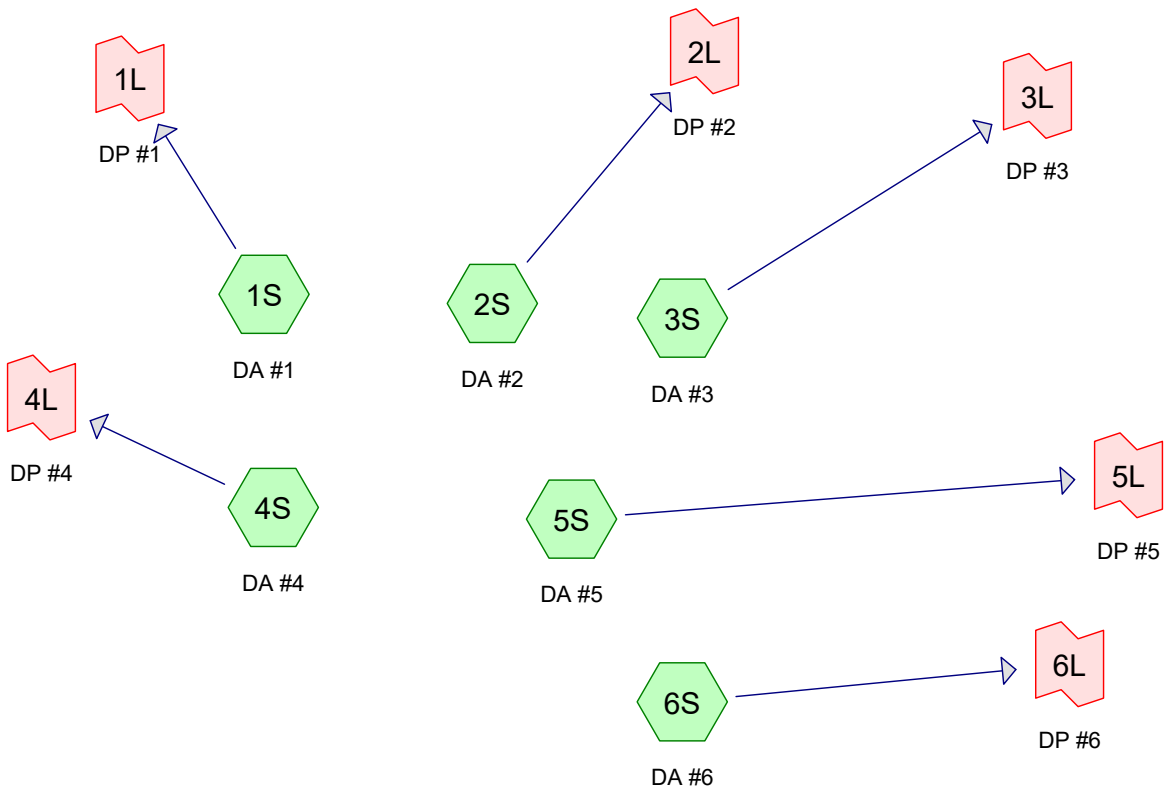
Pretreatment Provided			Pretreatment Technique
Pretreatment (10% of WQv)	47	ft^3	

Calculate Available Storage Capacity			
Bottom Width	2	*ft*	Design with a bottom width no greater than eight feet to avoid potential gullying and channel braiding, but no less than two feet
Side Slope (X:1)	3	*Okay*	Channels shall be designed with moderate side slopes (flatter than 3:1) for most conditions. 2:1 is the absolute maximum side slope
Longitudinal Slope	3%	*Okay*	*Maximum longitudinal slope shall be 4%*
Flow Depth	1.5	*ft*	*Maximum ponding depth of one foot at the mid-point of the channel, and a maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Top Width	11	*ft*	
Area	9.75	*sf*	
Minimum Length	44	*ft*	
Actual Length	275	*ft*	
End Point Depth check	1.50	*Okay*	*A maximum depth of 18" at the end point of the channel (for storage of the WQv)*
Storage Capacity	2,728	ft^3	
Soil Group (HSG)		C	

Runoff Reduction				
Is the Dry Swale contributing flow to another practice?		No	Select Practice	
RRv	**472**	**ft^3**	**Runnoff Reduction equals 40% in HSG A and B and 20% in HSG C and D up to the WQv**	
Volume Treated	0	ft^3	This is the difference between the WQv calculated and the runoff reduction achieved in the swale	
Volume Directed	0	ft^3	This volume is directed another practice	
Volume √	*Okay*		Check to be sure that channel is long enough to store WQv	

APPENDIX H – PRE-DEVELOPMENT ANALYSIS

Green Lakes
Pre-Development



Subcat Reach Pond Link

Routing Diagram for GREEN LAKES PRE DEV HYDROCAD Rev 1
Prepared by Tetra Tech Inc, Printed 4/7/2020
HydroCAD® 10.00-24 s/n 04052 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
31.390	85	Row crops, straight row, Good, HSG C (1S, 2S, 3S, 4S, 5S, 6S)
1.120	73	Woods, Fair, HSG C (1S, 3S)
6.040	76	Woods/grass comb., Fair, HSG C (1S, 4S, 5S, 6S)
38.550	**83**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
38.550	HSG C	1S, 2S, 3S, 4S, 5S, 6S
0.000	HSG D	
0.000	Other	
38.550		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	31.390	0.000	0.000	31.390	Row crops, straight row, Good	1S, 2S, 3S, 4S, 5S, 6S
0.000	0.000	1.120	0.000	0.000	1.120	Woods, Fair	1S, 3S
0.000	0.000	6.040	0.000	0.000	6.040	Woods/grass comb., Fair	1S, 4S, 5S, 6S
0.000	**0.000**	**38.550**	**0.000**	**0.000**	**38.550**	**TOTAL AREA**	

Summary for Subcatchment 1S: DA #1

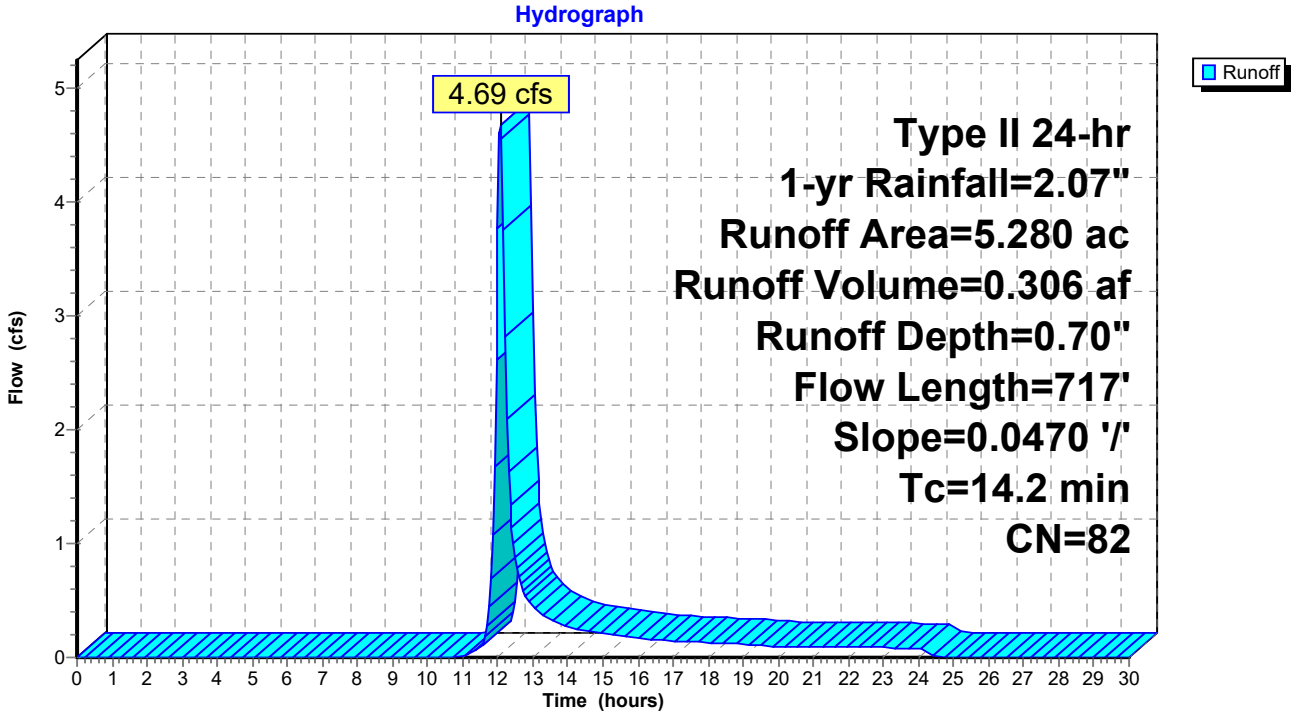
Runoff = 4.69 cfs @ 12.07 hrs, Volume= 0.306 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.440	76	Woods/grass comb., Fair, HSG C
3.780	85	Row crops, straight row, Good, HSG C
1.060	73	Woods, Fair, HSG C
5.280	82	Weighted Average
5.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0470	0.19		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.3	617	0.0470	1.95		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
14.2	717	Total			

Subcatchment 1S: DA #1



Summary for Subcatchment 2S: DA #2

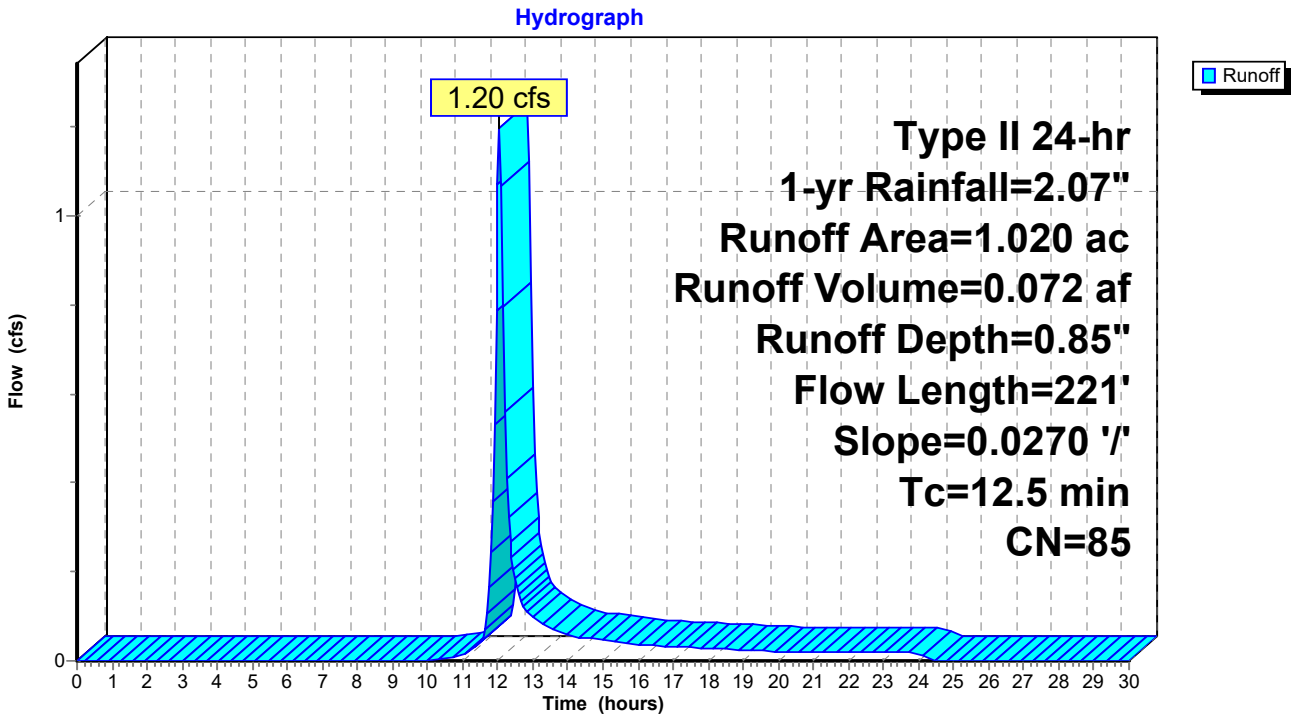
Runoff = 1.20 cfs @ 12.05 hrs, Volume= 0.072 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
1.020	85	Row crops, straight row, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0270	0.15		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
1.4	121	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	221	Total			

Subcatchment 2S: DA #2



Summary for Subcatchment 3S: DA #3

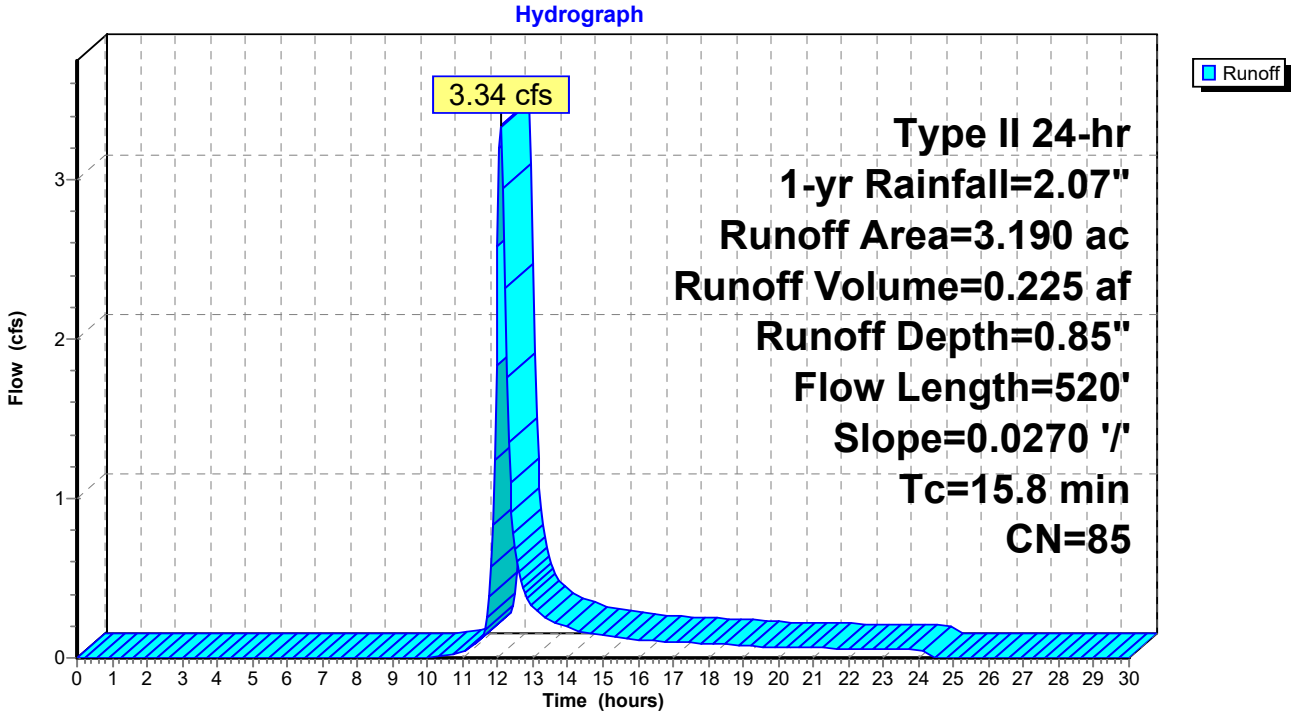
Runoff = 3.34 cfs @ 12.09 hrs, Volume= 0.225 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
3.130	85	Row crops, straight row, Good, HSG C
0.060	73	Woods, Fair, HSG C
3.190	85	Weighted Average
3.190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0270	0.15		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
4.7	420	0.0270	1.48		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
15.8	520	Total			

Subcatchment 3S: DA #3



Summary for Subcatchment 4S: DA #4

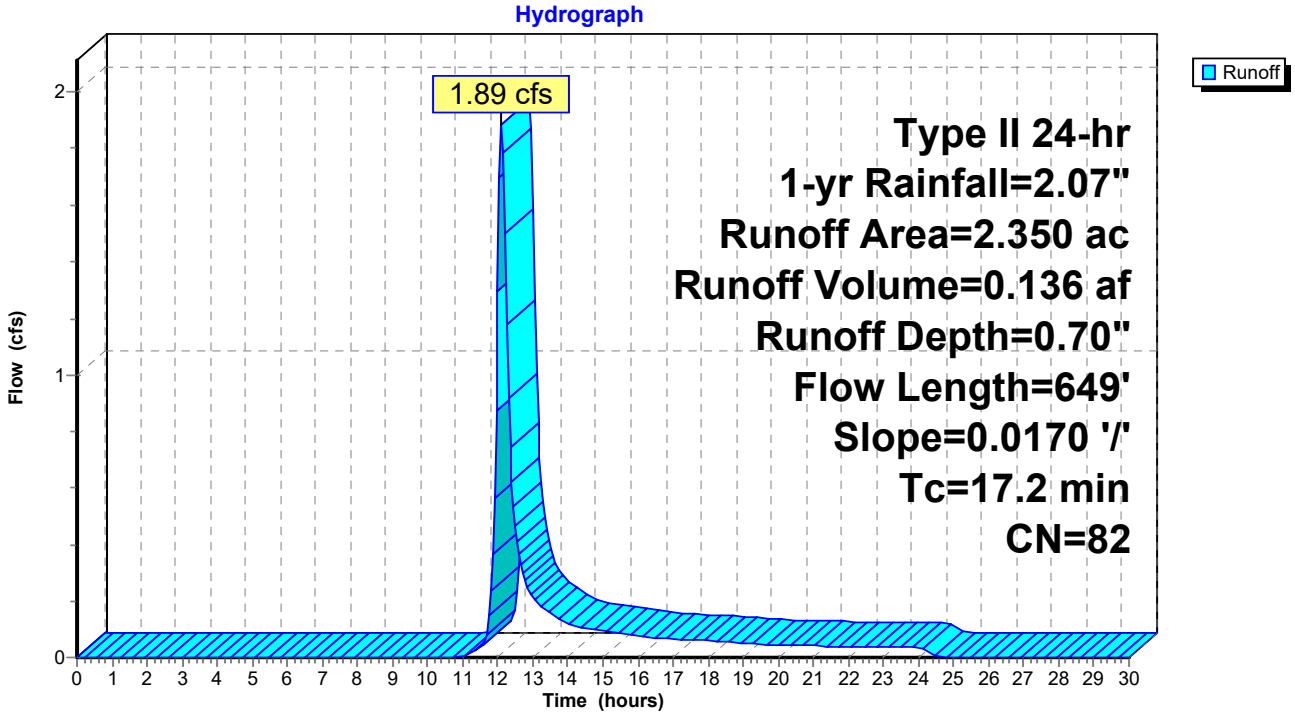
Runoff = 1.89 cfs @ 12.11 hrs, Volume= 0.136 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.800	76	Woods/grass comb., Fair, HSG C
1.550	85	Row crops, straight row, Good, HSG C
2.350	82	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0170	0.12		**Sheet Flow, Sheet Flow - Small Tree Farm** Cultivated: Residue>20% n= 0.170 P2= 2.40"
2.8	200	0.0170	1.17		**Shallow Concentrated Flow, Shallow - Crops** Cultivated Straight Rows Kv= 9.0 fps
1.1	349	0.0170	5.54	49.82	**Channel Flow, Channel - Roadside** Area= 9.0 sf Perim= 9.0' r= 1.00' n= 0.035 Earth, dense weeds
17.2	649	Total			

Subcatchment 4S: DA #4



Summary for Subcatchment 5S: DA #5

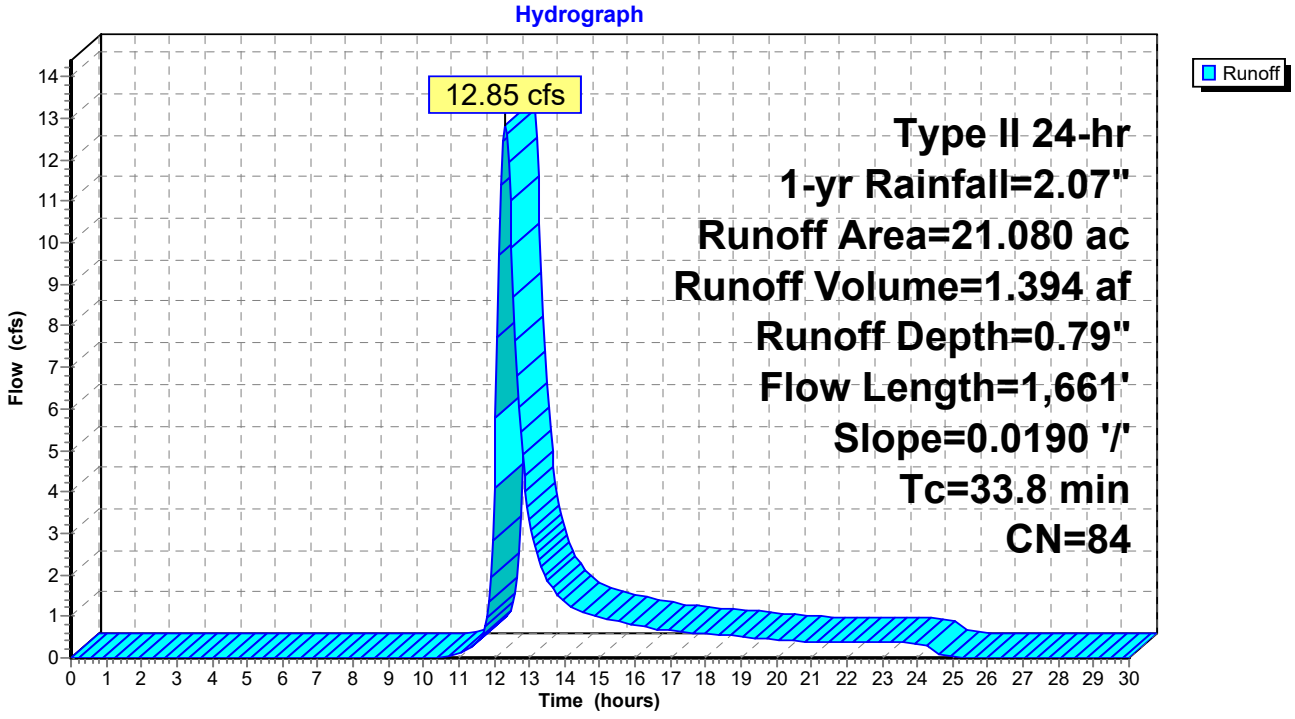
Runoff = 12.85 cfs @ 12.31 hrs, Volume= 1.394 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
2.260	76	Woods/grass comb., Fair, HSG C
18.820	85	Row crops, straight row, Good, HSG C
21.080	84	Weighted Average
21.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0190	0.13		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
21.0	1,561	0.0190	1.24		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
33.8	1,661	Total			

Subcatchment 5S: DA #5



Summary for Subcatchment 6S: DA #6

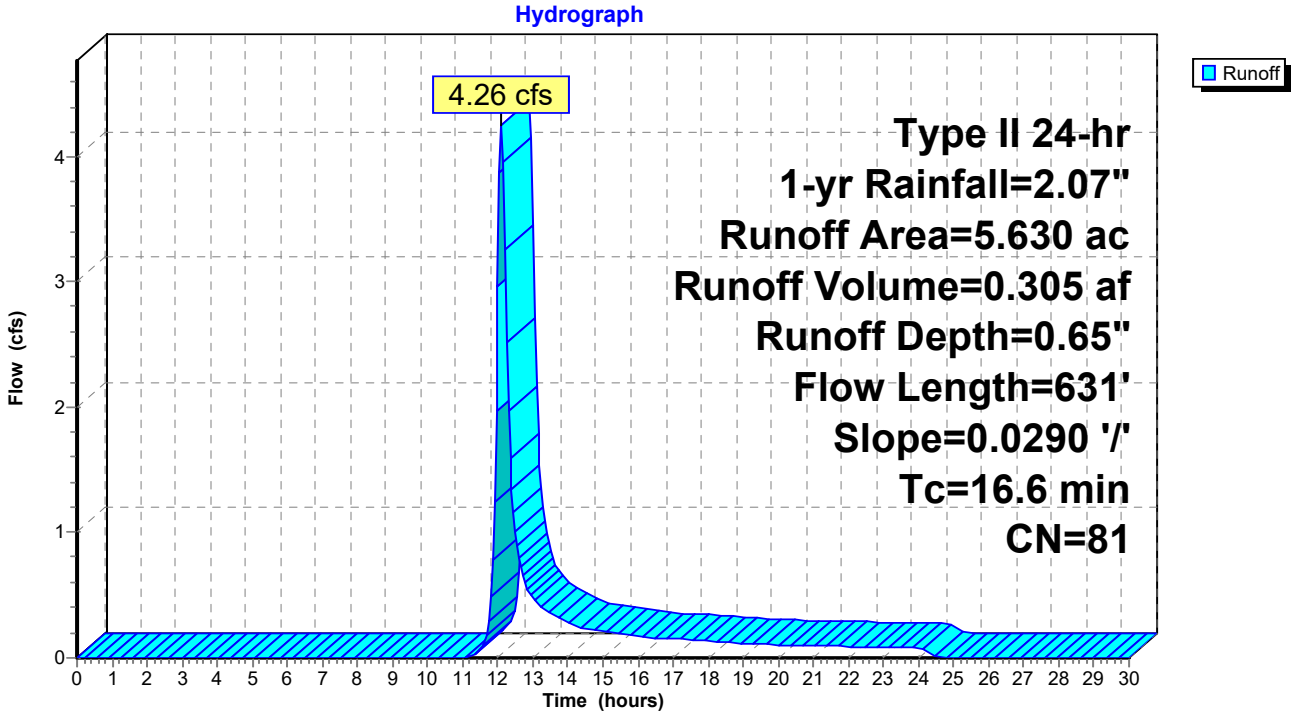
Runoff = 4.26 cfs @ 12.10 hrs, Volume= 0.305 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
3.090	85	Row crops, straight row, Good, HSG C
2.540	76	Woods/grass comb., Fair, HSG C
5.630	81	Weighted Average
5.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0290	0.15		**Sheet Flow, Sheet - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.8	531	0.0290	1.53		**Shallow Concentrated Flow, Shallow - Crops** Cultivated Straight Rows Kv= 9.0 fps
16.6	631	Total			

Subcatchment 6S: DA #6

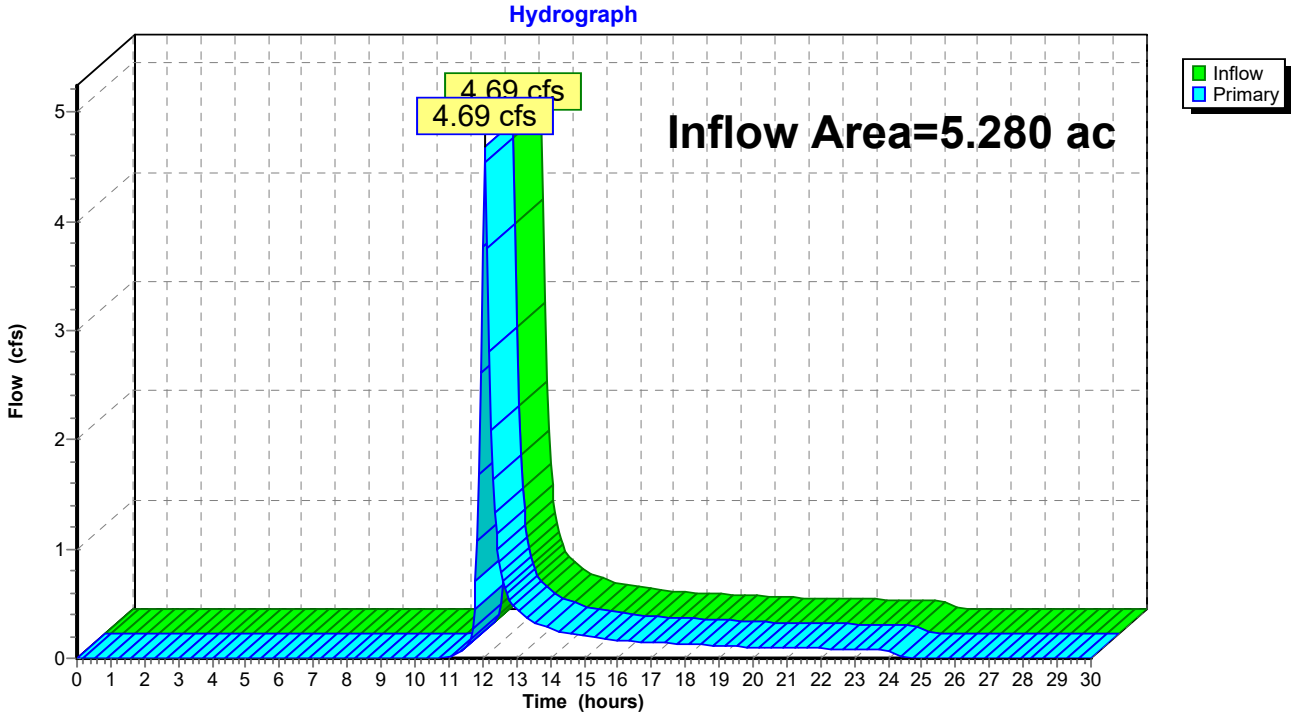


Summary for Link 1L: DP #1

Inflow Area = 5.280 ac, 0.00% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 4.69 cfs @ 12.07 hrs, Volume= 0.306 af
Primary = 4.69 cfs @ 12.07 hrs, Volume= 0.306 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP #1

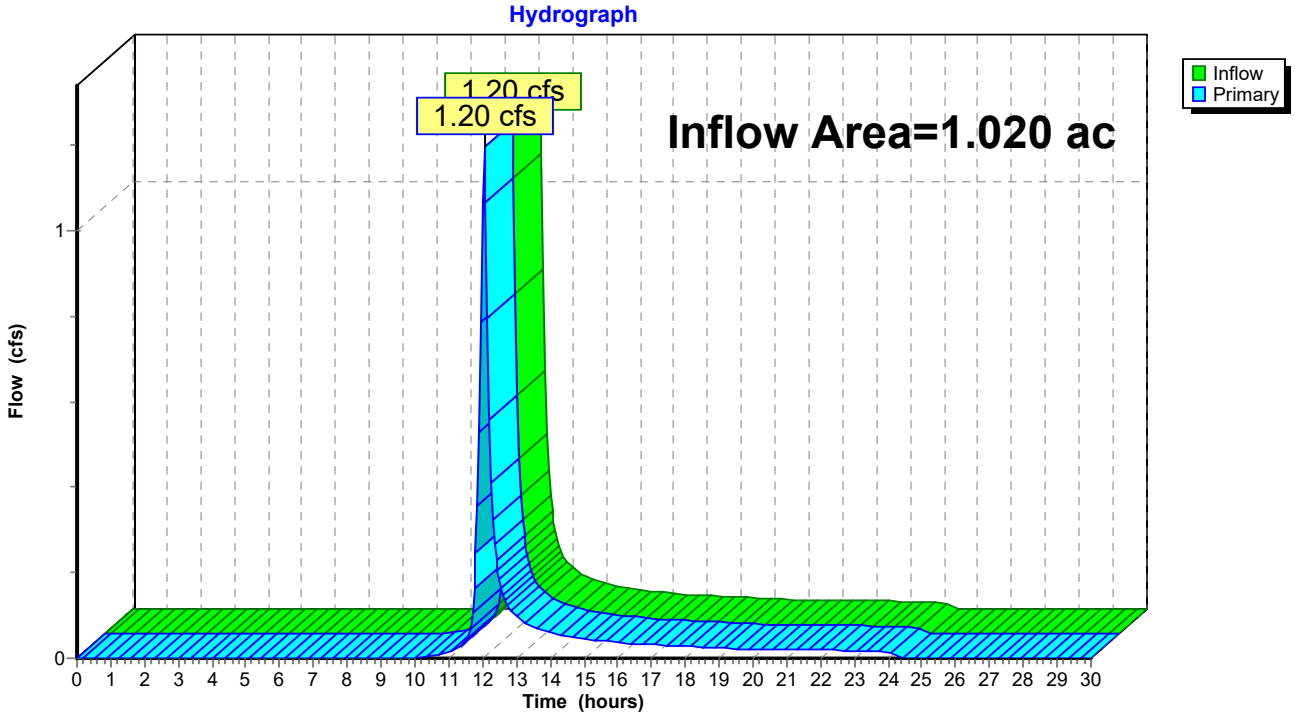


Summary for Link 2L: DP #2

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 0.85" for 1-yr event
Inflow = 1.20 cfs @ 12.05 hrs, Volume= 0.072 af
Primary = 1.20 cfs @ 12.05 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP #2

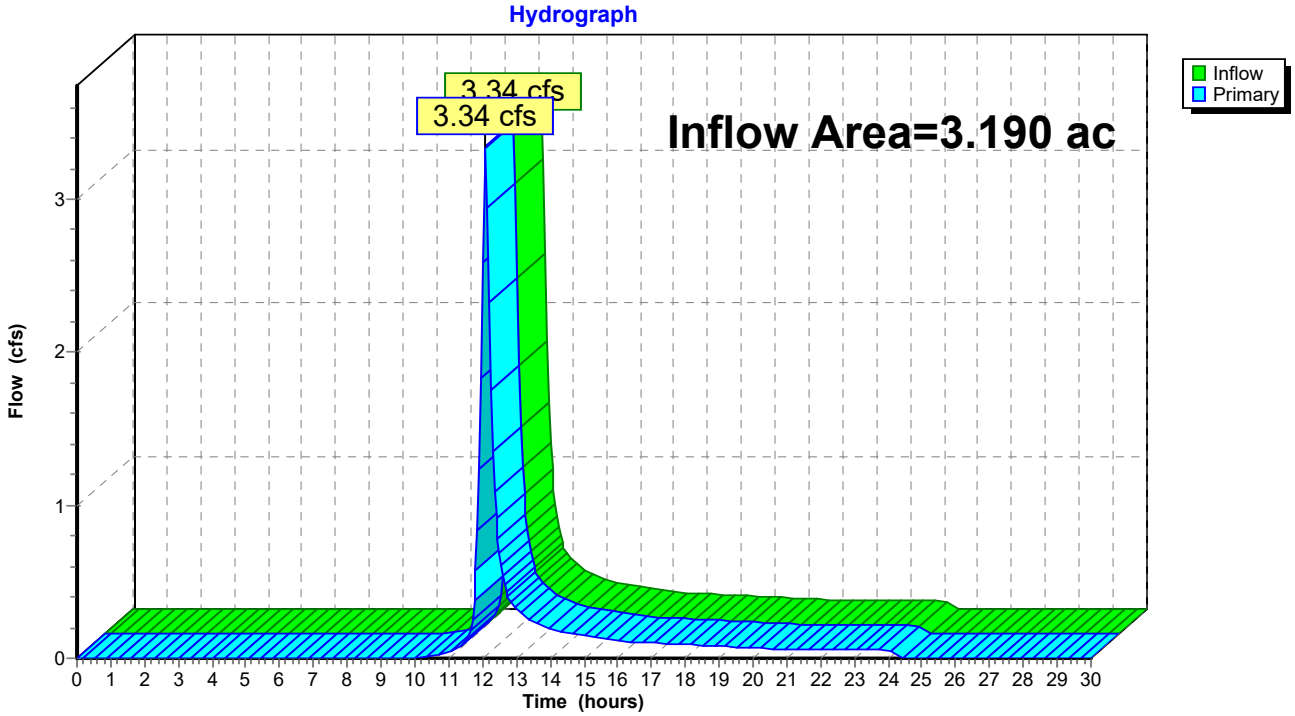


Summary for Link 3L: DP #3

Inflow Area = 3.190 ac, 0.00% Impervious, Inflow Depth = 0.85" for 1-yr event
Inflow = 3.34 cfs @ 12.09 hrs, Volume= 0.225 af
Primary = 3.34 cfs @ 12.09 hrs, Volume= 0.225 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP #3

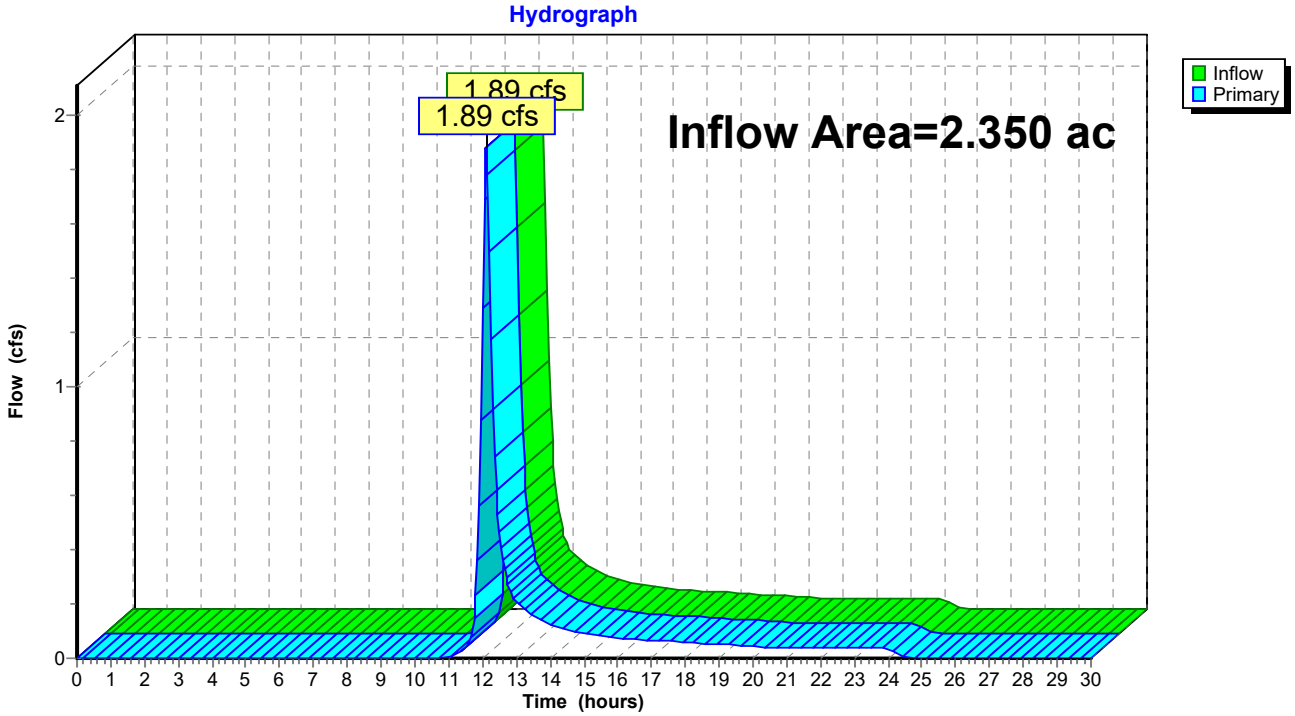


Summary for Link 4L: DP #4

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 1.89 cfs @ 12.11 hrs, Volume= 0.136 af
Primary = 1.89 cfs @ 12.11 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP #4

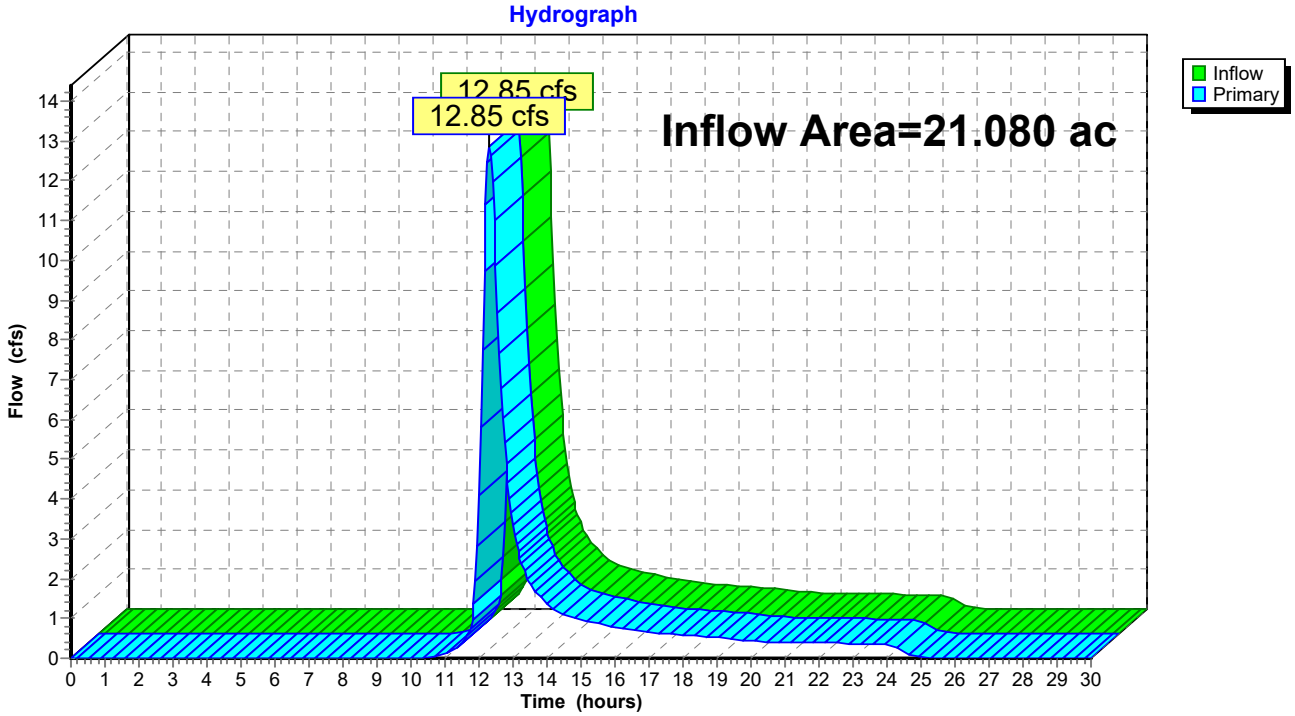


Summary for Link 5L: DP #5

Inflow Area = 21.080 ac, 0.00% Impervious, Inflow Depth = 0.79" for 1-yr event
Inflow = 12.85 cfs @ 12.31 hrs, Volume= 1.394 af
Primary = 12.85 cfs @ 12.31 hrs, Volume= 1.394 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP #5

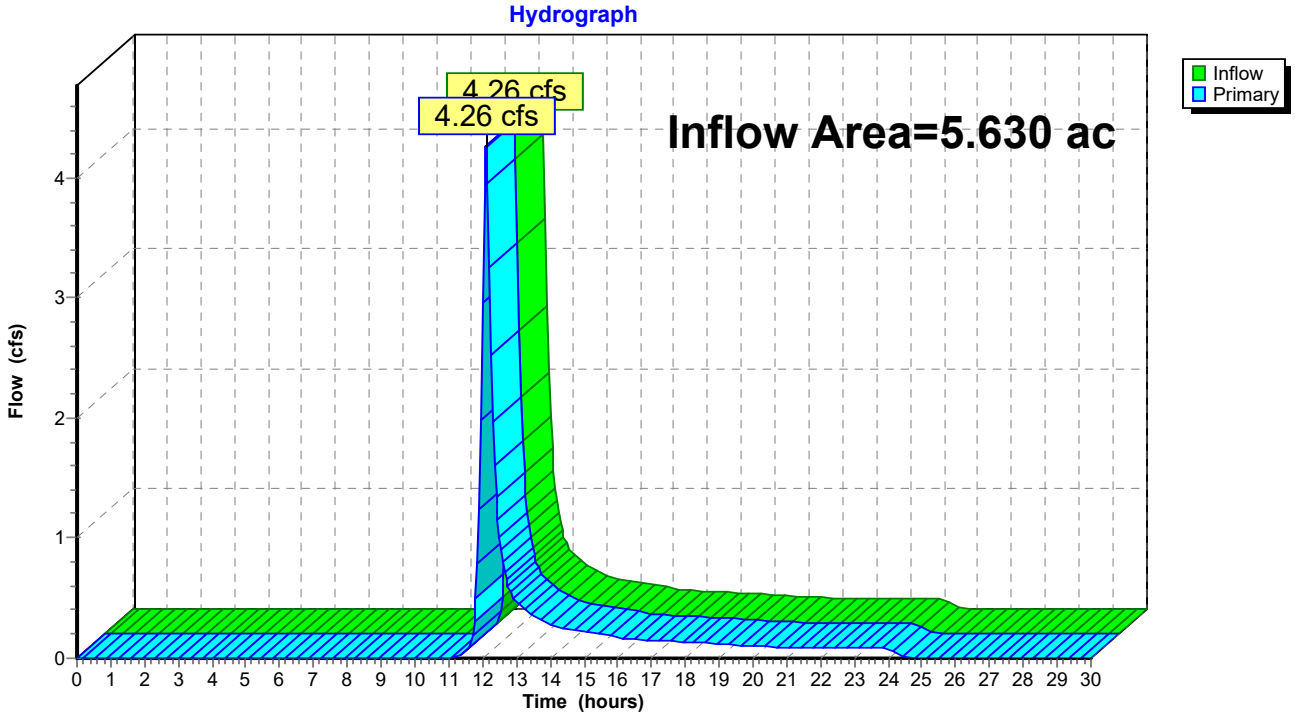


Summary for Link 6L: DP #6

Inflow Area = 5.630 ac, 0.00% Impervious, Inflow Depth = 0.65" for 1-yr event
Inflow = 4.26 cfs @ 12.10 hrs, Volume= 0.305 af
Primary = 4.26 cfs @ 12.10 hrs, Volume= 0.305 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP #6



Summary for Subcatchment 1S: DA #1

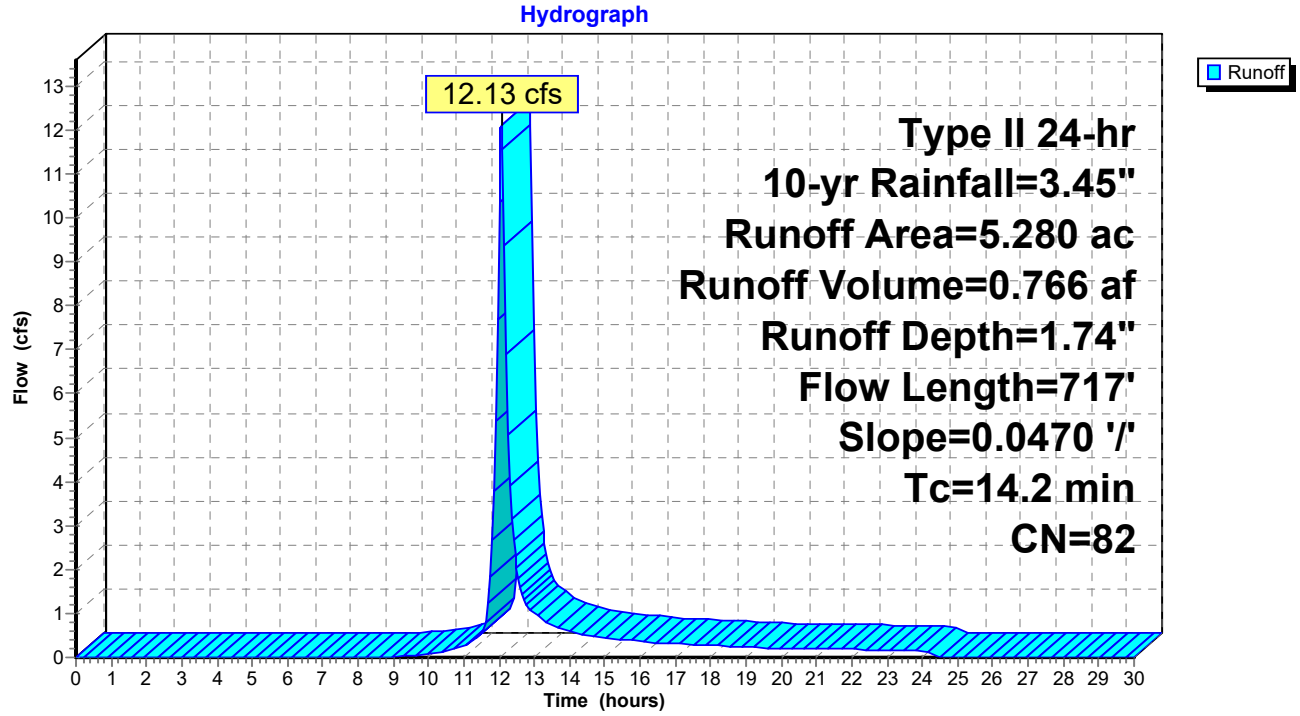
Runoff = 12.13 cfs @ 12.06 hrs, Volume= 0.766 af, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.440	76	Woods/grass comb., Fair, HSG C
3.780	85	Row crops, straight row, Good, HSG C
1.060	73	Woods, Fair, HSG C
5.280	82	Weighted Average
5.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0470	0.19		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.3	617	0.0470	1.95		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
14.2	717	Total			

Subcatchment 1S: DA #1



Summary for Subcatchment 2S: DA #2

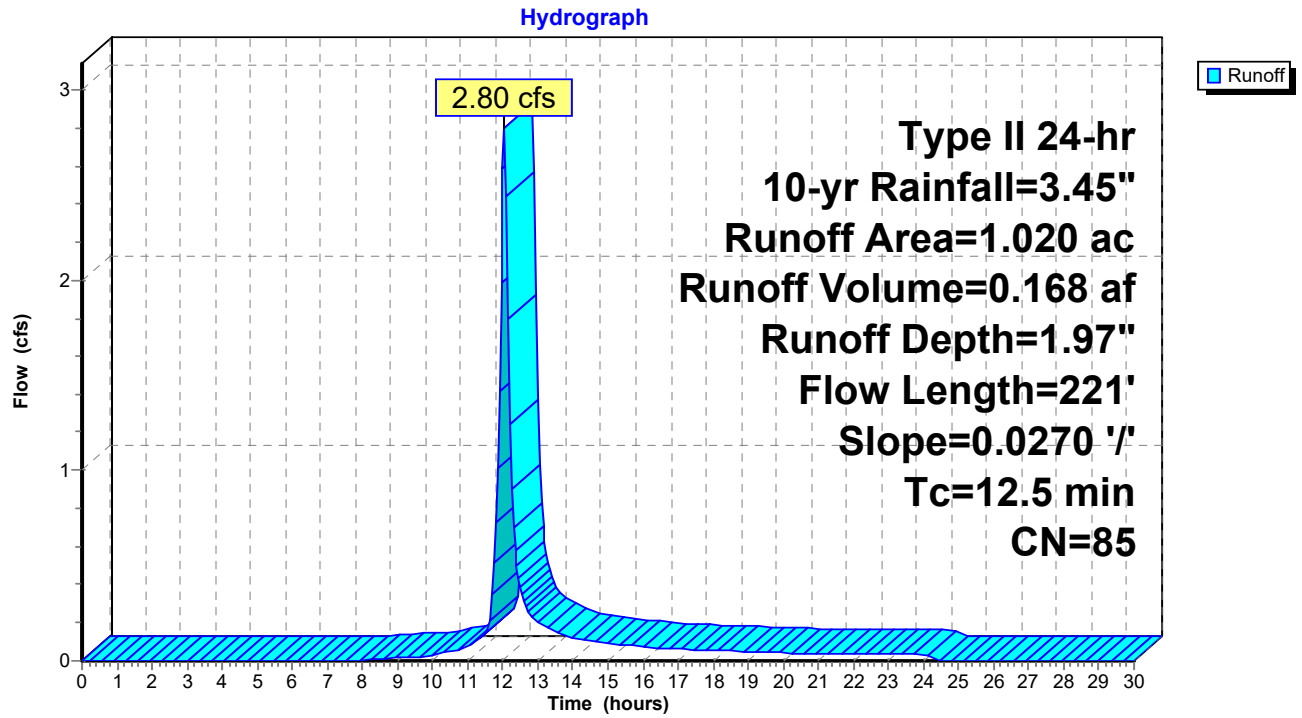
Runoff = 2.80 cfs @ 12.04 hrs, Volume= 0.168 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
1.020	85	Row crops, straight row, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0270	0.15		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
1.4	121	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	221	Total			

Subcatchment 2S: DA #2



Summary for Subcatchment 3S: DA #3

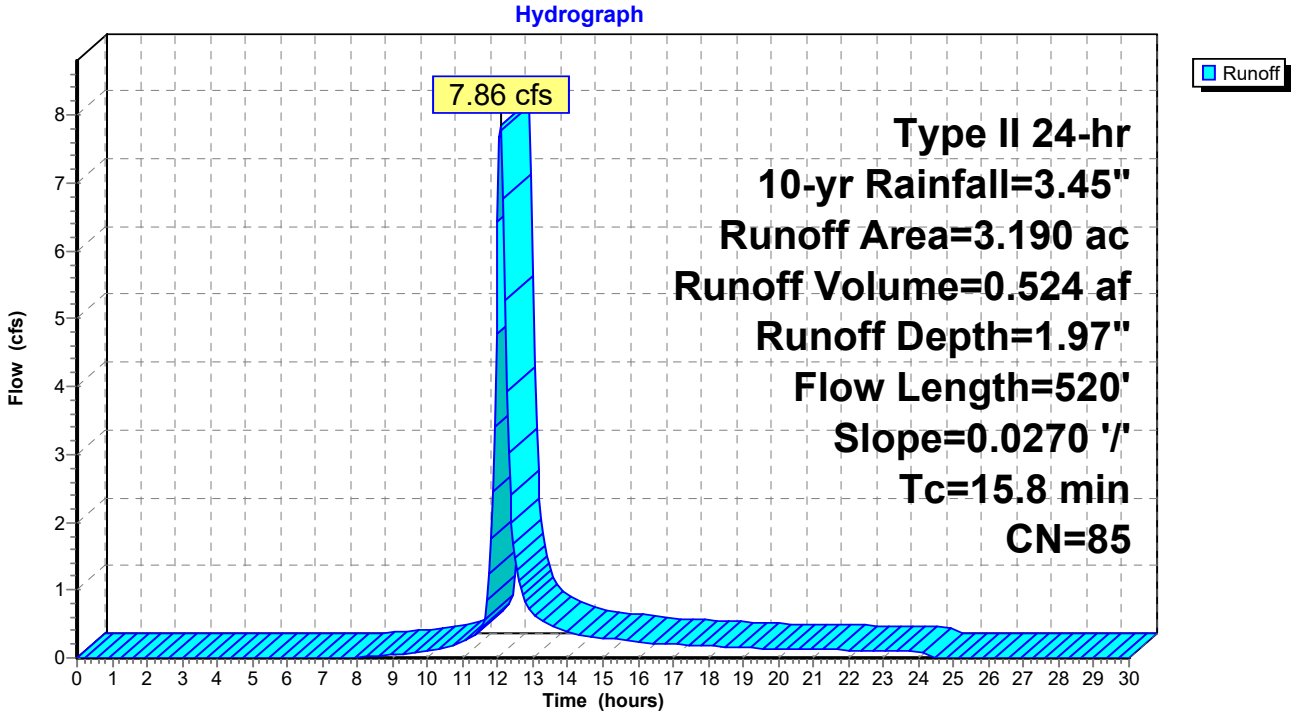
Runoff = 7.86 cfs @ 12.08 hrs, Volume= 0.524 af, Depth= 1.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
3.130	85	Row crops, straight row, Good, HSG C
0.060	73	Woods, Fair, HSG C
3.190	85	Weighted Average
3.190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0270	0.15		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
4.7	420	0.0270	1.48		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
15.8	520	Total			

Subcatchment 3S: DA #3



Summary for Subcatchment 4S: DA #4

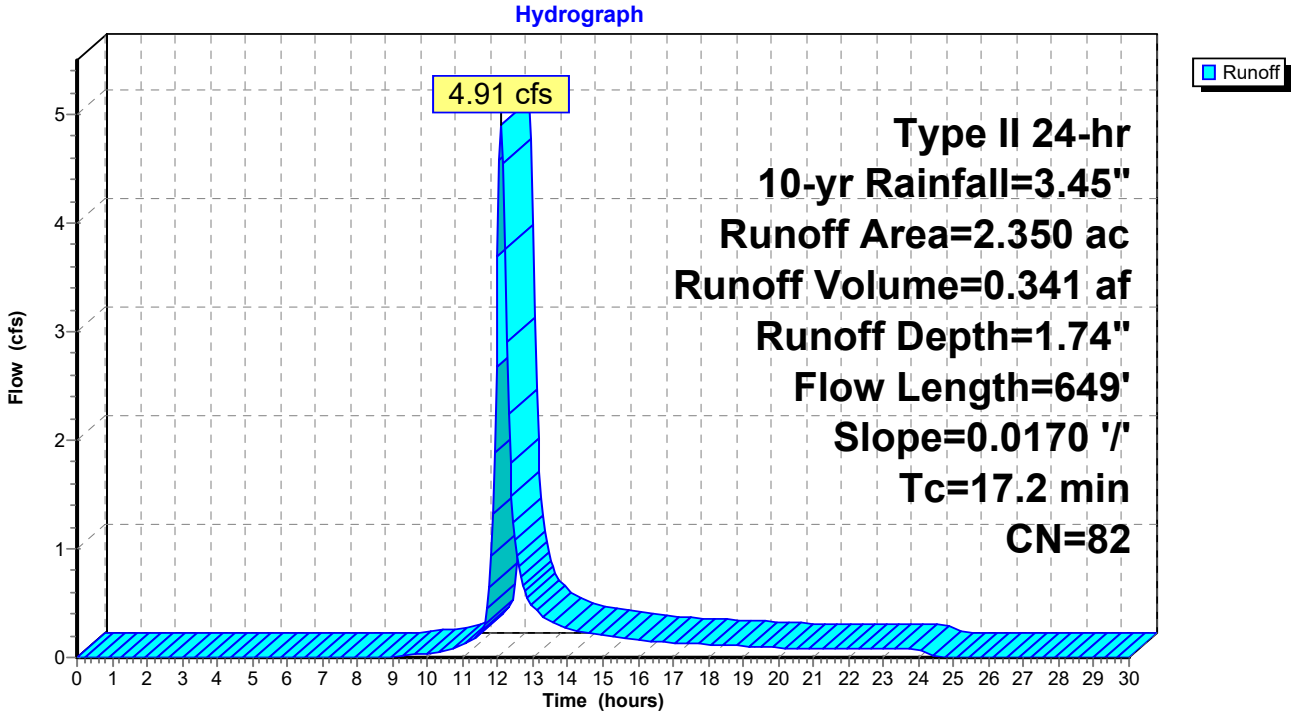
Runoff = 4.91 cfs @ 12.10 hrs, Volume= 0.341 af, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.800	76	Woods/grass comb., Fair, HSG C
1.550	85	Row crops, straight row, Good, HSG C
2.350	82	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0170	0.12		**Sheet Flow, Sheet Flow - Small Tree Farm** Cultivated: Residue>20% n= 0.170 P2= 2.40"
2.8	200	0.0170	1.17		**Shallow Concentrated Flow, Shallow - Crops** Cultivated Straight Rows Kv= 9.0 fps
1.1	349	0.0170	5.54	49.82	**Channel Flow, Channel - Roadside** Area= 9.0 sf Perim= 9.0' r= 1.00' n= 0.035 Earth, dense weeds
17.2	649	Total			

Subcatchment 4S: DA #4



Summary for Subcatchment 5S: DA #5

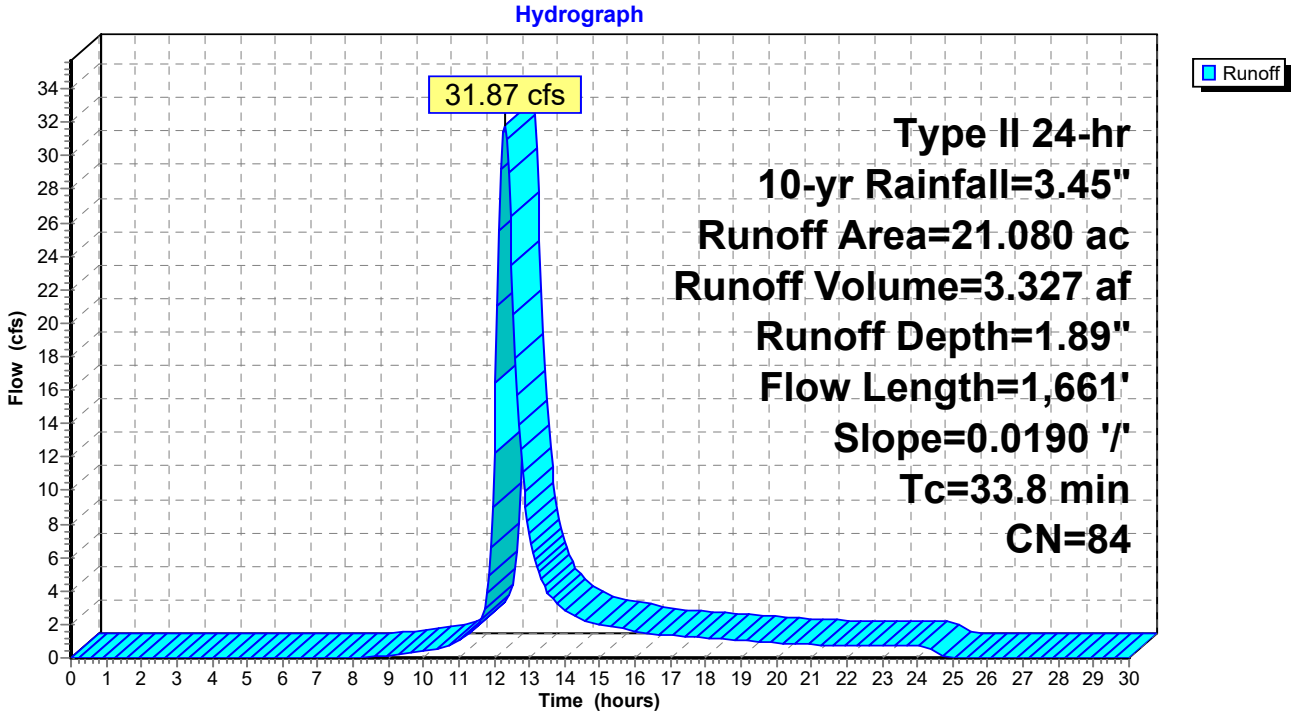
Runoff = 31.87 cfs @ 12.29 hrs, Volume= 3.327 af, Depth= 1.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
2.260	76	Woods/grass comb., Fair, HSG C
18.820	85	Row crops, straight row, Good, HSG C
21.080	84	Weighted Average
21.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0190	0.13		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
21.0	1,561	0.0190	1.24		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
33.8	1,661	Total			

Subcatchment 5S: DA #5



Summary for Subcatchment 6S: DA #6

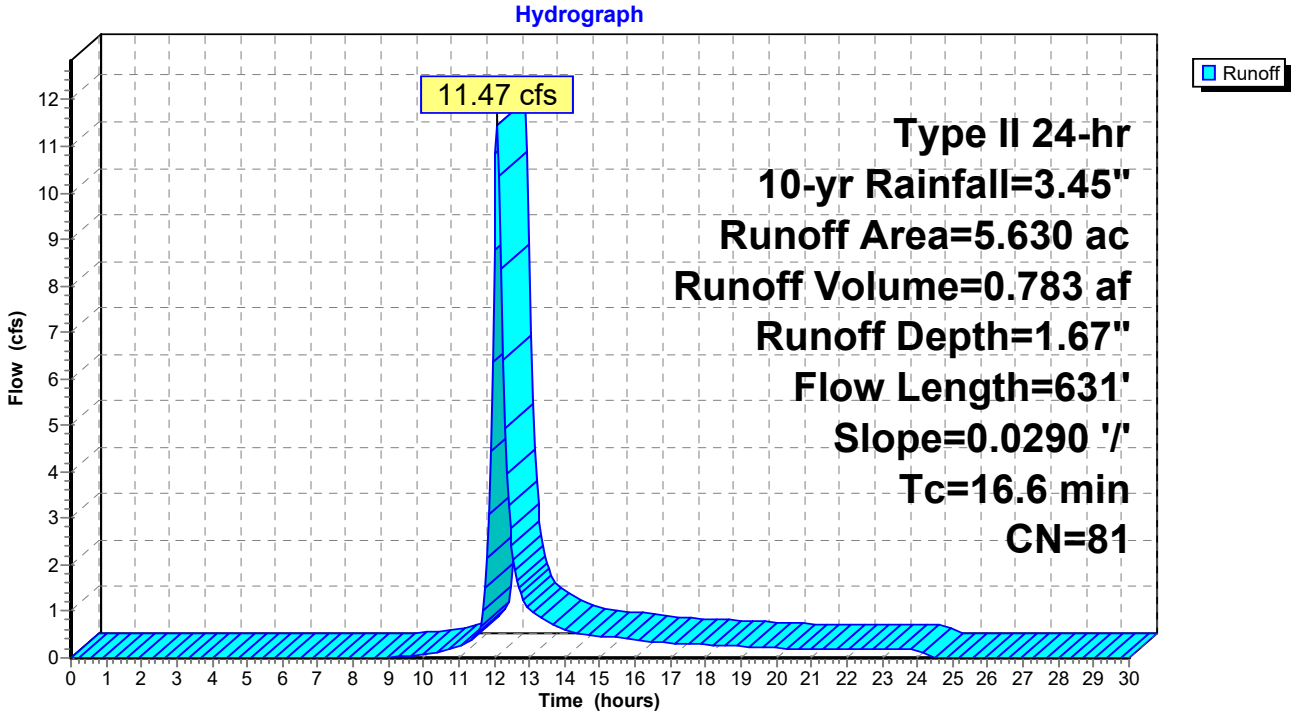
Runoff = 11.47 cfs @ 12.09 hrs, Volume= 0.783 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
3.090	85	Row crops, straight row, Good, HSG C
2.540	76	Woods/grass comb., Fair, HSG C
5.630	81	Weighted Average
5.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0290	0.15		**Sheet Flow, Sheet - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.8	531	0.0290	1.53		**Shallow Concentrated Flow, Shallow - Crops** Cultivated Straight Rows Kv= 9.0 fps
16.6	631	Total			

Subcatchment 6S: DA #6

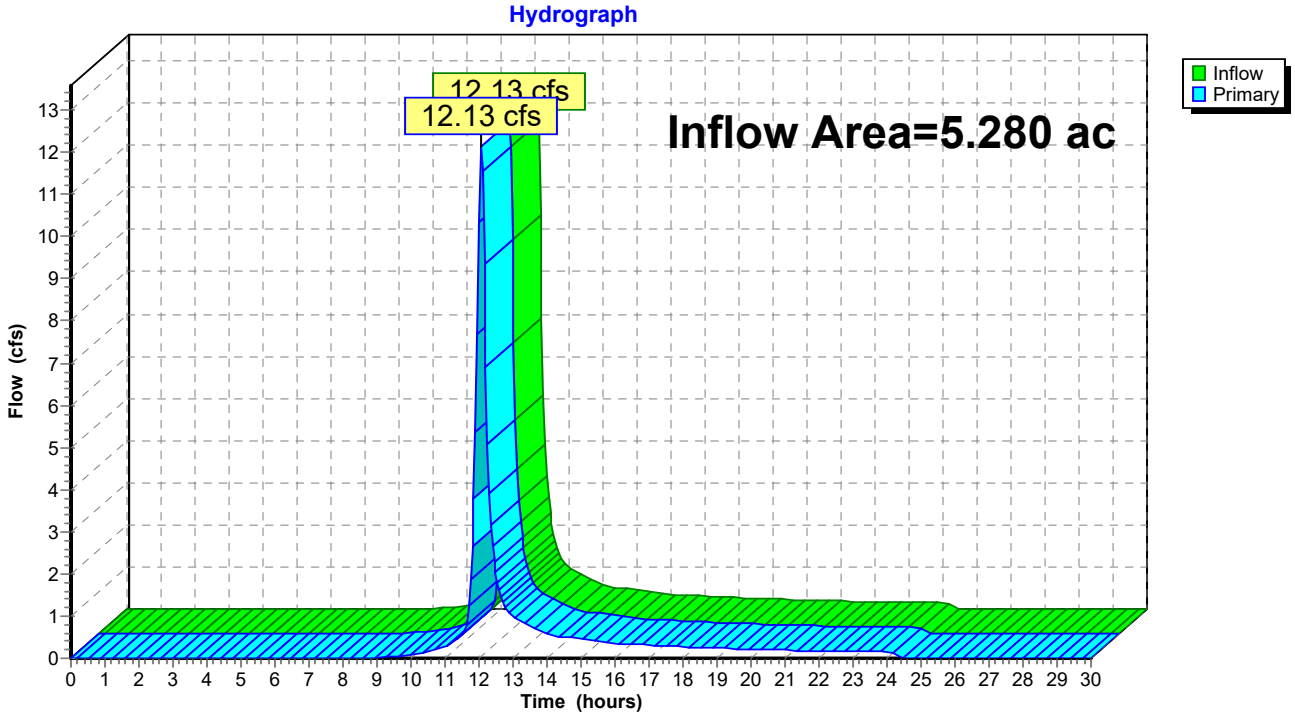


Summary for Link 1L: DP #1

Inflow Area = 5.280 ac, 0.00% Impervious, Inflow Depth = 1.74" for 10-yr event
Inflow = 12.13 cfs @ 12.06 hrs, Volume= 0.766 af
Primary = 12.13 cfs @ 12.06 hrs, Volume= 0.766 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP #1

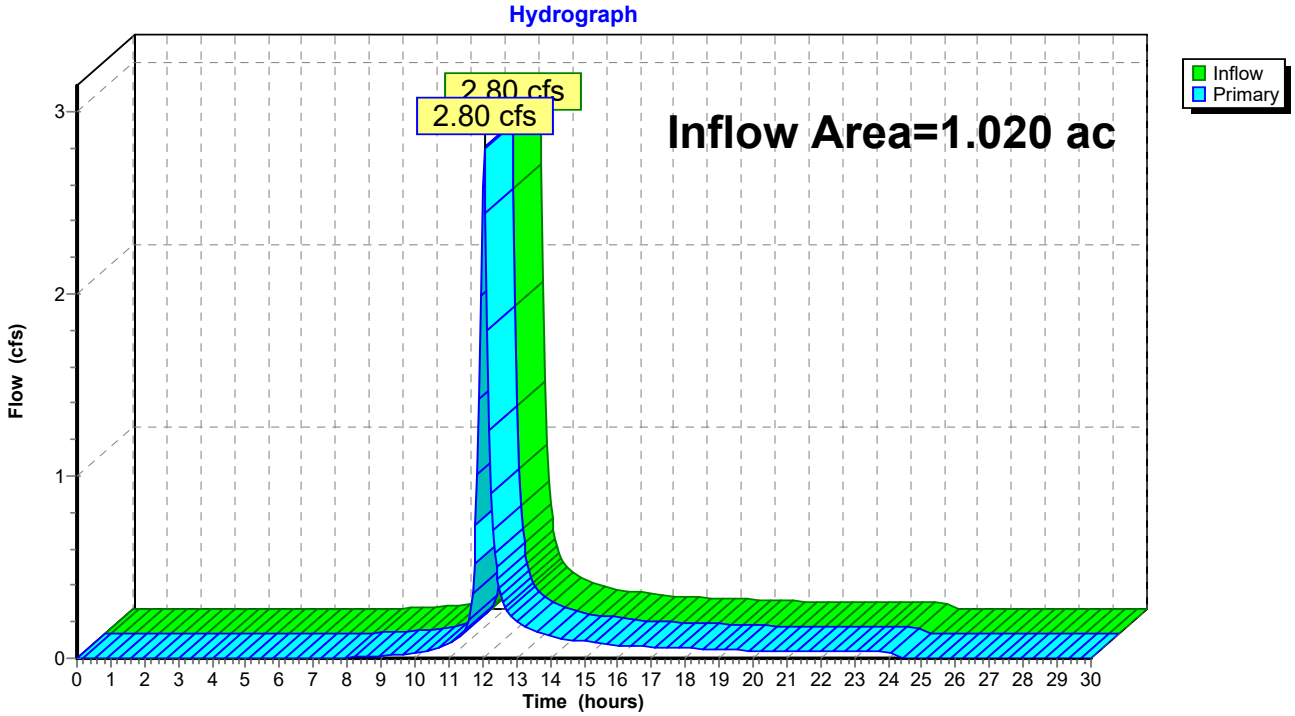


Summary for Link 2L: DP #2

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 1.97" for 10-yr event
Inflow = 2.80 cfs @ 12.04 hrs, Volume= 0.168 af
Primary = 2.80 cfs @ 12.04 hrs, Volume= 0.168 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP #2

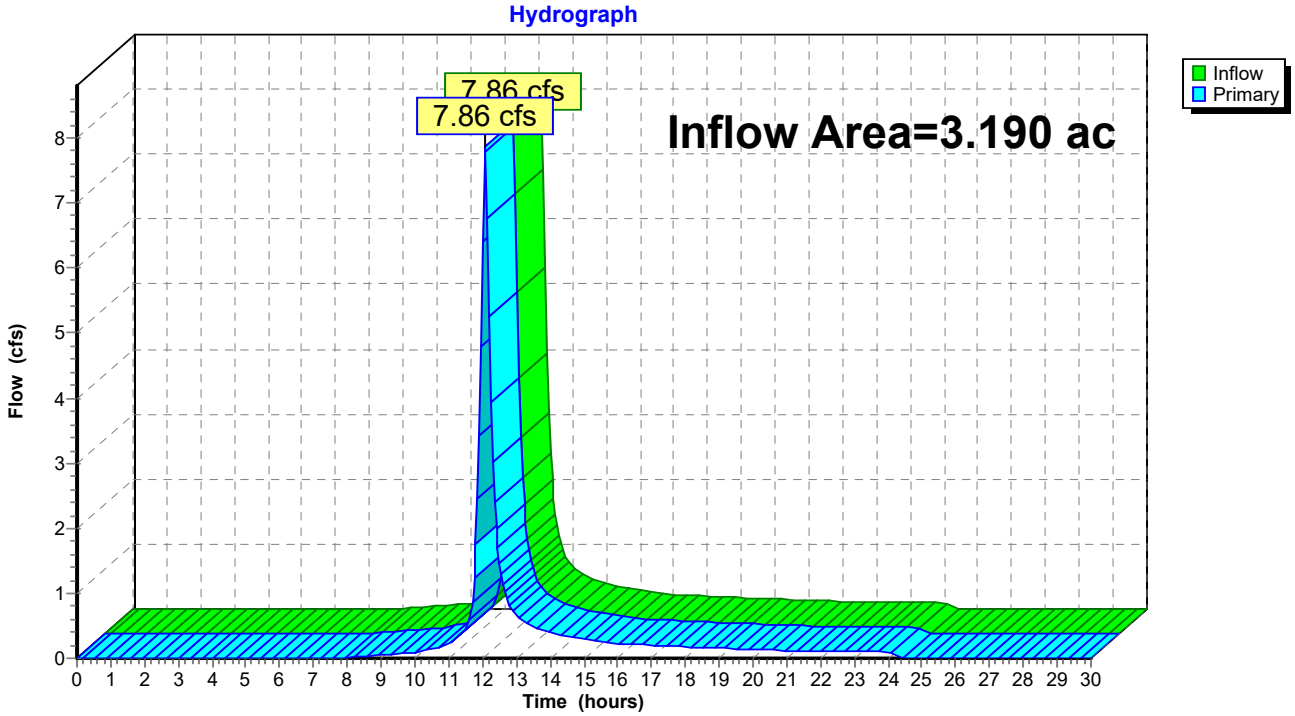


Summary for Link 3L: DP #3

Inflow Area = 3.190 ac, 0.00% Impervious, Inflow Depth = 1.97" for 10-yr event
Inflow = 7.86 cfs @ 12.08 hrs, Volume= 0.524 af
Primary = 7.86 cfs @ 12.08 hrs, Volume= 0.524 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP #3

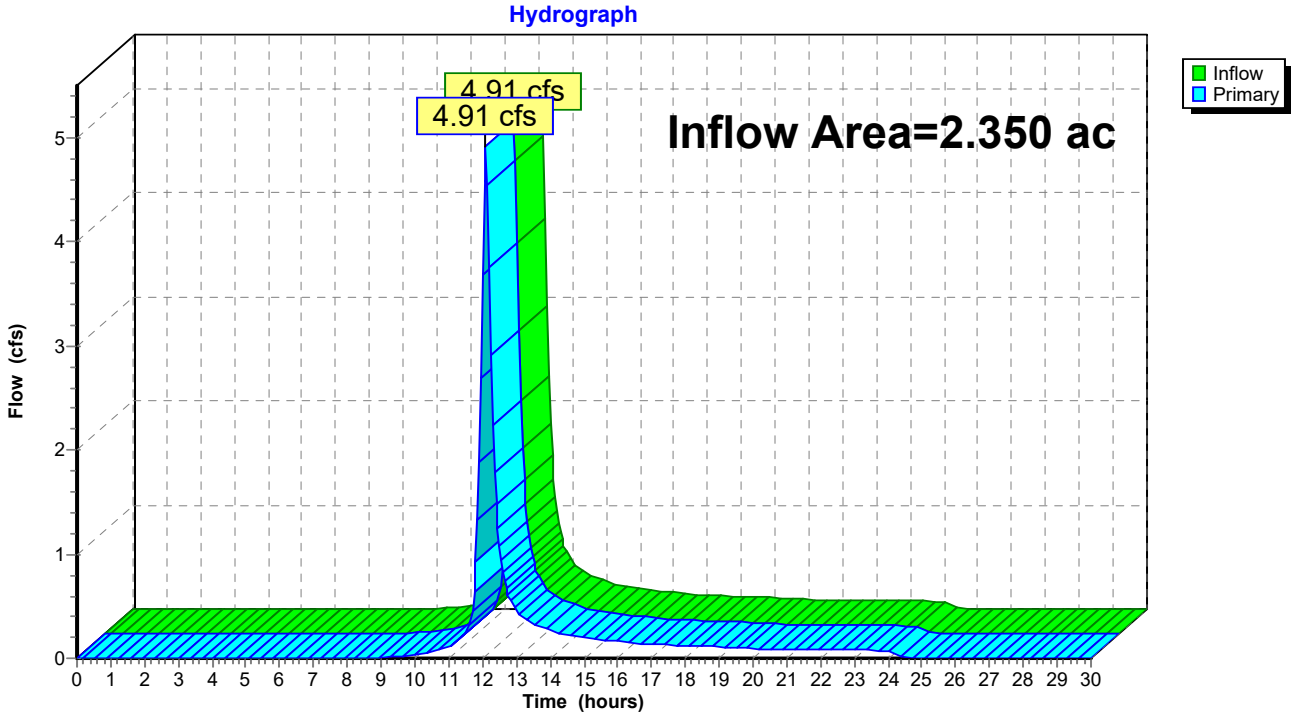


Summary for Link 4L: DP #4

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth = 1.74" for 10-yr event
Inflow = 4.91 cfs @ 12.10 hrs, Volume= 0.341 af
Primary = 4.91 cfs @ 12.10 hrs, Volume= 0.341 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP #4

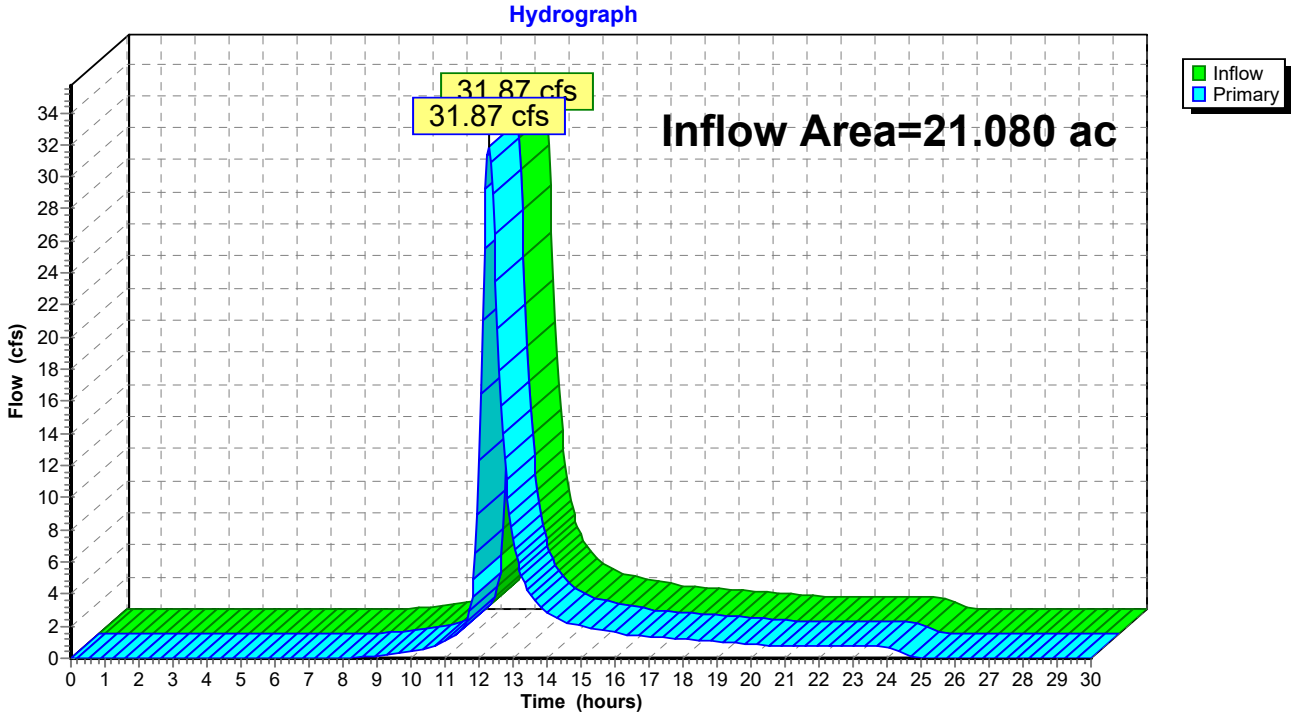


Summary for Link 5L: DP #5

Inflow Area = 21.080 ac, 0.00% Impervious, Inflow Depth = 1.89" for 10-yr event
Inflow = 31.87 cfs @ 12.29 hrs, Volume= 3.327 af
Primary = 31.87 cfs @ 12.29 hrs, Volume= 3.327 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP #5

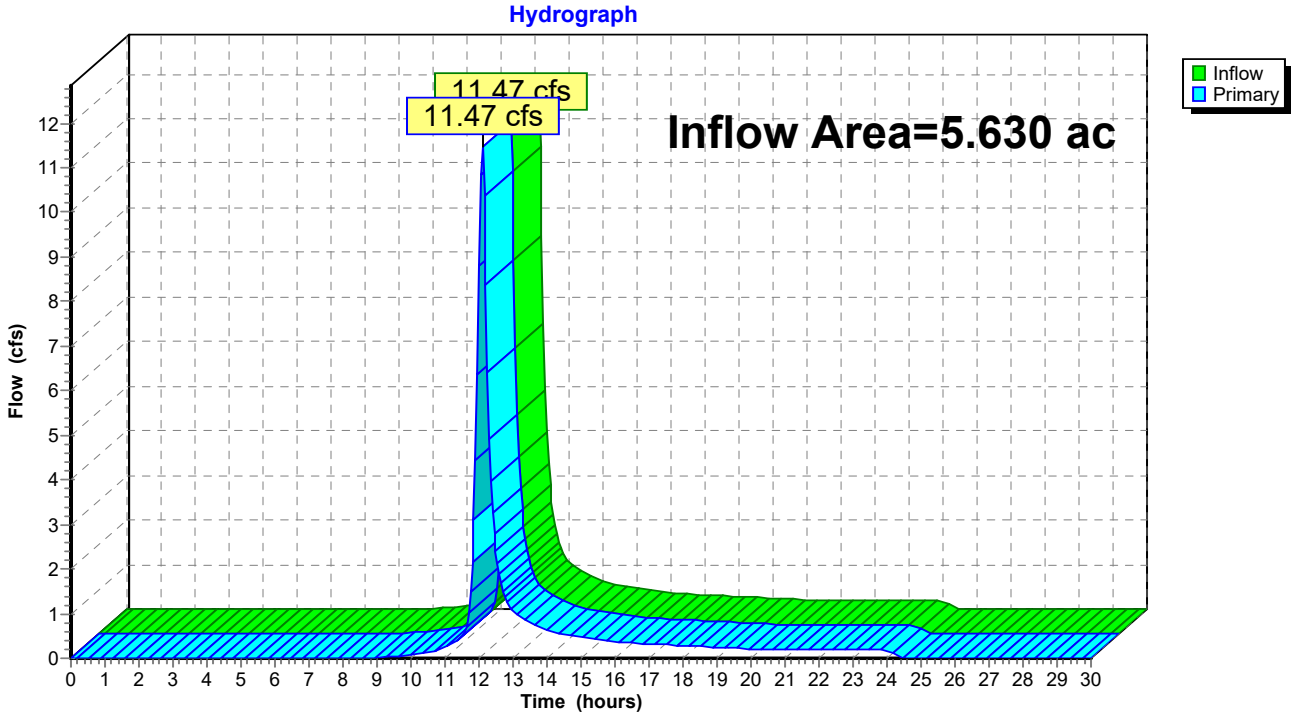


Summary for Link 6L: DP #6

Inflow Area = 5.630 ac, 0.00% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 11.47 cfs @ 12.09 hrs, Volume= 0.783 af
Primary = 11.47 cfs @ 12.09 hrs, Volume= 0.783 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP #6



Summary for Subcatchment 1S: DA #1

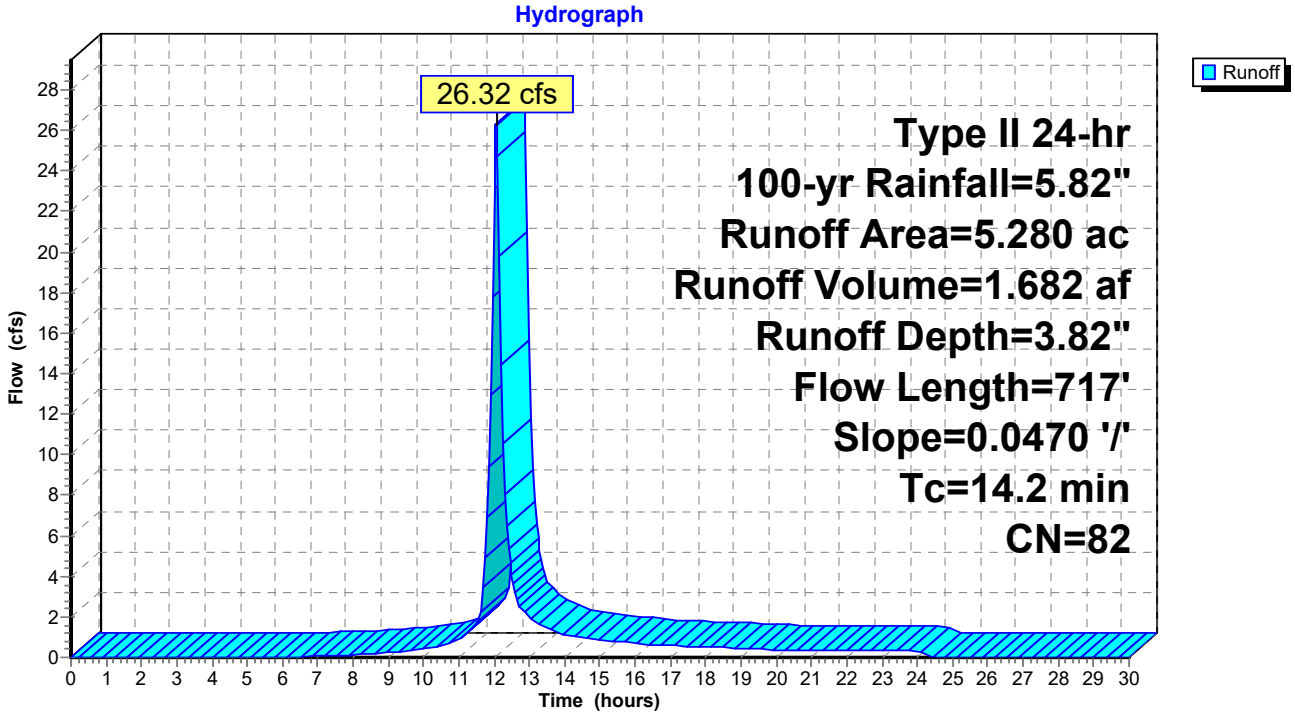
Runoff = 26.32 cfs @ 12.06 hrs, Volume= 1.682 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.440	76	Woods/grass comb., Fair, HSG C
3.780	85	Row crops, straight row, Good, HSG C
1.060	73	Woods, Fair, HSG C
5.280	82	Weighted Average
5.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0470	0.19		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.3	617	0.0470	1.95		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
14.2	717	Total			

Subcatchment 1S: DA #1



Summary for Subcatchment 2S: DA #2

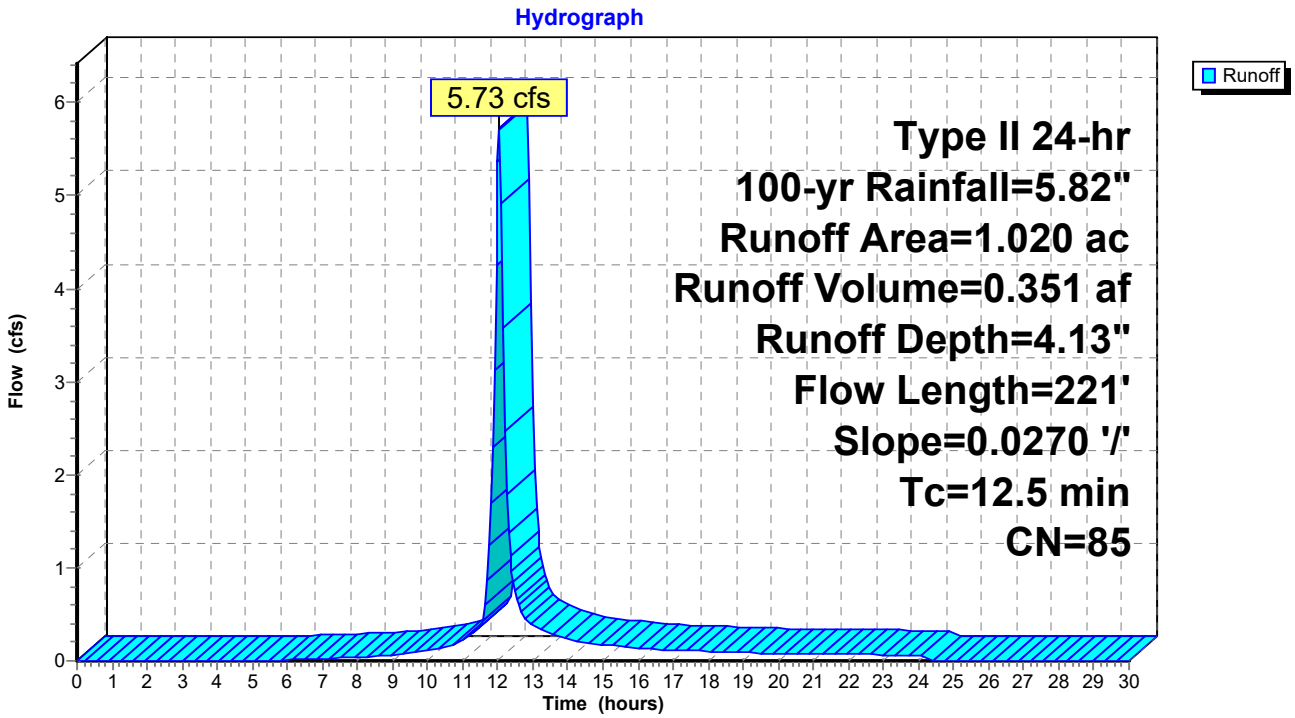
Runoff = 5.73 cfs @ 12.04 hrs, Volume= 0.351 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
1.020	85	Row crops, straight row, Good, HSG C
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0270	0.15		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
1.4	121	0.0270	1.48		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
12.5	221	Total			

Subcatchment 2S: DA #2



Summary for Subcatchment 3S: DA #3

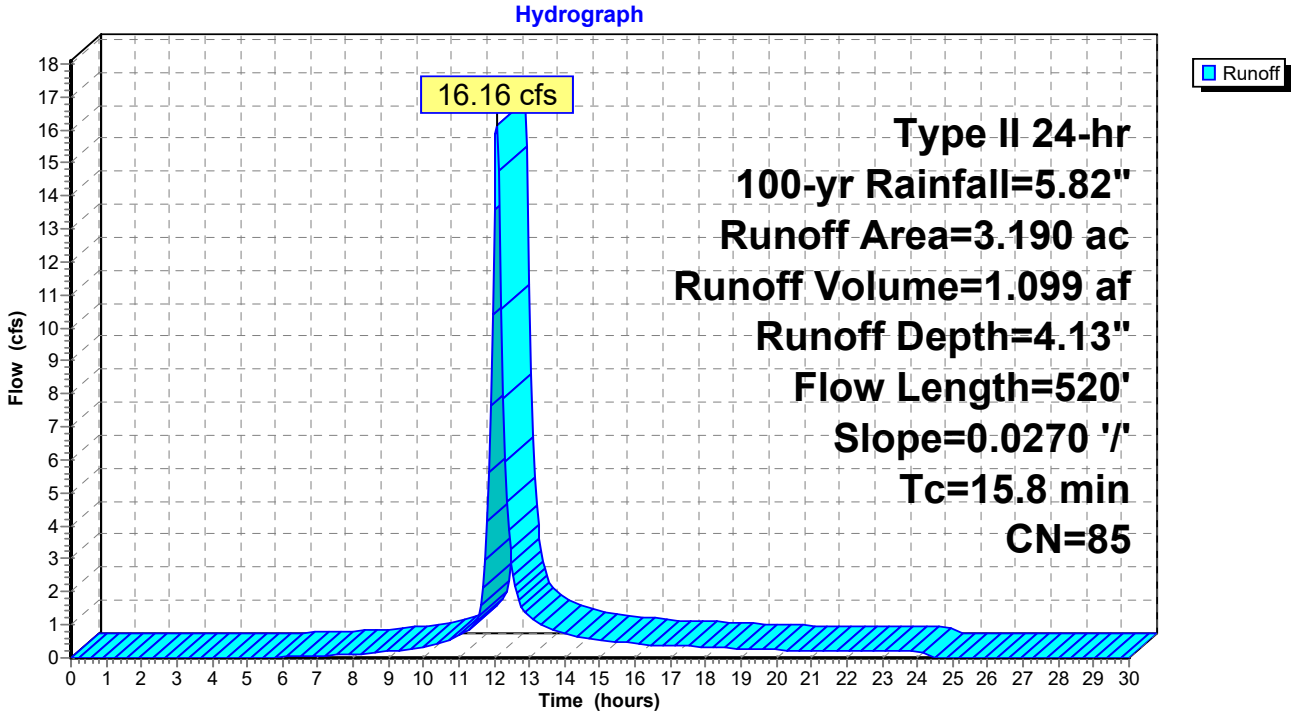
Runoff = 16.16 cfs @ 12.07 hrs, Volume= 1.099 af, Depth= 4.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
3.130	85	Row crops, straight row, Good, HSG C
0.060	73	Woods, Fair, HSG C
3.190	85	Weighted Average
3.190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0270	0.15		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
4.7	420	0.0270	1.48		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
15.8	520	Total			

Subcatchment 3S: DA #3



Summary for Subcatchment 4S: DA #4

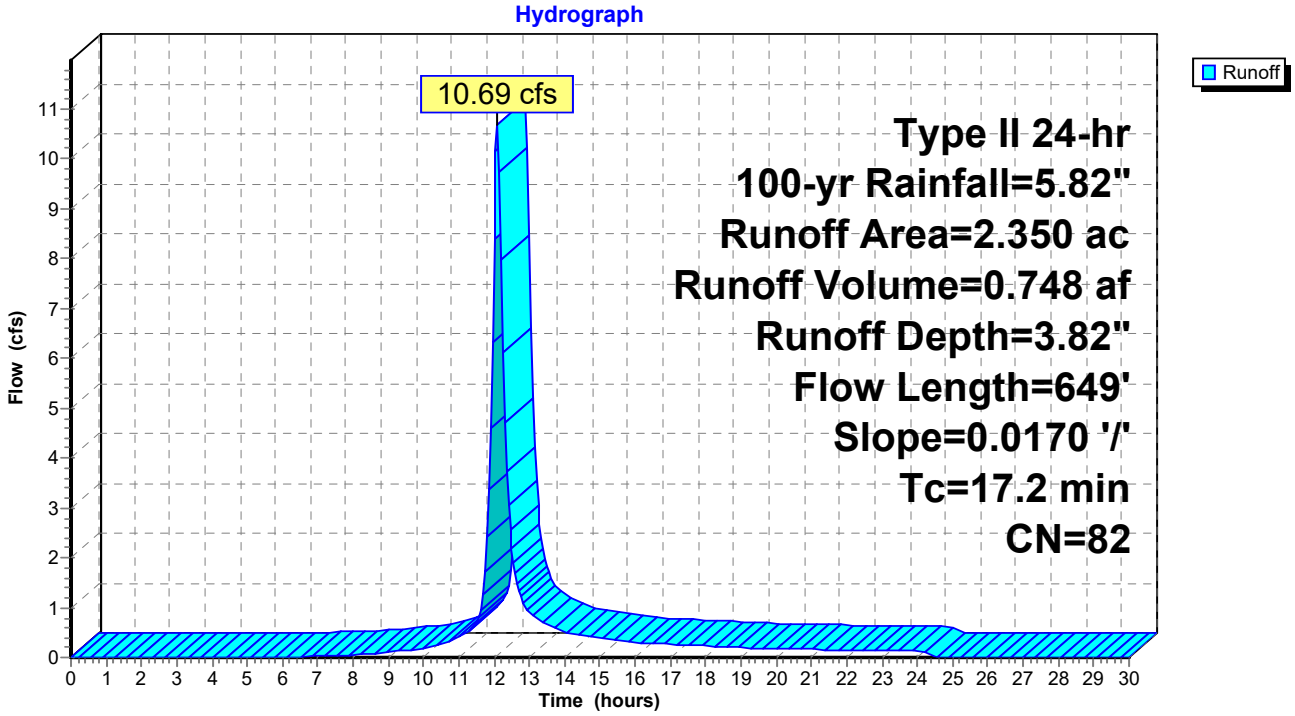
Runoff = 10.69 cfs @ 12.09 hrs, Volume= 0.748 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.800	76	Woods/grass comb., Fair, HSG C
1.550	85	Row crops, straight row, Good, HSG C
2.350	82	Weighted Average
2.350		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0170	0.12		**Sheet Flow, Sheet Flow - Small Tree Farm** Cultivated: Residue>20% n= 0.170 P2= 2.40"
2.8	200	0.0170	1.17		**Shallow Concentrated Flow, Shallow - Crops** Cultivated Straight Rows Kv= 9.0 fps
1.1	349	0.0170	5.54	49.82	**Channel Flow, Channel - Roadside** Area= 9.0 sf Perim= 9.0' r= 1.00' n= 0.035 Earth, dense weeds
17.2	649	Total			

Subcatchment 4S: DA #4



Summary for Subcatchment 5S: DA #5

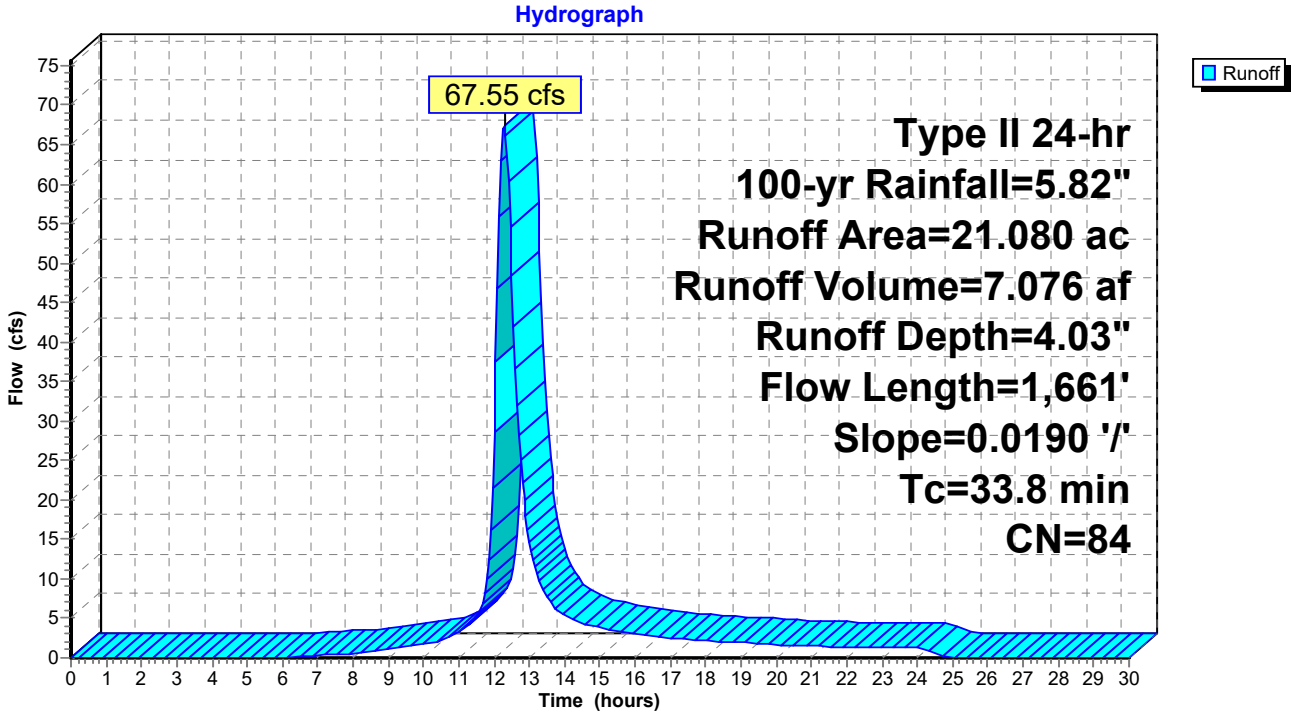
Runoff = 67.55 cfs @ 12.28 hrs, Volume= 7.076 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
2.260	76	Woods/grass comb., Fair, HSG C
18.820	85	Row crops, straight row, Good, HSG C
21.080	84	Weighted Average
21.080		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0190	0.13		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
21.0	1,561	0.0190	1.24		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
33.8	1,661	Total			

Subcatchment 5S: DA #5



Summary for Subcatchment 6S: DA #6

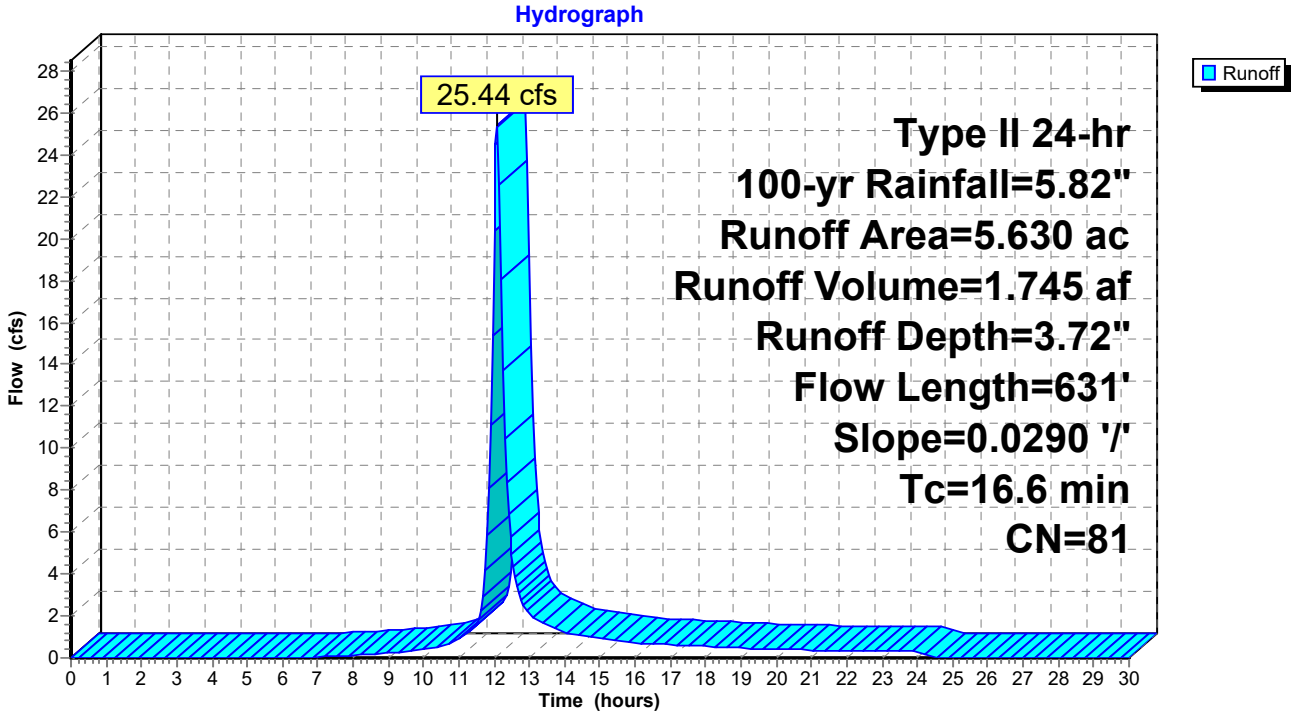
Runoff = 25.44 cfs @ 12.09 hrs, Volume= 1.745 af, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
3.090	85	Row crops, straight row, Good, HSG C
2.540	76	Woods/grass comb., Fair, HSG C
5.630	81	Weighted Average
5.630		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	100	0.0290	0.15		**Sheet Flow, Sheet - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.8	531	0.0290	1.53		**Shallow Concentrated Flow, Shallow - Crops** Cultivated Straight Rows Kv= 9.0 fps
16.6	631	Total			

Subcatchment 6S: DA #6

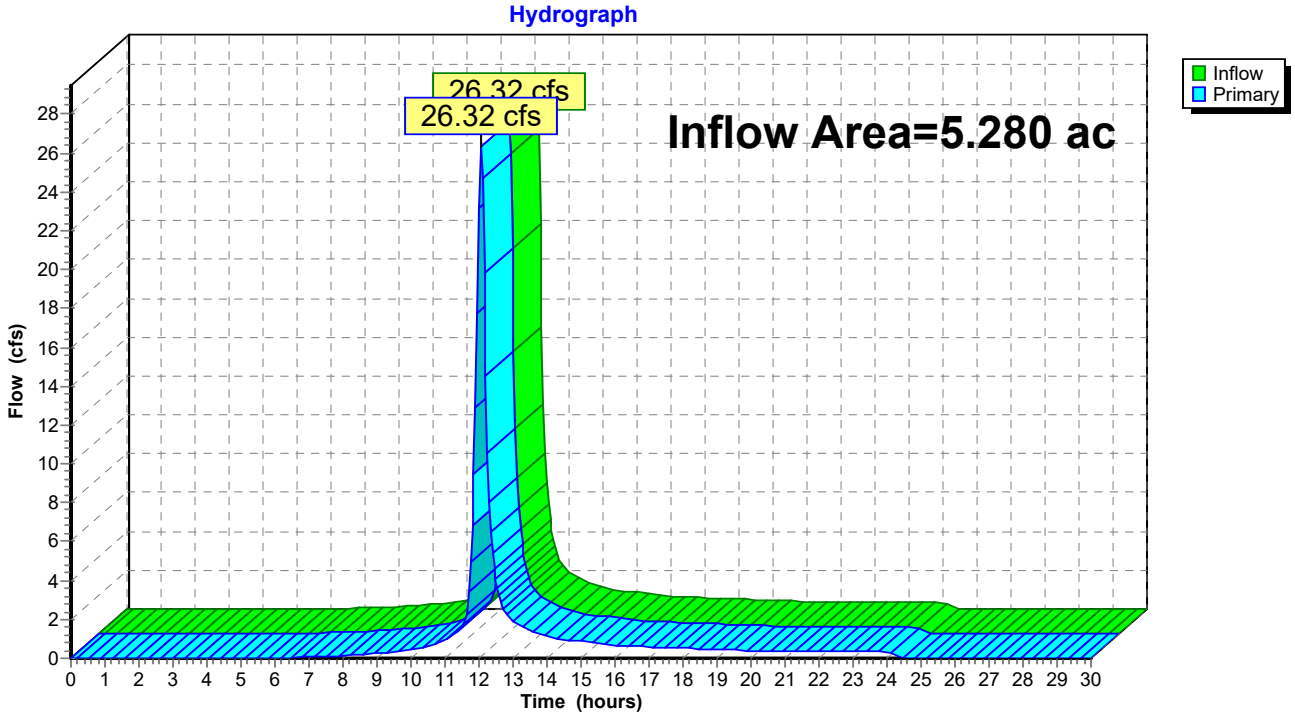


Summary for Link 1L: DP #1

Inflow Area = 5.280 ac, 0.00% Impervious, Inflow Depth = 3.82" for 100-yr event
Inflow = 26.32 cfs @ 12.06 hrs, Volume= 1.682 af
Primary = 26.32 cfs @ 12.06 hrs, Volume= 1.682 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP #1

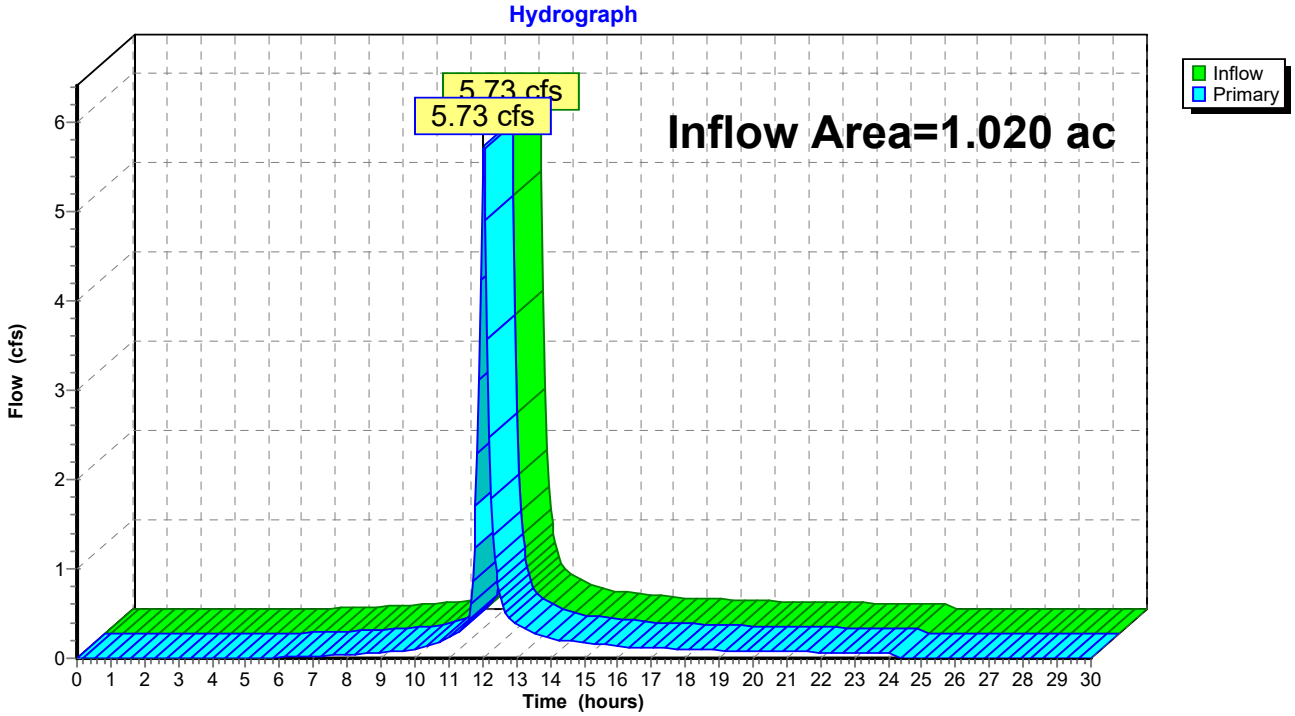


Summary for Link 2L: DP #2

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 4.13" for 100-yr event
Inflow = 5.73 cfs @ 12.04 hrs, Volume= 0.351 af
Primary = 5.73 cfs @ 12.04 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP #2

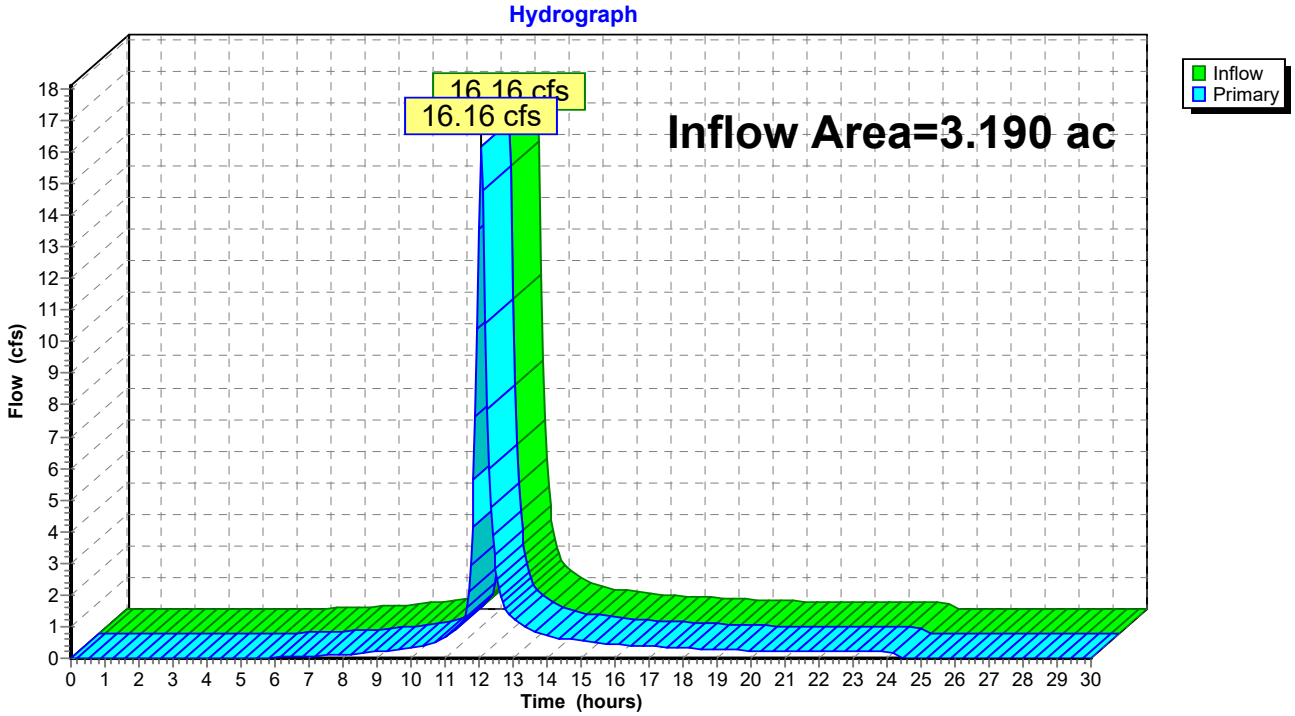


Summary for Link 3L: DP #3

Inflow Area = 3.190 ac, 0.00% Impervious, Inflow Depth = 4.13" for 100-yr event
Inflow = 16.16 cfs @ 12.07 hrs, Volume= 1.099 af
Primary = 16.16 cfs @ 12.07 hrs, Volume= 1.099 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP #3

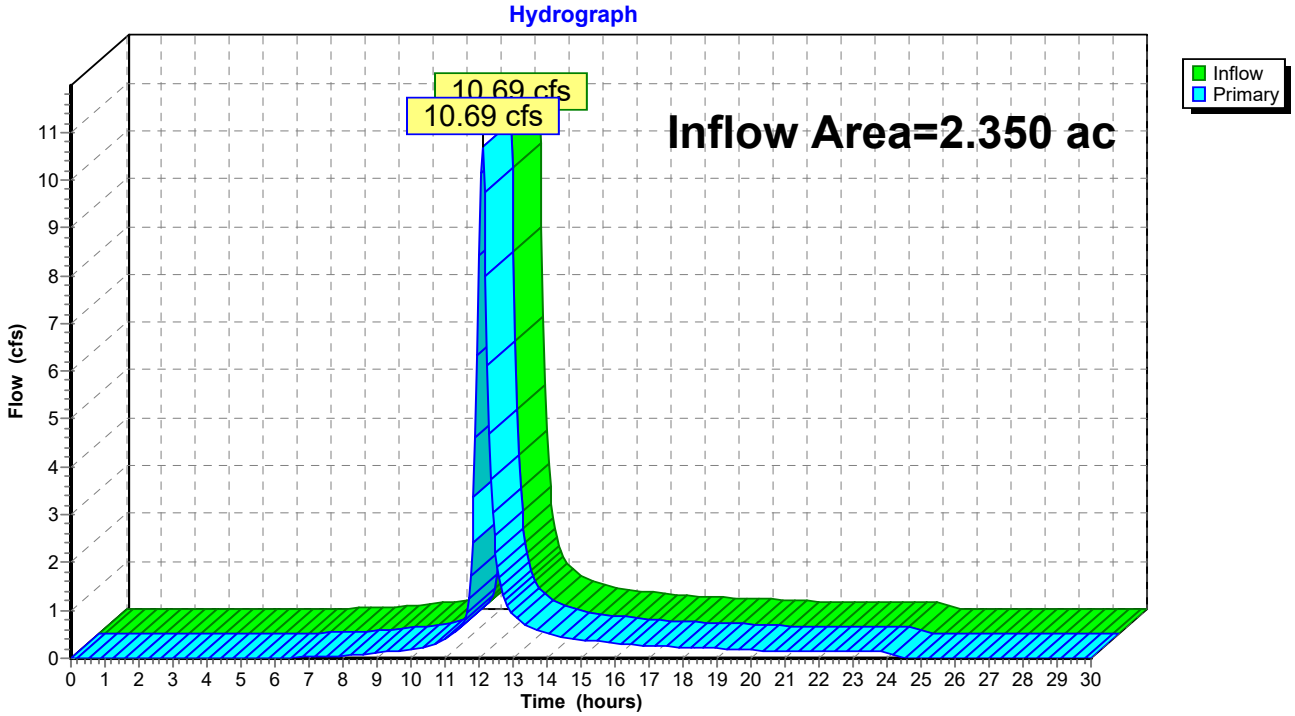


Summary for Link 4L: DP #4

Inflow Area = 2.350 ac, 0.00% Impervious, Inflow Depth = 3.82" for 100-yr event
Inflow = 10.69 cfs @ 12.09 hrs, Volume= 0.748 af
Primary = 10.69 cfs @ 12.09 hrs, Volume= 0.748 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP #4

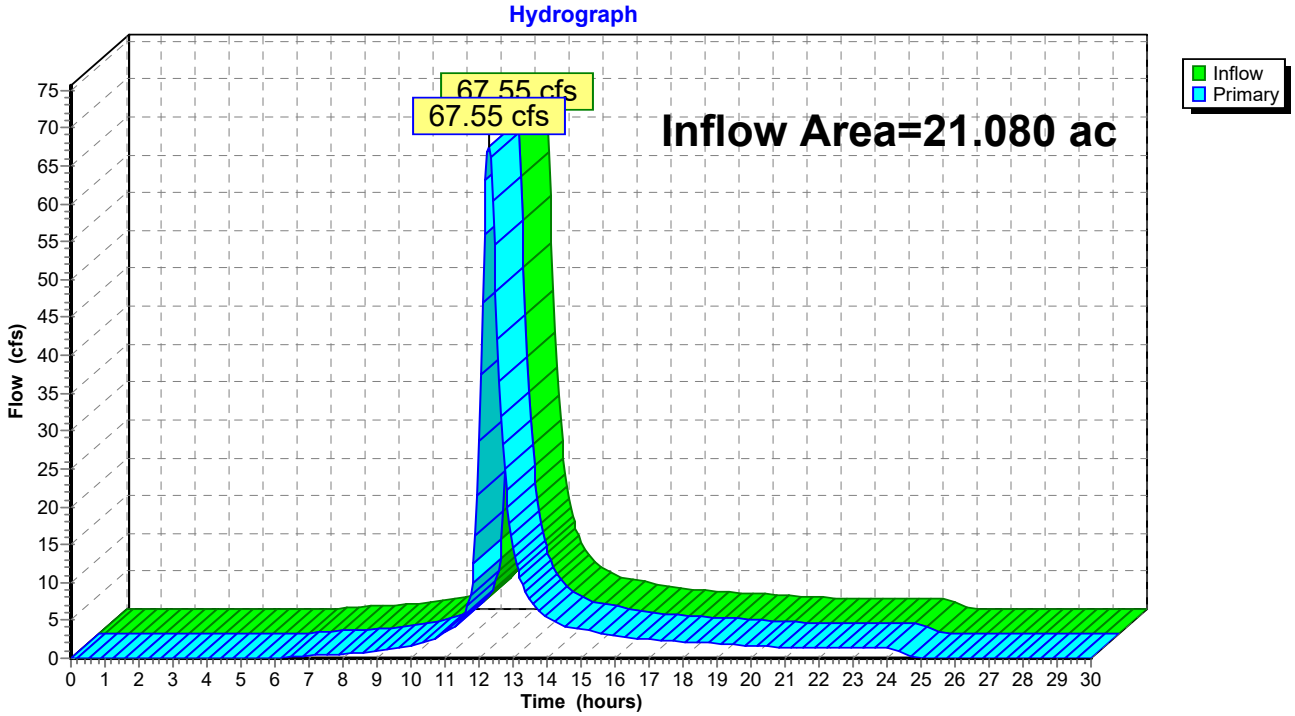


Summary for Link 5L: DP #5

Inflow Area = 21.080 ac, 0.00% Impervious, Inflow Depth = 4.03" for 100-yr event
Inflow = 67.55 cfs @ 12.28 hrs, Volume= 7.076 af
Primary = 67.55 cfs @ 12.28 hrs, Volume= 7.076 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP #5

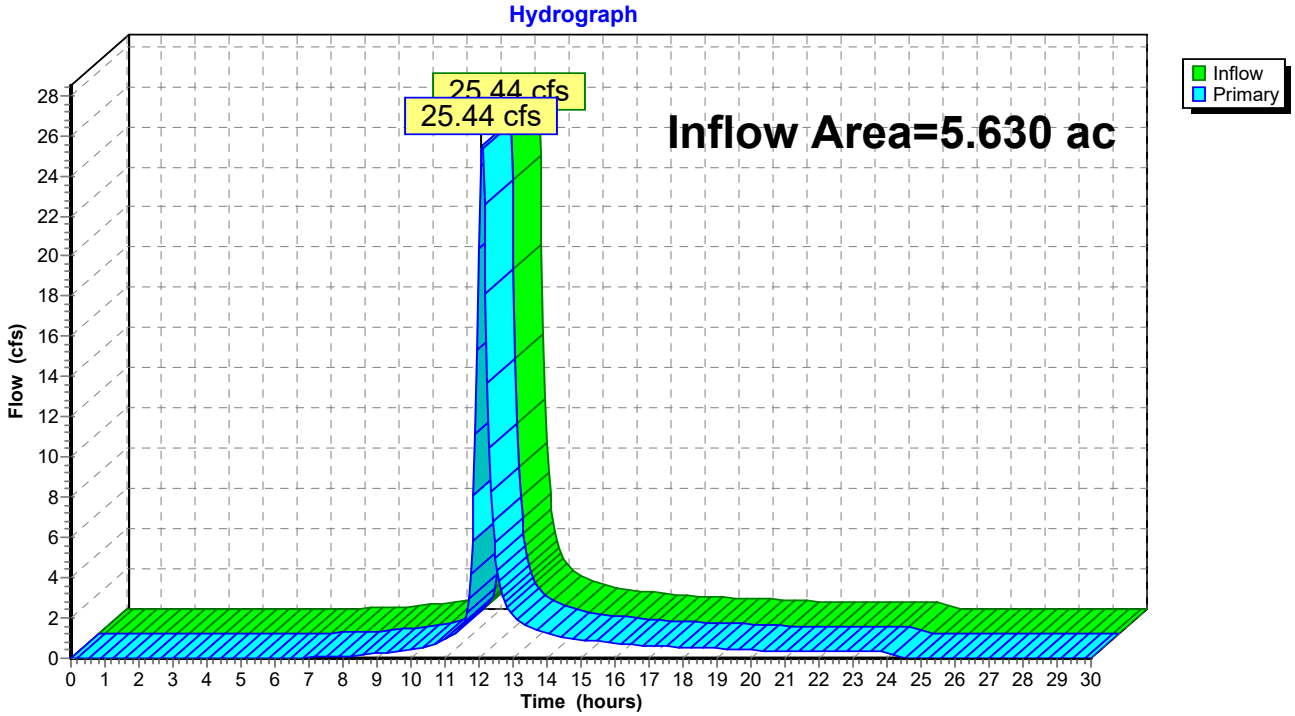


Summary for Link 6L: DP #6

Inflow Area = 5.630 ac, 0.00% Impervious, Inflow Depth = 3.72" for 100-yr event
Inflow = 25.44 cfs @ 12.09 hrs, Volume= 1.745 af
Primary = 25.44 cfs @ 12.09 hrs, Volume= 1.745 af, Atten= 0%, Lag= 0.0 min

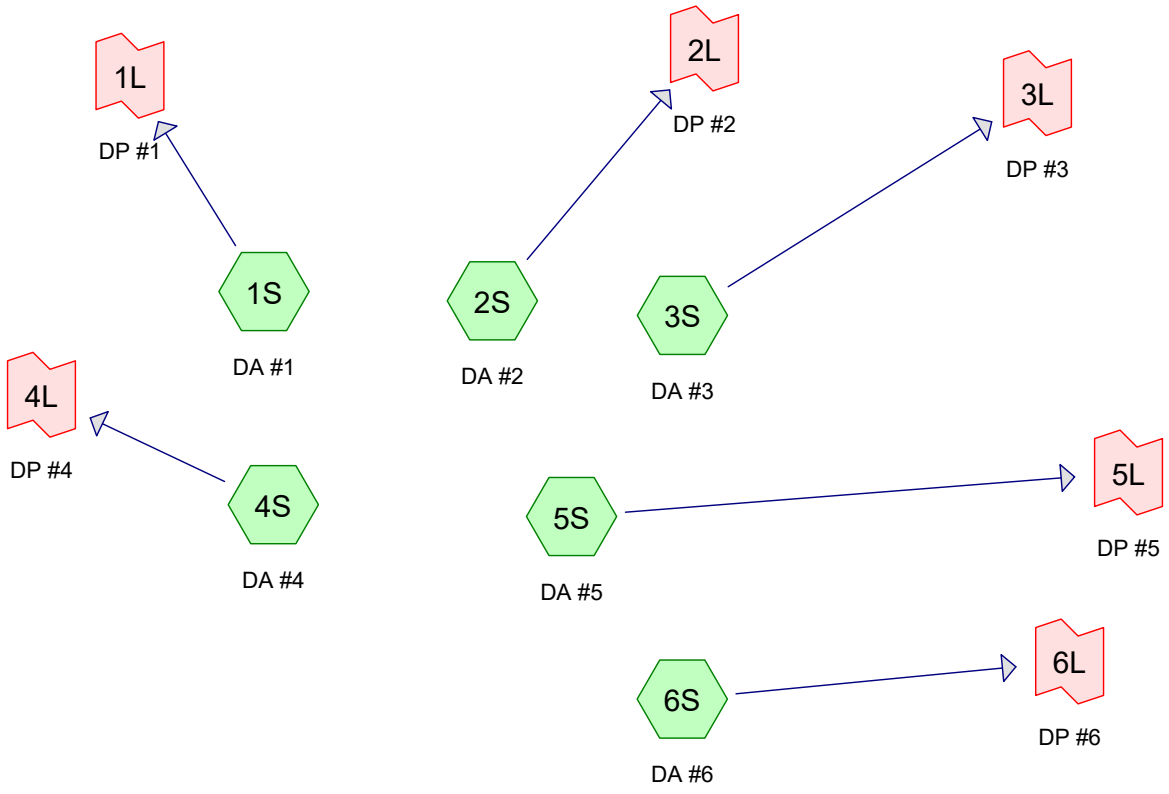
Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP #6



APPENDIX I – POST-DEVELOPMENT ANALYSIS

Green Lakes
Post-Development



Subcat Reach Pond Link

Routing Diagram for GREEN LAKES POST DEV HYDROCAD Rev 1
Prepared by Tetra Tech Inc, Printed 4/7/2020
HydroCAD® 10.00-24 s/n 04052 © 2018 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
23.400	74	Pasture/grassland/range, Good, HSG C (1S, 2S, 3S, 5S, 6S)
1.070	98	Paved parking, HSG C (4S, 5S, 6S)
9.460	85	Row crops, straight row, Good, HSG C (1S, 2S, 3S, 4S, 5S, 6S)
1.120	73	Woods, Fair, HSG C (1S, 3S)
3.500	76	Woods/grass comb., Fair, HSG C (1S, 4S, 5S)
38.550	**78**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
38.550	HSG C	1S, 2S, 3S, 4S, 5S, 6S
0.000	HSG D	
0.000	Other	
38.550		**TOTAL AREA**

GREEN LAKES POST DEV HYDROCAD Rev 1

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	23.400	0.000	0.000	23.400	Pasture/grassland/range, Good	1S, 2S, 3S, 5S, 6S
0.000	0.000	1.070	0.000	0.000	1.070	Paved parking	4S, 5S, 6S
0.000	0.000	9.460	0.000	0.000	9.460	Row crops, straight row, Good	1S, 2S, 3S, 4S, 5S, 6S
0.000	0.000	1.120	0.000	0.000	1.120	Woods, Fair	1S, 3S
0.000	0.000	3.500	0.000	0.000	3.500	Woods/grass comb., Fair	1S, 4S, 5S
0.000	**0.000**	**38.550**	**0.000**	**0.000**	**38.550**	**TOTAL AREA**	

Summary for Subcatchment 1S: DA #1

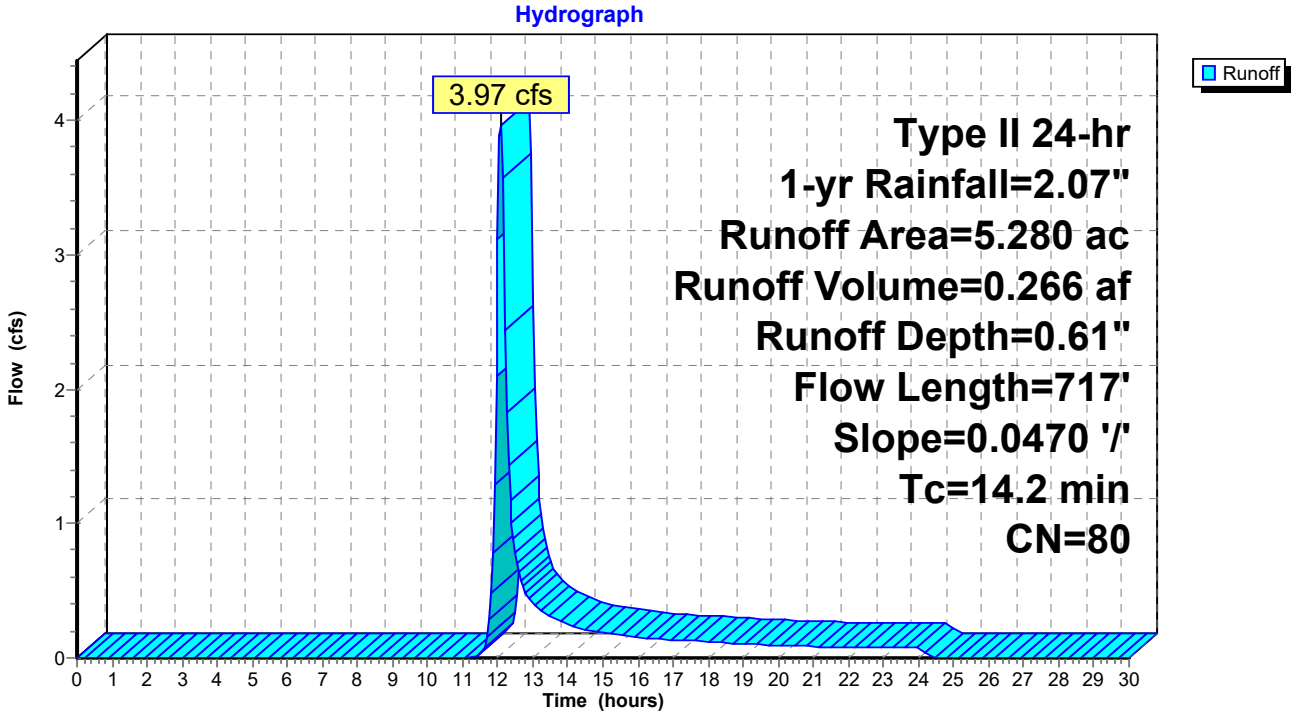
Runoff = 3.97 cfs @ 12.08 hrs, Volume= 0.266 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.440	76	Woods/grass comb., Fair, HSG C
3.130	85	Row crops, straight row, Good, HSG C
1.060	73	Woods, Fair, HSG C
0.650	74	Pasture/grassland/range, Good, HSG C
5.280	80	Weighted Average
5.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0470	0.19		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.3	617	0.0470	1.95		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
14.2	717	Total			

Subcatchment 1S: DA #1



Summary for Subcatchment 2S: DA #2

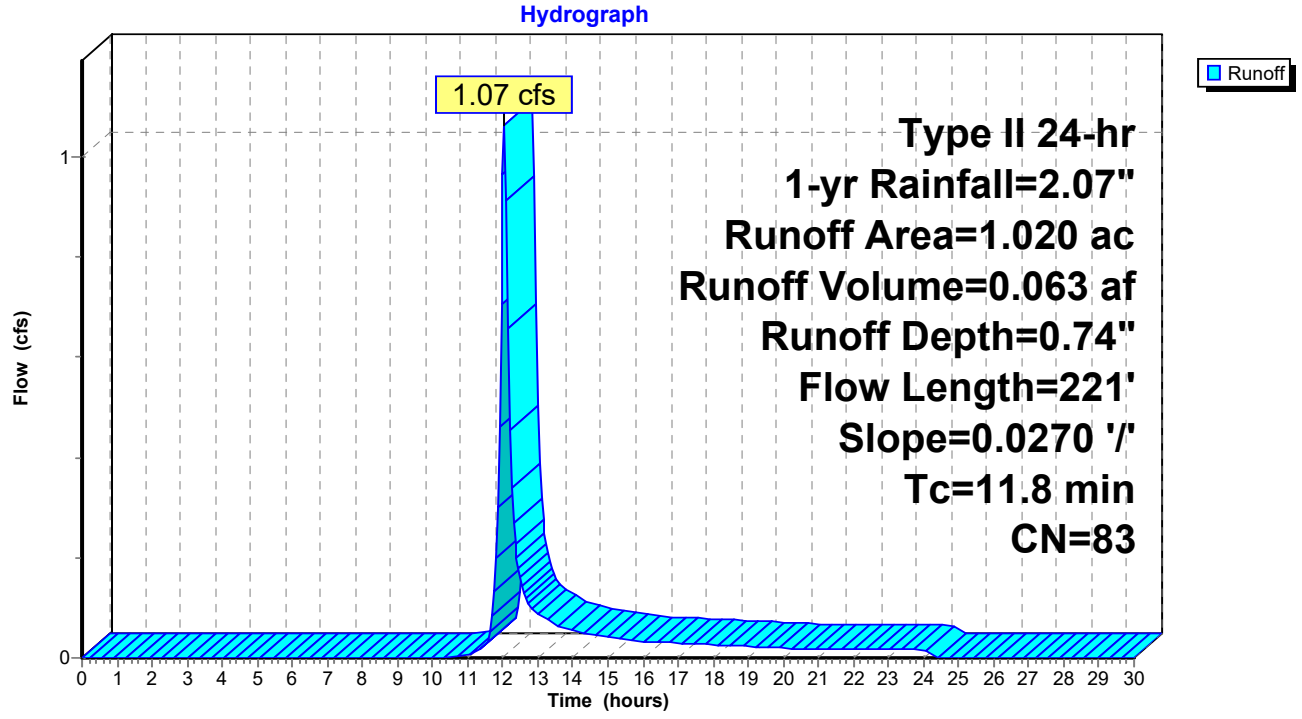
Runoff = 1.07 cfs @ 12.04 hrs, Volume= 0.063 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.840	85	Row crops, straight row, Good, HSG C
0.180	74	Pasture/grassland/range, Good, HSG C
1.020	83	Weighted Average
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0270	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.40"
1.8	121	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	221	Total			

Subcatchment 2S: DA #2



Summary for Subcatchment 3S: DA #3

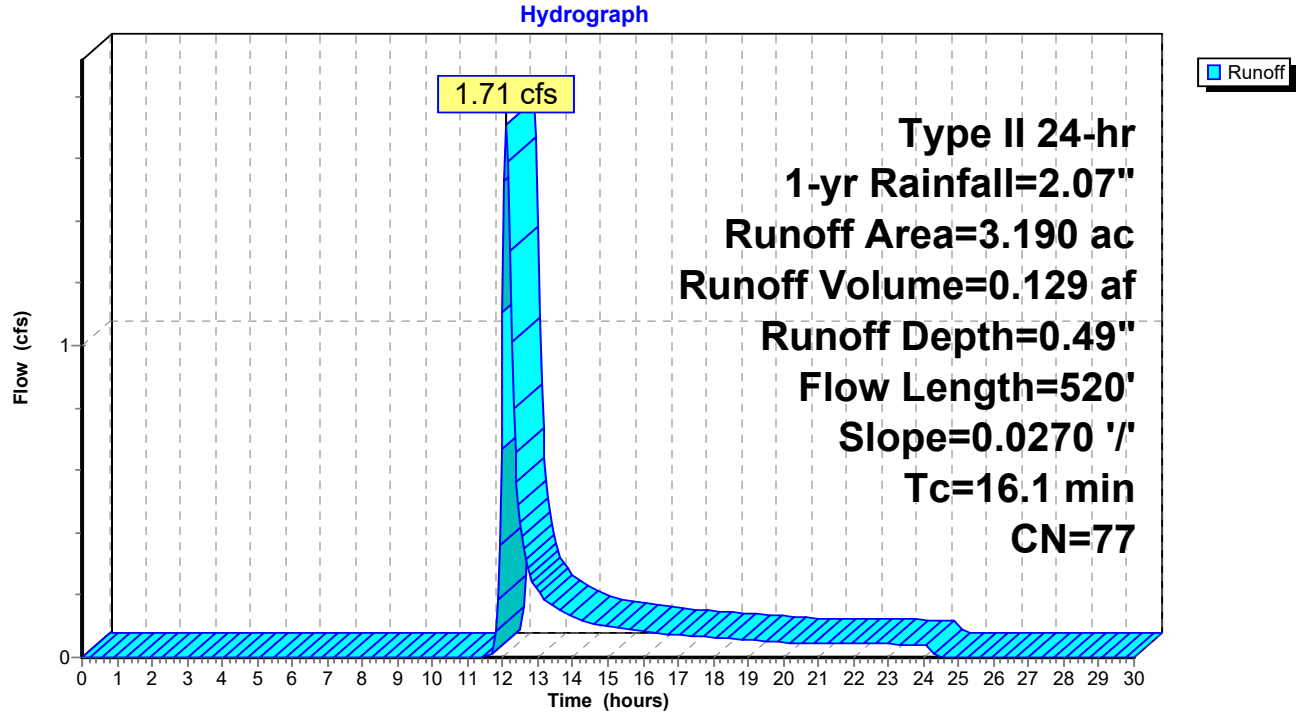
Runoff = 1.71 cfs @ 12.11 hrs, Volume= 0.129 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.760	85	Row crops, straight row, Good, HSG C
0.060	73	Woods, Fair, HSG C
2.370	74	Pasture/grassland/range, Good, HSG C
3.190	77	Weighted Average
3.190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0270	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.40"
6.1	420	0.0270	1.15		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Short Grass Pasture Kv= 7.0 fps
16.1	520	Total			

Subcatchment 3S: DA #3



Summary for Subcatchment 4S: DA #4

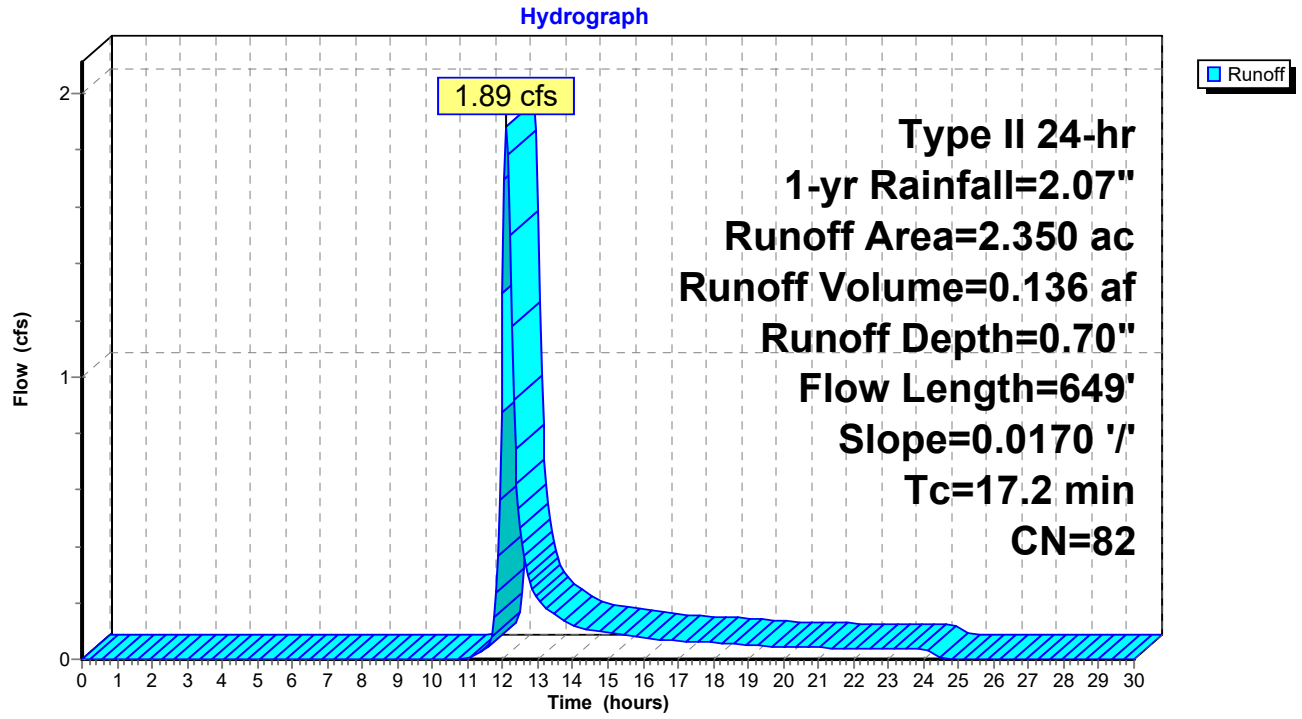
Runoff = 1.89 cfs @ 12.11 hrs, Volume= 0.136 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.800	76	Woods/grass comb., Fair, HSG C
1.450	85	Row crops, straight row, Good, HSG C
0.100	98	Paved parking, HSG C
2.350	82	Weighted Average
2.250		95.74% Pervious Area
0.100		4.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0170	0.12		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
2.8	200	0.0170	1.17		**Shallow Concentrated Flow, Shallow** Cultivated Straight Rows Kv= 9.0 fps
1.1	349	0.0170	5.54	49.82	**Channel Flow, Channel - Roadside** Area= 9.0 sf Perim= 9.0' r= 1.00' n= 0.035 Earth, dense weeds
17.2	649	Total			

Subcatchment 4S: DA #4



Summary for Subcatchment 5S: DA #5

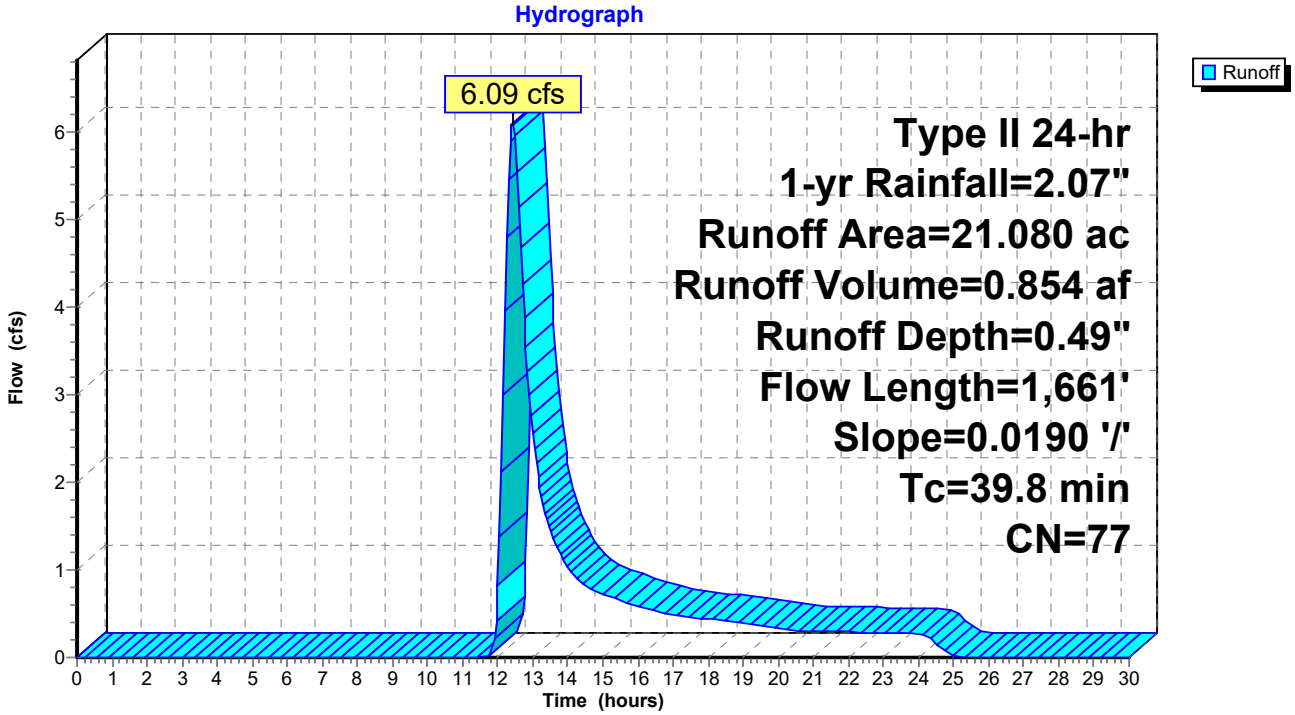
Runoff = 6.09 cfs @ 12.42 hrs, Volume= 0.854 af, Depth= 0.49"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
2.260	76	Woods/grass comb., Fair, HSG C
2.960	85	Row crops, straight row, Good, HSG C
15.020	74	Pasture/grassland/range, Good, HSG C
0.840	98	Paved parking, HSG C
21.080	77	Weighted Average
20.240		96.02% Pervious Area
0.840		3.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0190	0.13		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
27.0	1,561	0.0190	0.96		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Short Grass Pasture Kv= 7.0 fps
39.8	1,661	Total			

Subcatchment 5S: DA #5



Summary for Subcatchment 6S: DA #6

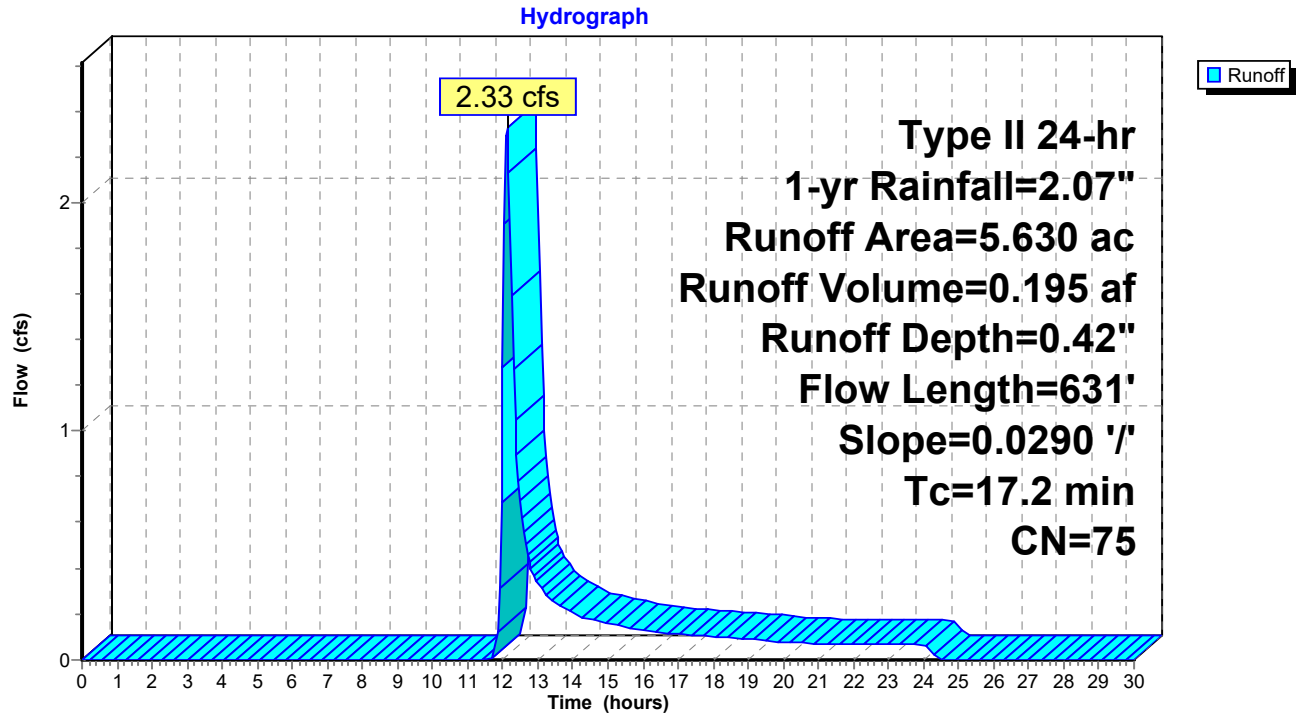
Runoff = 2.33 cfs @ 12.12 hrs, Volume= 0.195 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.07"

Area (ac)	CN	Description
0.320	85	Row crops, straight row, Good, HSG C
5.180	74	Pasture/grassland/range, Good, HSG C
0.130	98	Paved parking, HSG C
5.630	75	Weighted Average
5.500		97.69% Pervious Area
0.130		2.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0290	0.17		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 2.40"
7.4	531	0.0290	1.19		**Shallow Concentrated Flow, Shallow - Crops** Short Grass Pasture Kv= 7.0 fps
17.2	631	Total			

Subcatchment 6S: DA #6

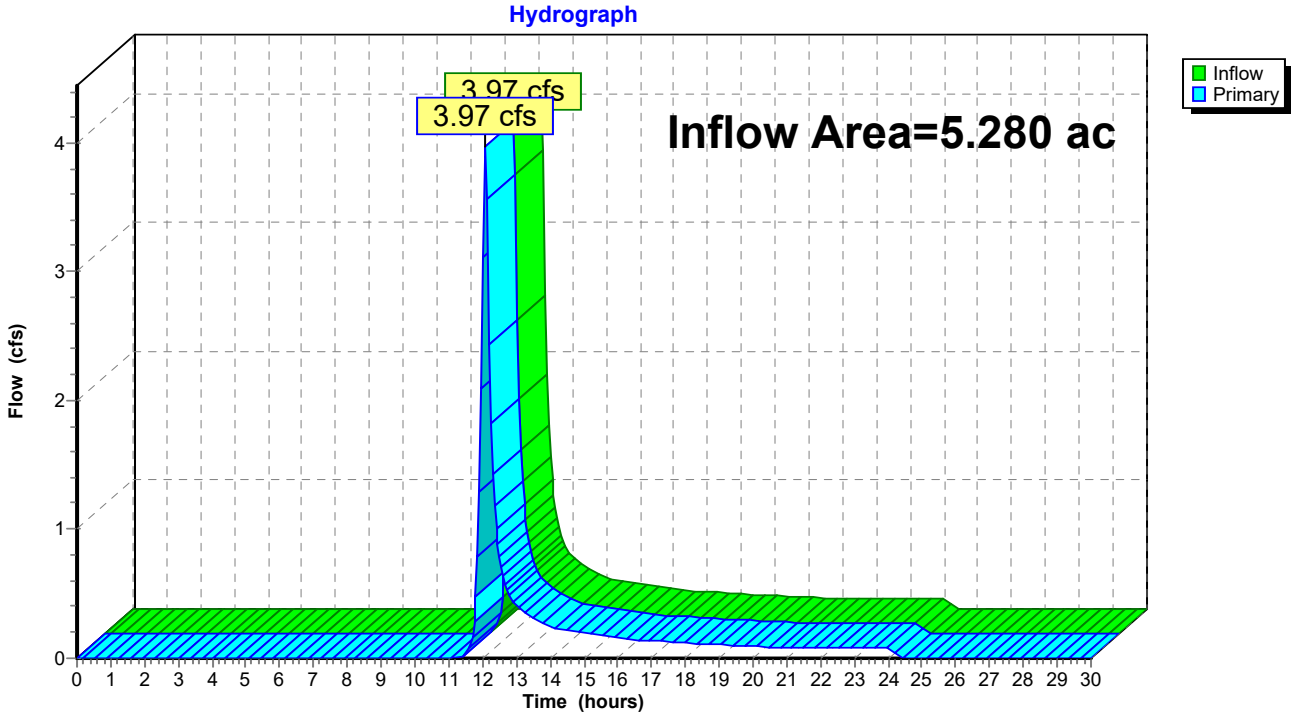


Summary for Link 1L: DP #1

Inflow Area = 5.280 ac, 0.00% Impervious, Inflow Depth = 0.61" for 1-yr event
Inflow = 3.97 cfs @ 12.08 hrs, Volume= 0.266 af
Primary = 3.97 cfs @ 12.08 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP #1

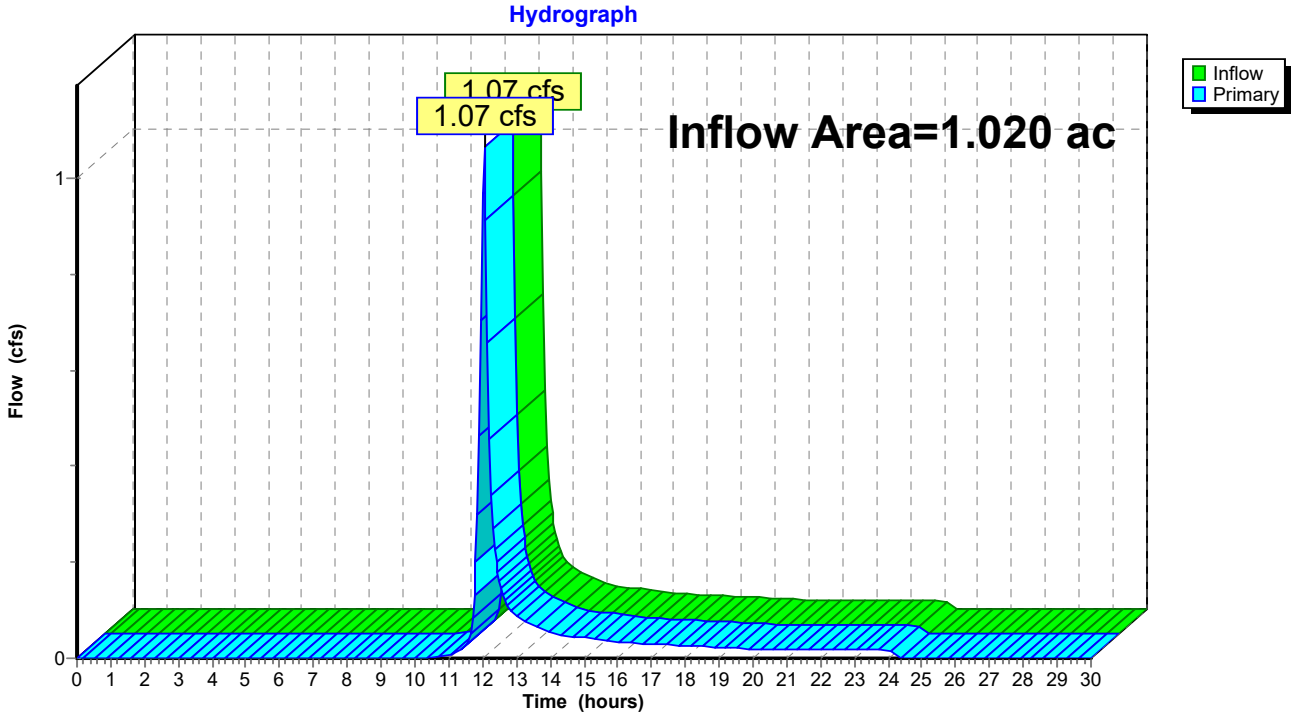


Summary for Link 2L: DP #2

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 0.74" for 1-yr event
Inflow = 1.07 cfs @ 12.04 hrs, Volume= 0.063 af
Primary = 1.07 cfs @ 12.04 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP #2

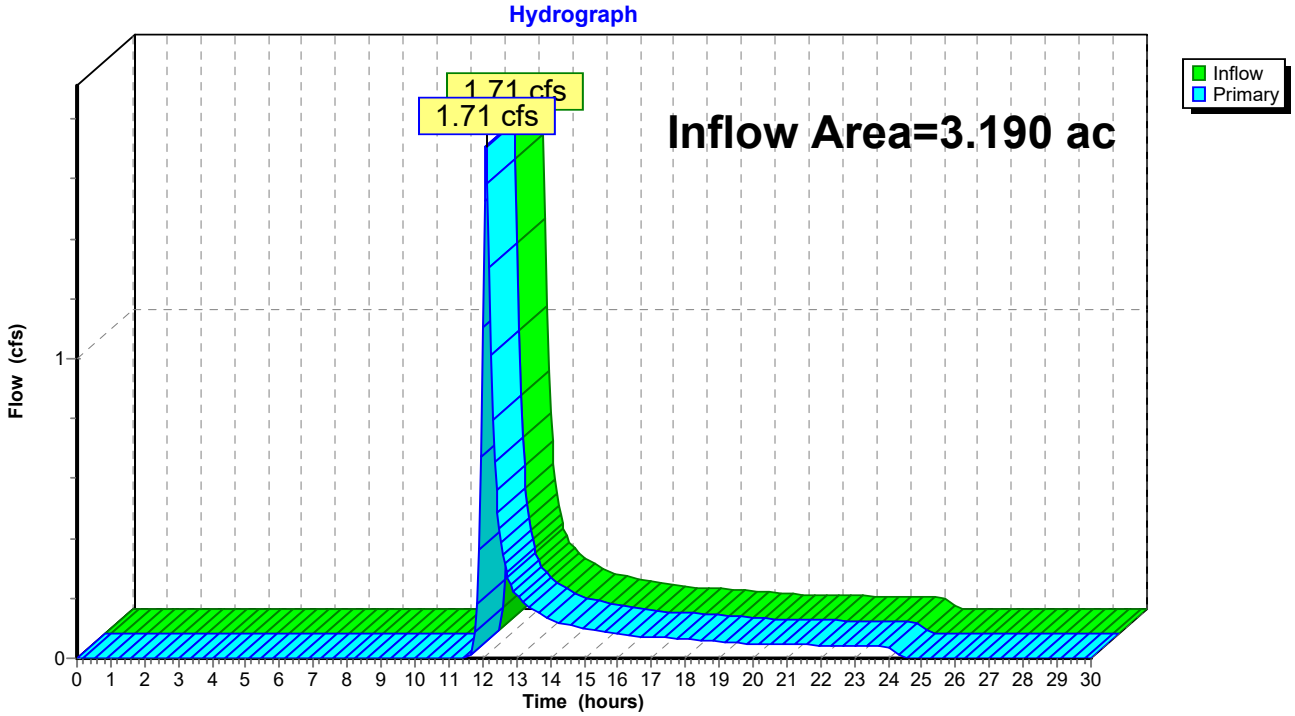


Summary for Link 3L: DP #3

Inflow Area = 3.190 ac, 0.00% Impervious, Inflow Depth = 0.49" for 1-yr event
Inflow = 1.71 cfs @ 12.11 hrs, Volume= 0.129 af
Primary = 1.71 cfs @ 12.11 hrs, Volume= 0.129 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP #3

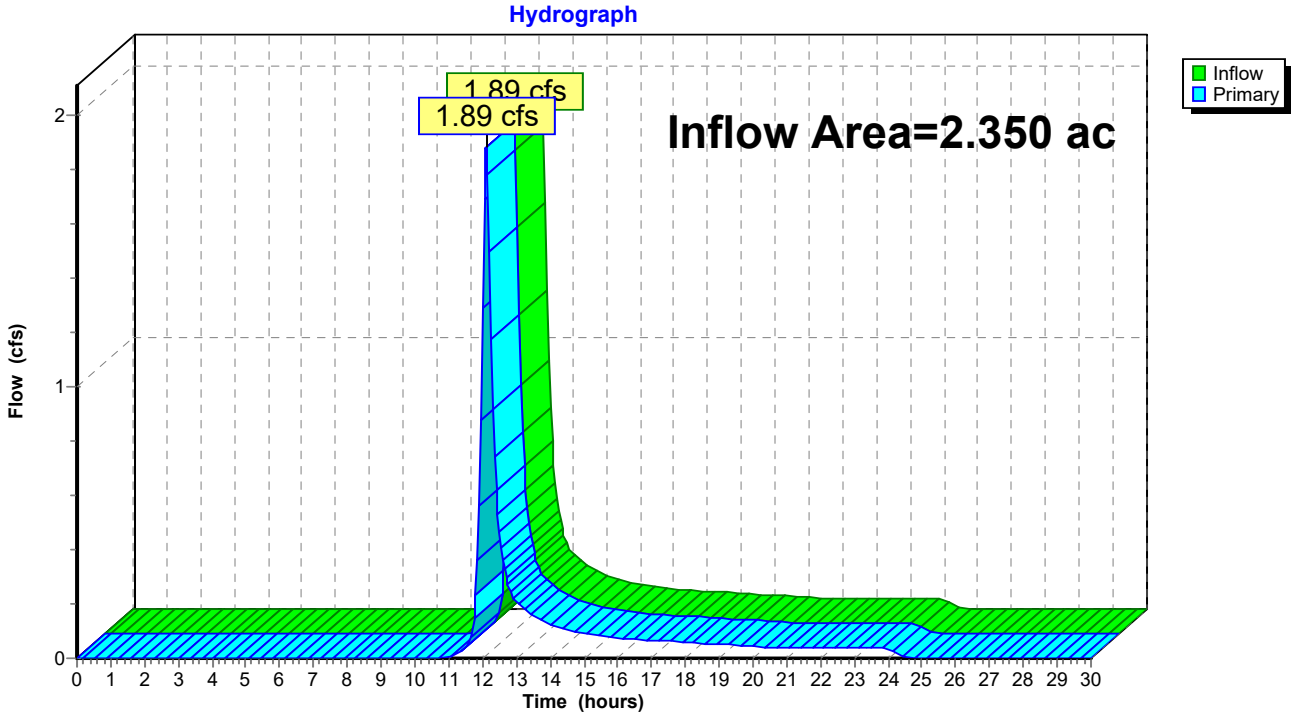


Summary for Link 4L: DP #4

Inflow Area = 2.350 ac, 4.26% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 1.89 cfs @ 12.11 hrs, Volume= 0.136 af
Primary = 1.89 cfs @ 12.11 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP #4

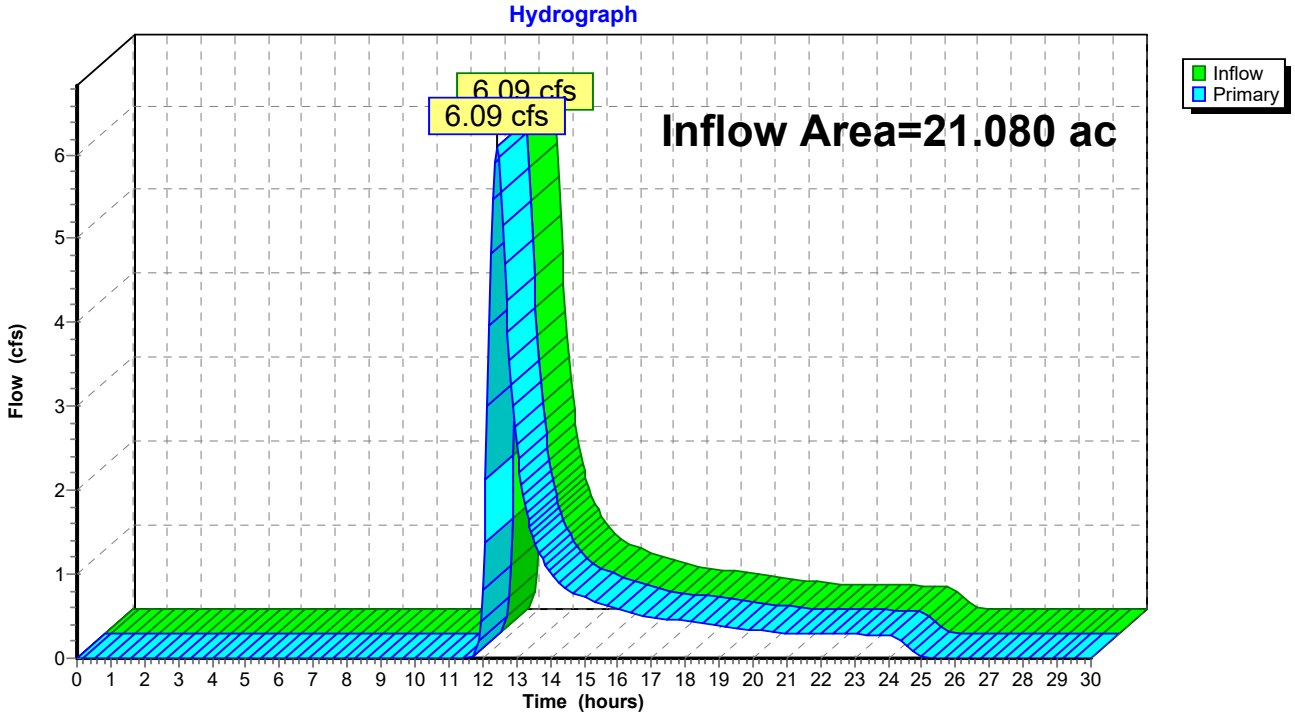


Summary for Link 5L: DP #5

Inflow Area = 21.080 ac, 3.98% Impervious, Inflow Depth = 0.49" for 1-yr event
Inflow = 6.09 cfs @ 12.42 hrs, Volume= 0.854 af
Primary = 6.09 cfs @ 12.42 hrs, Volume= 0.854 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP #5

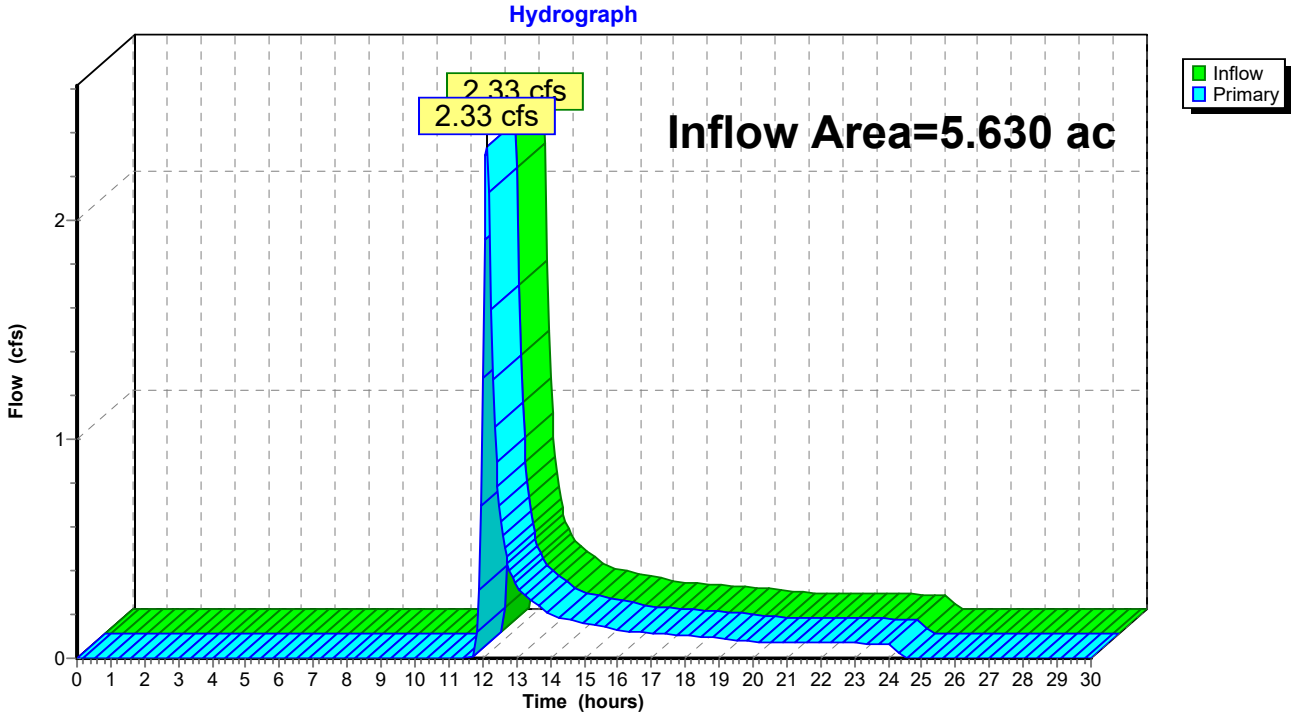


Summary for Link 6L: DP #6

Inflow Area = 5.630 ac, 2.31% Impervious, Inflow Depth = 0.42" for 1-yr event
Inflow = 2.33 cfs @ 12.12 hrs, Volume= 0.195 af
Primary = 2.33 cfs @ 12.12 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP #6



Summary for Subcatchment 1S: DA #1

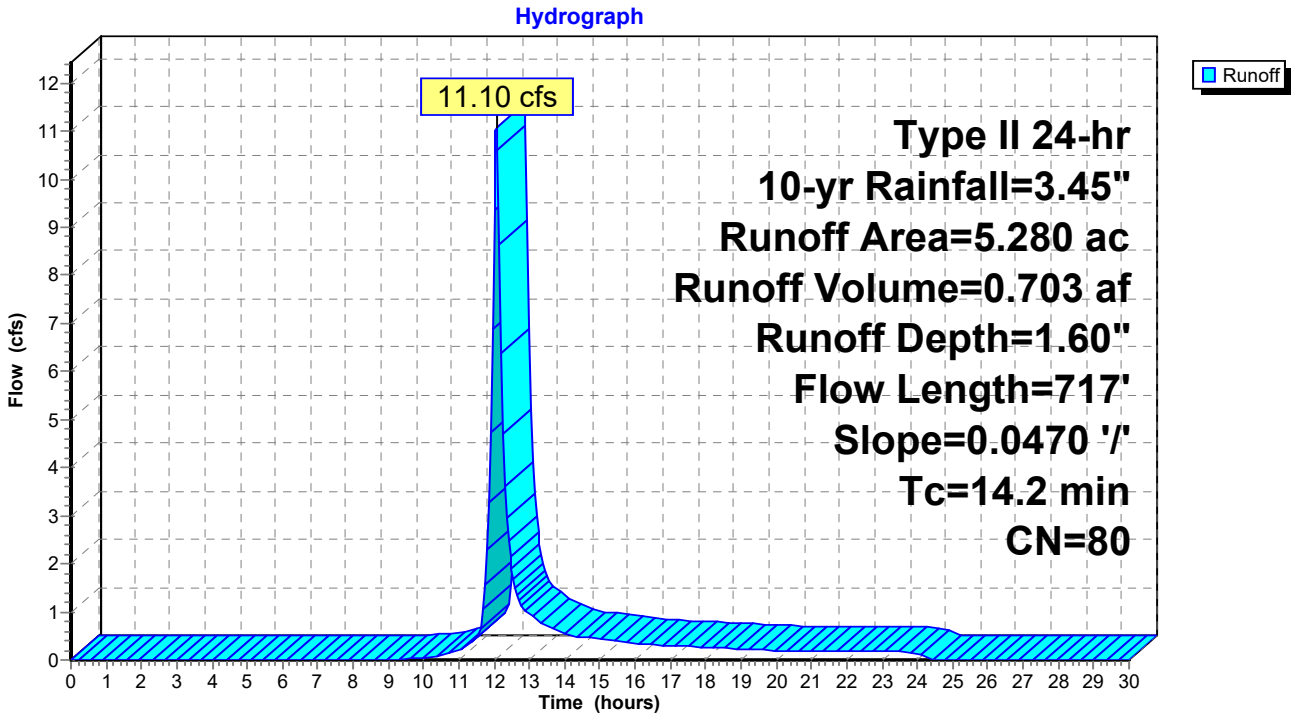
Runoff = 11.10 cfs @ 12.07 hrs, Volume= 0.703 af, Depth= 1.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.440	76	Woods/grass comb., Fair, HSG C
3.130	85	Row crops, straight row, Good, HSG C
1.060	73	Woods, Fair, HSG C
0.650	74	Pasture/grassland/range, Good, HSG C
5.280	80	Weighted Average
5.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0470	0.19		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.3	617	0.0470	1.95		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
14.2	717	Total			

Subcatchment 1S: DA #1



Summary for Subcatchment 2S: DA #2

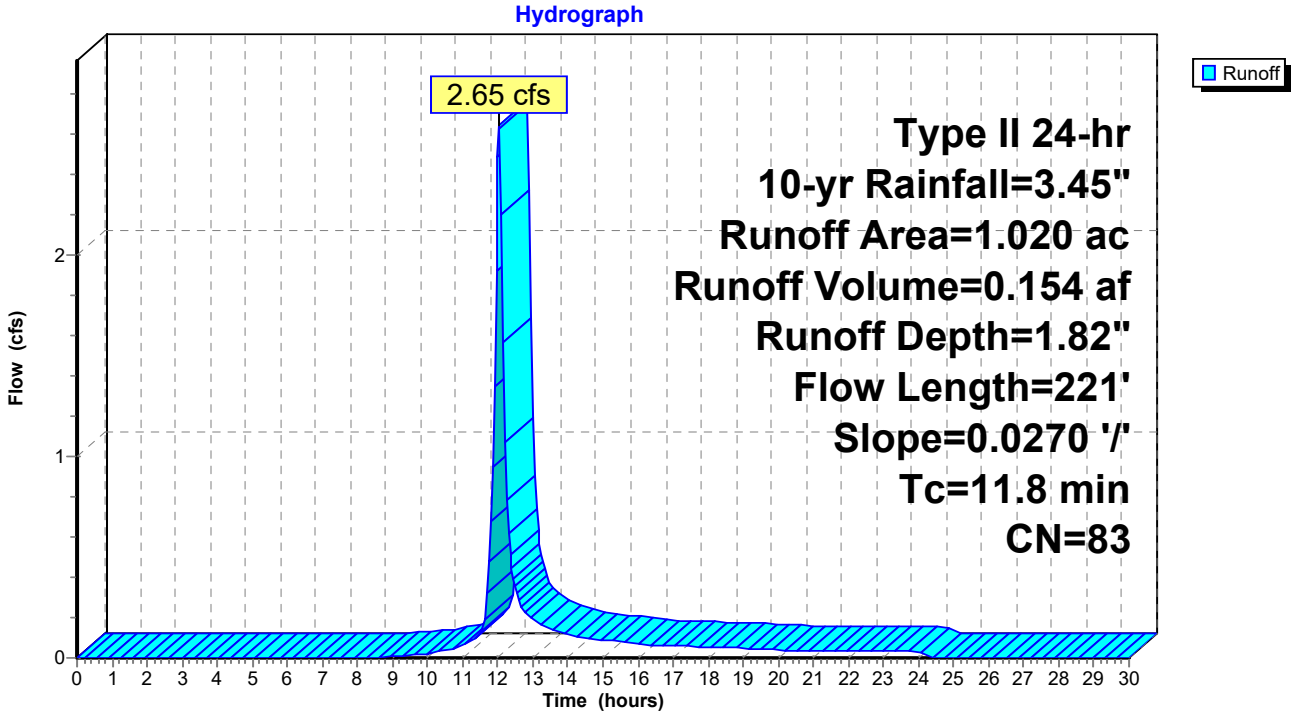
Runoff = 2.65 cfs @ 12.04 hrs, Volume= 0.154 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.840	85	Row crops, straight row, Good, HSG C
0.180	74	Pasture/grassland/range, Good, HSG C
1.020	83	Weighted Average
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0270	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.40"
1.8	121	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	221	Total			

Subcatchment 2S: DA #2



Summary for Subcatchment 3S: DA #3

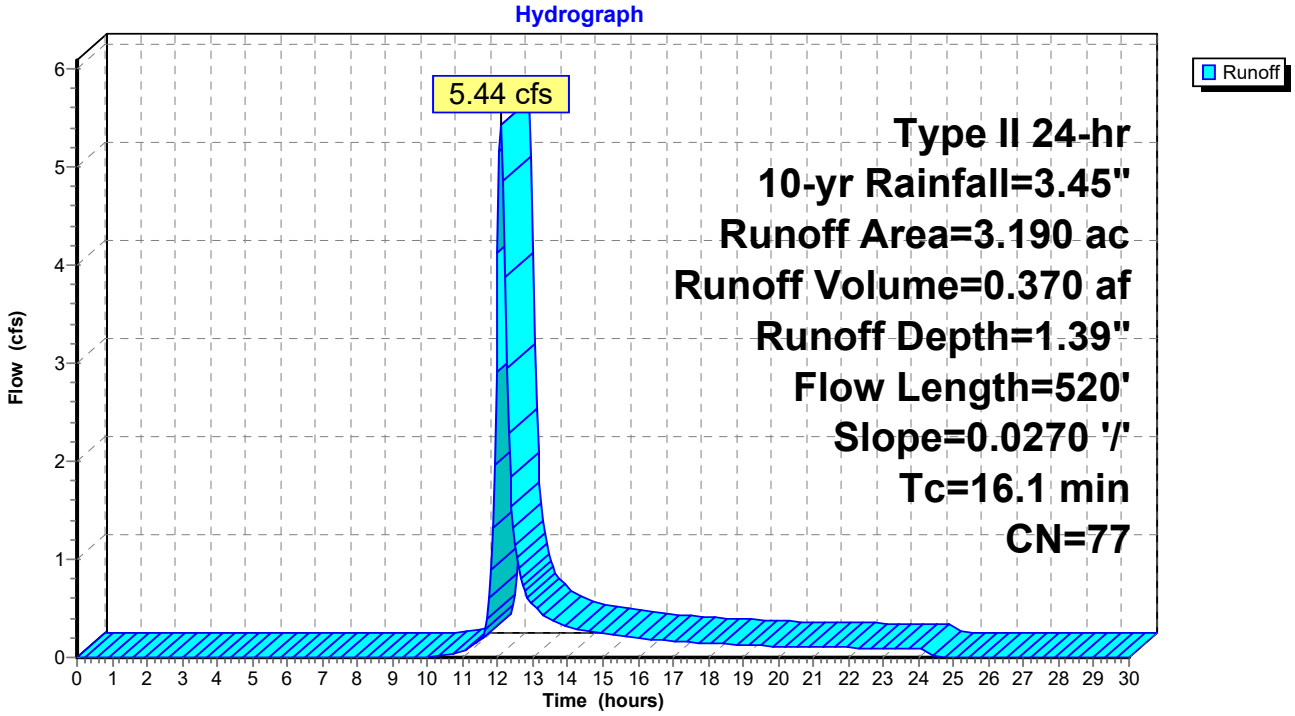
Runoff = 5.44 cfs @ 12.09 hrs, Volume= 0.370 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.760	85	Row crops, straight row, Good, HSG C
0.060	73	Woods, Fair, HSG C
2.370	74	Pasture/grassland/range, Good, HSG C
3.190	77	Weighted Average
3.190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0270	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.40"
6.1	420	0.0270	1.15		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Short Grass Pasture Kv= 7.0 fps
16.1	520	Total			

Subcatchment 3S: DA #3



Summary for Subcatchment 4S: DA #4

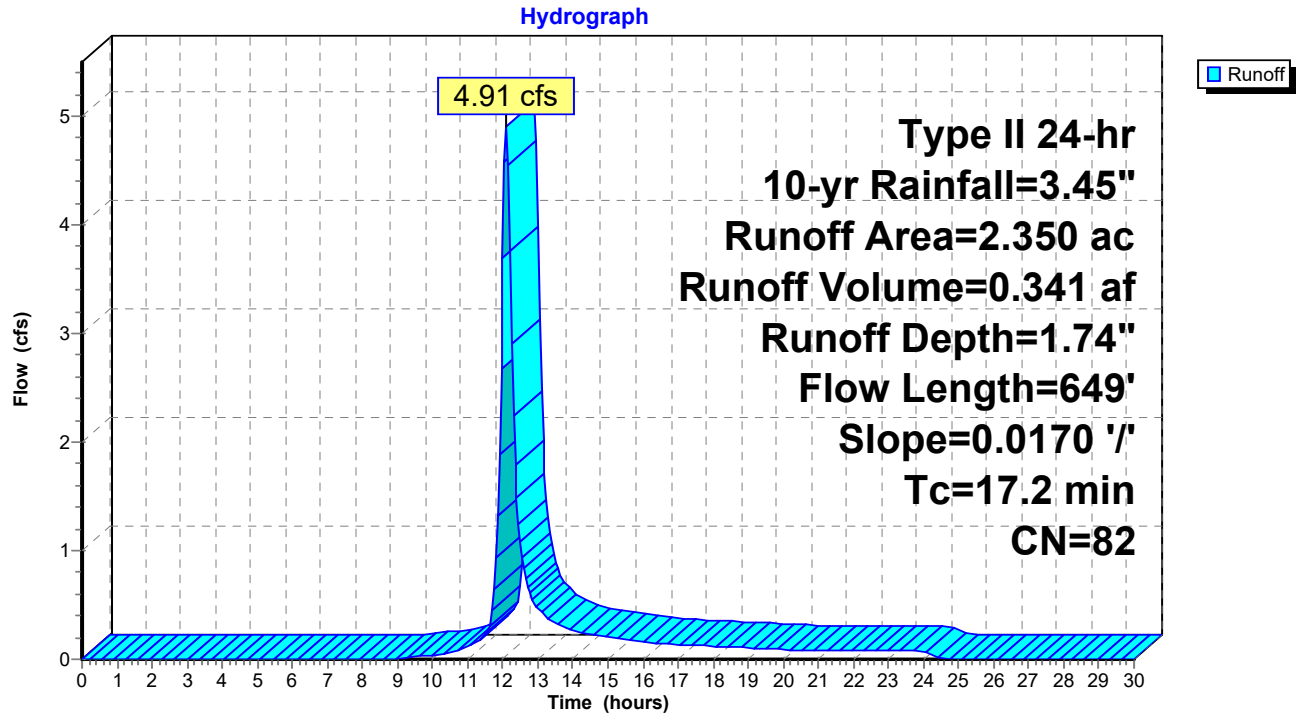
Runoff = 4.91 cfs @ 12.10 hrs, Volume= 0.341 af, Depth= 1.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.800	76	Woods/grass comb., Fair, HSG C
1.450	85	Row crops, straight row, Good, HSG C
0.100	98	Paved parking, HSG C
2.350	82	Weighted Average
2.250		95.74% Pervious Area
0.100		4.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0170	0.12		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
2.8	200	0.0170	1.17		**Shallow Concentrated Flow, Shallow** Cultivated Straight Rows Kv= 9.0 fps
1.1	349	0.0170	5.54	49.82	**Channel Flow, Channel - Roadside** Area= 9.0 sf Perim= 9.0' r= 1.00' n= 0.035 Earth, dense weeds
17.2	649	Total			

Subcatchment 4S: DA #4



Summary for Subcatchment 5S: DA #5

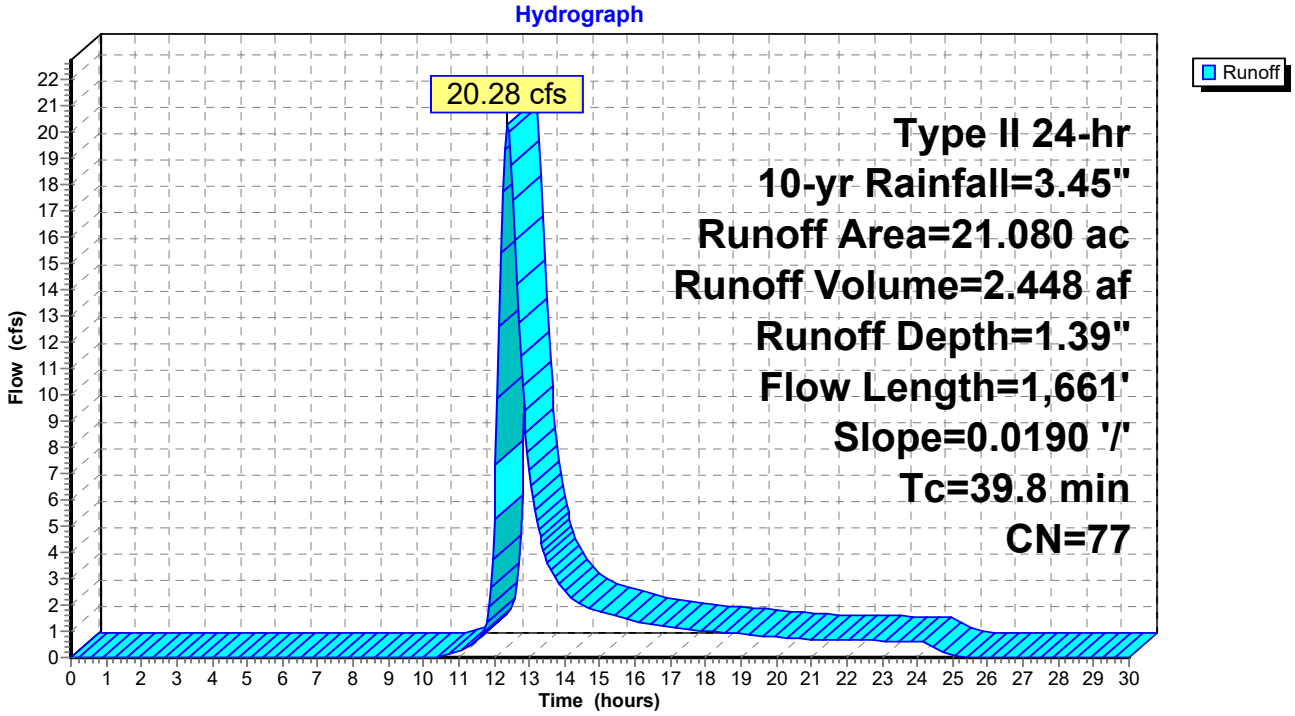
Runoff = 20.28 cfs @ 12.38 hrs, Volume= 2.448 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
2.260	76	Woods/grass comb., Fair, HSG C
2.960	85	Row crops, straight row, Good, HSG C
15.020	74	Pasture/grassland/range, Good, HSG C
0.840	98	Paved parking, HSG C
21.080	77	Weighted Average
20.240		96.02% Pervious Area
0.840		3.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0190	0.13		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
27.0	1,561	0.0190	0.96		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Short Grass Pasture Kv= 7.0 fps
39.8	1,661	Total			

Subcatchment 5S: DA #5



Summary for Subcatchment 6S: DA #6

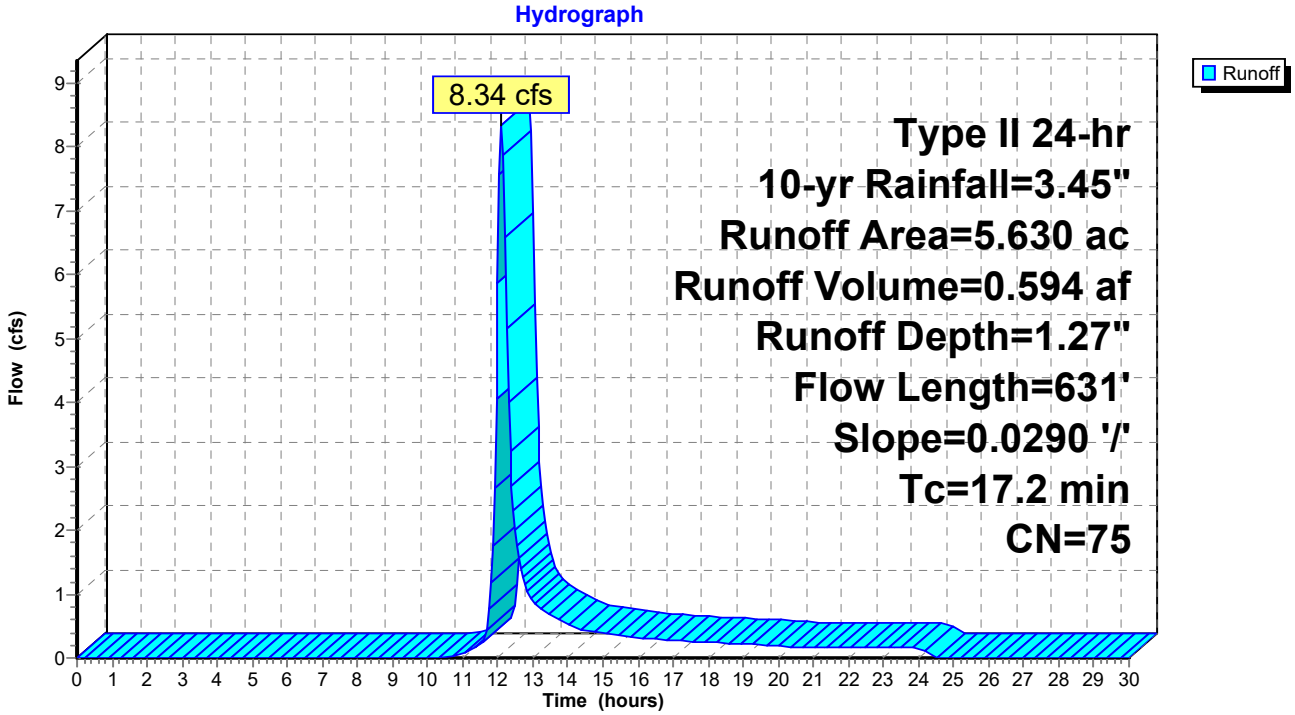
Runoff = 8.34 cfs @ 12.11 hrs, Volume= 0.594 af, Depth= 1.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.45"

Area (ac)	CN	Description
0.320	85	Row crops, straight row, Good, HSG C
5.180	74	Pasture/grassland/range, Good, HSG C
0.130	98	Paved parking, HSG C
5.630	75	Weighted Average
5.500		97.69% Pervious Area
0.130		2.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0290	0.17		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 2.40"
7.4	531	0.0290	1.19		**Shallow Concentrated Flow, Shallow - Crops** Short Grass Pasture Kv= 7.0 fps
17.2	631	Total			

Subcatchment 6S: DA #6

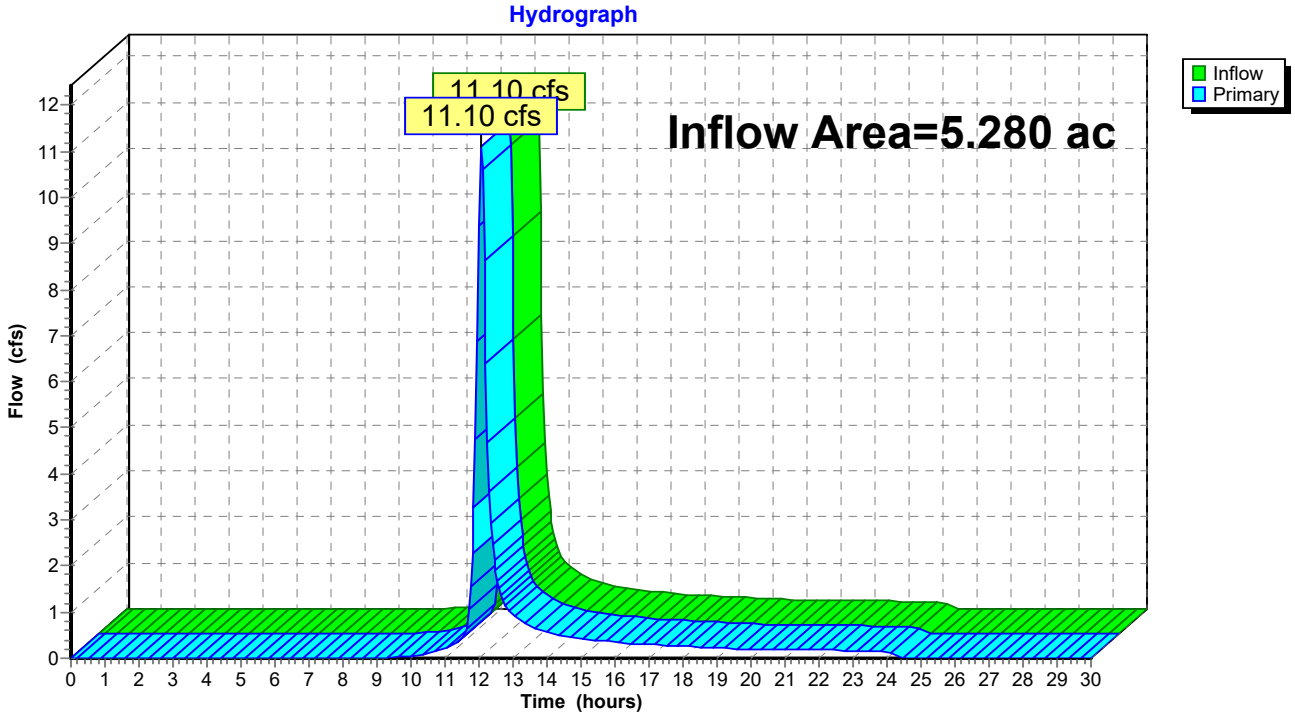


Summary for Link 1L: DP #1

Inflow Area = 5.280 ac, 0.00% Impervious, Inflow Depth = 1.60" for 10-yr event
Inflow = 11.10 cfs @ 12.07 hrs, Volume= 0.703 af
Primary = 11.10 cfs @ 12.07 hrs, Volume= 0.703 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP #1

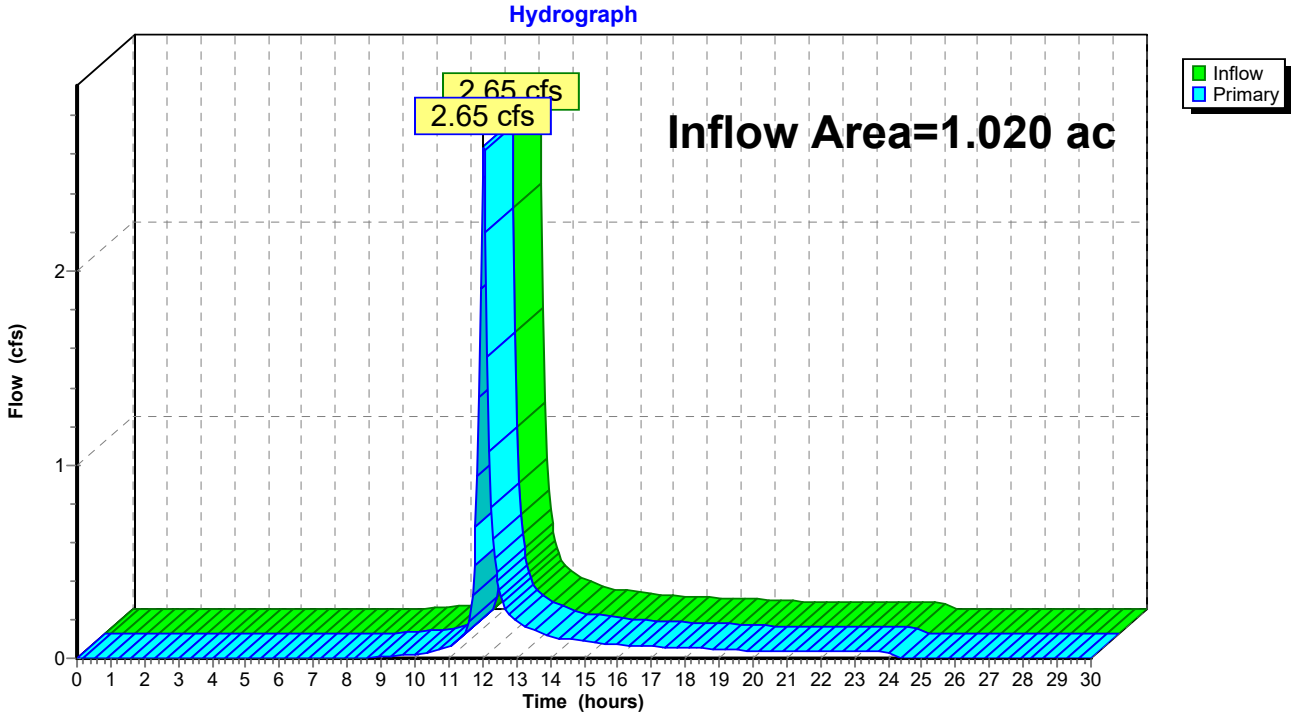


Summary for Link 2L: DP #2

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 1.82" for 10-yr event
Inflow = 2.65 cfs @ 12.04 hrs, Volume= 0.154 af
Primary = 2.65 cfs @ 12.04 hrs, Volume= 0.154 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP #2

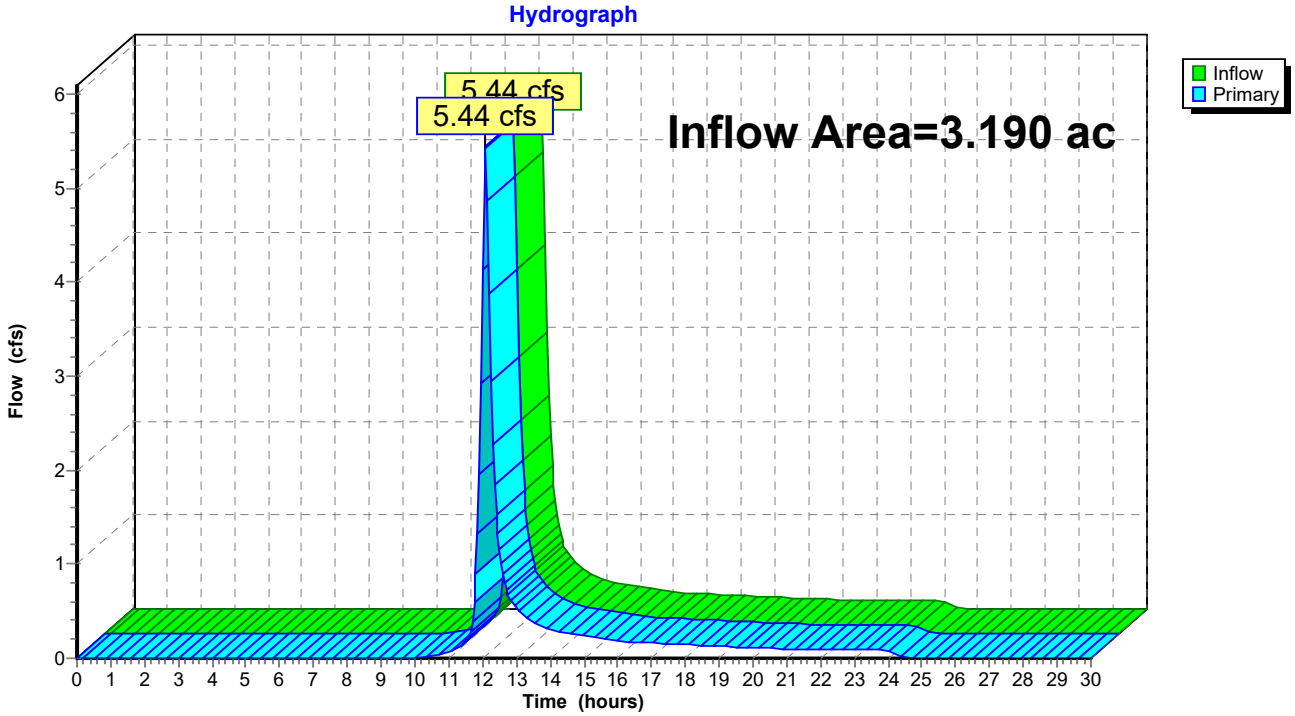


Summary for Link 3L: DP #3

Inflow Area = 3.190 ac, 0.00% Impervious, Inflow Depth = 1.39" for 10-yr event
Inflow = 5.44 cfs @ 12.09 hrs, Volume= 0.370 af
Primary = 5.44 cfs @ 12.09 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP #3

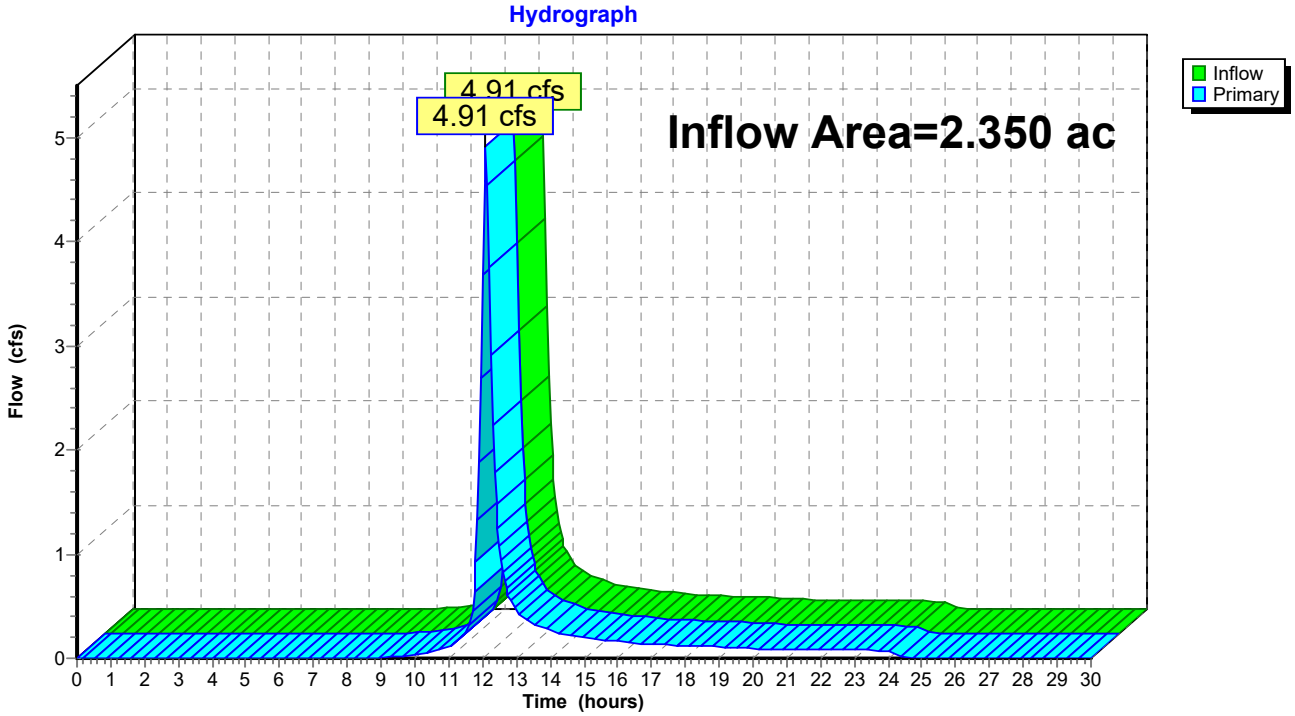


Summary for Link 4L: DP #4

Inflow Area = 2.350 ac, 4.26% Impervious, Inflow Depth = 1.74" for 10-yr event
Inflow = 4.91 cfs @ 12.10 hrs, Volume= 0.341 af
Primary = 4.91 cfs @ 12.10 hrs, Volume= 0.341 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP #4

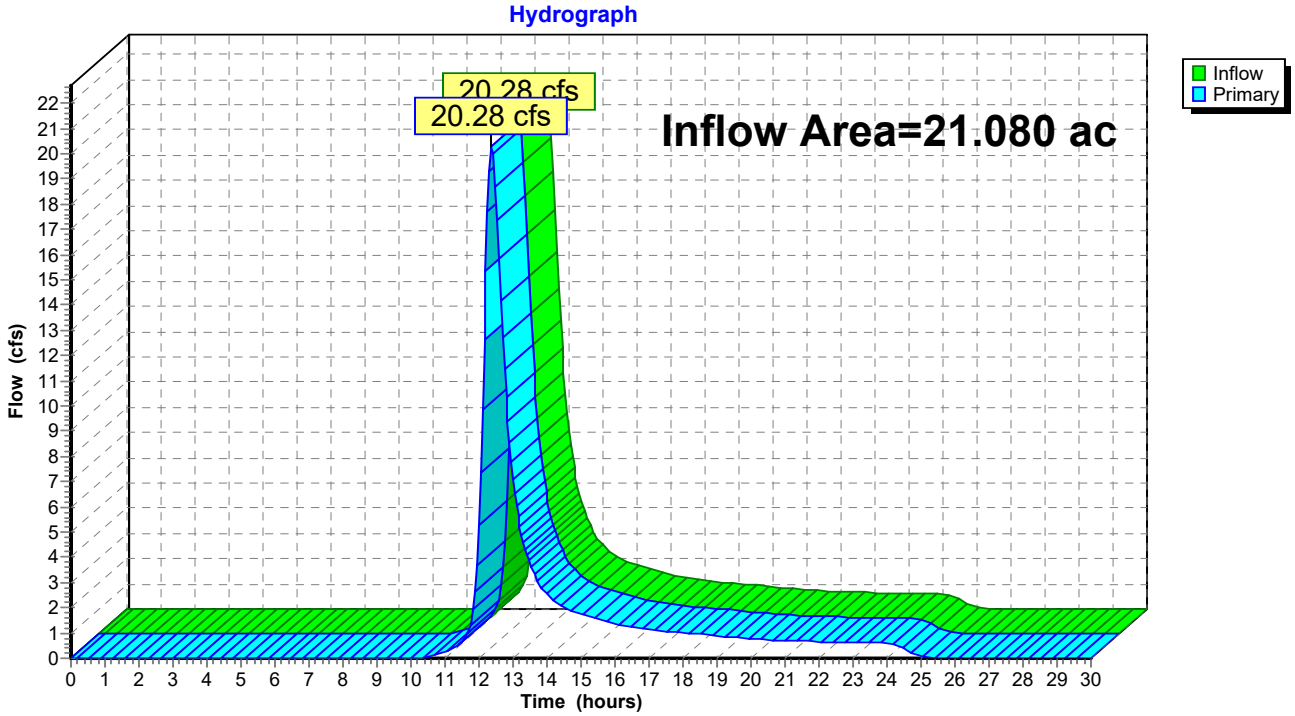


Summary for Link 5L: DP #5

Inflow Area = 21.080 ac, 3.98% Impervious, Inflow Depth = 1.39" for 10-yr event
Inflow = 20.28 cfs @ 12.38 hrs, Volume= 2.448 af
Primary = 20.28 cfs @ 12.38 hrs, Volume= 2.448 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP #5

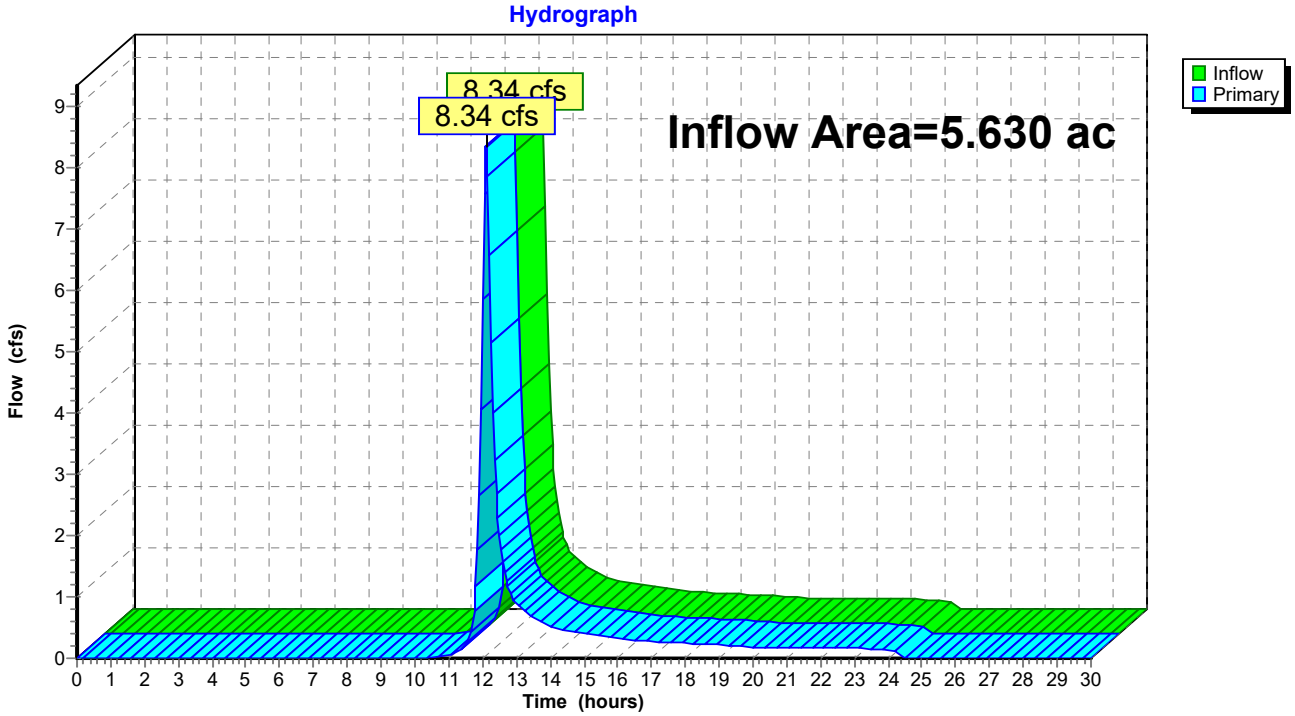


Summary for Link 6L: DP #6

Inflow Area = 5.630 ac, 2.31% Impervious, Inflow Depth = 1.27" for 10-yr event
Inflow = 8.34 cfs @ 12.11 hrs, Volume= 0.594 af
Primary = 8.34 cfs @ 12.11 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP #6



Summary for Subcatchment 1S: DA #1

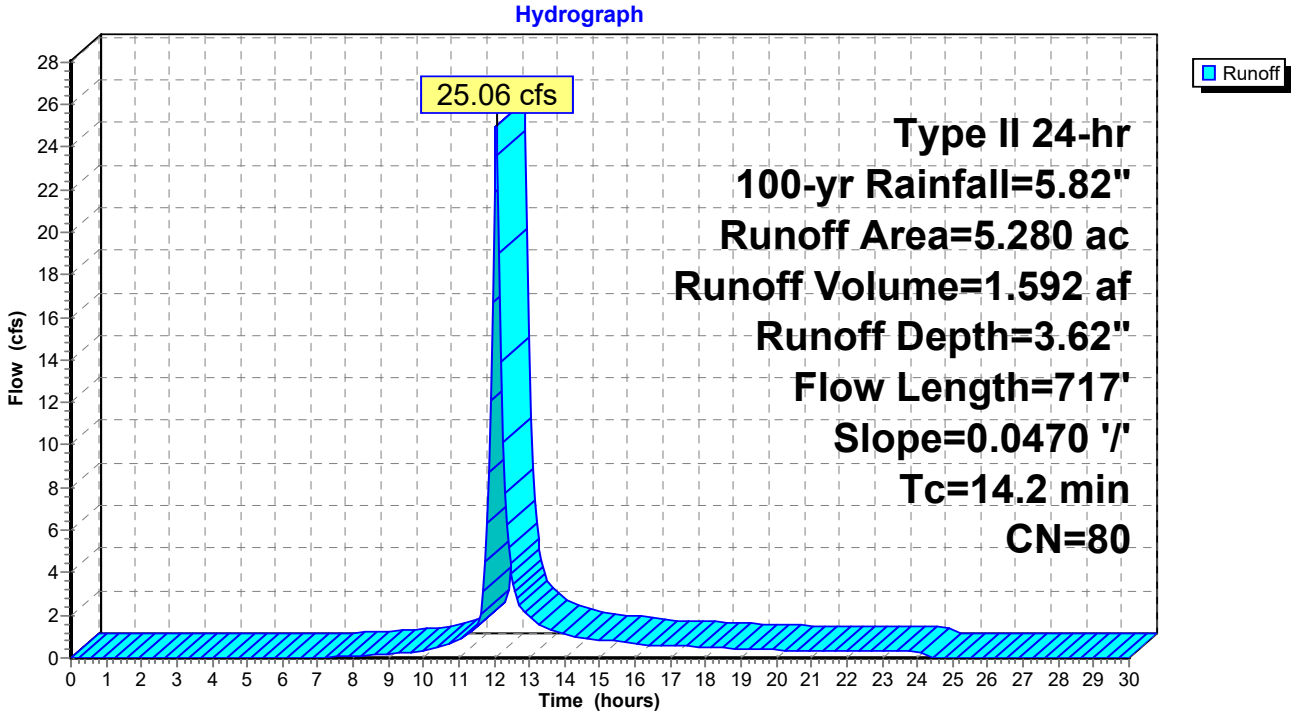
Runoff = 25.06 cfs @ 12.06 hrs, Volume= 1.592 af, Depth= 3.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.440	76	Woods/grass comb., Fair, HSG C
3.130	85	Row crops, straight row, Good, HSG C
1.060	73	Woods, Fair, HSG C
0.650	74	Pasture/grassland/range, Good, HSG C
5.280	80	Weighted Average
5.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0470	0.19		**Sheet Flow, Sheet Flow - Crops** Cultivated: Residue>20% n= 0.170 P2= 2.40"
5.3	617	0.0470	1.95		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Cultivated Straight Rows Kv= 9.0 fps
14.2	717	Total			

Subcatchment 1S: DA #1



Summary for Subcatchment 2S: DA #2

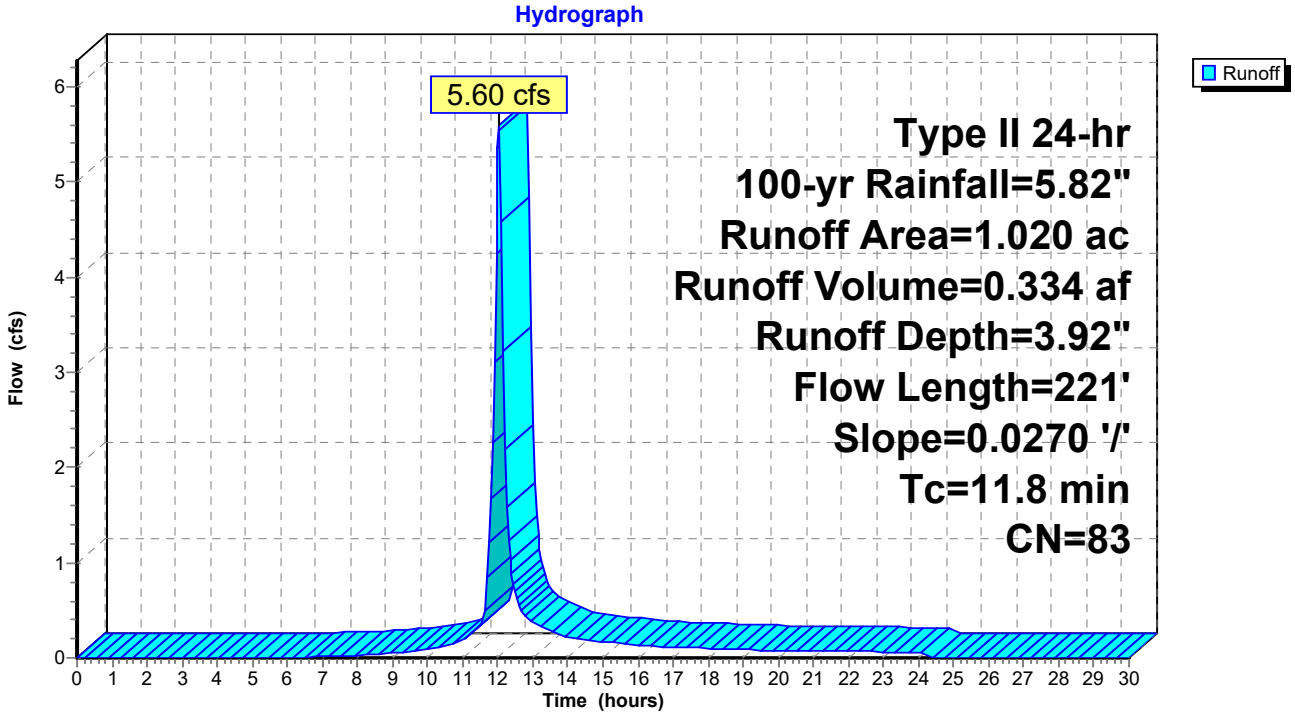
Runoff = 5.60 cfs @ 12.03 hrs, Volume= 0.334 af, Depth= 3.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.840	85	Row crops, straight row, Good, HSG C
0.180	74	Pasture/grassland/range, Good, HSG C
1.020	83	Weighted Average
1.020		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0270	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.40"
1.8	121	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.8	221	Total			

Subcatchment 2S: DA #2



Summary for Subcatchment 3S: DA #3

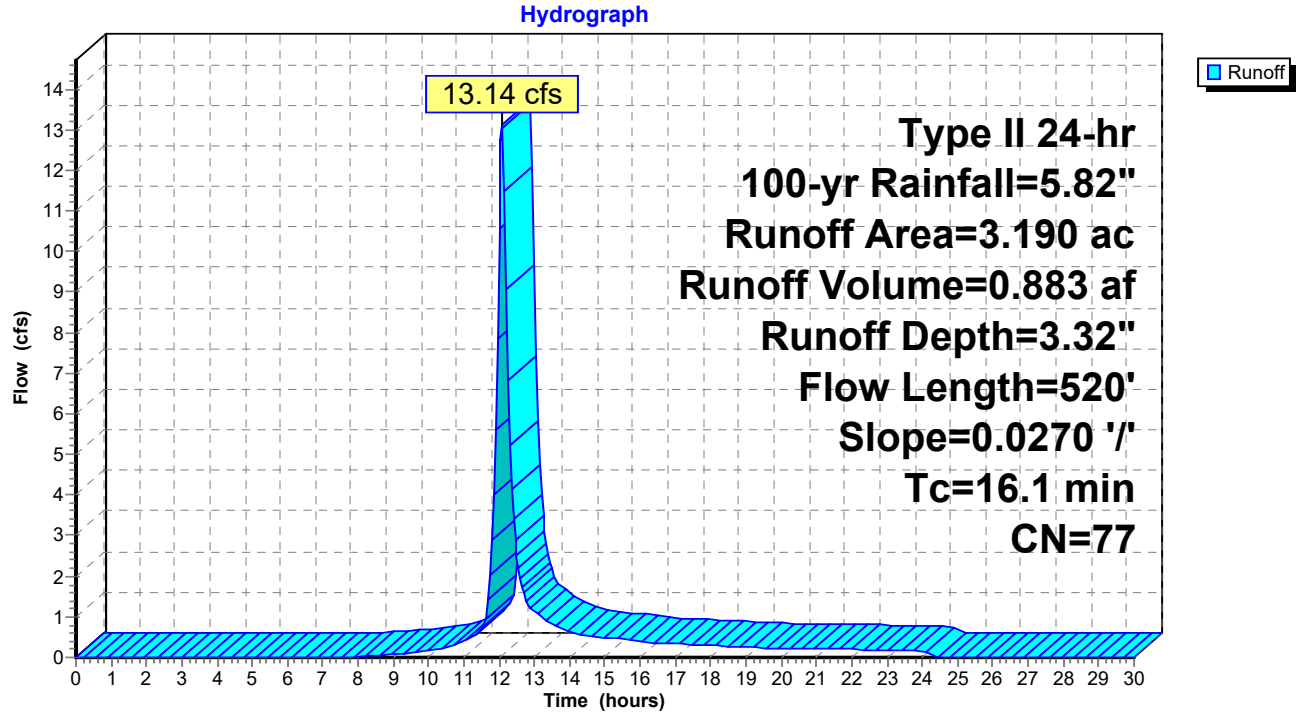
Runoff = 13.14 cfs @ 12.08 hrs, Volume= 0.883 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.760	85	Row crops, straight row, Good, HSG C
0.060	73	Woods, Fair, HSG C
2.370	74	Pasture/grassland/range, Good, HSG C
3.190	77	Weighted Average
3.190		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	100	0.0270	0.17		**Sheet Flow, Sheet Flow** Grass: Short n= 0.150 P2= 2.40"
6.1	420	0.0270	1.15		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Short Grass Pasture Kv= 7.0 fps
16.1	520	Total			

Subcatchment 3S: DA #3



Summary for Subcatchment 4S: DA #4

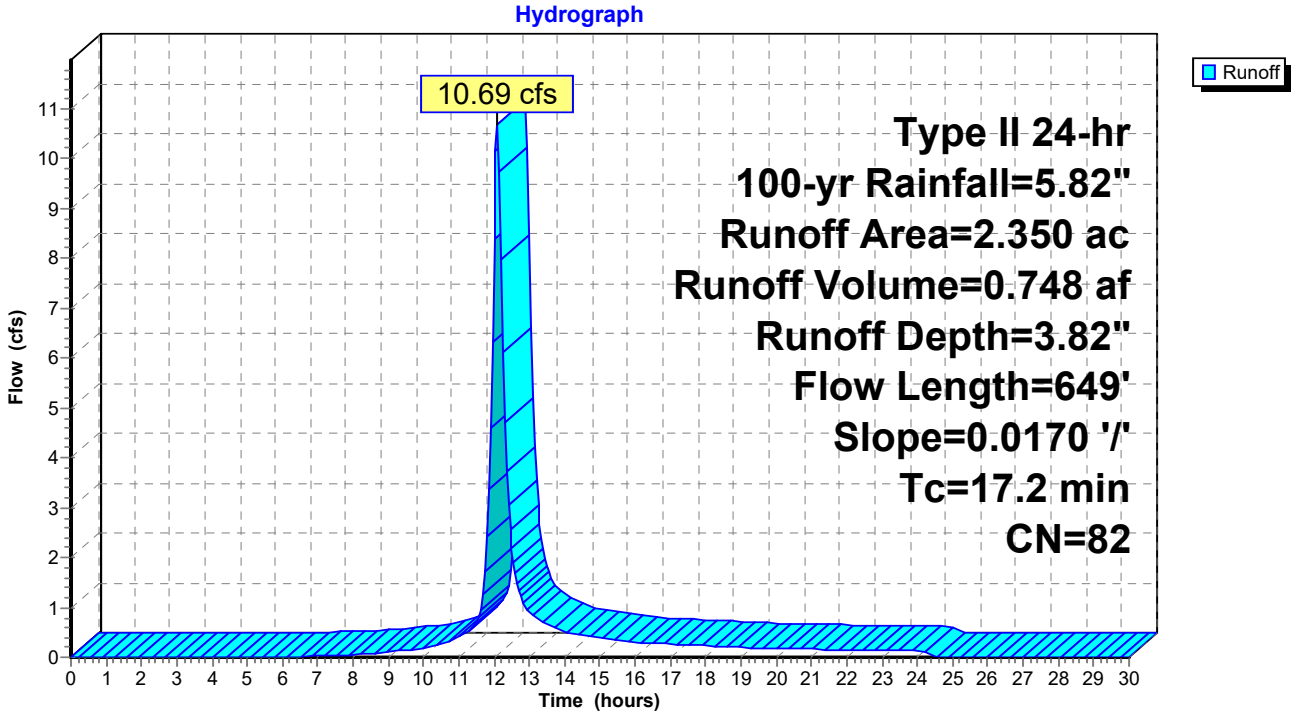
Runoff = 10.69 cfs @ 12.09 hrs, Volume= 0.748 af, Depth= 3.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.800	76	Woods/grass comb., Fair, HSG C
1.450	85	Row crops, straight row, Good, HSG C
0.100	98	Paved parking, HSG C
2.350	82	Weighted Average
2.250		95.74% Pervious Area
0.100		4.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.3	100	0.0170	0.12		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
2.8	200	0.0170	1.17		**Shallow Concentrated Flow, Shallow** Cultivated Straight Rows Kv= 9.0 fps
1.1	349	0.0170	5.54	49.82	**Channel Flow, Channel - Roadside** Area= 9.0 sf Perim= 9.0' r= 1.00' n= 0.035 Earth, dense weeds
17.2	649	Total			

Subcatchment 4S: DA #4



Summary for Subcatchment 5S: DA #5

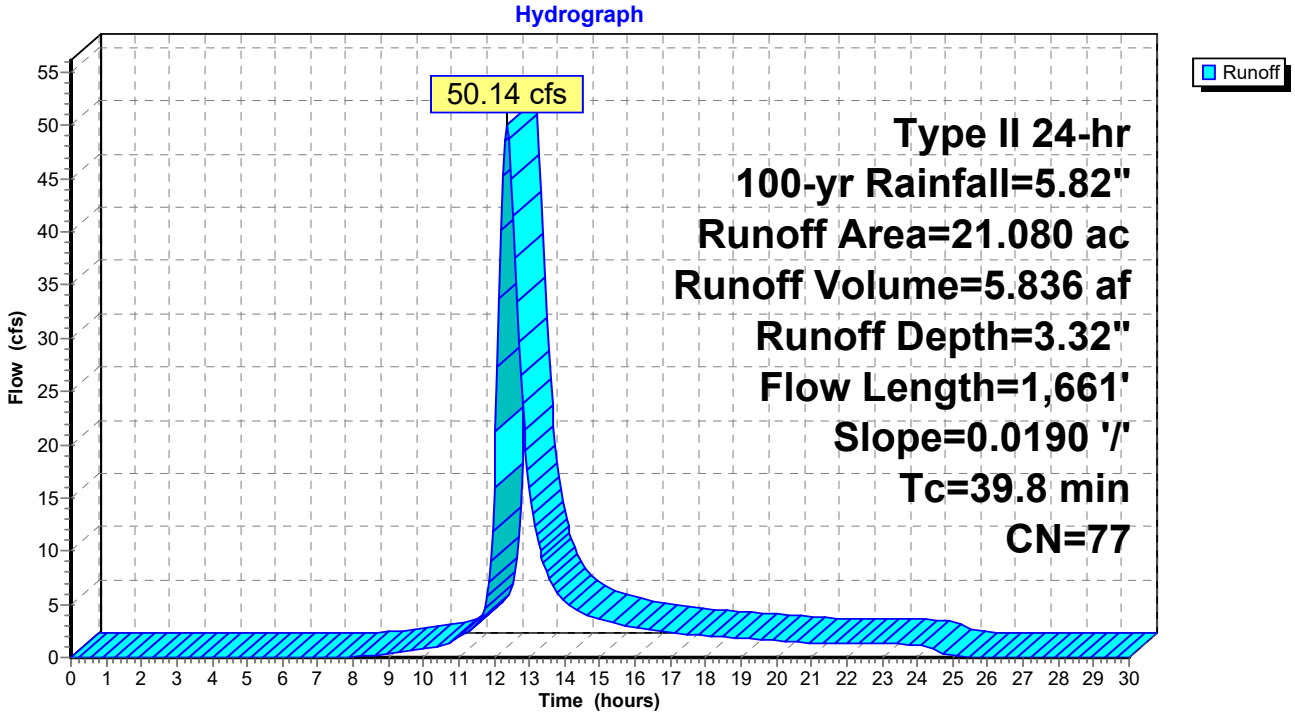
Runoff = 50.14 cfs @ 12.36 hrs, Volume= 5.836 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
2.260	76	Woods/grass comb., Fair, HSG C
2.960	85	Row crops, straight row, Good, HSG C
15.020	74	Pasture/grassland/range, Good, HSG C
0.840	98	Paved parking, HSG C
21.080	77	Weighted Average
20.240		96.02% Pervious Area
0.840		3.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	100	0.0190	0.13		**Sheet Flow, Sheet Flow** Cultivated: Residue>20% n= 0.170 P2= 2.40"
27.0	1,561	0.0190	0.96		**Shallow Concentrated Flow, Shallow Concentrated - Crops** Short Grass Pasture Kv= 7.0 fps
39.8	1,661	Total			

Subcatchment 5S: DA #5



Summary for Subcatchment 6S: DA #6

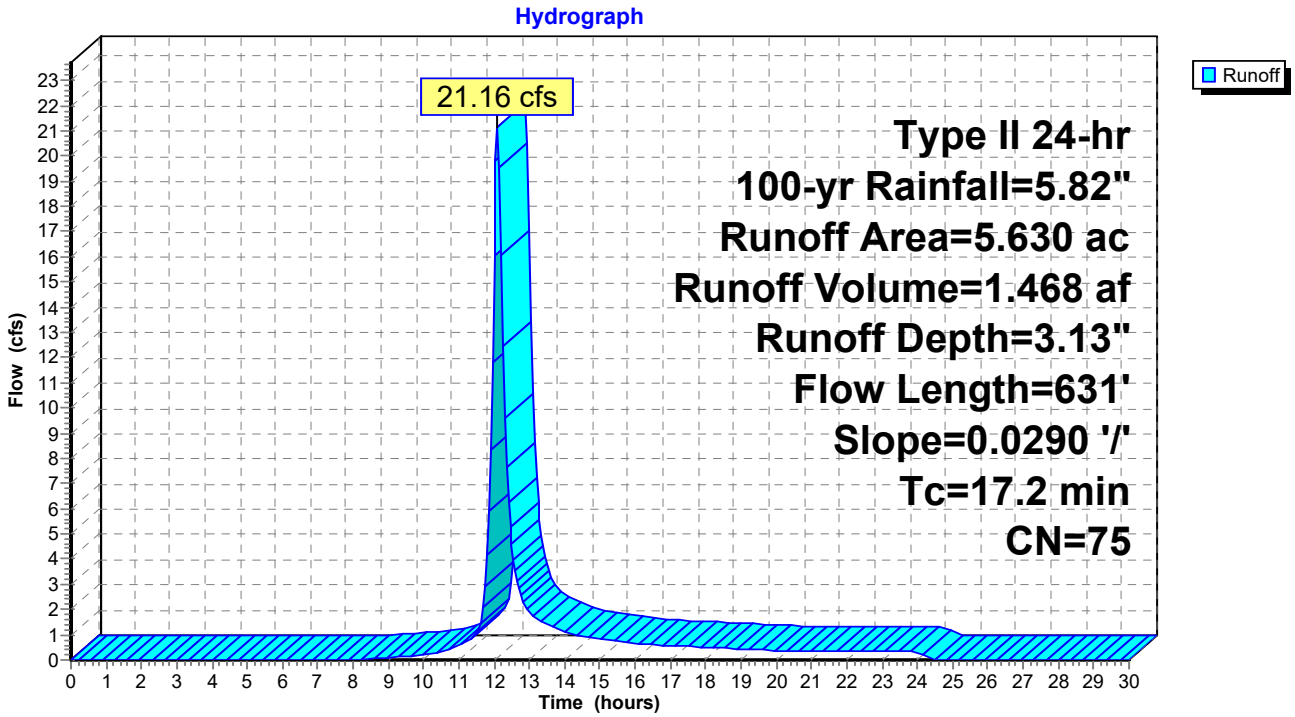
Runoff = 21.16 cfs @ 12.10 hrs, Volume= 1.468 af, Depth= 3.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=5.82"

Area (ac)	CN	Description
0.320	85	Row crops, straight row, Good, HSG C
5.180	74	Pasture/grassland/range, Good, HSG C
0.130	98	Paved parking, HSG C
5.630	75	Weighted Average
5.500		97.69% Pervious Area
0.130		2.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.0290	0.17		**Sheet Flow, Sheet** Grass: Short n= 0.150 P2= 2.40"
7.4	531	0.0290	1.19		**Shallow Concentrated Flow, Shallow - Crops** Short Grass Pasture Kv= 7.0 fps
17.2	631	Total			

Subcatchment 6S: DA #6

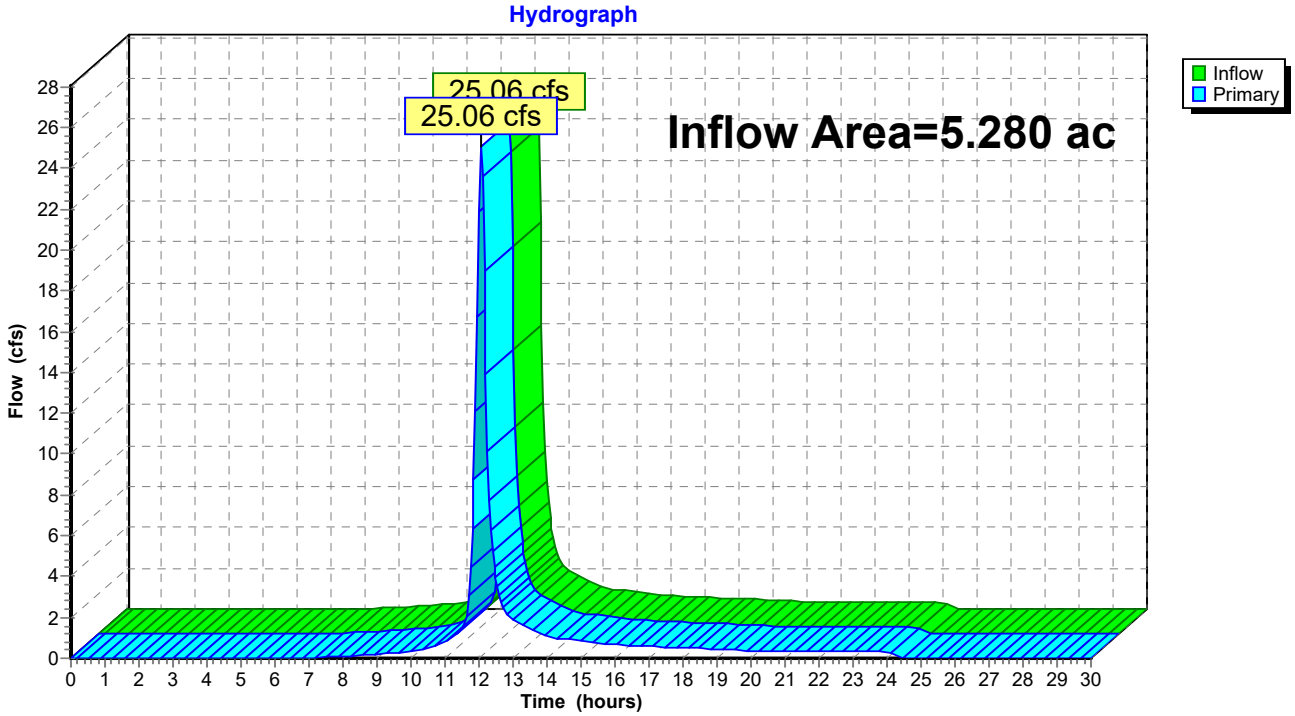


Summary for Link 1L: DP #1

Inflow Area = 5.280 ac, 0.00% Impervious, Inflow Depth = 3.62" for 100-yr event
Inflow = 25.06 cfs @ 12.06 hrs, Volume= 1.592 af
Primary = 25.06 cfs @ 12.06 hrs, Volume= 1.592 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 1L: DP #1

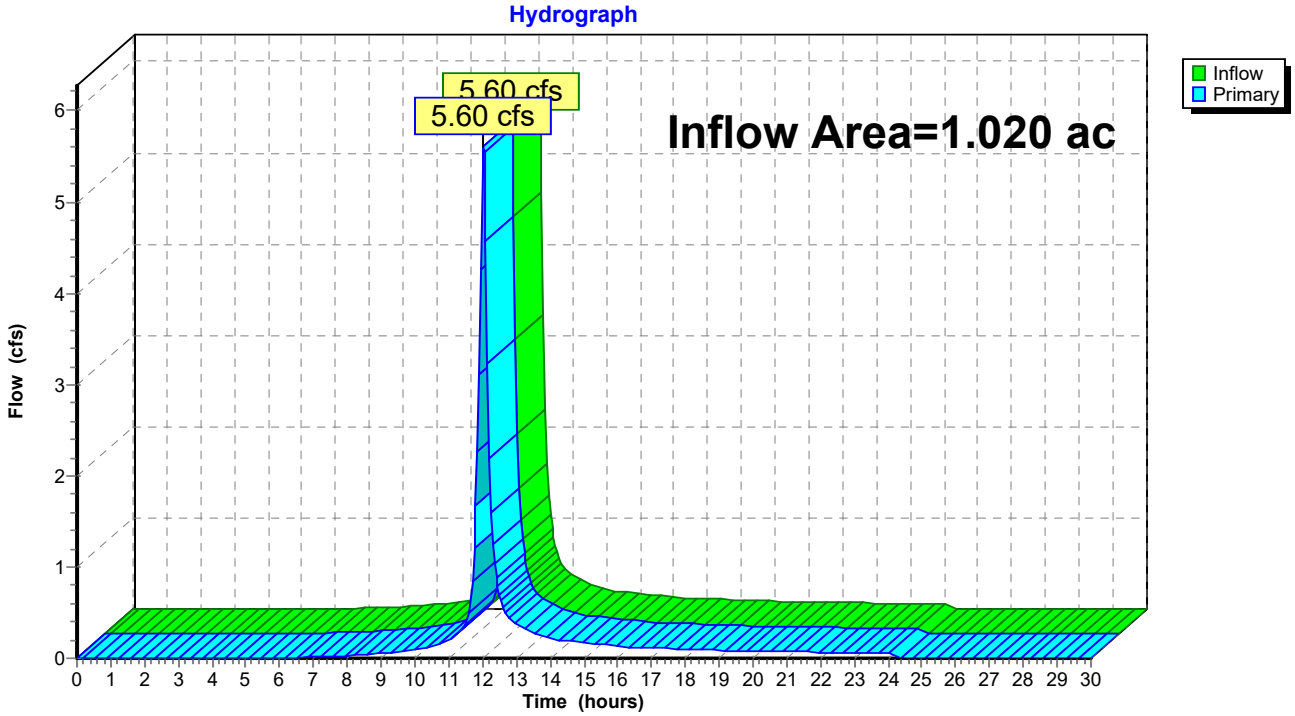


Summary for Link 2L: DP #2

Inflow Area = 1.020 ac, 0.00% Impervious, Inflow Depth = 3.92" for 100-yr event
Inflow = 5.60 cfs @ 12.03 hrs, Volume= 0.334 af
Primary = 5.60 cfs @ 12.03 hrs, Volume= 0.334 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 2L: DP #2

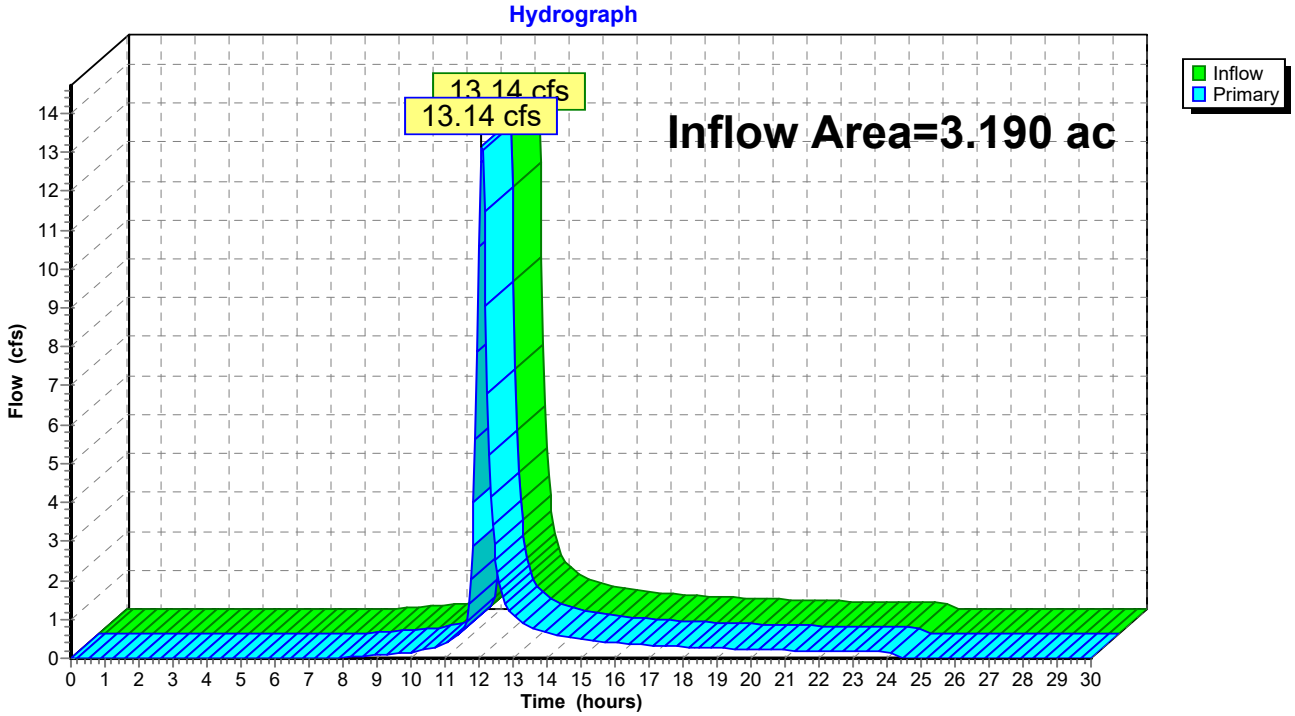


Summary for Link 3L: DP #3

Inflow Area = 3.190 ac, 0.00% Impervious, Inflow Depth = 3.32" for 100-yr event
Inflow = 13.14 cfs @ 12.08 hrs, Volume= 0.883 af
Primary = 13.14 cfs @ 12.08 hrs, Volume= 0.883 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 3L: DP #3

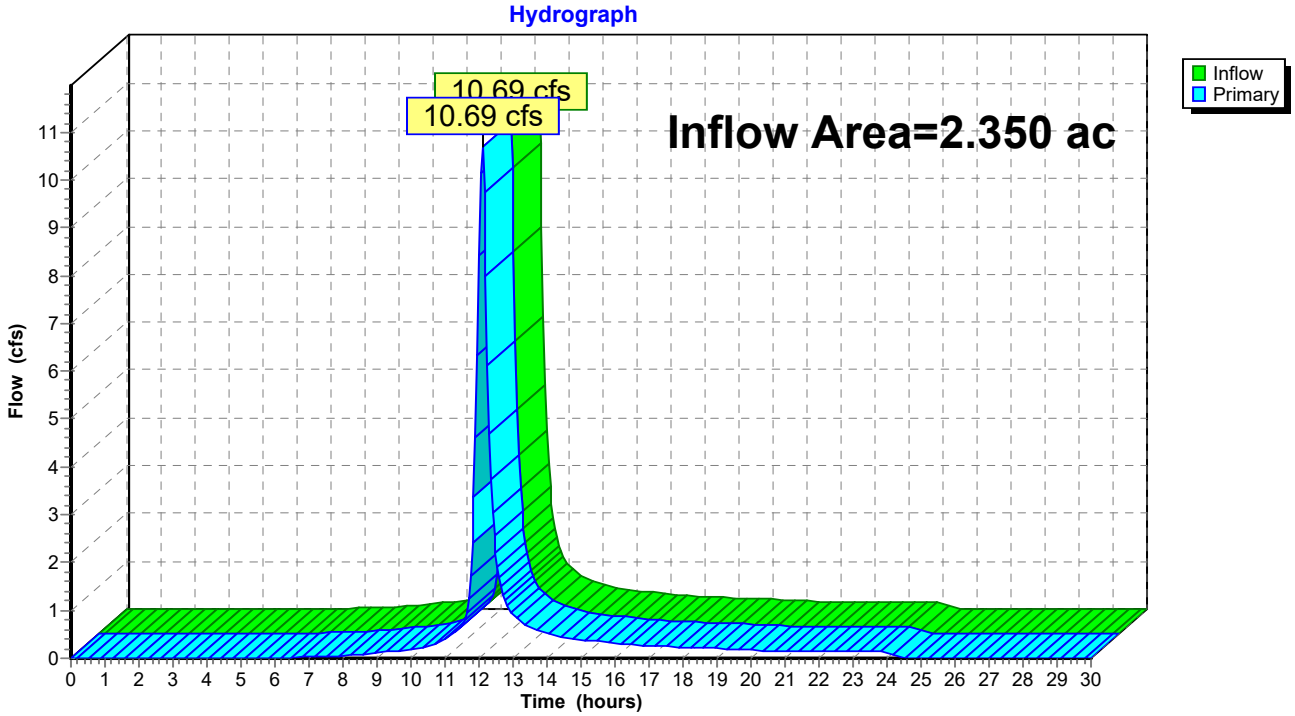


Summary for Link 4L: DP #4

Inflow Area = 2.350 ac, 4.26% Impervious, Inflow Depth = 3.82" for 100-yr event
Inflow = 10.69 cfs @ 12.09 hrs, Volume= 0.748 af
Primary = 10.69 cfs @ 12.09 hrs, Volume= 0.748 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 4L: DP #4

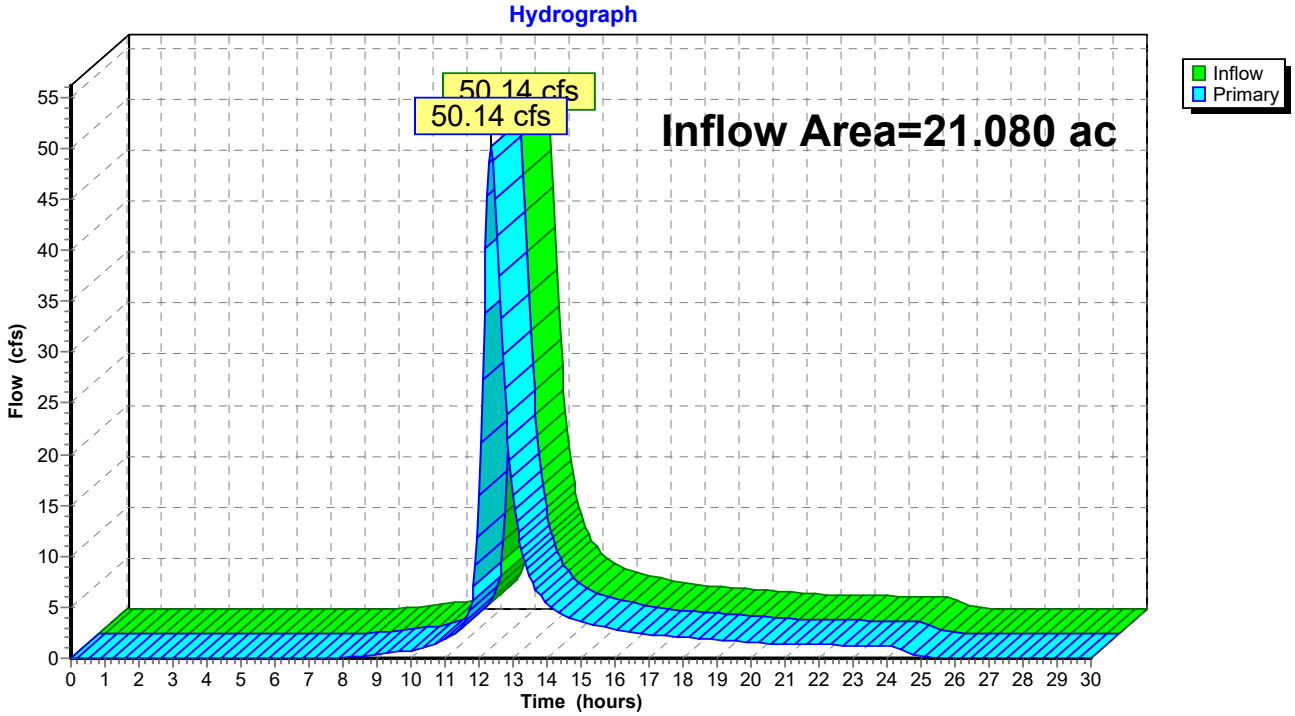


Summary for Link 5L: DP #5

Inflow Area = 21.080 ac, 3.98% Impervious, Inflow Depth = 3.32" for 100-yr event
Inflow = 50.14 cfs @ 12.36 hrs, Volume= 5.836 af
Primary = 50.14 cfs @ 12.36 hrs, Volume= 5.836 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 5L: DP #5

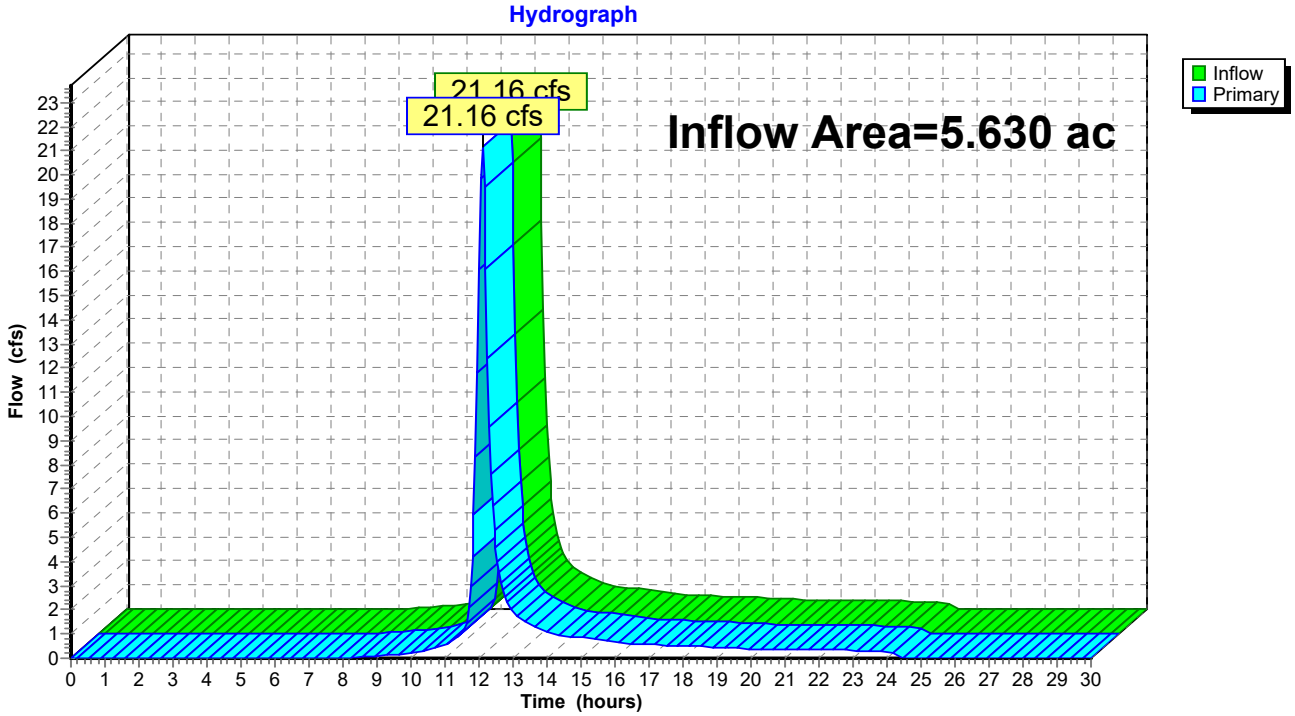


Summary for Link 6L: DP #6

Inflow Area = 5.630 ac, 2.31% Impervious, Inflow Depth = 3.13" for 100-yr event
Inflow = 21.16 cfs @ 12.10 hrs, Volume= 1.468 af
Primary = 21.16 cfs @ 12.10 hrs, Volume= 1.468 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Link 6L: DP #6



APPENDIX J – NOTICE OF INTENT (NOI)

0644089821

NOTICE OF INTENT

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

NYR _____
(for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

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

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Falck Renewables

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

Owner/Operator Contact Person First Name
Andrew

Owner/Operator Mailing Address
One Bridge Street, Suite 11

City
Irvington

State
NY

Zip
10533-

Phone (Owner/Operator)
201-286-2069

Fax (Owner/Operator)

Email (Owner/Operator)
andrew.d'amico@falckrenewables.com

FED TAX ID
--
(not required for individuals)

Project Site Information

Project/Site Name
GREEN LAKES SOLAR

Street Address (NOT P.O. BOX)
8507 Green Lakes Road

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

City/Town/Village (THAT ISSUES BUILDING PERMIT)
MANLIUS

State: NY
Zip: 13104 -
County: ONONDOGA
DEC Region: 7

Name of Nearest Cross Street
Buttonvale Road

Distance to Nearest Cross Street (Feet)
530

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

Tax Map Numbers
Section-Block-Parcel
82.-2-15.1

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

https://gisservices.dec.ny.gov/gis/stormwater/

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)
-7 59379
Ex. -73.749

Y Coordinates (Northing)
4305961
Ex. 42.652

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

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

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

Pre-Development Existing Land Use

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

Post-Development Future Land Use

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

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

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

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
23.4	23.4	0.9	0.2

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

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

A	B	C	D
%	%	100 %	%

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

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

Start Date / / – **End Date** / /

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

Name

Wetland

9a. Type of waterbody identified in Question 9?

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

9b. How was the wetland identified?

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

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

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

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

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

.

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

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

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

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

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

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

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

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

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

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

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

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

SWPPP Preparer

Tetra Tech, Inc.

Contact Name (Last, Space, First)

Sielski, Brian

Mailing Address

6 Century Road, Suite 300

City

Parsippany

State Zip

NJ 07054-

Phone

973-630-8167

Fax

Email

brian.sielski@tetratech.com

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. 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.

First Name

MI

Last Name

Signature

Date / /

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

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

Temporary Structural

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

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

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

Permanent Structural

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

Other

VEGETATED SWALES and RIP RAP WEIR

Post-construction Stormwater Management Practice (SMP) Requirements

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

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

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

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

- ○ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ● Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

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

Total WQv Required

		0	.	0	2	5	**acre-feet**

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

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

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

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

	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)		and/or	
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
○ Underground Infiltration System (I-4)			
○ Bioretention (F-5)			
● Dry Swale (O-1)			0.30
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

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

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

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

Name [ ]

Manufacturer [ ]

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

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

Total RRv provided

0.021 **acre-feet**

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

○ **Yes** ● **No**

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

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

Minimum RRv Required

0.007 **acre-feet**

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

● **Yes** ○ **No**

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

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

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

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

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

WQv Provided

0.003 **acre-feet**

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

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a). 0.025

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

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

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

CPv Required . **acre-feet**

CPv Provided . **acre-feet**

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

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

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

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

Total Overbank Flood Control Criteria (Qp)

Pre-Development 71.04 **CFS**

Post-development 52.72 **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development 151.89 **CFS**

Post-development 125.79 **CFS**

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

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

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

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

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

Soil types C on site limit the efficiency of the proposed vegetative swales. Non-rooftop disconnection was utilized for areas of the solar array where no impervious surfaces are proposed. The change in ground cover type from existing agricultural to permanent grass cover on site results in a runoff reduction.

Long term operations and maintenance plan for post-construction stormwater management practices will be implemented into the Owner/Operators overall operations and maintenance plan prior to construction.

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

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

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

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

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

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

Owner/Operator Certification

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

Print First Name **MI**

Print Last Name

Owner/Operator Signature

Date / /

APPENDIX K – NOTICE OF TERMINATION (NOT)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

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

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

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

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

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

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

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

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

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

Printed Name:

Title/Position:

Signature:	Date:

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

VII. Qualified Inspector Certification - Final Stabilization:

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

Printed Name:	
Title/Position:	
Signature:	Date:

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

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

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

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

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

APPENDIX L – CERTIFICATION STATEMENTS

CONTRACTOR CERTIFICATION PAGE

Green Lakes Solar Project

8507 Green Lakes Road, Manlius, NY 13066

"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 Pollution 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 of Contractor/Subcontractor	Phone Number
Address	City, State, Zip Code
Signature of Person Completing this Form	Date
Printed Name	Title
Name of Trained Contractor	Title

Responsibilities (check all that apply):

Erosion and Sediment Control Practices:

- ❑ Installation and/or construction
- ❑ Repair
- ❑ Replacement
- ❑ Inspection
- ❑ Maintenance

Post-construction SMPs:

- ❑ Construction
- ❑ Repair
- ❑ Inspection
- ❑ Operation & Maintenance

CONTRACTOR CERTIFICATION PAGE

Green Lakes Solar Project

8507 Green Lakes Road, Manlius, NY 13066

"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 Pollution 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 of Contractor/Subcontractor	Phone Number
Address	City, State, Zip Code
Signature of Person Completing this Form	Date
Printed Name	Title
Name of Trained Contractor	Title

Responsibilities (check all that apply):

Erosion and Sediment Control Practices:

- ❑ Installation and/or construction
- ❑ Repair
- ❑ Replacement
- ❑ Inspection
- ❑ Maintenance

Post-construction SMPs:

- ❑ Construction
- ❑ Repair
- ❑ Inspection
- ❑ Operation & Maintenance

APPENDIX M – INSPECTION FORMS

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 inspector[1] conduct an assessment of the site prior to the commencement of construction[2] 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. A preconstruction meeting should be held to review all of the SWPPP requirements with construction personnel.

When construction starts, site inspections shall be conducted by the qualified inspector at least every 7 calendar days. 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.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified inspector perform a final site inspection. The qualified inspector shall certify that the site has undergone final stabilization[3] 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 Refer to "Qualified Inspector" inspection requirements in the current SPDES General Permit for Stormwater Discharges from Construction Activity for complete list of inspection requirements.
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. 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 Access

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. 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 Inspector (print name)	**Qualified Inspector 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 at the outfalls?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease at the outfalls?
[ ] [ ] [ ] 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, debris and spoils 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.

3. Stabilized Construction Access

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?

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.

Runoff Control Practices (continued)

2. Flow 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

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. Silt Fence and Linear Barriers

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.

Sediment Control Practices (continued)

2. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated; Filter Sock or Manufactured 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.
[ ] [ ] [ ] Manufactured insert fabric is free of tears and punctures.
[ ] [ ] [ ] Filter Sock is not torn or flattened and fill material is contained within the mesh sock.

Sediment accumulation ___% of design capacity.

3. 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 trap slopes and disturbed areas are stabilized.

Sediment accumulation is ___% of design capacity.

4. Temporary Sediment Basin

Yes No NA

[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
[ ] [ ] [ ] Sediment basin dewatering pool is dewatering at appropriate rate.

Sediment accumulation is ___% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design. All practices shall be maintained in accordance with their respective standards.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

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:

APPENDIX N – INSPECTION REPORTS & PHOTO LOG

Exhibit E

LONG EAF

Instructions for Completing Part 1

Part 1 is to be completed by the applicant or project sponsor. 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; indicate whether missing information does not exist, or is not reasonably available to the sponsor; and, when possible, generally describe work or studies which would be necessary to update or fully develop that information.

Applicants/sponsors must complete all items in Sections A & B. In Sections C, D & E, most items contain an initial question that must be answered either "Yes" or "No". If the answer to the initial question is "Yes", complete the sub-questions that follow. If the answer to the initial question is "No", proceed to the next question. Section F allows the project sponsor to identify and attach any additional information. Section G requires the name and signature of the applicant or project sponsor to verify that the information contained in Part 1is accurate and complete.

A. Project and Applicant/Sponsor Information.

Name of Action or Project: Green Lakes Solar		
Project Location (describe, and attach a general location map): The proposed project is located on private land at 8507 Green Lakes Road, Town of Manlius, Onondaga County, New York.		
Brief Description of Proposed Action (include purpose or need): EF NY CDG 002, LLC (Falck Renewables) proposes the development of approximately 23.8 acres of a larger 146.3.-acre parcel of private land in Onondaga County into a ground-mounted photovoltaic (PV) solar energy generating facility (Green Lakes Solar). The proposed project would be capable of delivering about 7,8700 kilowatts (kW) of alternating electric current (AC) to the electrical power grid, which is sufficient to provide renewable energy to approximately 600 households. The PV panels proposed for this project are similar to solar panels utilized for typical residential roof top installations and would be placed on a racking system either pile driven or screw mounted to the ground surface. The PV project will be directly interconnected to, and provide energy to, National Grid's local electric distribution grid via either underground or overhead electrical service. Prior to utility interconnection, direct current (DC) electrical power generated by the solar panels will be transformed to AC power and modified as necessary to connect to National Grid's electrical power supply. The project would also include an equipment pad, a gravel access road and would be surrounded by a chain-linked security fence.		
Name of Applicant/Sponsor: Falck Renewables	Telephone: E-Mail:	
Address: One Bridge Street, Suite 11		
City/PO: Irvington	State: New York	Zip Code: 10533
Project Contact (if not same as sponsor; give name and title/role): Jonathan Koch	Telephone: E-Mail:	
Address: One Bridge Street, Suite 11		
City/PO: Irvington	State: New York	Zip Code: 10533
Property Owner (if not same as sponsor): Charles Hafner	Telephone: (315) 263-0597 E-Mail: pshapero01@gmail.com	
Address: 8507 Green Lakes Road		
City/PO: Manlius	State: NY	Zip Code: 13104

B. Government Approvals

B. Government Approvals, Funding, or Sponsorship. ("Funding" includes grants, loans, tax relief, and any other forms of financial assistance.)

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees ☑Yes ☐No	Town of Manlius: Special Permit	4/16/2020
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town of Manlius: Special Permit Approval	4/16/2020
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No		
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSERDA Grant; NYS Ag & Markets Review, SPDES General Permit	4/16/2020
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? ☐Yes ☑No

ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? ☐Yes ☑No

iii. Is the project site within a Coastal Erosion Hazard Area? ☐Yes ☑No

C. Planning and Zoning

C.1. Planning and zoning actions.

Will administrative or legislative adoption, or amendment of a plan, local law, ordinance, rule or regulation be the only approval(s) which must be granted to enable the proposed action to proceed? ☐Yes ☑No

- **If Yes,** complete sections C, F and G.
- **If No,** proceed to question C.2 and complete all remaining sections and questions in Part 1

C.2. Adopted land use plans.

a. Do any municipally- adopted (city, town, village or county) comprehensive land use plan(s) include the site where the proposed action would be located? ☑Yes ☐No

If Yes, does the comprehensive plan include specific recommendations for the site where the proposed action would be located? ☐Yes ☑No

b. Is the site of the proposed action within any local or regional special planning district (for example: Greenway; Brownfield Opportunity Area (BOA); designated State or Federal heritage area; watershed management plan; or other?) ☐Yes ☑No

If Yes, identify the plan(s):

_____

_____

_____

c. Is the proposed action located wholly or partially within an area listed in an adopted municipal open space plan, or an adopted municipal farmland protection plan? ☑Yes ☐No

If Yes, identify the plan(s):

Onondaga County Agriculture and Farmland Protection Plan

_____

_____

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. ☑ Yes ☐ No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Restricted Agriculture

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

c. Is a zoning change requested as part of the proposed action? ☐ Yes ☑ No
If Yes,
i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

a. In what school district is the project site located? Fayetteville-Manlius Central School District

b. What police or other public protection forces serve the project site?
Town of Manlius Police Department

c. Which fire protection and emergency medical services serve the project site?
Minoa Fire Department, Fayetteville Fire Department

d. What parks serve the project site?
Green Lakes State Park, Mill Run Park, Beard park, Lewis Park

D. Project Details

D.1. Proposed and Potential Development

a. What is the general nature of the proposed action (e.g., residential, industrial, commercial, recreational; if mixed, include all components)?

b. a. Total acreage of the site of the proposed action? 146.43 acres
b. Total acreage to be physically disturbed? 23.8 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 24.5 acres

c. Is the proposed action an expansion of an existing project or use? ☐ Yes ☑ No
i. If Yes, what is the approximate percentage of the proposed expansion and identify the units (e.g., acres, miles, housing units, square feet)? % _____ Units: _____

d. Is the proposed action a subdivision, or does it include a subdivision? ☐ Yes ☑ No
If Yes,
i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)
ii. Is a cluster/conservation layout proposed? ☐ Yes ☑ No
iii. Number of lots proposed? _____
iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? ☐ Yes ☑ No
i. If No, anticipated period of construction: _____ months
ii. If Yes:
- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____year
- Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? ☐ Yes ☑ No

If Yes, show numbers of units proposed.

	One Family	Two Family	Three Family	Multiple Family (four or more)
Initial Phase	_____	_____	_____	_____
At completion of all phases	_____	_____	_____	_____

g. Does the proposed action include new non-residential construction (including expansions)? ☑ Yes ☐ No

If Yes,

i. Total number of structures 7,870 kW

ii. Dimensions (in feet) of largest proposed structure: 7 to 10 height; 550 ft width; and 800 ft length

iii. Approximate extent of building space to be heated or cooled: 0 square feet

h. Does the proposed action include construction or other activities that will result in the impoundment of any liquids, such as creation of a water supply, reservoir, pond, lake, waste lagoon or other storage? ☐ Yes ☑ No

If Yes,

i. Purpose of the impoundment: _____

ii. If a water impoundment, the principal source of the water: ☐ Ground water ☐ Surface water streams ☐ Other specify:

_____

iii. If other than water, identify the type of impounded/contained liquids and their source.

_____

iv. Approximate size of the proposed impoundment. Volume: _____ million gallons; surface area: _____ acres

v. Dimensions of the proposed dam or impounding structure: _____ height; _____ length

vi. Construction method/materials for the proposed dam or impounding structure (e.g., earth fill, rock, wood, concrete):

_____

D.2. Project Operations

a. Does the proposed action include any excavation, mining, or dredging, during construction, operations, or both? (Not including general site preparation, grading or installation of utilities or foundations where all excavated materials will remain onsite) ☐ Yes ☑ No

If Yes:

i .What is the purpose of the excavation or dredging? _____

ii. How much material (including rock, earth, sediments, etc.) is proposed to be removed from the site?

- Volume (specify tons or cubic yards): _____
- Over what duration of time? _____

iii. Describe nature and characteristics of materials to be excavated or dredged, and plans to use, manage or dispose of them.

_____

_____

i*v.* Will there be onsite dewatering or processing of excavated materials? ☐ Yes ☑ No

If yes, describe. _____

_____

v. What is the total area to be dredged or excavated? _____acres

vi. What is the maximum area to be worked at any one time? _____ acres

vii. What would be the maximum depth of excavation or dredging? _____ feet

viii. Will the excavation require blasting? ☐ Yes ☐ No

ix. Summarize site reclamation goals and plan: _____

_____

_____

b. Would the proposed action cause or result in alteration of, increase or decrease in size of, or encroachment into any existing wetland, waterbody, shoreline, beach or adjacent area? ☐ Yes ☑ No

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

_____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

_____

_____

_____

_____

iii. Will the proposed action cause or result in disturbance to bottom sediments? ☐Yes ☐No

If Yes, describe: _____

iv. Will the proposed action cause or result in the destruction or removal of aquatic vegetation? ☐Yes ☐No

If Yes:

- acres of aquatic vegetation proposed to be removed: _____
- expected acreage of aquatic vegetation remaining after project completion: _____
- purpose of proposed removal (e.g. beach clearing, invasive species control, boat access): _____

_____

- proposed method of plant removal: _____
- if chemical/herbicide treatment will be used, specify product(s): _____

v. Describe any proposed reclamation/mitigation following disturbance: _____

_____

c. Will the proposed action use, or create a new demand for water? ☐Yes ☑No

If Yes:

i. Total anticipated water usage/demand per day: _____ gallons/day

ii. Will the proposed action obtain water from an existing public water supply? ☐Yes ☐No

If Yes:

- Name of district or service area: _____
- Does the existing public water supply have capacity to serve the proposal? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No
- Do existing lines serve the project site? ☐Yes ☐No

iii. Will line extension within an existing district be necessary to supply the project? ☐Yes ☐No

If Yes:

- Describe extensions or capacity expansions proposed to serve this project: _____

_____

- Source(s) of supply for the district: _____

iv. Is a new water supply district or service area proposed to be formed to serve the project site? ☐Yes ☐No

If, Yes:

- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- Proposed source(s) of supply for new district: _____

v. If a public water supply will not be used, describe plans to provide water supply for the project: _____

_____

vi. If water supply will be from wells (public or private), what is the maximum pumping capacity: _____ gallons/minute.

d. Will the proposed action generate liquid wastes? ☐Yes ☑No

If Yes:

i. Total anticipated liquid waste generation per day: _____ gallons/day

ii. Nature of liquid wastes to be generated (e.g., sanitary wastewater, industrial; if combination, describe all components and approximate volumes or proportions of each): _____

_____

_____

iii. Will the proposed action use any existing public wastewater treatment facilities? ☐Yes ☑No

If Yes:

- Name of wastewater treatment plant to be used: _____
- Name of district: _____
- Does the existing wastewater treatment plant have capacity to serve the project? ☐Yes ☐No
- Is the project site in the existing district? ☐Yes ☐No
- Is expansion of the district needed? ☐Yes ☐No

- Do existing sewer lines serve the project site? ☐Yes ☐No
- Will a line extension within an existing district be necessary to serve the project? ☐Yes ☐No

  If Yes:
  - Describe extensions or capacity expansions proposed to serve this project: _____

_____

_____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? ☐Yes ☑No

If Yes:
- Applicant/sponsor for new district: _____
- Date application submitted or anticipated: _____
- What is the receiving water for the wastewater discharge? _____

v. If public facilities will not be used, describe plans to provide wastewater treatment for the project, including specifying proposed receiving water (name and classification if surface discharge or describe subsurface disposal plans):

_____

_____

vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____

_____

_____

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? ☑Yes ☐No

If Yes:

i. How much impervious surface will the project create in relation to total size of project parcel?

_____ Square feet or 1.09 acres (impervious surface)

_____ Square feet or 146.4 acres (parcel size)

ii. Describe types of new point sources. _____

_____

iii. Where will the stormwater runoff be directed (i.e. on-site stormwater management facility/structures, adjacent properties, groundwater, on-site surface water or off-site surface waters)?

_____

_____

- If to surface waters, identify receiving water bodies or wetlands: _____

_____

_____

- Will stormwater runoff flow to adjacent properties? ☐Yes ☑No

iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? ☑Yes ☐No

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? ☐Yes ☑No

If Yes, identify:

i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

_____

ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)

_____

iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)

_____

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? ☐Yes ☑No

If Yes:

i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) ☐Yes ☐No

ii. In addition to emissions as calculated in the application, the project will generate:
- _____Tons/year (short tons) of Carbon Dioxide (CO_2)
- _____Tons/year (short tons) of Nitrous Oxide (N_2O)
- _____Tons/year (short tons) of Perfluorocarbons (PFCs)
- _____Tons/year (short tons) of Sulfur Hexafluoride (SF_6)
- _____Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflourocarbons (HFCs)
- _____Tons/year (short tons) of Hazardous Air Pollutants (HAPs)

h. Will the proposed action generate or emit methane (including, but not limited to, sewage treatment plants, landfills, composting facilities)? ☐Yes ☑No

If Yes:

i. Estimate methane generation in tons/year (metric): _____

ii. Describe any methane capture, control or elimination measures included in project design (e.g., combustion to generate heat or electricity, flaring): _____

_____

i. Will the proposed action result in the release of air pollutants from open-air operations or processes, such as quarry or landfill operations? ☐Yes ☑No

If Yes: Describe operations and nature of emissions (e.g., diesel exhaust, rock particulates/dust):

_____

_____

j. Will the proposed action result in a substantial increase in traffic above present levels or generate substantial new demand for transportation facilities or services? ☐Yes ☑No

If Yes:

i. When is the peak traffic expected (Check all that apply): ☐ Morning ☐ Evening ☐Weekend ☐ Randomly between hours of _____ to _____.

ii. For commercial activities only, projected number of truck trips/day and type (e.g., semi trailers and dump trucks): _____

_____

iii. Parking spaces: Existing _____ Proposed _____ Net increase/decrease _____

iv. Does the proposed action include any shared use parking? ☐Yes ☐No

v. If the proposed action includes any modification of existing roads, creation of new roads or change in existing access, describe:

_____

vi. Are public/private transportation service(s) or facilities available within ½ mile of the proposed site? ☐Yes ☐No

vii Will the proposed action include access to public transportation or accommodations for use of hybrid, electric or other alternative fueled vehicles? ☐Yes ☐No

viii. Will the proposed action include plans for pedestrian or bicycle accommodations for connections to existing pedestrian or bicycle routes? ☐Yes ☐No

k. Will the proposed action (for commercial or industrial projects only) generate new or additional demand for energy? ☐Yes ☑No

If Yes:

i. Estimate annual electricity demand during operation of the proposed action: _____

_____

ii. Anticipated sources/suppliers of electricity for the project (e.g., on-site combustion, on-site renewable, via grid/local utility, or other):

_____

iii. Will the proposed action require a new, or an upgrade, to an existing substation? ☐Yes ☑No

l. Hours of operation. Answer all items which apply.

i. During Construction:

- Monday - Friday: 7am-5pm
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: Daylight Hours
- Saturday: Daylight Hours
- Sunday: Daylight Hours
- Holidays: Daylight Hours

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? ☐ Yes ☑ No

If yes:

i. Provide details including sources, time of day and duration:

_____

_____

ii. Will the proposed action remove existing natural barriers that could act as a noise barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

n. Will the proposed action have outdoor lighting? ☐ Yes ☑ No

If yes:

i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

_____

_____

ii. Will proposed action remove existing natural barriers that could act as a light barrier or screen? ☐ Yes ☐ No

Describe: _____

_____

o. Does the proposed action have the potential to produce odors for more than one hour per day? ☐ Yes ☑ No

If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

_____

_____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? ☐ Yes ☑ No

If Yes:

i. Product(s) to be stored _____

ii. Volume(s) _____ per unit time _____ (e.g., month, year)

iii. Generally, describe the proposed storage facilities:_____

_____

q. Will the proposed action (commercial, industrial and recreational projects only) use pesticides (i.e., herbicides, insecticides) during construction or operation? ☐ Yes ☑ No

If Yes:

i. Describe proposed treatment(s):

_____

_____

_____

_____

ii. Will the proposed action use Integrated Pest Management Practices? ☐ Yes ☐ No

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? ☐ Yes ☑ No

If Yes:

i. Describe any solid waste(s) to be generated during construction or operation of the facility:

- Construction: _____ tons per _____ (unit of time)
- Operation : _____ tons per _____ (unit of time)

ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:

- Construction: _____

  _____
- Operation: _____

  _____

iii. Proposed disposal methods/facilities for solid waste generated on-site:

- Construction: _____

  _____
- Operation: _____

  _____

s. Does the proposed action include construction or modification of a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____

ii. Anticipated rate of disposal/processing:

- _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
- _____ Tons/hour, if combustion or thermal treatment

iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

ii. Generally describe processes or activities involving hazardous wastes or constituents: _____

iii. Specify amount to be handled or generated _____ tons/month

iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? ☐ Yes ☐ No

If Yes: provide name and location of facility: _____

If No: describe proposed management of any hazardous wastes which will not be sent to a hazardous waste facility:

E. Site and Setting of Proposed Action

E.1. Land uses on and surrounding the project site

a. Existing land uses.

i. Check all uses that occur on, adjoining and near the project site.

☐ Urban ☐ Industrial ☐ Commercial ☑ Residential (suburban) ☐ Rural (non-farm)
☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other (specify): _____

ii. If mix of uses, generally describe:

Primarily used for agriculture with minimal residential development

b. Land uses and covertypes on the project site.

Land use or Covertype	Current Acreage	Acreage After Project Completion	Change (Acres +/-)
• Roads, buildings, and other paved or impervious surfaces	0	0	0
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	0	0	0
• Agricultural (includes active orchards, field, greenhouse etc.)	23.4	0	-23.4
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: ground mounted solar array, equipment pad and gravel access road	0	23.4	+23.4

c. Is the project site presently used by members of the community for public recreation? ☐ Yes ☑ No

i. If Yes: explain: _____

d. Are there any facilities serving children, the elderly, people with disabilities (e.g., schools, hospitals, licensed day care centers, or group homes) within 1500 feet of the project site? ☐ Yes ☑ No

If Yes,

i. Identify Facilities:

_____

_____

e. Does the project site contain an existing dam? ☐ Yes ☑ No

If Yes:

i. Dimensions of the dam and impoundment:

- Dam height: _____ feet
- Dam length: _____ feet
- Surface area: _____ acres
- Volume impounded: _____ gallons OR acre-feet

ii. Dam's existing hazard classification: _____

iii. Provide date and summarize results of last inspection:

_____

_____

f. Has the project site ever been used as a municipal, commercial or industrial solid waste management facility, or does the project site adjoin property which is now, or was at one time, used as a solid waste management facility? ☐ Yes ☑ No

If Yes:

i. Has the facility been formally closed? ☐ Yes ☐ No

- If yes, cite sources/documentation: _____

ii. Describe the location of the project site relative to the boundaries of the solid waste management facility:

_____

_____

iii. Describe any development constraints due to the prior solid waste activities: _____

_____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? ☐ Yes ☑ No

If Yes:

i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred:

_____

_____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? ☐ Yes ☑ No

If Yes:

i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: ☐ Yes ☑ No

☐ Yes – Spills Incidents database Provide DEC ID number(s): _____

☐ Yes – Environmental Site Remediation database Provide DEC ID number(s): _____

☐ Neither database

ii. If site has been subject of RCRA corrective activities, describe control measures:_____

_____

_____

iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? ☐ Yes ☑ No

If yes, provide DEC ID number(s): _____

iv. If yes to (i), (ii) or (iii) above, describe current status of site(s):

_____

_____

v. Is the project site subject to an institutional control limiting property uses? ☐ Yes ☐ No

- If yes, DEC site ID number: _____
- Describe the type of institutional control (e.g., deed restriction or easement): _____
- Describe any use limitations: _____
- Describe any engineering controls: _____
- Will the project affect the institutional or engineering controls in place? ☐ Yes ☐ No
- Explain: _____

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? 5 feet

b. Are there bedrock outcroppings on the project site? ☐ Yes ☑ No
If Yes, what proportion of the site is comprised of bedrock outcroppings? _____%

c. Predominant soil type(s) present on project site:

Cazenovia silt loam	97.4 %
Cazenovia Soils	1.0 %
Lima Silt Loam	1.6 %

d. What is the average depth to the water table on the project site? Average: _____ feet

e. Drainage status of project site soils:
☑ Well Drained: 1.6 % of site
☑ Moderately Well Drained: 98.4 % of site
☐ Poorly Drained _____% of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 100 % of site
☐ 10-15%: _____% of site
☐ 15% or greater: _____% of site

g. Are there any unique geologic features on the project site? ☐ Yes ☑ No
If Yes, describe: _____

h. Surface water features.

i. Does any portion of the project site contain wetlands or other waterbodies (including streams, rivers, ponds or lakes)? ☐ Yes ☑ No

ii. Do any wetlands or other waterbodies adjoin the project site? ☑ Yes ☐ No

If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

iii. Are any of the wetlands or waterbodies within or adjoining the project site regulated by any federal, state or local agency? ☑ Yes ☐ No

iv. For each identified regulated wetland and waterbody on the project site, provide the following information:

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? ☐ Yes ☑ No

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

i. Is the project site in a designated Floodway? ☐ Yes ☑ No

j. Is the project site in the 100-year Floodplain? ☑ Yes ☐ No

k. Is the project site in the 500-year Floodplain? ☐ Yes ☑ No

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? ☐ Yes ☑ No
If Yes:

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____

_____ _____ _____

_____ _____ _____

n. Does the project site contain a designated significant natural community? ☐ Yes ☑ No

If Yes:

i. Describe the habitat/community (composition, function, and basis for designation): _____

_____

ii. Source(s) of description or evaluation: _____

iii. Extent of community/habitat:

- Currently: _____ acres
- Following completion of project as proposed: _____ acres
- Gain or loss (indicate + or -): _____ acres

o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? ☐ Yes ☑ No

If Yes:

i. Species and listing (endangered or threatened): _____

_____

_____

p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? ☐ Yes ☑ No

If Yes:

i. Species and listing: _____

_____

q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? ☐ Yes ☑ No

If yes, give a brief description of how the proposed action may affect that use: _____

_____

E.3. Designated Public Resources On or Near Project Site

a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☑ Yes ☐ No

If Yes, provide county plus district name/number: ONON003

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? Approximately 8

ii. Source(s) of soil rating(s): Prime Farmland

c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? ☐ Yes ☑ No

If Yes:

i. Nature of the natural landmark: ☐ Biological Community ☐ Geological Feature

ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____

_____

_____

d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? ☐ Yes ☑ No

If Yes:

i. CEA name: _____

ii. Basis for designation: _____

iii. Designating agency and date: _____

e. 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 Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? ☐ Yes ☑ No

If Yes:

i. Nature of historic/archaeological resource: ☐ Archaeological Site ☐ Historic Building or District

ii. Name: _____

iii. Brief description of attributes on which listing is based:

_____

f. 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? ☑ Yes ☐ No

g. Have additional archaeological or historic site(s) or resources been identified on the project site? ☐ Yes ☑ No

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

h. Is the project site within fives miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? ☑ Yes ☐ No

If Yes:

i. Identify resource: Green Lakes State Park, national Natural Landmark (Round Lake), and NYS State Trail (Bike Path)

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): Sate Parks and National Natural Lake

iii. Distance between project and resource: West and North 0.8 and 1.9 miles.

i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? ☐ Yes ☑ No

If Yes:

i. Identify the name of the river and its designation: _____

ii. Is the activity consistent with development restrictions contained in 6NYCRR Part 666? ☐ Yes ☐ No

F. Additional Information

Attach any additional information which may be needed to clarify your project.

If you have identified any adverse impacts which could be associated with your proposal, please describe those impacts plus any measures which you propose to avoid or minimize them.

G. Verification

I certify that the information provided is true to the best of my knowledge.

Applicant/Sponsor Name Jodi Hunt Date 4/16/2020

Signature Jodi2 Hunt Title Project Manager

PRINT FORM

EAF Mapper Summary Report

Tuesday, March 31, 2020 7:21 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	No
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	Yes
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No

E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ONON003
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	Yes
E.3.i. [Designated River Corridor]	No

Exhibit F

WETLAND REPORT

Wetland Delineation Report

Proposed Green Lakes Solar Site

8507 Green Lakes Road
Fayetteville, New York 13082

April 8, 2020

Prepared by:

Tetra Tech, Inc.
3136 South Winton Road, Suite 303
Rochester, NY 14623
Phone: (585) 417-4002

Prepared for:

Falck Renewables
One Bridge Street, Suite 11
Irvington, New York 10533

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Appendix A Select Site Photographs

1.0 INTRODUCTION

EF NY CDG 002, LLC (Falck Renewables) is proposing to construct a ground-mounted solar facility located at 8507 Green Lakes Road, Fayetteville, New York (hereafter referred to as the "Site"). The Site includes approximately 23.4 acres of a larger 147-acre parcel (Figure 1).

Tetra Tech, Inc. (Tetra Tech) was retained by Falck Renewables to delineate wetlands in support of potential state and federal wetland permits. This wetland delineation report summarizes the results of the wetland delineation effort and includes a description of the Site, methods used to delineate wetlands, information reviewed, field survey results, a summary and a references section. Attached appendices include data forms and select site photographs.

1.1 Regulatory Framework

In New York, wetlands are jointly regulated by the New York State Department of Environmental Conservation (NYSDEC) and the U.S. Army Corps of Engineers (USACE). New York State's freshwater wetlands are protected under Article 24 of the Environmental Conservation Law, commonly referred to as the Freshwater Wetlands Act. Pursuant to Article 24, New York regulates wetlands greater than 12.4 acres or wetlands of any size that possess unique qualities. In addition, to protect and preserve wetlands, New York regulates a wetlands adjacent area, which is defined as those areas of land or water that are outside a wetland and within 100 feet of the wetland boundary. The USACE has regulatory jurisdiction over waters of the United States including wetlands pursuant to Section 404 of the Clean Water Act, and jurisdiction over Navigable Waters of the United States pursuant to Section 10 of the 1899 Rivers and Harbors Act.

2.0 SITE DESCRIPTION

The Site is located in the central portion of New York, approximately four miles northeast of Fayetteville, New York. It is surrounded by agricultural fields, undeveloped forest, and residential properties. As identified above, the Site includes approximately 23.4 acres of a larger 147-acre parcel located adjacent to Green Lakes Road to the west. The parcel is mainly comprised of agricultural fields and undeveloped mixed forest. There are several unimproved roads, a pole barn and Quonset steel hut. The Site is comprised of agricultural fields (Christmas trees, hay, row crops), vacant fields, and a portion of an unimproved road.

3.0 METHODS

Wetland boundaries were delineated in the field using the Routine Onsite Determination Method, as described in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE, 1987), together with region-specific methods and guidelines provided in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0 (USACE, 2012). In addition, the Routine Delineation Procedure, as described in the New York State Freshwater Wetlands Delineation Manual (Browne et al., 1995) was also considered. These methods incorporate a three-parameter approach using vegetation, soils, and hydrology to identify the presence of freshwater wetlands.

The presence of a wetland was field-verified by analyzing dominant vegetation, soil classification, and hydrology at one sample station within each investigated area. Under the New York State method, the presence of hydrophytic vegetation characteristics (i.e., greater than 50 percent facultative wet (FACW) or wetter species, 10 percent or greater areal cover of obligate (OBL) perennial species, morphological adaptions, or expanses of peat mosses over persistently saturated soils) typically indicates a wetland, and

an area that exhibits these indicators can generally be considered a wetland without detailed examination of hydrology and/or soils.

Dominant vegetation in each stratum (tree, shrub, herbaceous, and vine) was identified using appropriate regional field guides. Wetland indicator statuses for dominant species were obtained from the National Wetland Plant List (U.S. Army Corps of Engineers 2016). Wetlands were classified based on the United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) classification hierarchy (USFWS 2018). Classifications were assigned by determining the most abundant type classification(s) in the wetland. A wetland was assigned multiple type classifications if more than one class comprised at least 30 percent areal coverage. Soil cores were obtained by using a hand-held augur, which was advanced to a depth of 20 inches, when possible. Soil profiles/characteristics were recorded in standard soil log format and soil colors were determined using a Munsell Soil Color Chart (Kollmorgen Corporation, 2000). Primary and secondary wetland hydrology indicators were also visually assessed and recorded.

The USGS National Hydrology Dataset (NHD) is a digital geospatial dataset that maps and models the surface water of the United States. It represents the water drainage networks of the Site and surrounding area, describing features such as rivers, streams, lakes, and ponds.

Data from the United States Department of Agriculture Natural Resource Conservation Service (USDA NRCS) provided soil maps and soil surveys for the counties of New York State, specifically Onondaga County. This data provides information on the soil types and series found within the region. Information and soil data for the Site could be found through the USDA Web Soil Survey (WSS).

Wetland boundary points and sample stations, and stream centerlines were recorded using a Trimble GeoExplorer 7X GPS handheld unit. This unit generally provides sub-meter accuracy; however, accuracy can range within three to five meters.

4.0 INFORMATION REVIEW

4.1 Mapped Wetlands and Streams

Federal and state data regarding mapped wetlands were reviewed for the Site (Figure 2). Data from the USFWS NWI identified five mapped freshwater forested/shrub wetlands within the parcel, making up approximately 8.0-acres, located to the north of the Site. These NWI wetlands include two palustrine forested, broad-leaved deciduous, seasonally saturated (PFO1B) wetlands; two palustrine forested, needle-leaved evergreen, seasonally saturated (PFO4B) wetlands; and one palustrine forested, broad-leaved deciduous/ needle-leaved evergreen, seasonally saturated (PFO1/4B) wetland complex.

NWI mapped riverine wetlands connect the referenced off-Site mapped wetlands to Pools Brook, located to the east of the Site. The riverine wetland was identified as riverine, unknown perennial, unconsolidated bottom, permanently flooded (R5UBH). Approximately 1.9-acres of the mapped riverine feature occurs within the parcel.

NYSDEC regulated mapped wetlands were not identified within the Site boundaries. Although there were no mapped NYSDEC wetlands identified on the Site, the NYSDEC may also regulate any wetlands that are 12.4 acres or larger. This acreage includes all wetlands that are hydrologically connected, both on-Site and off-Site. The closest state regulated mapped freshwater wetland to the Site is located approximately 100 feet to the north and east (NYSDEC Wetland MAN-8). This feature generally occurs in the same location as the previously identified PFO1B/PFO4B mapped NWI wetland complex. This state mapped

wetland is listed as occupying 229.3-acres and is classified as a Class 1 wetland. The NYSDEC ranks wetlands in one of four classes ranging from Class 1, which provide the most benefits, to Class 4, which provide the fewest benefits. There are approximately 20.0-acres of the NYSDEC wetland found within the parcel.

The USGS NHD identified one stream in the same locations as the NWI mapped riverine wetlands described above. Approximately 3,149.87 linear feet of this NHD mapped stream occurs within the parcel and east of the Site.

4.2 Soil Survey

According to the USDA NRCS soil survey for Onondaga County, New York, three mapped soil units were identified within the Site (Figure 3). The hydric rating, as presented on Figure 3, indicates the percentage of a mapped soil unit's components that meets the criteria for hydric soils. Lima Silt loam (LtA) minor component met the hydric soil rating, the other two series did not. The minor component comprised approximately 1 percent of the Lima soils for 1 percent hydric rating. Mapped soil units on-Site include the following:

- **Cazenovia silt loam, 2 to 8 percent slopes (CfB)** – CfB soils occupy approximately 19.5-acres of the Site or 97.4 percent. These soils include approximately 85 percent Cazenovia components. The parent material of the Cazenovia soil consists of a loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale. Cazenovia soils are generally moderately well drained soils that occur on convex and gently undulating reworked lake plains and till plains. The seasonal zone of water saturation for this component is about 24 to 48 inches. These soils do not meet the hydric criteria.
- **Cazenovia soils, 15 to 25 percent slopes (CgD)** – CgD soils occupy approximately 0.2-acres of the Site or 1.0 percent. These soils include approximately 80 percent Cazenovia components. The parent material of the Cazenovia soil consists of a loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale. Cazenovia soils are generally moderately well drained soils that occur on convex and gently undulating reworked lake plains and till plains. The seasonal zone of water saturation for this component is about 24 to 48 inches. These soils do not meet the hydric criteria.
- **Lima silt loam, 0 to 3 percent slopes (LtA)** – LtA soils occupy approximately 0.3-acres of the Site or 1.6 percent. These soils include approximately 85 percent Lima components. The parent material of the Lima soil consists of a loamy till that contains calcareous loamy lodgment till derived from limestone, sandstone, and shale. Lima soils are generally moderately well drained soils that occur on ridges, till plains, and drumlins. The seasonal zone of water saturation for this component is about 18 to 24 inches. With only 1 percent of the LtA soil components described as having hydric features, these soils do not meet the hydric criteria.

5.0 SURVEY RESULTS

Observations of the vegetation communities within the Site can generally be broken down into three communities; Christmas tree plantations, maintained fields, and vacant fields. The two Christmas tree areas consisted mainly of balsam fir (*Abies balsamea*) and patches of unidentifiable grass species and white clover (*Trifolium repens*).

The maintained field community appear to be areas of previous farming that have been rotated out and have upland successional plants growing, with areas of observed seasonal mowing. The area consists of a diverse herbaceous community with varied densities of broad-leafed weed species such as common plantain (*Plantago major*), bull thistle (*Cirsium vulgare*), white clover (*Trifolium repens*), and unidentifiable grass species. There are also densities of Indian mallow (*Abutilon fruticosum*), Queen Anne's lace (*Daucus carota*), and Chicory (*cichorium intybus*).

The vacant field community appears to be partially maintained fields mainly comprised of an unidentifiable hay species, Canada goldenrod (*Solidago canadensis*), Queen Anne's lace (*Daucus carota*), common milkweed (*Asclepias syriaca*), and some densities of purple loosestrife (*Lythrum salicaria*).

Land within the Site and surrounding land has been subjected to historic modification of landform and hydrology. Most of the modification was conducted to facilitate agriculture by altering the drainage contours and stormwater discharge through excavated drainage ditches and drainage tiles.

Based on the desktop evaluation and field observations, including lack of hydrology, hydric soils, and dominance of upland vegetation throughout the Site, there are no wetlands present within the Site.

6.0 SUMMARY

According to the New York State Freshwater Wetlands Delineation Manual, the vegetative growing season is defined as the portion of the year when soil temperatures are above biological zero (41°F). For the Site, which is found in mesic soil temperature regime, the growing season months are assumed between late March and late October. The field delineation for the Site was conducted in early April in the early growing season. There were dead standing structures of herbaceous plants that were largely identifiable, with diagnostic features such as dried seed heads and leaves. Hydrology conditions at the time of observation were seasonably "wetter" with recent rain and snow melt. This caused the Site to have areas of standing water, moist soils, and observable water table. Test pits were dug to examine soils within the Site; they were found to be similar to the described Cazenovia Silt Loams (CfB), 2 to 8 percent slopes. Based on field observations of hydrology, soils, and identifiable vegetation, we can conclude that there are no wetlands present within the Site. No NYSDEC regulated freshwater wetlands or surface waterbodies were identified within the Site. Areas of the undeveloped forest to the north and east of the Site, outside of the fenced area, were observed to have wetter conditions and appear to match the mapped NWI and NYSDEC wetlands. An official jurisdictional determination would need to be based on USACE and NYSDEC review of the Site.

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Figure 1

Site Location



Legend

- Parcel Boundary
- Site Boundary

*Locations are approximate

Approximate Scale:

0 0.125 0.25 0.5 Miles

TETRA TECH

Figure 1
Site Location

Green Lake Solar
8507 Green Lakes Road
Fayetteville, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Figure 2

NWI and NYDEC Mapped
Wetlands and NHD Mapped
Streams



Legend

- Parcel Boundary
- Site Boundary
- NYSDEC Wetlands
- Freshwater Forested/Shrub Wetland
- Riverine

*Locations are approximate

Approximate Scale:

0 0.05 0.1 0.2 Miles

TETRA TECH

Figure 2
Mapped Water Features

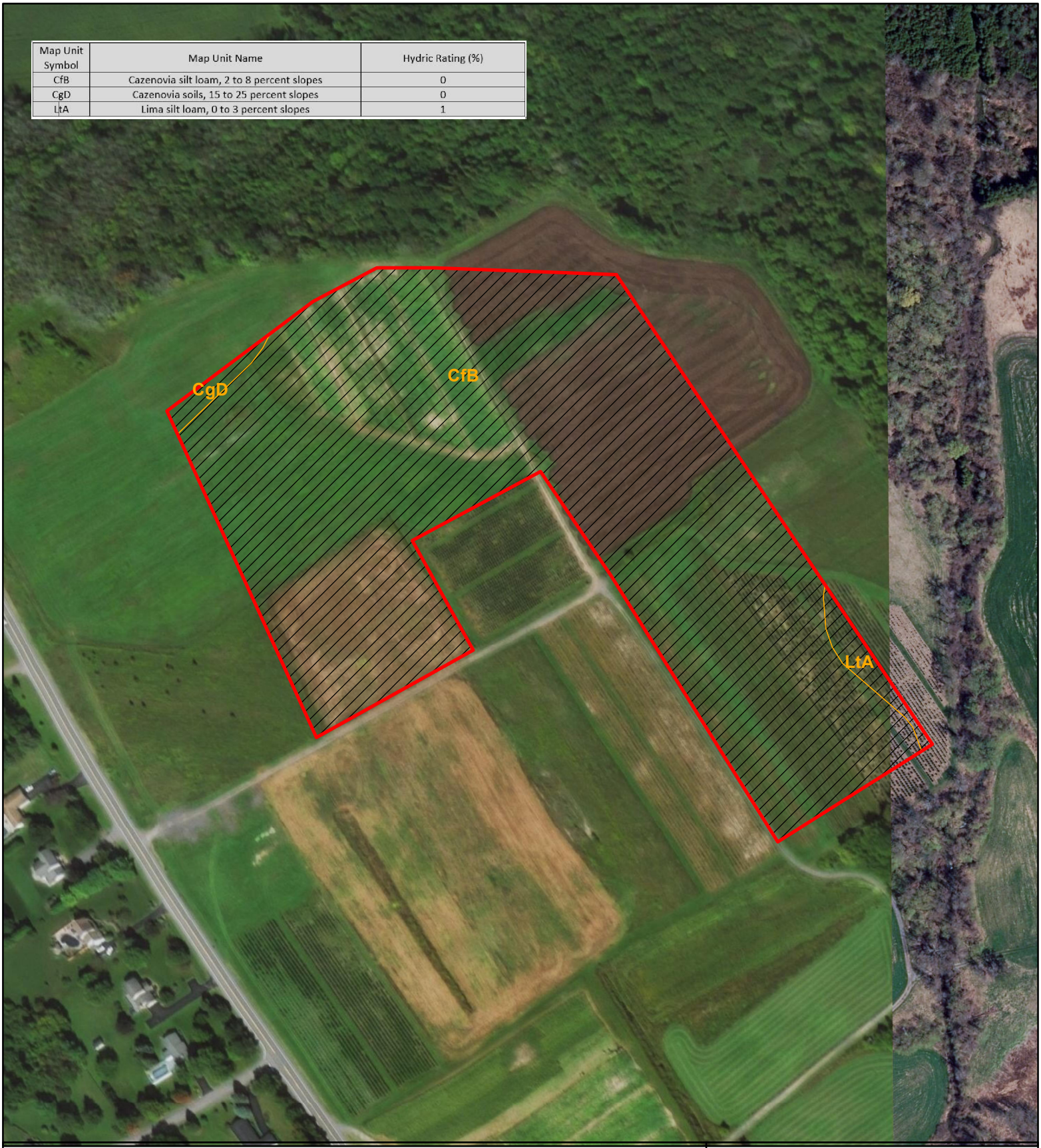
Green Lake Solar
8507 Green Lakes Road
Fayetteville, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Figure 3

NRCS Soil Units

Map Unit Symbol	Map Unit Name	Hydric Rating (%)
CfB	Cazenovia silt loam, 2 to 8 percent slopes	0
CgD	Cazenovia soils, 15 to 25 percent slopes	0
LtA	Lima silt loam, 0 to 3 percent slopes	1



Legend

Site Boundary

NRCS Soils

Approximate Scale:

0 225 450 900 Feet

TETRA TECH

Figure 3
NRCS Soil Units

Green Lake Solar
8507 Green Lakes Road
Fayetteville, NY

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors

Appendix A

Select Site Photography

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of western boundary of the Site facing north from unpaved access road.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of Site and unpaved access road facing east.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of soil test pit within Site facing east within vacant field. Pit had filled with water overtime, high water table from recent rainfall in past days.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of typical maintained fields found within the Site facing west.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View from northern boundary of the Site looking towards Christmas Tree plantings facing south..

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of slope difference between the upslope Site and the downslope wooded wetland, facing northwest.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of eastern boundary of Site facing south.

PHOTOGRAPHIC DOCUMENTATION			
Client:	Falck Renewables	**Project No:**	194-7119.01.03
Site Name:	Green Lakes Solar Site	**Location:**	Fayetteville, NY



Description:	View of the southern portion of the Site from the access road facing north.

Exhibit G

PROFESSIONAL FEES REIMBURSEMENT AGREEMENT

TOWN OF MANLIUS

SPECIAL PERMIT APPLICATION – EXHIBIT "G"

PROFESSIONAL FEES REIMBURSEMENT AGREEMENT

As a condition of the application(s) to the Town of Manlius, its Zoning Board of Appeals, Planning Board, codes administration/planning office, and/or Town Board (the **"**Town**"**) for various zoning, land use, construction and related reviews, approvals, certificates, permits and related consideration(s) (including for any local governmental assisted funding) related to the request of EF NY CDG 002, LLC (Falck Renewables): (the "Application"), Green Lakes Solar Facility [name], One Bridge Street, Suite 11, Irvington, New York 10533 [legal address] ("Applicant") relative to proposed development at 8507 Green Lakes Road, Fayetteville, New York 13066 [project address], Tax Parcel # 082-02-15.1**,** Manlius, New York, and related matters (the "Project") agrees as follows:

The Application and Project may or will likely entail that the Town incur legal, engineering, architectural, administrative and related expense(s) including, without limitation, for both on staff and third party consultants involved in the consideration of the Application and Project, and including, without limitation, attendance at Zoning Board of Appeals, Planning Board, and Town Board meetings, consultation with the Applicant, its or the Town's engineer, architect, attorney, and/or other Town officers and employees, or consultants or professional service providers, incidental to the Application from the earlier of the filing of the Application for and/or first presentation of the Project to Town, and through final completion and issuance of all Town and other governmental permits, certifications and approvals.

In connection with and consideration of the foregoing, Applicant agrees to bear all cost and expense for such administrative, legal, engineering, architect and other professional and consulting assistance to the Town incidental to the Application and Project, and including that expense incurred by the Town for Town employees and officers performing reasonable and necessary work on behalf of the Town incident to the Application or Project.

In connection with the foregoing, Applicant shall reimburse the Town for time spent by outside consultants and professionals at the usual rate charged by them to private clientele, or if none, then the usual rate charged to municipalities. Reimbursement for the cost of Town employees and officers shall be based upon the cost to Town for the services of such persons, including salary and fringe benefits, reduced to an hourly rate and including overtime where directly attributable to the Application or Project.

Should the Town determine, in its sole discretion, that additional services are required to represent, supervise, inspect, evaluate and/or consult, including in order to protect the rights and/or interests of the Town such as relative to an enforcement or violation proceeding, the Applicant shall likewise bear all costs associated with such services.

This Agreement shall be effective as of _____, 20__. The Applicant shall deposit an initial sum of **$**_____, and such other amounts as from time to time the Town may determine, payable to and deposited with the Town and which sum or sums shall be applied against those sums reimbursable to the Town pursuant to the terms of this Agreement (the "Deposit"). Upon completion or discontinuance of the Application and Project and payment of all fees incurred, any unused Deposit shall be returned to the Applicant.

The Applicant shall receive periodically, one or more statements detailing charges for which reimbursement has been made against the Deposit, detailing unpaid amounts, if any, and setting forth any additional Deposit required by the Town. Failure to pay any amounts due the Town of Manlius within twenty (20) days of the date of statement may result in the termination of work/services by Town relative to the Application, the non-issuance suspension or revocation of any certificates, permits or approvals, and/or denial of applications, the Town's commencement of collection efforts, and/or the exercise of any other rights or remedies available to Town hereunder or pursuant to applicable law, including under the Town Code. No certificates, approvals or permits, including, without limitation, Certificates of Occupancy/Compliance, may be issued until all fees due hereunder are paid or sufficient Deposit for same made.

Notwithstanding any provision hereof to the contrary or otherwise, the intent of this Agreement is to subject all of those subject matter areas under applicable provisions of Federal, State, and County laws, rules and regulations whatsoever, the Town Code including as any of same may be amended from time to time, and without limitation, those provisions under Chapters 59, 63, 72, 83, 95, 96, 104, 119, 123, 125, 126, 127, 131, 147, and 155 of the Town Code to the provisions hereof; in addition any financing or funding applications incidental to the Application or Project and requiring sponsorship or support of Town, and review under the State Environmental Quality Review Act or other State or Federal environmental, historical or related laws, rules or regulations shall likewise be subject to the provisions hereof.

In addition, and notwithstanding any provisions hereof to the contrary or otherwise, any provisions of the Town Code or other laws, rules or regulations providing rights more favorable to and protective of Town shall be deemed incorporated herein by reference, and shall not be deemed superseded by less protective provisions herein.

In the event of a breach or default by Applicant, Town shall be entitled to pursue any and all legal rights and remedies pursuant to applicable law including, without limitation, the Town Code and shall be entitled to recover, in addition to any sums due, reasonable attorney's fees ,costs and disbursements incurred in any such efforts.

If any part of this Agreement or the application thereof to any person or entity or circumstance is adjudged invalid, illegal or unconstitutional by any court of competent jurisdiction, such order or judgment shall be confined in its operation to the part of this law or in its application directly involved in the controversy in which such judgment shall have been rendered and shall not affect or impair the validity of the remainder of this Agreement or the application thereof to other persons, entities or circumstances. Further, in adjudging such invalid, illegal or unconstitutional provision or part thereof, the court shall attempt to modify same to a provision or part which is not illegal, invalid or unconstitutional and which best achieves the intent of such illegal, invalid or unconstitutional provision or part thereof.

The Town Supervisor has executed this agreement pursuant to a blanket Resolution adopted by the Town Board at a meeting thereof held on _____, 20__, and is duly authorized and empowered to execute this instrument and enter into this Agreement on behalf of the Town of Manlius.

In the event Applicant is a closely held corporation, partnership or limited liability company, its three (3) largest principals shall be signatories to this Agreement, as joint and severable parties with Applicant and Town.

This instrument shall be executed in triplicate. At least one original shall be permanently filed, after execution thereof, in the office of the Town Clerk and one in the Code Enforcement Office.

Dated: 4/15/2020

_____	_____
Print Applicant Name	**Applicant's Authorized Signature/Title**

Applicant Address: One Bridge Street, Suite 11, Irvington, New York 10533

_____

_____	_____
Print Applicant (Principal) Name	**Applicant's Principal Signature**
_____	_____
Print Applicant (Principal) Name	**Applicant's Principal Signature**
_____	_____
Print Applicant (Principal) Name	**Applicant's Principal Signature**

TOWN OF MANLIUS

By: _____

Name: _____

Title: _____

Exhibit H

DISCLOSURE AFFIDAVIT

DISCLOSURE AFFIDAVIT

Green Lakes Solar Facility Application
8507 Green Lakes Road, Fayetteville, New York
13066

State of New York

Mr. Jonathan Koch, as a representative of the Applicant, EF NY CDG 002, LLC (Falck Renewables), who having been first duly sworn says:

I reviewed General Municipal Law §809 and am familiar with the provisions contained therein, that no state officer, or any officer or employee of the County of Onondaga or Town of Manlius has any interest in the person, partnership or association owning the premises subject of the application or making such application, and that no other violation of §809 shall result from such application

Jonathan Koch
Falck Renewables

Subscribed and sworn to before me this day 4/1/2020

Notary Public

ERIN Q. SANCHEZ
Notary Public, State of New York
No. 1SA6035943
Qualified in Dutchess County
Commission Expires January 10, 2022

My Commission Expires on: 1/10/22



Special Use Permit and Site Plan Approval Application

Proposed Green Lakes Solar Site
8507 Green Lakes Road
Fayetteville, New York 13082

Submitted April 16, 2020

Prepared by:

TETRA TECH

Tetra Tech, Inc.
3163 South Winton Road, Suite 303
Rochester, NY 14623
Phone: (585) 417-4007

Prepared for:

EF NY CDG 002, LLC
One Bridge Street, Suite 11
Irvington, New York 10533

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1.0 PROJECT OVERVIEW

EF NY CDG 002, LLC (Falck Renewables) is seeking a Special Use Permit and Site Plan approval for the construction of the Green Lakes Solar 5 megawatt (MW) alternating current (AC) photovoltaic (PV) array located at 8507 Green Lakes Road, Fayetteville (Manlius), New York (hereafter referred to as the "Site"). Falck Renewables proposes the development of approximately 23.4 acres of a larger approximately 147.43-acre parcel of agricultural land in the Town of Manlius, Onondaga County into a ground-mounted (PV) solar farm.

The proposed PV solar farm would be capable of delivering about 5,000 kW AC into the local electrical distribution system, which is sufficient to provide renewable energy to approximately 600 households. The PV solar modules proposed for this project are fixed-tilt modules that would be placed on a racking system that is either pile driven or screw mounted to the ground surface. The PV solar modules will be directly interconnected to and provide energy to the local electric distribution system via a typical 13.2 kilovolt, overhead electrical service. Prior to utility interconnection, direct current (DC) electric power generated by the PV solar modules will be transformed to AC electric power by inverters and modified as necessary to safely supply the local electrical distribution system. The PV solar farm would also include an equipment pad, a gravel access road, a vegetative soil cover, and it will be surrounded by a chain-linked security fence per code.

The following sections and Exhibits provide information 1) about the proposed PV solar farm and 2) required as part of the Special Permit application criteria and Section 155-27.2 of the Town Code.

2.0 SITE DESCRIPTION

The Site located 8507 Green Lakes Road, Fayetteville, New York, consists of an approximately 147.43-acre parcel assigned Assessor Parcel Number (APN) 313889-082-000-0002-015-001-0000 and Property Identifier 082.-02-15.1. According to the Onondaga County Image Mate Online database the property class is listed as "field crops" and is zoned as residential-agricultural.

The Site includes agricultural and wooded land with several unimproved roads and two farm related buildings. The Site is bounded by wooded land followed by agricultural land to the north and east, wooded land followed by residential structures to the south and Green Lakes Road followed by residential structures to the west.

A map showing the location of the Site is presented in *Attachment 1*.

3.0 COMMUNITY CHARACTER AND SURROUNDING LAND USE

The general area at the Site consists of agricultural and undeveloped land. The Site is located within a rural residential area in the Village of Fayetteville in Onondaga County, New York. The Site is bounded by wooded land followed by agricultural land to the north and east, wooded land followed by residential structures to the south and Green Lakes Road followed by residential structures to the west.

Table 4-1 Adjacent Properties and Addresses

Direction from the Site	Street Address	Description
North	N/A	Wooded Land
East	N/A	Wooded and Agricultural Land
South	Green Lakes Road	Wooded Land
South	8535 Green Lakes Road	Residential
West	Green Lakes Road	Green Lakes Road
West	8542-8512 Green Lakes Road	Residential

The installation and operation of a solar facility is consistent with the Town's vision to *"...promote the safe, effective and efficient use of solar photovoltaic energy systems that reduce on-site and off-site consumption of utility-supplied energy while protecting the health, safety and welfare of adjacent and surrounding land uses and properties."* (Section 155-27.2 of the Town Code).

Falck Renewables and its affiliates have worked closely with the landowner to locate the Site in the least productive area of farmland on the designated land parcel. In addition, the PV solar farm will be decommissioned after its useful life (designed for 40 years) and the land may be readily reused for agriculture. During the PV solar farm's useful life, native nutrient-rich plant blends can be used as ground cover to enhance soil erosion measures and increase future farm production.

The proposed PV solar farm is harmonious with the Site's adjoining parcels' existing agricultural use, will not depreciate or alter those properties' essential character, and presents no conflict with residentially zoned areas of Town of Manlius.

While research is limited on the effect of ground-mounted PV solar farms on surrounding land values, a 2013 nationwide study of wind farms and surrounding property values within viewing range showed no evidence of affected property values. Due to PV solar farms' smaller profile and lack of flicker and shadow potential on surrounding lands, PV solar farms are anticipated to have even less of an impact than wind farms on surrounding land values.

4.0 NATURAL AND CULTURAL RESOURCES

4.1 Threatened and Endangered Species

Tetra Tech, on behalf of Falck Renewables, consulted with the New York State Department of Environmental Conservation (NYSDEC) online Environmental Assessment Form (EAF) Mapper on March 31, 2020. The NYSDEC review stated that there is no record of unique geological features, wetlands or waterbodies, State listed rare species of plant or animal, or critical environmental areas on the project Site. The NYSDEC EAF Form is included as Exhibit E to the Special Permit Application.

Tetra Tech submitted a consultation request to the United States Department of the Interior Fish and Wildlife Service (USFWS) on March 3, 2020. The USFWS responded that there are no critical habitats for threatened or endangered species in the vicinity of the Site (*Attachment 2)*.

4.2 Cultural Resources

Tetra Tech, on behalf of Falck Renewables, submitted a consultation request to the New York State Office of Parks, Recreation, and Historic Preservation's (OPRHP) Cultural Resource Information System (CRIS) database to identify properties listed on the State and National Register of Historic Places (NRHP) on or in the vicinity of the Project Site. OPRHP responded to the consultation by issuing a "No Effect" letter dated March 19, 2020 (*Attachment 3*) stating that no archaeological surveying was required, and the proposed solar facility would have no effect on historic cultural resources.

5.0 OPERATION AND MAINTENANCE CONSIDERATIONS

While PV solar farms of this capacity are typically considered to be fairly low-maintenance, routine operation and maintenance services, including locally contracted vegetation management, will be performed per industry codes and manufacturers' specifications, ensuring the safe and efficient operation of equipment. The PV solar farm will be continuously monitored such that unexpected issues may be addressed immediately.

5.1 Noninterference

The Site will not produce an electromagnetic interference in the existing microwave communications operation.

5.2 Proximity to radio, television and telephone systems

The Site will not interfere with existing fixed broadcast, retransmission, or reception antennae for radio, television or wireless phone.

5.3 Fencing and security

The Site will be surrounded by a chain-link fence in compliance with all Federal, State, and Municipal codes.

5.4 Lighting

No artificial lighting will be needed for the normal operations at the Site.

5.5 Utility Interconnection and Considerations

In general, the greatest challenge in siting economically viable PV solar farm is associated with utility interconnection capacity and requirements. Falck Renewables and its affiliates have been working in close coordination with the National Grid and the 25% interconnection down payment associated with the Site has been paid per D. Payment and Construction Milestones of the New York State Standardized Interconnection Requirements and Application Process For New Distributed Generators and Energy Storage Systems 5 MW or Less Connected in Parallel with Utility Distribution Systems.

Traffic impacts are generally limited to the PV solar farm construction period, which is estimated to last approximately three months. Once the PV solar farm is operational, traffic is typically

limited to less than 10 visits per year to monitor operation, provide maintenance/repair, and maintain vegetation, as necessary.

5.7 Noise

There may be some noise associated with PV solar farm construction – truck entry/exit, earthmoving equipment, etc. – but it is expected to be temporary in duration and limited to normal working hours.

The solar collection modules themselves are quiet. The greatest potential source of noise is anticipated to be from the power inverter at the Site. The inverter will be located central to the array of solar modules and more than 700 feet from the nearest residential receptor. Noise levels at a typical inverter will be approximately 55 decibels at a distance of three feet and the noise will dissipate quickly as distance from the inverter increases. As a point of comparison, engaging in normal face-to-face conversation generates a noise level of approximately 60 decibels, and typical city traffic inside a car has a noise level of approximately 80 decibels (Center for Disease Control and Prevention, 2017). At a distance of 40 feet, which is closer than the nearest receptors, the inverter's noise level calculates to approximately 35 decibels, which is comparable to a soft whisper. Thus, noise impacts from the facility's operation are expected to be insignificant.

5.8 Solid Waste

Some minor amount of solid waste generation may occur during the construction process, but it will be disposed of off-site at an appropriate location. Once operational, the PV solar farm will not generate an appreciable amount of solid waste.

5.9 Fire Protection and Emergency Access

Coordination with emergency services is an important part of any PV solar farm development process and this coordination will be conducted as part of the Building Permit application process. Local emergency services will be provided with notification that the Site is undergoing review and invited to visit the Site. Equipment specifications will be provided to responders during the building permit application and implementation process.

The following measures will be taken regarding response to potential emergencies at the proposed facility:

- Local emergency responders will be invited to tour the Site during construction and after construction is completed. The Site tour will agenda will include descriptions of the system components, emergency shut-down, system isolation, etc.;

- The facility will be provided with a 'Knox-Box" or other similar locking mechanism to provide Site access to emergency responders;
- Emergency telephone numbers will be posted on the perimeter fence;
- System components will be marked in order to provide emergency responders with appropriate warning and guidance with respect to isolating the electrical systems;
- A Site access road will be constructed in a way that allows for the passage of emergency vehicles in the event of an emergency; and
- A Site access road will be maintained to allow emergency vehicle access to the Site.

6.0 VISUAL IMPACTS ANALYSES

6.1 Viewsheds and screening

Tetra Tech, on behalf of Falck Renewables conducted a full dimensional viewshed analysis and developed a conceptual landscape/screening plan to address concerns of visibility from residences in proximity to the proposed Site. The viewshed map analyzes the potential visibility of the solar modules and screening provided by topography as well as existing vegetation. A profile that depicts the terrain and other existing features that may influence visibility of the Site was developed to provide a graphical representation of the line of sight from points selected along Green Lakes Road. The viewshed map is provided in *Attachment 4* and the Landscaping plan is included in *Attachment 5*.

To incorporate vegetative screening into the project, the project will incorporate the daily activities of the existing commercial farm located on the property, growing trees for both landscaping and seasonal purposes (Chuck Hafner Farms). Operations from the tree farm will continue during solar operations and provide partial screening of the PV solar farm from residences located along the west side of Highway 290 and along Buttonvale Road.

6.2 Federal Aviation Administration & Glare Analysis

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint and glare from photovoltaic modules is receiving increased attention. The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010 (FAA Guidance). The FAA Guidance recommends that glare analyses should be performed on a site-specific basis using the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT). This guidance applies to PV solar farm located on/near airport property but is also considered to be an industry best practice for solar facilities in general.

Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The calculations and methods are based on analyses, test data, a database of different photovoltaic module surfaces (e.g. anti-reflective coating, texturing), and models developed over several years at Sandia. The results are presented in a simple easy-to-interpret plot that specifies when glare will occur throughout the year, with color indicating the potential ocular hazard (Sandia Laboratories, 2016).

The SGHAT (GlareGauge) was utilized to evaluate the potential for glare at several locations along nearby roads, residences, and any commercial facilities. The modules to be used on the Site are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. The modules will be on a south-facing fixed-tilt array with an approximate height not to exceed nine feet from the ground surface. The modules will have a maximum 25-degree tilt. Two separate glare analyses were conducted for a module height of nine feet (maximum height) with applicable panel specifications. The SGHAT Report is included as *Attachment 6.*

The Federal Aviation Administration (FAA) Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility would require formal filing to the FAA. The FAA Notice Criteria Tool Report is included as *Attachment 7.*

7.0 REFERENCES

Adolf Goetzberger and Volker Hoffman (2005). "Photovoltaic Solar Energy Generation." Springer, New York.

The Federal Aviation Administration (FAA) developed *Technical Guidance for Evaluating Selected Solar Technologies on Airports* in 2010

Fthenakis, V.M. (2003). Practical Handbook of Photovoltaics: Fundamentals and Applications: Overview of Potential Hazards. Available at http://www.bnl.gov/pv/files/pdf/art_170.pdf .

U.S. Dept. of Energy (2010). "Photovoltaic Basics." Available at http://www1.eere.energy.gov/solar/pv_basics.html .

Vasilis Fthenakis, Hyung Chul Kim and Erik Alsema (2008). "Emissions from Photovoltaic Life-Cycles." *Environmental Science and Technology* 2008 42 (6):2168-2174. Available at: http://pubs.acs.org/doi/full/10.1021/es071763q .

Hoen et al. (2013). "A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States". Ernest Orlando Lawrence Berkeley National Laboratory.

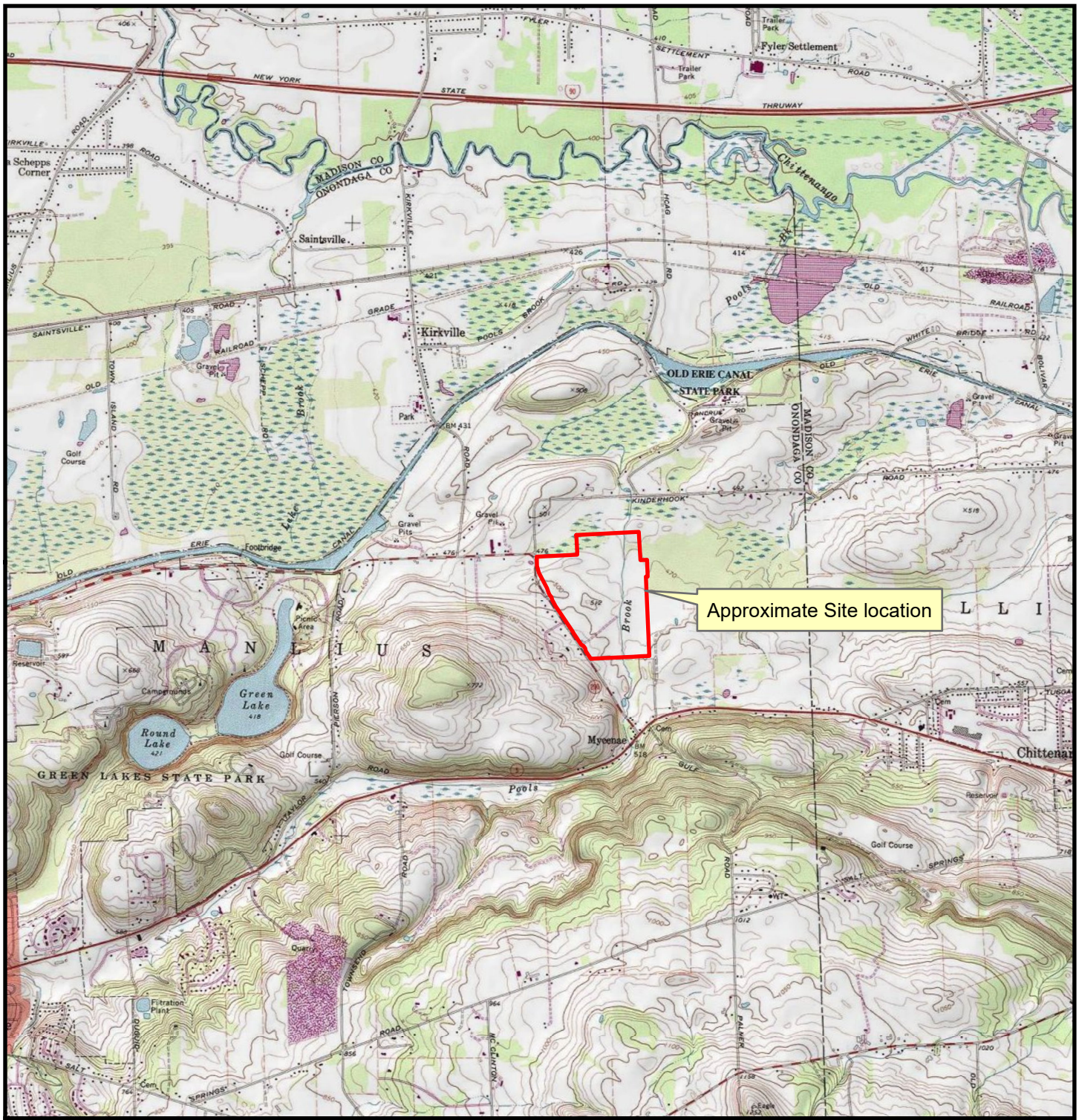
8.0 ATTACHMENTS

ATTACHMENT 1 – SITE LOCATION MAP
ATTACHMENT 2 – USFWS THREATENED AND ENDANGERED SPECIES
ATTACHMENT 3 – SHPO CONSULTATION LETTER
ATTACHMENT 4 – VIEWSHED ANALYSIS
ATTACHMENT 5 – LANDSCAPING PLAN
ATTACHMENT 6 – GLARE ANALYSIS
ATTACHMENT 7 – FEDERAL AVIATION ADMINSTRATION SCREEN

ATTACHMENT 1

SITE LOCATION MAP

Copyright: Tetra Tech 12/19/2019 4:58:47 PM





Legend

Approximate Site boundary

Approximate scale:

0 0.25 0.5 1 Miles

TETRA TECH

Attachment A
Site Location

Green Lakes Solar
8507 Green Lakes Road
Fayetteville, NY

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

ATTACHMENT 2

USFWS THREATENED AND ENDANGERED SPECIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
http://www.fws.gov/northeast/nyfo/es/section7.htm

In Reply Refer To: March 04, 2020
Consultation Code: 05E1NY00-2020-SLI-1931
Event Code: 05E1NY00-2020-E-05805
Project Name: Green Lakes Solar

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: http://www.fws.gov/northeast/nyfo/es/section7.htm

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/

eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

Project Summary

Consultation Code: 05E1NY00-2020-SLI-1931

Event Code: 05E1NY00-2020-E-05805

Project Name: Green Lakes Solar

Project Type: POWER GENERATION

Project Description: Proposed ground-mounted solar project on agricultural land

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/43.05829677491623N75.93458241903994W



Counties: Onondaga, NY

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered

Reptiles

NAME	STATUS
Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2202	Threatened

Snails

NAME	STATUS
Chittenango Ovate Amber Snail *Succinea chittenangoensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1776	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

ATTACHMENT 3

SHPO CONSULTATION LETTER

NEW YORK STATE OF OPPORTUNITY. | Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

March 19, 2020

Jodi Hunt
Project manager
Tetra Tech, Inc.
3136 South Winton Road
Suite 303
Rochester, NY 14623

Re: DEC
Green Lakes Solar/7 MW/23.5 of 147 Acres
8507 Green Lakes Rd, Town of Manlius, Onondaga County, NY
20PR01565

Dear Jodi Hunt:

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

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

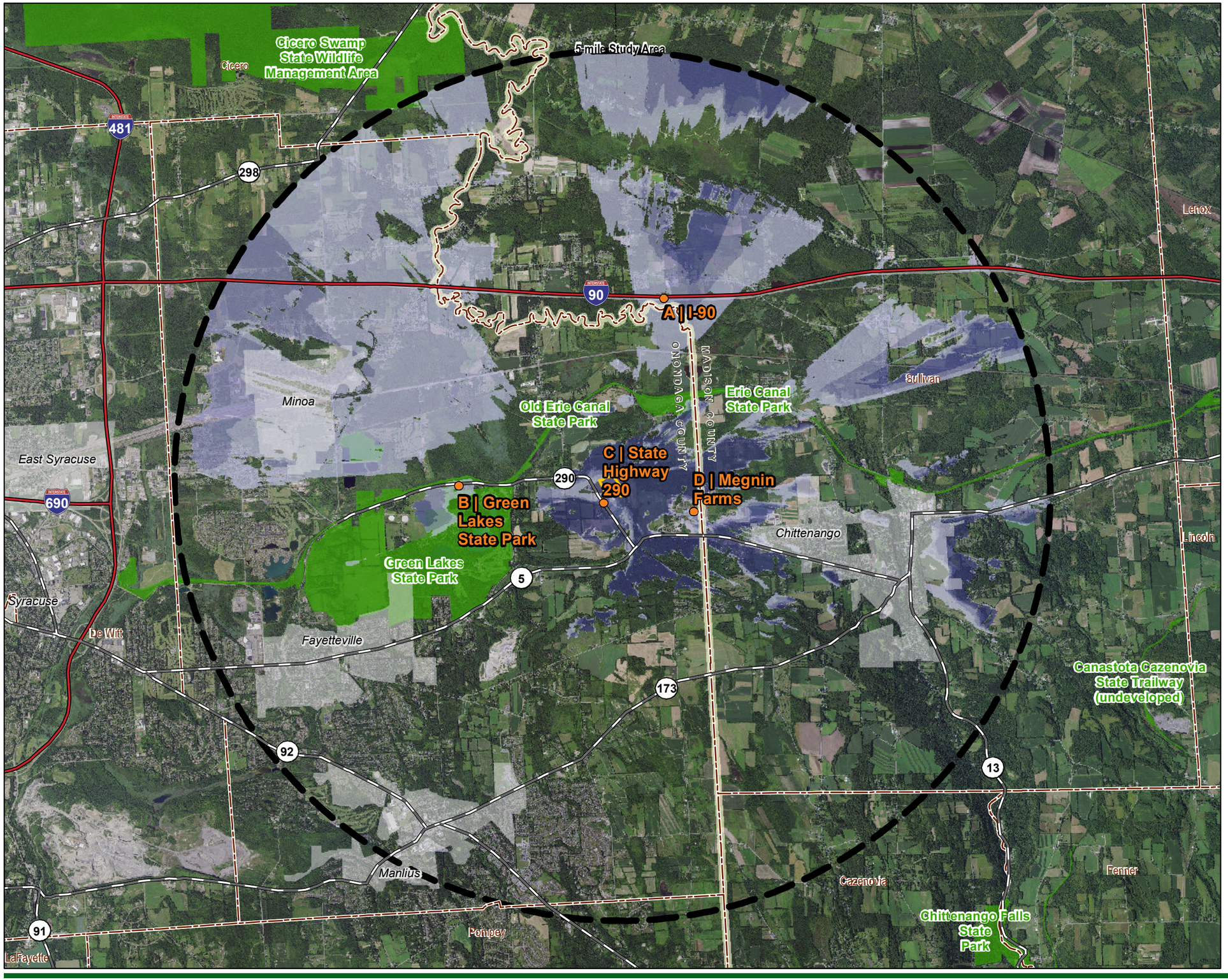
R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

ATTACHMENT 4

VIEWSHED ANALYSIS

Green Lakes Solar Project | Onondaga County, NY



Project Area | **Viewshed Analysis**

- Line-of-Sight Location
- Project Area
- State Park

Transportation

- Interstate Highway
- U.S. Highway
- State Highway

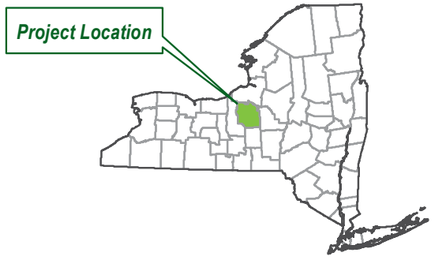
% of PV Panels Potentially Visible

- < 25%
- 25% - 50%
- 50% - 75%
- > 100%

*Viewshed analysis is based on topography (bare earth; no vegetation or intervening structures) and a maximum 10' height of solar panels to evaluate the potential visibility of the proposed project. Areas that are not shaded in purple indicate that there is likely no visibility.

NOT FOR CONSTRUCTION

0 1.5 3 Miles



Green Lakes Solar Project | Onondaga County, NY



Project Area | **Viewshed Analysis**

- Line-of-Sight Location
- Line-of-Sight
- Project Area
- State Park

Transportation

- Interstate Highway
- U.S. Highway
- State Highway

% of PV Panels Potentially Visible

- < 25%
- 25% - 50%
- 50% - 75%
- > 100%

*Viewshed analysis is based on topography (bare earth; no vegetation or intervening structures) and a maximum 10' height of solar panels to evaluate the potential visibility of the proposed project. Areas that are not shaded in purple indicate that there is likely no visibility.

NOT FOR CONSTRUCTION

0 0.5 1 Miles

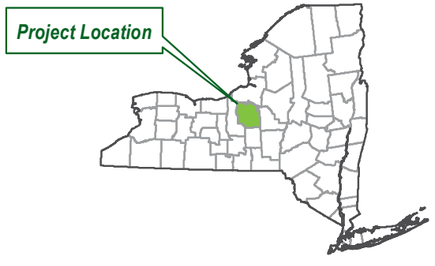


Figure 1: Line of Sight A | I-90

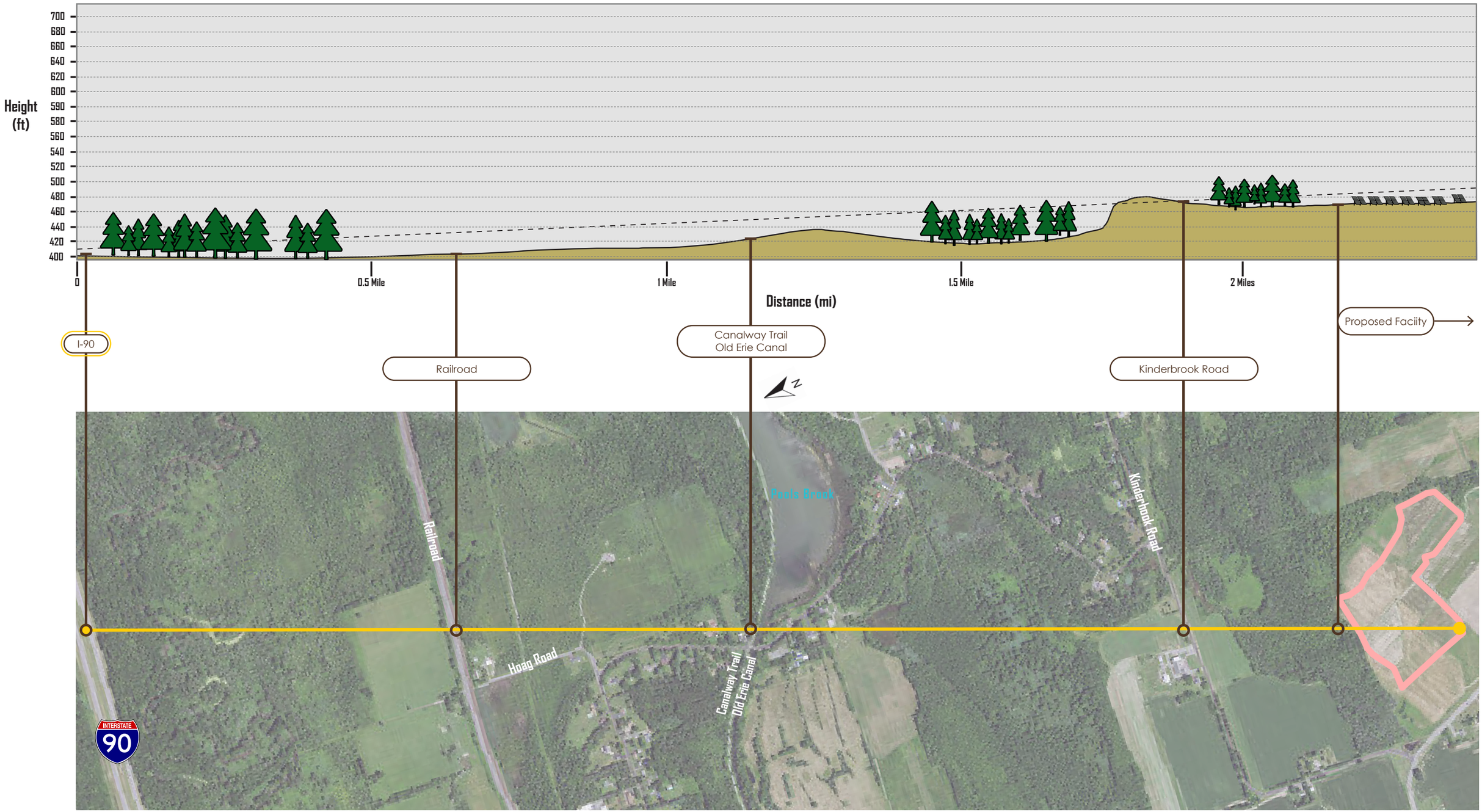


Figure 2: Line of Sight B | Green Lakes State Park

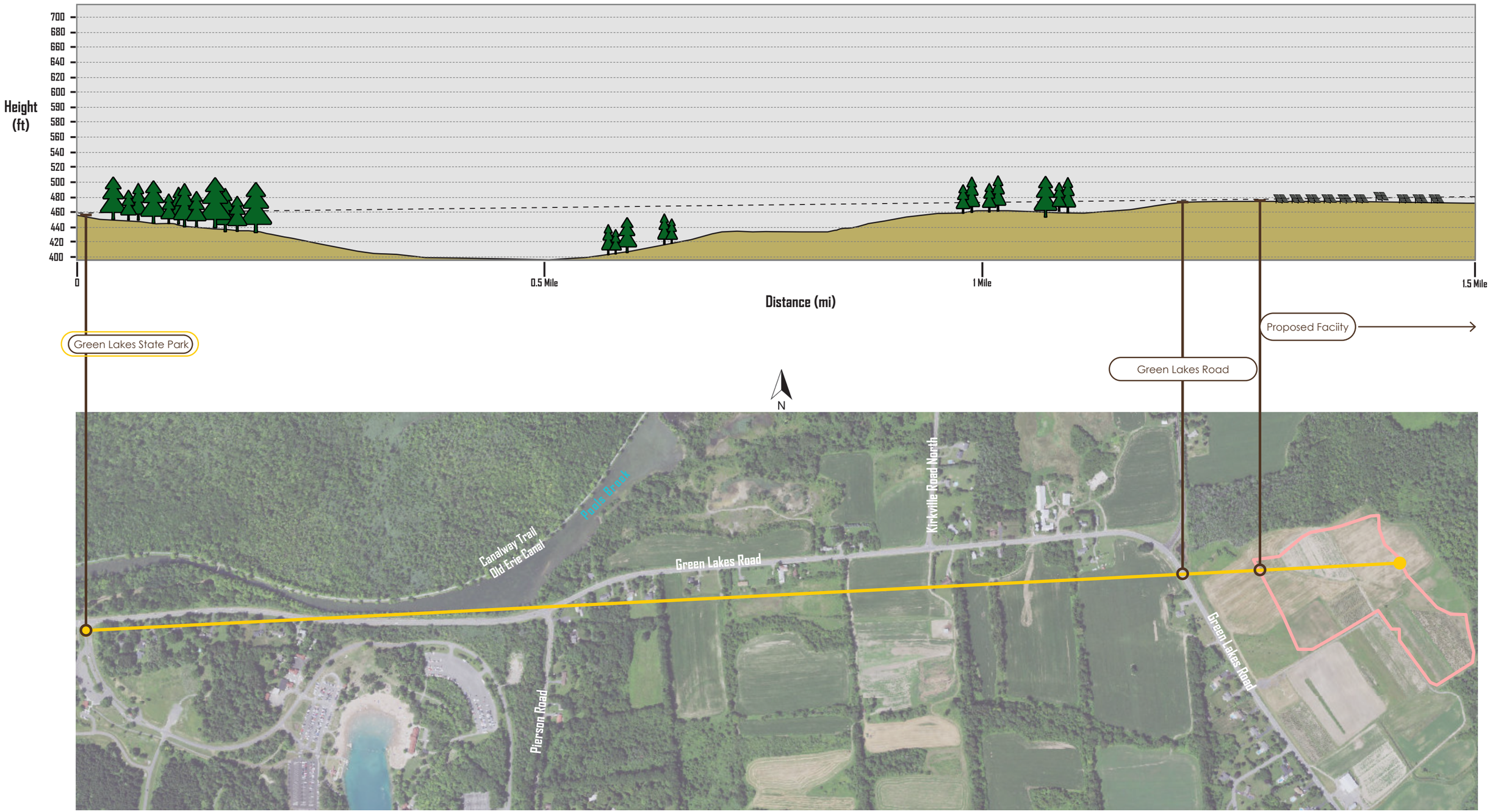


Figure 3: Line of Sight C | State Highway 290/Green Lakes Road

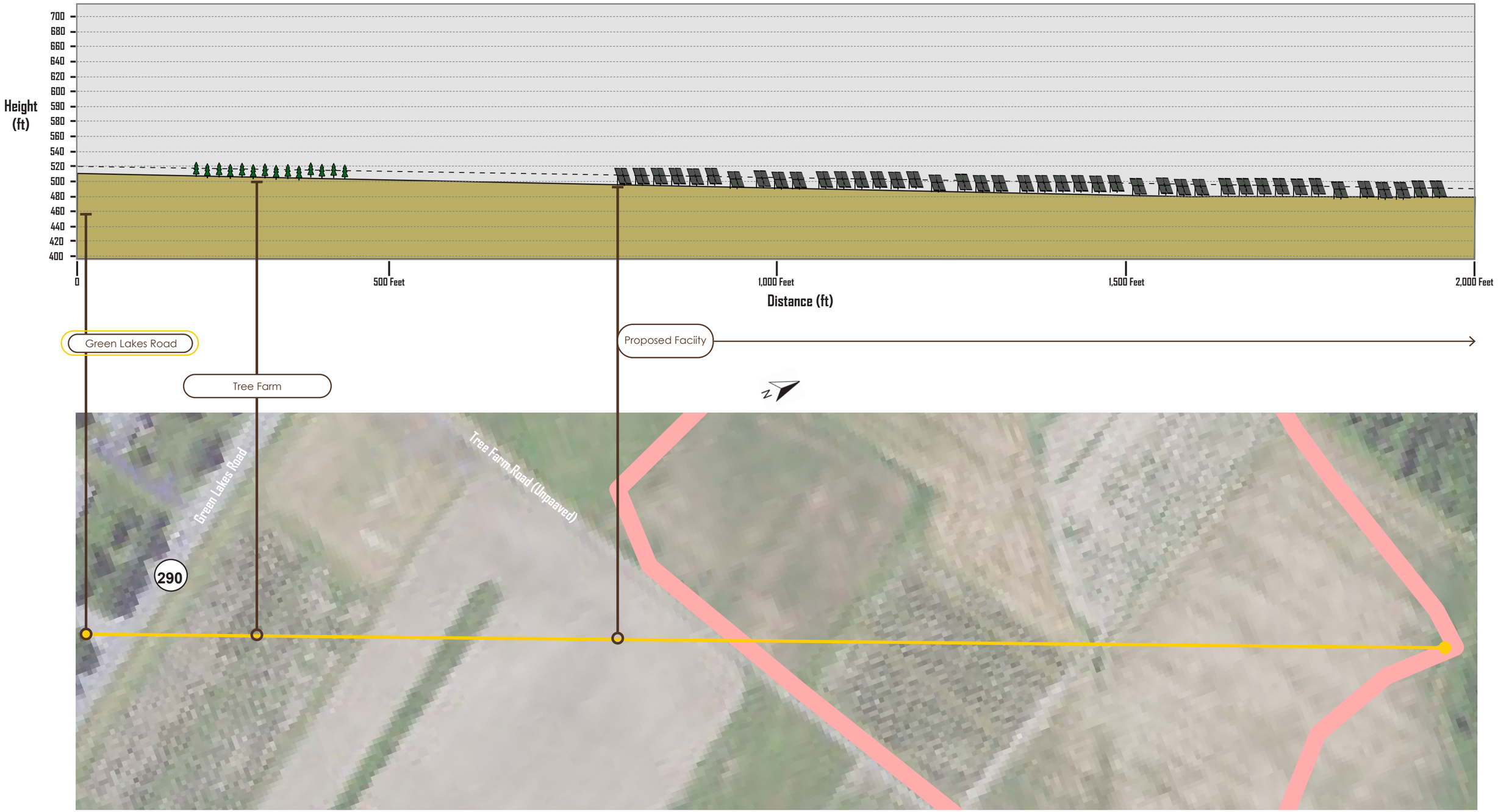
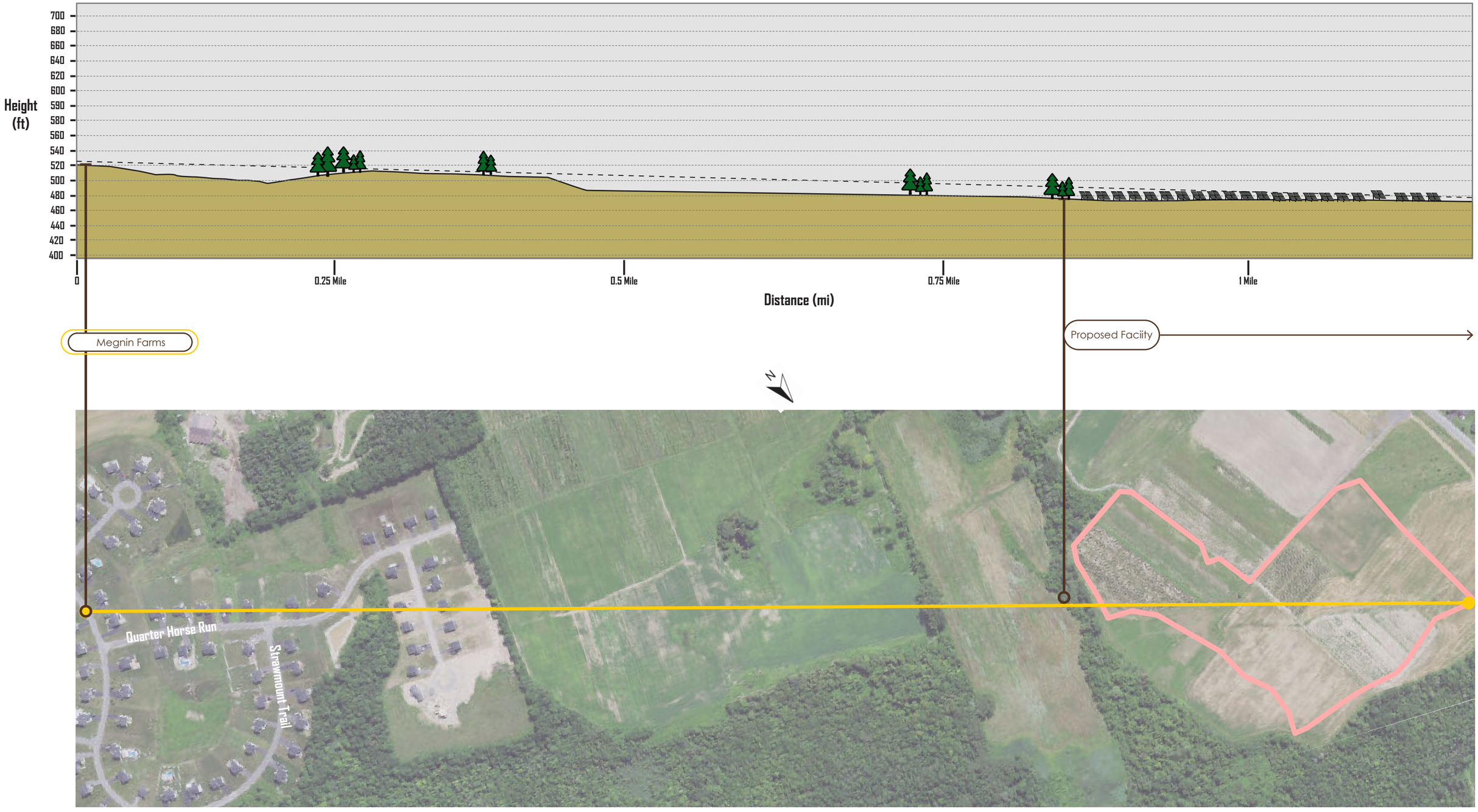


Figure 4: Line of Sight D | Megnin Farms



ATTACHMENT 5

LANDSCAPING PLAN

TETRA TECH
ARCHITECTS & ENGINEERS

April 10, 2020

Mrs. Jodi L. Hunt, Project Manager
Tetra Tech Engineering Corporation, P.C.
3136 South Winton Road, Suite 303
Rochester, New York 14623

Re: Green Lakes Solar Project
8507 Green Lakes Road
Manlius, New York 13066
Tt Project Number 194-7119

Dear Mrs. Hunt:

On April 8, 2020 I visited the above referenced project for the purposes of determining whether landscape materials are recommended to be installed to screen the proposed solar array development from New York State Route 290 – Green Lakes Road as shown on the Sheet C-201.

I evaluated the existing site against the proposed site plan in order to determine where the solar units might be visible from Green Lakes Road and from adjacent properties. Additionally, I compared the existing site topography against the road profile to gain a perspective on whether the solar array development could be visible along the property road frontage.

The solar project towards the northwest portion of the site is approximately 470 feet from the center line of Green Lakes Road. This portion of the development begins approximately 10 feet below the highest topographic point of the site. The solar panels will therefore be about 15 feet below the centerline of the road.

The south west portion of the solar development is approximately 1,130 feet from the centerline of Green Lakes Road and drops approximately 5 feet from the center line of the road. This portion of the development appears to be partially screened by evergreen trees.

The placement of this solar development on the site given the existing topography currently limits the overall visibility of the planned solar development. Adding plant material to enhance screening of this development will not be effective and is shown on the attached photographs.

Tetra Tech Architects & Engineers
Cornell Business & Technology Park
10 Brown Road, Ithaca, New York 14850
Tel 607.277.7100 Fax 607.277.1410 www.tetratech-ae.com

If you should have any questions on the enclosed, please do not hesitate to contact me at our **Ithaca** Office.

Sincerely,

James R. Stephenson

James R. Stephenson
Senior Landscape Architect
jim.stephenson@TetraTech.com

JRS:adm

cc: Project 194-7119, File 46b



SITE PHOTOGRAPHS



View to Northwest portion of the solar development



View to Southwest portion of the solar development

ATTACHMENT 6

GLARE ANALYSIS

TETRA TECH

MEMO

To:	EF NY CDG 002, LLC
From:	Tetra Tech, Inc.
Date:	March 13, 2020
Subject:	Glint and Glare Analysis of the Green Lakes Solar Project in Onondaga County, Fayetteville, NY

At the request of EF NY CDG 002, LLC (Falck Renewables), Tetra Tech, Inc. (Tetra Tech) conducted a glint and glare analysis of the proposed Green Lakes Solar Project (Project) located in Onondaga County, New York. The Project site consists of approximately 20 acres of undeveloped land approximately 3.8 miles northeast of downtown Fayetteville, New York. The Project is bounded by wooded land followed by agricultural land to the north and east, wooded land followed by residential structures to the south and Green Lakes Road followed by residential structures to the west. Topography throughout the Project site is relatively flat and ranges from approximately 440 to 500 feet above mean sea level with the highest elevations along the northern Project site boundary, gradually sloping down to the southwest.

This memorandum provides a description of the glint and glare anticipated from use of the Project site as a solar energy generating facility. Included are a Site Plan (Attachment A), the Sandia glare analysis reports (Attachment B), and the Federal Aviation Administration (FAA) Notice Criteria Tool Output (Attachment C).

GLARE ANALYSIS METHOD

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glare (a continuous source of bright light) from photovoltaic modules is receiving increased attention. As an industry standard, the term “glint and glare” analysis is typically used to describe an analysis of potential ocular impacts to defined receptors. As a point of clarification ForgeSolar defines glint and glare in the following statement:

> *Glint is typically defined as a momentary flash of bright light, often caused by a reflection off a moving source. A typical example of glint is a momentary solar reflection from a moving car. Glare is defined as a continuous source of bright light. Glare is generally associated with stationary objects, which, due to the slow relative movement of the sun, reflect sunlight for a longer duration.*

Based on the ForgeSolar definitions of glint and glare and the stationary nature of the Project modules (tracking arrays do not rotate faster than the relative movement of the sun), the potential reflectance from the Project modeled throughout this report will be referred to as glare.

The Federal Aviation Administration (FAA) developed Technical Guidance for Evaluating Selected Solar Technologies on Airports in 2010 (FAA Guidance). The FAA Guidance recommends that glare analyses should be performed on a site-specific basis using the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT). This guidance applies to solar facilities located on federally-obligated airport property but is also considered to be an industry best practice for solar facilities in general. The SGHAT complies with FAA 78 FR 63276. Tetra Tech

utilized the SGHAT technology as part of an online tool (GlareGauge) developed by Sandia National Laboratories and hosted by ForgeSolar. GlareGauge provides a quantitative assessment of the following:

- When and where glare has the potential to occur throughout the year for a defined solar array polygon; and
- Potential effects on the human eye at locations where glare is predicted.

Based on the predicted retinal irradiance (intensity) and subtended angle (size/distance) of the glare source to receptor, the GlareGauge categorizes potential glare where it is predicted by the model to occur in accordance with three tiers of severity (ocular hazards) that are shown by different colors in the model output:

- Red glare: glare predicted with a potential for permanent eye damage (retinal burn)
- Yellow glare: glare predicted with a potential for temporary after-image
- Green glare: glare predicted with a low potential for temporary after-image

The following statement was issued by Sandia Laboratories regarding the SGHAT technology:

> *Sandia developed SGHAT v. 3.0, a web-based tool and methodology to evaluate potential glint/glare associated with solar energy installations. The validated tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The calculations and methods are based on analyses, test data, a database of different photovoltaic module surfaces (e.g. anti-reflective coating, texturing), and models developed over several years at Sandia. The results are presented in a simple easy-to-interpret plot that specifies when glare will occur throughout the year, with color indicating the potential ocular hazard (Sandia Laboratories, 2016).*

According to the Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports (78 FR 63276), the FAA has determined that "glint and glare from solar energy systems could result in an ocular impact to pilots and/or air traffic control (ATC) facilities and compromise the safety of the air transportation system." The FAA has developed the following criteria analyzed by SGHAT as it pertains to the Project:

- No potential for glint or glare in the existing or planned Airport Traffic Control Tower (ATCT) cab; and
- No potential for glare or "low potential for after-image" along the final approach path for any existing landing threshold or future landing thresholds (including any planned interim phases of the landing thresholds) as shown on the current FAA-approved Airport Layout Plan (ALP). The final approach path is defined as two miles from 50 feet above the landing threshold using a standard three-degree glidepath.

The SGHAT was utilized to evaluate the potential for glint and glare at Syracuse Hancock International (SYR) as noted in the FAA Notice Criteria Tool Output (Attachment C). SYR contains 4 two-mile final approach path runways (RWY 10/28 and RWY 15/33) which were modeled according to the direction, threshold crossing height and glide path noted in the FAA Airport Database. In addition, 2 representative surrounding observation points (OPs) and segmented routes along Green Lakes Road were modeled to provide a representation of potential impacts to the surrounding viewshed. The SGHAT input parameters are noted in Table 1 and Table 2.

Table 1: SGHAT Input Parameters - Surrounding Properties

Racking Type	Module Type	Module Orientation[1]	Tilt	Panel Centroid Height[2]	Observation Point Height[2]	Route Receptor Height[2]
Fixed Tilt	Smooth Glass with Anti-Reflective Coating	180˚	25˚	5 feet	6 feet	5 feet

1. South-facing modules throughout Project
2. Height above ground surface: OP height of 6 feet represents standing on ground or first story views; route receptor height represents average views from a standard vehicle.

Table 2: SGHAT Input Parameters - Syracuse Hancock International

Module Orientation[1]	Tilt	Panel Centroid Height[2]	Air Traffic Control Tower Height[2]	Runway Direction (true direction)	Runway Threshold Crossing Height[2]	Runway Glide Path[3]
180˚	25˚	5 feet	50 feet	RWY 10: 87˚ RWY 28: 267˚ RWY 15: 134˚ RWY 33: 314˚	RWY 10: 55 feet RWY 28: 60 feet RWY 15: 53 feet RWY 33: 53 feet	RWY 10: 3˚ RWY 28: 3˚ RWY 15: 3˚ RWY 33: 3˚

1. Fixed-tilt, south-facing, smooth glass modules with anti-reflective coating throughout the Project.
2. Height above ground surface: ATCT height assumed to be approximately 50 feet.
3. Glide path is the angle of aircraft decent along the two-mile final approach path into the designated runway.

GLARE ANALYSIS RESULTS

The SGHAT GlareGauge modeled the results for the Project. Based on conservatisms and assumptions in the software, the Project was split into two photovoltaic (PV) array areas (PV 1 and PV 2) and Green Lakes Road was split into four segments. The SGHAT did not produce any results for glare along the two-mile final approach paths into SYR nor at the SYR ATCT; therefore, the Project complies with the minimum standards set for solar projects on airport property (FAA 78 FR 63276, as outlined above).

In addition, red glare and green glare were not predicted at any surrounding OPs or route receptors modeled in the SGHAT; however, yellow glare was predicted at one of the OPs as outlined in Table 3.

Table 3: Glare Analysis Summary

Receptor	Annual Green Glare Minutes	Annual Yellow Glare Minutes	Annual Red Glare Minutes
SYR RWY 10	0	0	0

SYR RWY 28	0	0	0
SYR RWY 15	0	0	0
SYR RWY 33	0	0	0
SYR ATCT	0	0	0
Green Lakes Road - 1	0	0	0
Green Lakes Road – 2	0	0	0
Green Lakes Road – 3	0	0	0
Green Lakes Road - 4	0	0	0
OP 2 (Residential)	0	2,730	0
OP 3 (Residential 2)	0	0	0

It is important to note that the SGHAT is bound by conservative limitations. The SGHAT does not consider obstacles (either man-made or natural) between the defined Project and the observer during analysis such as vegetative screening (existing or proposed), buildings, rolling topography, etc. In addition, the SGHAT does not account for varying ambient conditions (i.e. cloudy days, precipitation, etc.). The Project is located in an agricultural field that is surrounded by existing vegetation on the northern, eastern and southern sides. Residential homes located on the western side have tree plantings and sloping topography along Green Lakes Road. The glare analysis results summarized in Table 3 are a conservative representation as it is anticipated that many of these predicted annual glare minutes will be obstructed by existing vegetation and topography.

FAA NOTICE CRITERIA CONSULTATION

The FAA Notice Criteria Tool allows the user to determine if a proposed structure would require a formal submission to the FAA under CFR Title 14 Part 77.9 (Safe, Efficient Use, and Preservation of the Navigable Airspace). This online tool was utilized to determine if the proposed solar facility is recommended to formally file to the FAA based on the Project's central location and height above ground surface. The FAA Notice Criteria Tool Report (Attachment C) stated that a formal filing with the FAA Obstruction Evaluation Group is recommended due to the Project's proximity to SYR. As demonstrated by the results of the SGHAT, the Project is not anticipated to have adverse effects on SYR's two-mile final approach paths or ATCT. Formal filing of the Project to the FAA is recommended with the SGHAT output appended to demonstrate no adverse effects.

SUMMARY

The Project Site layout was modeled on the SGHAT GlareGauge in order to evaluate the potential extent of glare the proposed Project may have upon the two-mile final approach paths to SYR, approximately 9 miles northwest of the Project as well as on the surrounding properties and roadways. The final approach paths were generally defined as 2 miles from approximately 50 feet above the landing thresholds (78 FR 63276) using a standard 3-degree glide path. The land thresholds were defined from Runway 10/28 and 15/33 as noted in the FAA Airport Database and summarized in Table 2. In addition, the SGHAT was used to model potential extents of glare at

representative residential properties to the west and segmented vehicular traffic routes along Green Lakes Road. Based on the results noted in Table 3, no glare was predicted at the SYR receptors and, therefore, the Project is in compliance with FAA 78 FR 63276. Since the Project was recommended to formally file to the FAA OEG from the results of the FAA Notice Criteria Tool, Tetra Tech recommends that this formal filing be conducted with the glare analysis appended to demonstrate no adverse effects on navigable airspace.

Yellow glare (glare predicted with a potential for temporary after-image) was predicted at OP 2. In general, the yellow glare predicted at these receptors occurs in the morning hours (from 5:00 AM to 7:00 AM) from March through mid-September. The predicted glare (2,730 annual minutes) at OP 2 is totaling no more than 20 minutes per day, which equates to approximately 1.0% of annual daylight minutes. As noted above, the SGHAT is a conservative model and does not account for varying ambient conditions and/or screening due to existing or proposed vegetative cover or other objects, rolling topography between the Project and receptor, etc. Based on the Project location surrounded by existing mature vegetation and undeveloped land, it is anticipated that many of the predicted annual glare minutes will be obstructed by existing vegetation and rolling topography.

REFERENCES

Sandia Solar Glare Hazard Analysis Tool, GlareGauge hosted by ForgeSolar. Accessed online https://www.forgesolar.com/.

Interim Policy, FAA Review of Solar Energy System Projects on Federally Obligated Airports. 78 FR 63276. October 23, 2013.

Federal Aviation Administration. CFR Title 14 Part 77.9 Notice of Proposed Construction or Alteration Requiring Notice. 2010.

Federal Aviation Administration. Technical Guidance for Evaluating Selected Solar Technologies on Airports. 2010.

Federal Aviation Administration Notice Criteria Tool. Obstruction Evaluation Version 2018.1.4. Accessed online https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm

Federal Aviation Administration Airport Database. Accessed online on March 9, 2020. https://www.faa.gov/air_traffic/flight_info/aeronav/aero_data/Airport_Data/

FORGESOLAR GLARE ANALYSIS

Project: **Falck Renewables - New York**
Site configuration: **Green Lakes**
Analysis conducted by Josh Burdett (joshua.burdett@tetratech.com) at 14:08 on 13 Mar, 2020.

U.S. FAA 2013 Policy Adherence

The following table summarizes the policy adherence of the glare analysis based on the 2013 U.S. Federal Aviation Administration Interim Policy 78 FR 63276. This policy requires the following criteria be met for solar energy systems on airport property:

- No "yellow" glare (potential for after-image) for any flight path from threshold to 2 miles
- No glare of any kind for Air Traffic Control Tower(s) ("ATCT") at cab height.
- Default analysis and observer characteristics (see list below)

ForgeSolar does not represent or speak officially for the FAA and cannot approve or deny projects. Results are informational only.

COMPONENT	STATUS	DESCRIPTION
Analysis parameters	PASS	Analysis time interval and eye characteristics used are acceptable
Flight path(s)	PASS	Flight path receptor(s) do not receive yellow glare
ATCT(s)	PASS	Receptor(s) marked as ATCT do not receive glare

Default glare analysis parameters and observer eye characteristics (for reference only):

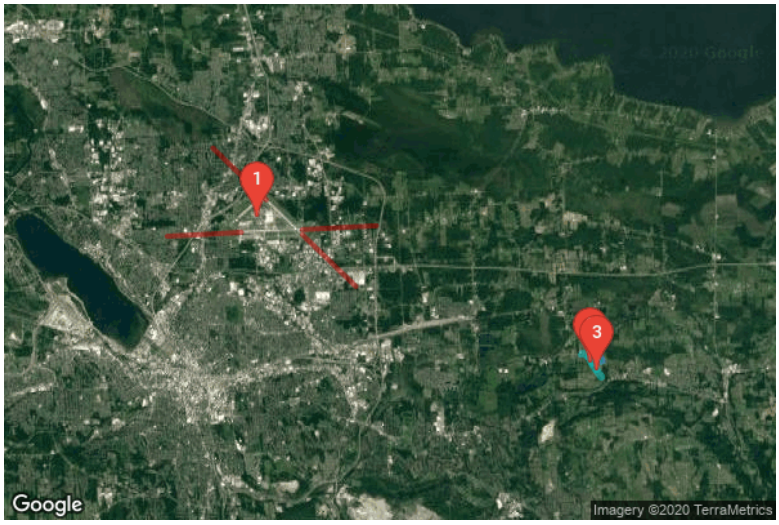
- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

FAA Policy 78 FR 63276 can be read at https://www.federalregister.gov/d/2013-24729

SITE CONFIGURATION

Analysis Parameters

DNI: peaks at 1,000.0 W/m^2
Time interval: 1 min
Ocular transmission coefficient: 0.5
Pupil diameter: 0.002 m
Eye focal length: 0.017 m
Sun subtended angle: 9.3 mrad
Site Config ID: 36624.6727



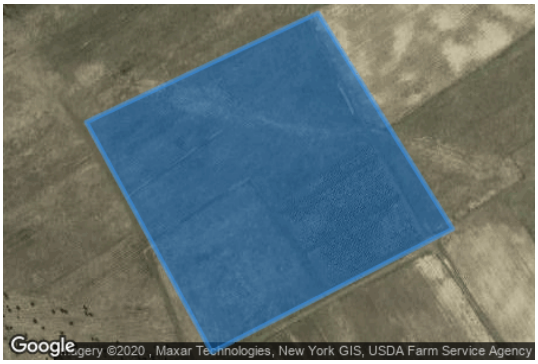
PV Array(s)

Name: PV array 1
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.057794	-75.933735	492.31	5.00	497.31
2	43.057747	-75.933477	489.42	5.00	494.42
3	43.058076	-75.932726	486.08	5.00	491.08
4	43.058531	-75.932769	484.24	5.00	489.24
5	43.059095	-75.932941	478.74	5.00	483.74
6	43.059754	-75.933606	476.54	5.00	481.54
7	43.060773	-75.934550	478.80	5.00	483.80
8	43.061008	-75.935194	476.98	5.00	481.98
9	43.060663	-75.936181	485.04	5.00	490.04

Name: PV array 2
Axis tracking: Fixed (no rotation)
Tilt: 25.0°
Orientation: 180.0°
Rated power: -
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.060673	-75.936224	486.14	5.00	491.14
2	43.059246	-75.935001	482.47	5.00	487.47
3	43.058431	-75.937189	498.20	5.00	503.20
4	43.059952	-75.938327	489.99	5.00	494.99

Flight Path Receptor(s)

Name: RWY-10
Description:
Threshold height: 55 ft
Direction: 87.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



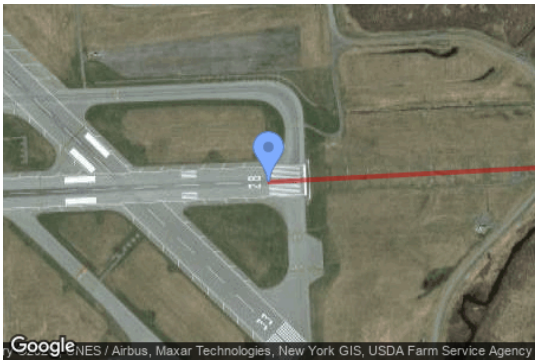
Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.108224	-76.125582	415.27	55.00	470.27
Two-mile	43.106711	-76.165177	431.53	592.20	1023.73

Name: RWY-15
Description:
Threshold height: 53 ft
Direction: 134.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.120919	-76.112385	410.69	53.00	463.69
Two-mile	43.141004	-76.140912	398.83	618.32	1017.15

Name: RWY-28
Description:
Threshold height: 60 ft
Direction: 267.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.109293	-76.093161	397.59	60.00	457.59
Two-mile	43.110806	-76.053565	406.77	604.28	1011.05

Name: RWY-33
Description:
Threshold height: 53 ft
Direction: 314.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°

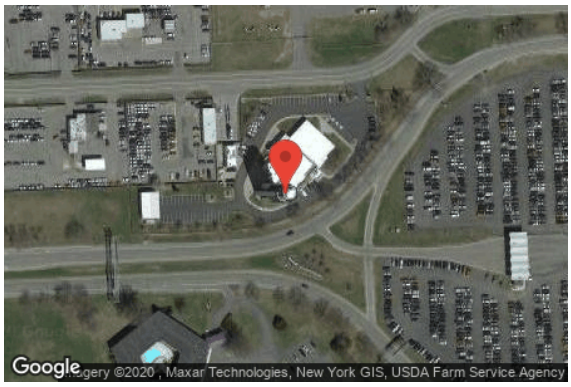


Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	43.107304	-76.093075	399.29	53.00	452.29
Two-mile	43.087219	-76.064554	417.04	588.70	1005.74

Discrete Observation Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
1-ATCT	1	43.114195	-76.117112	417.90	50.00
OP 2	2	43.057594	-75.939496	498.93	6.00
OP 3	3	43.054193	-75.936029	523.22	6.00

Map image of 1-ATCT



Route Receptor(s)

Name: Green Lakes Road-1
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.060937	-75.944060	488.71	5.00	493.71
2	43.061032	-75.941914	484.69	5.00	489.69
3	43.060561	-75.940927	477.04	5.00	482.04
4	43.059871	-75.940412	481.33	5.00	486.33

Name: Green Lakes Road-2
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.059864	-75.940431	481.34	5.00	486.34
2	43.059221	-75.939959	493.92	5.00	498.92
3	43.058531	-75.939466	496.96	5.00	501.96
4	43.057701	-75.938779	497.26	5.00	502.26
5	43.057230	-75.938393	497.64	5.00	502.64

Name: Green Lakes Road-3
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.057230	-75.938414	497.88	5.00	502.88
2	43.054878	-75.936226	515.53	5.00	520.53

Name: Green Lakes Road-4
Path type: Two-way
Observer view angle: 50.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	43.054878	-75.936247	515.77	5.00	520.77
2	43.052087	-75.933586	513.07	5.00	518.07

GLARE ANALYSIS RESULTS

Summary of Glare

PV Array Name	Tilt (°)	Orient (°)	"Green" Glare min	"Yellow" Glare min	Energy kWh
PV array 1	25.0	180.0	0	2,654	-
PV array 2	25.0	180.0	0	76	-

Total annual glare received by each receptor

Receptor	Annual Green Glare (min)	Annual Yellow Glare (min)
RWY-10	0	0
RWY-15	0	0
RWY-28	0	0
RWY-33	0	0
1-ATCT	0	0
OP 2	0	2730
OP 3	0	0
Green Lakes Road-1	0	0
Green Lakes Road-2	0	0
Green Lakes Road-3	0	0
Green Lakes Road-4	0	0

Results for: PV array 1

Receptor	Green Glare (min)	Yellow Glare (min)
RWY-10	0	0
RWY-15	0	0
RWY-28	0	0
RWY-33	0	0
1-ATCT	0	0
OP 2	0	2654
OP 3	0	0
Green Lakes Road-1	0	0
Green Lakes Road-2	0	0
Green Lakes Road-3	0	0
Green Lakes Road-4	0	0

Flight Path: RWY-10

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY-15

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY-28

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY-33

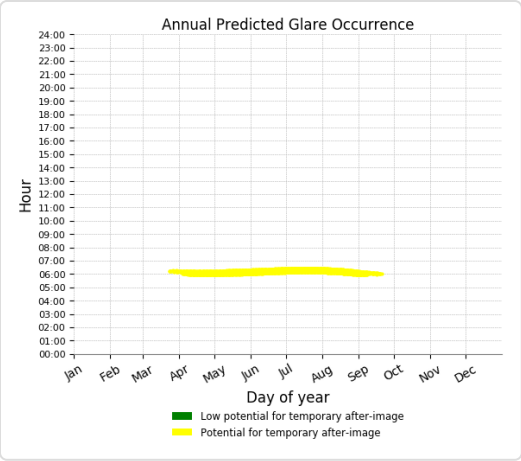
0 minutes of yellow glare
0 minutes of green glare

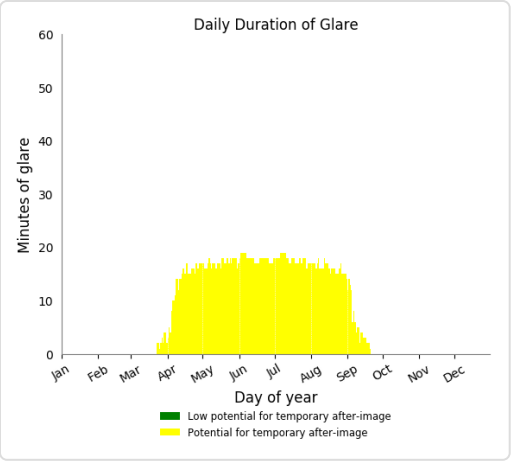
Point Receptor: 1-ATCT

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

2654 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-1

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-2

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-3

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-4

0 minutes of yellow glare
0 minutes of green glare

Results for: PV array 2

Receptor	Green Glare (min)	Yellow Glare (min)
RWY-10	0	0
RWY-15	0	0
RWY-28	0	0

Receptor	Green Glare (min)	Yellow Glare (min)
RWY-33	0	0
1-ATCT	0	0
OP 2	0	76
OP 3	0	0
Green Lakes Road-1	0	0
Green Lakes Road-2	0	0
Green Lakes Road-3	0	0
Green Lakes Road-4	0	0

Flight Path: RWY-10

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY-15

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY-28

0 minutes of yellow glare
0 minutes of green glare

Flight Path: RWY-33

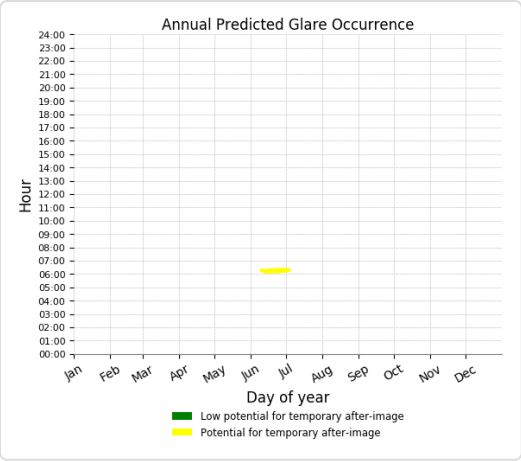
0 minutes of yellow glare
0 minutes of green glare

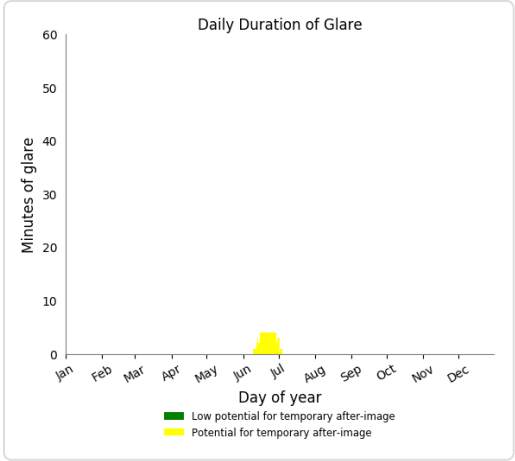
Point Receptor: 1-ATCT

0 minutes of yellow glare
0 minutes of green glare

Point Receptor: OP 2

76 minutes of yellow glare
0 minutes of green glare





Point Receptor: OP 3

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-1

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-2

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-3

0 minutes of yellow glare
0 minutes of green glare

Route: Green Lakes Road-4

0 minutes of yellow glare
0 minutes of green glare

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
Glare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover and geographic obstructions.
Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Glare vector plots are simplified representations of analysis data. Actual glare emanations and results may differ.
The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual results and glare occurrence may differ.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.

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ATTACHMENT 7

FEDERAL AVIATION ADMINSTRATION SCREEN

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

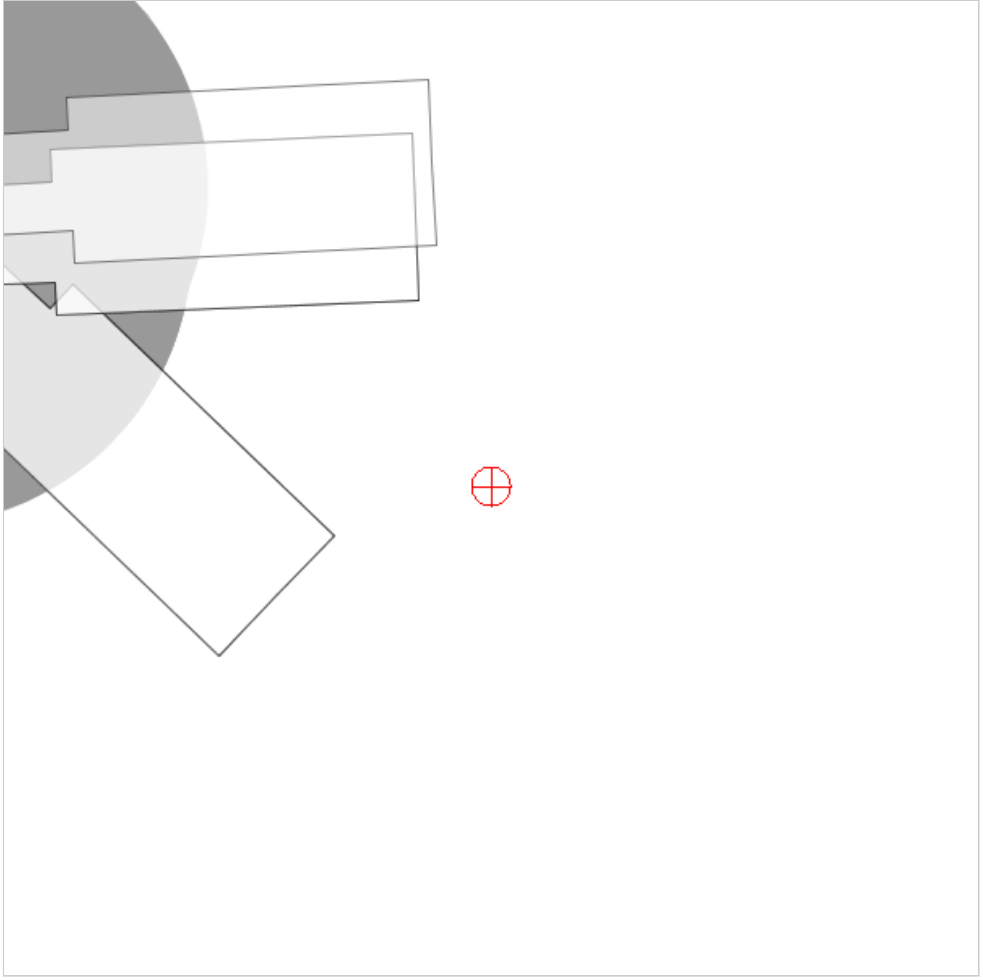
Latitude:	43 Deg 3 M 33.81 S N ▼
Longitude:	75 Deg 56 M 7.72 S W ▼
Horizontal Datum:	NAD83 ▼
Site Elevation (SE):	485 (nearest foot)
Structure Height :	7 (nearest foot)
Traverseway:	No Traverseway ▼ (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	◉ No ○ Yes

Results

You exceed the following Notice Criteria:

Your proposed structure is in proximity to a navigation facility and may impact the assurance of navigation signal reception. The FAA, in accordance with 77.9, requests that you file.

The FAA requests that you file



Project Submission Success
Project Name: FALCK-000573772-20

Project FALCK-000573772-20 has been submitted successfully to the FAA.

Your filing is assigned Aeronautical Study Number (ASN):

Please refer to the assigned ASN on all future inquiries regarding this filing.

Please return to the system at a later date for status updates.

It is the responsibility of each e-filer to exercise due diligence to determine if coordination of the proposed construction or alteration is necessary with their state aviation department. Please use the link below to contact your state aviation department to determine their requirements:
State Aviation Contacts

To ensure e-mail notifications are delivered to your inbox please add noreply@faa.gov to your address book. Notifications sent from this address are system generated FAA e-mails and replies to this address will NOT be read or forwarded for review. Each system generated e-mail will contain specific FAA contact information in the text of the message.

Return to Portal