Final Environmental Impact Statement
for the
Malone Solar Project
proposed in
Franklin County, New York

November 2024

PROJECT OWNER AND DEVELOPER

Project Owner:

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Project Developer:

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ACRONYMS/ABBREVIATIONS

Acronym/Abbreviation	Definition
%	percent
AADT	annual average daily traffic
AC	alternating current
the Applicant	Luna Rossa Malone Solar, LLC (fka Yellow 17 LLC and Yellow 5 LLC)
AR	anti-reflective
ATCT	air traffic control tower
CES	Clean Energy Standards
CFR	Code of Federal Regulations
CLCPA	New York State Climate Leadership and Community Protection Act
DC	direct current
DEIS	Draft Environmental Impact Statement
DOT	New York State Department of Transportation
ENB	Environmental Notice Bulletin
FAA	Federal Aviation Administration
FEAF	Full Environmental Assessment Form
IT	information technology
kV	kilovolt
LLC	Limited Liability Company
LWRP	Local Waterfront Revitalization Program
MAL	Malone-Dufort Airport
MW	megawatt
NNSA	National Nuclear Security Administration
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSERDA	New York State Energy Research and Development Authority
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation
PD	Planned Development

Acronym/Abbreviation	Definition
Project	Malone Solar Project, a 2-MW AC electric generating facility
Project Area	50.42-acre parcel 2.25 miles northwest of the Town of Malone
PV	photovoltaic
SEQR	State Environmental Quality Review
SGHAT	ForgeSolar Glare Hazards Analysis Tool
USGS	United States Geological Survey

1. INTRODUCTION

This Final Environmental Impact Statement (FEIS) for the proposed Malone Solar Project ("Project") was prepared pursuant to the New York State Environmental Quality Review Act ("SEQR" or "SEQRA") and its implementing regulations, 6 NYCRR Part 617. This document is preceded by a Draft Environmental Impact Statement (DEIS), which was accepted as complete by the Town of Malone Town Board ("Town Board" or "Lead Agency") on March 6, 2024. The FEIS builds upon the DEIS, providing responses to substantive comments received on the DEIS and addressing Project changes that have occurred, including changes made in response to public input. The DEIS is attached to this FEIS (see ***Appendix I***) and remains in effect fully except where specifically corrected or where the Project has been changed (i.e., the FEIS does not generally reiterate information that remains accurate and unchanged in the DEIS). The purpose of these two documents (collectively referred to as the "EIS Record") is to identify and evaluate the potentially significant adverse impacts of the Project and, where applicable, to identify reasonable alternatives or mitigation measures while weighing the positive social and economic considerations of the Project.

Luna Rossa Malone Solar, LLC, fka Yellow 17 LLC and Yellow 5 LLC ("the Applicant"), a wholly owned subsidiary of Nautilus Solar ("Nautilus"), has been working with Cipriani Energy Group, a community solar developer, to secure discretionary permits for the proposed Malone Solar Project ("the Malone Solar Project" or "the Project"), a 2-megawatt ("MW") alternating current ("AC") solar energy generation facility. As part of the discretionary permitting process, the Applicant submitted a Full Environmental Assessment Form Part 1 ("FEAF Part 1") dated August 26, 2021 to the Town Board for review according to the requirements of SEQR. After this submission, the Town Board assumed Lead Agency status on May 11, 2022, and conducted an environmental review of the Project consistent with SEQR. The Town Board held public hearings on June 22, 2022 and July 13, 2022, as required under New York State Town Law and permitted under SEQR and heard concerns from local community members about the potential environmental impacts of the Project.

Based on its review of the environmental record prepared for the Project, the Town Board determined that the Project may result in one or more significant adverse impacts on the environment and issued a Positive Declaration of Environmental Significance on November 16, 2022. Specifically, the Town Board determined that "*the proposed action may result in light shining onto adjoining properties…*" and thus, a "*moderate to large impact may occur*."

The Town of Malone posted the SEQR Determination on the New York State Department of Environmental Conservation ("NYSDEC") Environmental Notice Bulletin's website ("ENB") on November 30, 2022. The SEQR Positive Declaration and associated documentation is included as ***Attachment A***.

Following the Positive Declaration, the Applicant's consultant, Tetra Tech, Inc. ("Tetra Tech"), prepared a Draft Scoping Document and a Final Scoping Document outlining areas that should be further studied as part of an Environmental Impact Statement ("EIS"), as required under SEQR. The Final Scoping Document, which was prepared, filed, distributed, and published consistent with 6 NYCRR Sections 617. 8 and 617.12, was accepted by the Town Board on September 27, 2023. The Final Scoping Document outlined the contents of the Draft Environmental Impact Statement ("DEIS") including a review of existing conditions of the Project site, glint and glare impacts to adjoining and nearby properties, energy and utility facilities pursuant to 6 NYCRR 617.9(b)(5), socioeconomic conditions, mitigation measures, Project alternatives, and cumulative impacts. Consistent with 6 NYCRR 617.9, the Applicant prepared a Draft Environmental Impact Statement ("DEIS") to evaluate the issues identified by the Final Scoping Document.

The DEIS was opened for public comment in March 2024 and a Public Hearing was held by the Town Board on March 27, 2024, with the public comment period ending April 12, 2024. A responsiveness summary has been prepared as part of this FEIS (Section 3.0) to address all substantive comments received on the DEIS. The responsiveness summary provides detailed information on discrete topic areas in furtherance of the SEQR evaluation. Updated studies attached to the FEIS include updated Visual Simulations and an updated Forge Solar Glare Analysis. Other updated documents include the site plan, SWPPP, and landscaping plan along with the updated solar panel, pad-mounted equipment, and underground electrical line ("UGE") Project details.

The following are the next steps in the SEQRA process for the Malone Solar Project, starting with the adoption of the FEIS by the Lead Agency:

- Lead Agency issues the FEIS.
- Final notice of completion of the FEIS is published.
- FEIS and a copy of the public notice is distributed to the agencies listed on in Section 1.1.1 of the FEIS.
- 10 day minimum public comment period ensues before Findings are issued.
- Lead Agency issues Findings Statement, completing the SEQR process.

1.1. PROJECT SUMMARY

The proposed Project is located at 176 Bare Hill Road (Tax Parcel ID: 84.-1-73.100) Franklin County, New York (the "Property") and is identified on the Site Location Map in ***Attachment B***. The Project is located about 2.25 miles northwest of Malone town center and is sited on an approximately 50.42-acre parcel with a proposed development footprint of approximately 8.5 acres (the "Project Area" or "Project Footprint"). According to the Town's Zoning Map, the parcel containing the Project Area is zoned "Planned

Development" ("PD") and "Countryside" ("C"). The Property consists of wooded land and is bounded by wooded areas to the north; wooded land and Little Salmon River to the east; wooded areas and at least one commercial property to the south; and wooded land, Bare Hill Road, and mostly commercial and municipal uses to the west.

1.1.1. LIST OF PROJECT REGULATORY APPROVALS

The list of regulatory approvals required to construct and operate the Project is summarized below. Please note this list has been updated since the DEIS was issued.

Project regulatory approvals include:

- Use Variance (for Large-Scale Solar Energy System with Solar Panel surface area larger than 7000 Square Feet pursuant to Section 6(F) of the Town of Malone Local Law # 2 of 2018 ("Solar Law")) – Town of Malone Board of Variances and Appeals
- Use Variance (for location of Solar Energy System in area with Prime Farmland, Farmland of Statewide Importance, and/or Town Agricultural Land pursuant to Section 5(A)(3)(a) of the Solar Law) – Town of Malone Board of Variances and Appeals
- Zoning Permit – Town of Malone Town Board
- Special Use Permit – Town of Malone Town Board
- Site Plan Review – Town of Malone Town Board
- Building Permit – Town of Malone Code Enforcement Officer
- Stormwater Pollution Prevention Plan (SWPPP); SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001 – NYS Department of Environmental Conservation
- Historic/Cultural Resources Review – NYS State Historic Preservation Office
- U.S. Army Corps of Engineers and NYSDEC Jurisdictional Determination for wetlands located on site.
- Town of Malone Local Waterfront Revitalization Program (LWRP) review
- Town of Malone Driveway/Right-of-way Permit
- FAA Consultation for impacts to air navigation
- Decommissioning Plan – Town of Malone Town Board (***Attachment C***)

1.1.2. PROPOSED ACTION

The Applicant proposes to build ground-mounted solar arrays with the capacity to generate a total of 2 MW AC on approximately 8.5 acres with a fenced-in area of approximately 8.24 acres. The PV panels for the proposed Project will be ground-mounted on a low-profile single-axis tracking system consisting of a small post footprint, from small I-beam posts driven into the ground. As a result of the Town of Malone's comments and public comments on the DEIS during the March 27, 2024 Public Hearing, the Project has been modified and some individual Project components have changed. Modifications are outlined below in Table 1. The Project will consist of the following components:

- A PV solar array of 4,238 Astro N7 CHSM66RN(DG)F-BH Bifacial Series 595-615W solar PV panels with an anti-reflective ("AR") coating producing direct current ("DC") electricity mounted on single-axis tracking structures that will follow the sun throughout the day;
- The panels have a centroid height of 5.1 feet and the Ground Cover Ratio is 0.49;
- 16 inverters placed throughout the Project Area to convert DC electricity to AC electricity;
- A medium voltage cable collection system that will aggregate the AC output from the inverters;
- A point of interconnection where the Project's electrical output will be connected to the National Grid Substation via a 13.2 kV direct feeder line;
- 1 utility-owned riser pole;
- Internal infrastructure including access roads, a gate, and fencing; and
- Temporary laydown areas for equipment staging during construction.

Table 1. Summary of Modifications to Project components subsequent to the DEIS

Project Component	Original Site Plan	Updated Site Plan
Number of Panels	4,297	4,238
Panel Type	JAM 78D30 580-605/MB w/ AR coating	Astro N7 CH5M66RN(DG)F-BH w/ AR coating
Panel Centroid Height	4.5 feet	5.1 feet
Ground Cover Ratio	0.5	0.49
Interconnection	Pole-mounted	Underground Electric Line

Landscape Plantings	6 gray birch, 8 evergreens	4 eastern red cedar, 3 pitch pine
Fenced-In Area	8.6 acres	8.24 acres
Project Area/Project Footprint	8.75 acres	8.5 acres
Acreage of Tree Clearing Required	8.75 acres	8.5 acres
Panel Surface Area	2.97 acres	2.90 acres

Public roads will be used for construction access and general access during Project operation. Materials required for the construction of the Project are expected to be transported via New York State Route 37 to Brand Road, and then from Bare Hill Road to the Project site located at 176 Bare Hill Road. The Project's 408-foot long private driveway, which will run from the Project Area to Bare Hill Road, will be used by construction and maintenance vehicles to access the solar field via Brand Road and State Route 37. Improvements to public roads to support construction and maintenance activities for the Project, such as widening, shoulder improvements, or the addition of turnarounds, are not anticipated to be necessary per the Applicant.

The PV panels proposed to be used for the Project will not exceed a maximum height of 8.6 feet. The Project design includes setbacks, fencing, and landscape buffering meant to minimize ground-level visual impacts.

The Project will not include any outdoor artificial lighting on the property. Additionally, there will be no motion-activated lighting, or any other security lighting mechanisms, installed around the Project Area or on the Project perimeter fence.

2. REVISIONS TO THE DEIS

One of the mandates of SEQR is to prepare the DEIS as early as possible in the review process. As a result, it is common for projects to change after the DEIS is submitted, and particularly in response to comments on the DEIS. The FEIS builds upon the DEIS, providing responses to comments, and in this Section, providing additional information and addressing Project changes that occurred after the DEIS was accepted as complete and released for public comment.

The Applicant prepared the DEIS pursuant to 6 NYCRR 617.9 to evaluate the potential glare and glint impacts to adjoining and nearby properties. Due to the Town's comments and public comments received on the DEIS, Applicant has made a number of changes to the Project. This section outlines Project modifications subsequent to the DEIS submission and outlines any potential environmental impacts resulting from the updated Project layout.

2.1. CHANGES TO PROJECT LAYOUT

Subsequent to the acceptance of the DEIS, development of the Project has continued, and minor modifications were made to the Project design. The Town Board, in its role as Lead Agency, has reviewed the Applicant's summary of these changes and potential impacts as part of the process of FEIS preparation. These changes are summarized below.

- *Brief Summary of Updated Design Changes*: In order to address and mitigate concerns raised over glare on flight paths of the Malone-Dufort Airport, which is an important asset to the Town of Malone community, Applicant changed panels and layout and the panel resting angle was raised to ten degrees in order to reduce predicted glare. The updated design includes use of panels with a slightly smaller surface area and a new manufacturer, while still including an AR coating and an adjusted and updated layout based on the shorter length of the new panels.

- *Updated panels:* The Project layout presented in the DEIS included the Deep Blue 3.0 605W MBB Bifacial Mono PERC Half-cell Double Glass Module JAM78D30 580-605/MB series panels. The panels used for the updated Project layout will be Astro N7 CHSM66RN(DG)/F-BH Bifacial Series 595~615W panels, which the Applicant has stated will have an efficiency of 22.8% as opposed to the 21.6% efficiency of the original panels. Additionally, the Applicant states the use of more efficient panels allows for the reduction of total panel quantity and surface area. The number of solar panels has been reduced from 4,297 to 4,238 as noted in Table 1 above. Overall, the panel surface area was previously 2.97 acres and will be 2.90 acres with the updated panels as noted in

Table 1 above. Panel specification sheet with AR declaration is included in ***Attachment D***. The updated site plan is included as ***Attachment E***.

- *Updated centroid height and Ground Cover Ratio:* The proposed Project layout including the updated panels, which were included due to their increased efficiency and decreased surface area, resulted in an increase in centroid panel height from 4.5 feet above ground surface to 5.1 feet and a decreased Ground Cover Ratio from 0.50 to 0.49. However, panel tracking axis orientation, which is 180˚, maximum tracking angle, which is 52˚, and panel material, which is smooth glass with an AR coating are all the same as the previous panel specification and associated layout.

- *Project Layout Shifts & Underground Transmission and Pad Mounted Equipment:* Aside from the updated panel specifications and layout, other minor adjustments to the Project layout were included in the updated Site Plan (see ***Attachment E***):

    - The updated Project layout, included as ***Attachment E***, reduced the fence line and tree line in the northeastern corner of the Project Area. The reduction in the northeastern corner moved the fence in approximately 102 feet at the furthest point with a total area reduction of 0.25 acres from 8.75 acres to 8.5 acres, which further reduces the amount of tree-clearing required from 8.75 to 8.5 acres, preserving more of the surrounding forest as a visual buffer. This, along with the 0.11-acre reduction from the updated gate location outlined below, reduced the total fenced-in area from 8.6 acres to 8.24 acres.

    - To further minimize views of Project components, the gate along the entrance road was moved 110 feet further east along the driveway to set it back further from the road, reducing the acreage of the fenced in area by 0.11 acres in addition to the 0.25 acre reduction from the fence line modification described above. Thus, the updated fenced-in area was reduced from 8.6 acres to 8.24 acres. Additionally, views of the gate, entrance road, and other Project components will be further minimized by inclusion of tree plantings pursuant to the landscaping plan appended hereto in ***Attachment E***.

    - All power generated within the proposed solar facility is directed toward the point of interconnection via proposed UGE (Underground Electrical Line). Equipment, including a 15 kV main generator disconnect switch, recloser, and utility metering station is proposed to be mounted on concrete pads near the Project entrance, along with one riser pole, the height and specifications of which are set by the local utility, with views minimized by the proposed landscaping plantings, as shown in ***Attachment E***. Instead of utilizing multiple

developer-owned, above-ground utility poles, this design keeps interconnection transmission and equipment consolidated and close to the ground. The updated plantings include four eastern red cedar (*Juniperus virginiana*) and three pitch pine (*Pinus rigida*). One utility owned riser, the height and specifications of which are determined by the local utility, is required by National Grid to be included in the interconnection site plans. The updated equipment and proposed UGE is included as ***Attachment F***.

- *Addition of level spreaders:* To reduce any erosion impacts, the updated Project layout includes level spreaders (gravel trenches) as shown in ***Attachment E***. As defined by the NYSDEC Stormwater Design Manual, level spreaders are devices for distributing stormwater runoff uniformly over the ground surface as sheet flow to prevent concentrated, erosive flows and promote infiltration. Consistent with the intent of the NYSDEC Stormwater Design Manual, as well as the NYSDEC Solar Guidance Memorandum, level spreaders have been utilized at this Project site to maintain sheet flow conditions in more steeply sloped areas. Any changes in the site plan will comply with NYSDEC requirements outlined in the NYSDEC stormwater management guidance. The updated SWPPP is included as ***Attachment G***.

2.2. NEW AND ADDITIONAL INFORMATION

As described in Section 2.1 above, changes and revisions to the Project layout have been made since acceptance of the DEIS. This section summarizes new and additional information provided by the Applicant relating to glare and potential environmental impacts as a result of Project layout changes. The Town Board, in its role as Lead Agency, has reviewed the Applicant's summary of this new and additional information and potential impacts as part of the process of FEIS preparation. This information is summarized below:

- *Updated Glare Analysis:* Tetra Tech conducted a Glint and Glare Analysis, dated May 2, 2023, and included in the DEIS, using the ForgeSolar Glare Hazards Analysis Tool (SGHAT) developed by Sandia National Laboratories (***Attachment H***). ForgeSolar is used globally by industry, academia, and military to evaluate PV glare and satisfies the Federal Aviation Administration (FAA), United States Department of Energy, National Nuclear Security Administration (NNSA), and other regulatory requirements including ocular impact and luminance. The tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The Applicant provided the following results:

    - The SGHAT was utilized to evaluate the potential for glint and glare while driving along 1) proximal segments of Bare Hill Road, Brand Road, Shears Road, Route 37, and a road

that runs through the Bare Hill Correctional Facility; and 2) 17 nearby locations selected to represent observer views at neighboring properties and the Malone-Dufort Airport. The May 2, 2023 glare study, which used a conservative methodology by not accounting for additional plantings contained in previously considered landscaping plans, shows that there will be no glare for surrounding properties and minimal glare for the final approach paths of the Malone-Dufort Airport. Under the current FAA policy, some glare for the final approach paths for Federally Regulated Airports is permitted. However, in consideration of the importance of the Malone-Dufort Airport to the Town of Malone and the surrounding community, the Applicant has changed the layout of the solar array so that all glare impacts to the final approach paths of the Malone-Dufort Airport are eliminated per the most recent glare analysis, and no glare impacts are anticipated.

- The updated Project layout proposes the use of single-axis panels, which would have back-tracking where panels assume a flat resting angle (0˚) when the sun is outside the panel's maximum tracking angle. During normal daytime operations, as the modules track the sun, a 0 degree angle is possible. However, as shown in the updated analysis in ***Attachment I***, glare would not be created. This feature is utilized so that panels do not cause shading on other panels. The greatest chance glare can occur to observers, particularly around sunset and sunrise, is when the angle of incidence is highest. The angle of incidence is the angle at which the source of light (the sun) hits the reflective surface of the panels and then the angle of reflectance, which is equal to the angle of incidence, is the angle at which the glare is reflected. Typically, this can be prevented by increasing the resting angle, which is standard practice for reducing glare from PV arrays. However, considering the original glare analysis, dated May 2, 2023, was conducted with a 5˚ resting angle and still showed that the Project would produce some glare for the Malone-Dufort Airport final approach paths, the resting angle would need to be increased (***Attachment H***). Thus, in order to curtail glare to the Malone-Dufort Airport, the resting angle was raised to 10˚. The glare analyses utilizing this increased resting angle of 10˚ concluded that glare was eliminated from the areas of concern, and no glare is anticipated on the surrounding area or the flight paths of the Malone-Dufort Airport. Results of the updated glare analyses incorporating the design changes and mitigation measure of increasing the resting angle to 10˚ are included in ***Attachment I***.

- *Updated photographic simulations:* The DEIS included photographic simulations, dated October 5, 2022 for five separate viewpoints to illustrate the Project components and the potential visual

changes to the existing landscape (***Attachment J***). The simulations were used to determine the level of contrast between the existing landscape and the expected landscape after the Project is constructed. After changes were made to the Project layout, as discussed in Section 2.1 of this FEIS, Applicant completed updated photographic simulations, dated October 16, 2024 (***Attachment K***) and provided the following summary of the photographic simulations:

- In preparing the latest photographic simulations, the photographic simulation showing the viewpoint at the proposed entrance and access road for the proposed Project was updated (Location 1). The updated photographic simulation depicts a gravel access road extending far back from the road cutting through the tree line but does not depict any views of the proposed solar array. This updated photographic simulation shows that utility poles by the entrance are now replaced by the pad-mounted electric equipment as a result of the inclusion of the UGE, and the gate on the entrance road is located farther back from the road, further concealing the gate and Project. Additionally, the updated photographic simulations show that landscape plantings, as included in the landscaping plan in the updated site plans (***Attachment E***), will supplement the existing forested visual buffer.

- *Updated panels:* The updated panels still use the 180˚ orientation, 52˚ maximum tracking angle, panel material and AR coatings described in the DEIS as a mitigation measure. They are designed to maximize the absorption of sunlight while simultaneously minimizing light reflection or glare. Additionally, the updated glare study conducted by Tetra Tech (***Attachment I***) was conducted using specifications from the updated panels and showed no glare resulting from the Project on neighboring properties, and no glare is anticipated on the surrounding area or the flight paths of the Malone-Dufort Airport.

- *Updated centroid height and Ground Cover Ratio:* The updated panel layout has a centroid height of 5.1 feet versus 4.5 feet in the previous layout and the Ground Cover Ratio decreased from 0.50 to 0.49. Additionally, the updated glare study conducted by Tetra Tech (***Attachment I***) was conducted using the updated centroid height of 5.1 feet and Ground Cover Ratio of 0.49 from the updated panels and showed no glare resulting from the Project that would affect flight paths or neighboring properties.

- *Project Layout Shifts & Underground Transmission and Pad Mounted Equipment:* The project layout shifts (reducing the fence line in the northeast corner of the Project Area and changing the location of the gate along the entrance road) as well as the proposed underground electric line helps

to reduce the amount of tree clearing required. The existing tree line and buffers are maintained and moving the gate back from the road and utilization of the underground electric line all reduce visual impacts by concealing more aspects of the Project as shown in the updated photographic simulations (***Attachment K***).

- *Addition of level spreaders and updated SWPPP:* The Applicant completed an updated Stormwater Pollution Prevention Plan (SWPPP) after the site design layout was changed. This SWPPP is included as ***Attachment G***. Additionally, level spreaders will be utilized at this Project site to maintain sheet flow conditions in more steeply sloped areas. Level spreaders are designed to reduce any environmental impacts associated with excess stormwater flow within the Project Area. As discussed in Section 2.1, any changes in the site plan will comply with NYSDEC requirements outlined in the NYSDEC stormwater management guidance.

- *Applicant Name:* The Applicant name was initially listed as Yellow 17 LLC in the DEIS. The Applicant name has been updated to *Luna Rossa Malone Solar, LLC, fka Yellow 17 LLC and Yellow 5 LLC, a wholly owned subsidiary of Nautilus Solar* ("*Nautilus*"). Documents previously submitted to the Town that reference Yellow 5 LLC or Yellow 17 LLC remain correct as Luna Rossa Malone Solar, LLC will be the future owner and operator of the Project.

- *Landscaping Plan:* The DEIS described landscape plantings on page 23 but did not attach a landscaping plan. According to the DEIS, "Six gray birch (*Betula populifolia*), along with eight total evergreens (six eastern red cedar and two pitch pines), will surround the construction entrance…" The original landscaping plan is included as ***Attachment M.*** As a result of the updated design layout, the landscaping plan and plantings surrounding the construction entrance have been modified. The updated landscaping plan, included within the updated site plan included as ***Attachment E.***, still includes plantings around the entrance supplementing the existing tree lines and create a visual buffer from Bare Hill Road. The updated landscaping plan includes four eastern red cedar and three pitch pine. The updated plantings were added to both sides of the driveway entrance, where space permitted, to reduce the visual impact of the road and interconnection safety equipment. While the number of plants was reduced due to inclusion of the proposed UGE and electrical equipment, as described in Section 2.1 above, the updated landscaping plan is anticipated to reduce visual impacts of the road and pad-mounted electrical equipment. A review of the updated photographic simulations, ***Attachment K***, indicates that these plantings supplement the existing forested visual buffer.

- *FAA Determination of No Hazard to Air Navigation:* The FAA issued a letter providing a Determination of No Hazard to Air Navigation, dated December 19, 2022. This determination was extended through January 9, 2026 per a letter from the FAA, dated July 9, 2024, including the updated panel layout and Project Area. The FAA letters are included as ***Attachment N***.

2.3. CORRECTIONS TO THE DEIS

During preparation of the FEIS, statements requiring further clarification were identified by the Lead Agency. As described in Section 2.1 above, changes and revisions to the Project layout have been made since acceptance of the DEIS. Additionally, in preparation of this FEIS, need for clarifications to a selection of topics discussed in the DEIS were identified. The Town Board, in its role as Lead Agency, has reviewed the Applicant's summary of these changes and clarifications as part of the FEIS preparation process. This information is summarized below.

- *Length of lease term:* Page 3 of the DEIS misstated the length of lease term. Applicant has clarified that a Land Lease Option and Lease Agreement was entered into between the Applicant and the landowners in August 2020. The term of the Land Lease Option extended site control prior to execution of the Lease Agreement through July 31st, 2024. A Second Amendment to the Option and Lease Agreement extends site control through July 31st, 2026 (***Attachment L***). Once the Lease Agreement is executed, the Project will operate subject to an initial 25-year lease period, which is further subject to two, five-year lease term extensions. The initial 25-year lease period will begin after the lease is executed.

- *Required Regulatory Approvals:* The DEIS contained an incomplete list of required regulatory approvals on page 4. This list of approvals set forth in Section 1.1.1 of this FEIS has been updated to include two Use Variances, USACE and NYSDEC Jurisdictional Determinations for wetlands, Town of Malone LWRP review, Town of Malone Driveway/Right-of-way permit, and FAA consultation. Additionally, the SPDES permit incorrectly referenced the old permit and has been updated in Section 1.1.1 of this FEIS to reference the current permit, SPDES General Permit for Stormwater discharges from Construction Activity Permit No. GP-0-20-001.

- *CESIR Study:* Section 5.1 of the DEIS noted integration with the regional power grid and interconnection with National Grid's power system. Section 6 of National Grid's CESIR study (***Attachment O***) details the work and cost associated with interconnecting the Project to the grid. The CESIR evaluates the system's planned interconnection, identifies concerns, and implements mitigation measures to maintain appropriate safety factors and performance standards. The CESIR

identified the following required system upgrades that must be made in order to interconnect the Project:

- 3V0 Substation Upgrade to account for Overvoltage.
- LTC Bi-directional Control Co-generation Capability to address Substation Regulation for Reverse Power.
- National Grid Protection and Control Package to mitigate Unintentional Islanding/Required EMS Visibility for Generation Sources.
- New Recloser Installation for Fault Sensitivity.

National Grid will not allow any projects to connect to the grid if they have not taken the required measures to improve and upgrade the grid, as noted in the CESIR. Applicant has stated that the Malone Solar Project will make the required system upgrades to comply with the utility requirements for grid improvement.

- *New York CLCPA energy goals:* The DEIS referenced assurance of interconnection and utilization of the electricity generated by the Project on page 17 but did not specify how this would be done. The Applicant submitted Project interconnection and design documents to National Grid to complete a CESIR study (***Attachment O***) and entered into an interconnection agreement with National Grid. Applicant has stated that 100% of the utility's Contribution in Aid of Construction (CIAC) has been paid, ensuring that the costs of design and construction are accounted for. With hosting capacity secure and upgrades paid for, the Applicant and National Grid are ready to execute the interconnection agreement. If required permits and approvals are obtained, the Applicant and National Grid will begin work toward an expedited interconnection.

- *Project Footprint acreage:* Pages 3 and 25 of the DEIS incorrectly stated the proposed development footprint of approximately 9.725 acres, while the original Project Footprint was, in fact, 8.75 acres. In fact, the proposed Project Footprint acreage is approximately 8.5 acres due to the reduction of the fenced-in area in the northeast corner, the reduction of the gated entrance area by moving the gate back, and the reduced overall surface area of the array due to the updated panels, as outlined in Section 2.1.

- *Setbacks:* Page 22 of the DEIS discussed required setbacks as a mitigation measure. The Project is located in the Planned Development and Countryside zoning districts. The DEIS discussed the Project in relation to the Planned Development zoning district but omitted the Countryside zoning

district. In accordance with Section 5 (A)(1) of the Town of Malone Local Law 2 of 2018 ("Solar Law"), the Project will comply with (or exceed) the setback requirements for the underlying zoning districts where the Project is located. Specifically, the Project will provide for a 50-foot side yard setback where 15 feet is required, a 300-foot rear yard setback where 15 feet is required, and a 400-foot front yard setback where 75 feet is required. These setbacks are compliant with the Countryside District rules and will also be followed in the Planned Development District, which has no minimum setbacks.

- *DEIS Attachment B:* the May 2, 2023 Glint and Glare Analysis (**Attachment H**) stated that the Project featured a fixed-tilt system. The Project will have a single-axis tracker and not a fixed-tilt system. This detail has been revised in the updated analysis (***Attachment I***).

- *Observation heights in glare analyses:* The observation heights used in the Glint and Glare Analysis dated May 2, 2023 (**Attachment H**) used a height of 5 feet for observers in a standard commuter vehicle. The updated glare analysis, dated October 14, 2024, used heights of 3.5 feet above ground for passenger vehicles and 7.6 feet above ground for commercial trucks per American Association of State Highway and Transportation Officials guidelines. The updated analysis dated October 14, 2024, using these revised observer heights, found no glare to adjacent properties and viewpoints (***Attachment I***).

- *Reference to Malone Planning Board:* The DEIS referenced the Town of Malone Planning Board in Section 9, page 25, when referencing concerns raised by the SEQR Positive Declaration. The Town of Malone Town Board is the entity who issued the SEQR Positive Declaration.

3. RESPONSE TO COMMENTS

In accordance with the SEQR process, the DEIS was opened for public comment in March 2024 and a Public Hearing was held by the Town Board on March 27, 2024, with the public comment period ending April 12, 2024. The following are responses to comments on the DEIS provided by the Town of Malone (***Attachment P***) and comments received from the general public during the Public Hearing held by the Town on March 27, 2024 (documented in the Town of Malone Public Hearing minutes at ***Attachment Q***). No other written comments (including comments from agencies) were received.

3.1. RESPONSE TO COMMENTS FROM THE TOWN OF MALONE

The following are responses to comments from the Town of Malone, dated March 27, 2024 (***Attachment P***).

Comment 1: "The length of the term is misstated on Page 3 of the DEIS. The DEIS states that the lease term runs from 2020 to 2025, but the lease term is 25 years, subject to up to two, five-year extensions. The attached lease option does not discuss a five-year option."

Response 1: *Page 3 of the DEIS misstated the length of lease term. This has been updated and noted in Section 2.3 of this FEIS, which clarifies that a Land Lease Option and Lease Agreement was entered into between the Applicant, and the landowners in August 2020. The term of the Land Lease Option extended site control prior to execution of the Lease Agreement through July 31st, 2024. A Second Amendment to the Option and Lease Agreement extends site control through July 31st, 2026 (**Attachment L**). Once the Lease Agreement is executed, the Project will operate subject to an initial 25-year lease period, which is further subject to two, five-year lease term extensions. The initial 25-year lease period will begin after the lease is executed.*

Comment 2: "Sometimes the Applicant is referred to as Yellow 5 especially in the attachments, but to the Town they have referred to themselves as Yellow 17."

Response 2: *As stated in Section 2.3 of this FEIS, the Applicant name was initially listed as Yellow 17 LLC in the DEIS. The Applicant name has been updated to Luna Rossa Malone Solar, LLC, fka Yellow 17 LLC and Yellow 5 LLC, a wholly owned subsidiary of Nautilus Solar ("Nautilus"). Documents previously submitted to the Town that reference Yellow 5 LLC or*

Yellow 17 LLC remain correct as Luna Rossa Malone Solar, LLC will be the future owner and operator of the Project.

Comment 3: Response to comment #3 stating, "The list of required regulatory approvals for this Project needs to be updated. The necessary use variances are not clearly described. Also, the reference to the SPDES General Permit should be edited because the current permit is SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001.

Response 3: *As stated in Section 2.3 of this FEIS, the DEIS contained an incomplete list of required regulatory approvals on Page 4. This list of approvals, set forth in Section 1.1.1 of the FEIS, has been updated to include two Use Variances, USACE and NYSDEC Jurisdictional Determinations for wetlands, Town of Malone LWRP review, Town of Malone Driveway/Right-of-way permit, and FAA consultation. Additionally, the SPDES permit incorrectly referenced the old permit and has been updated in Section 1.1.1 of this FEIS to reference the current permit, SPDES General Permit for Stormwater discharges from Construction Activity Permit No. GP-0-20-001.*

Comment 4: "The Existing Conditions discussion (Section 3, page 5) is insufficient and lacking detail/organization that would be expected in an EIS. The Existing Conditions should relate back to the Town's initial SEQRA findings.

a. For example: Geologic setting is a list of bullet points that appear to discuss general land use items.
b. The wetland delineation figure and data is attached as Attachment E but a general summary of the Army Corps findings is not provided in the EIS document, other than a statement to indicate the project was 'sited to avoid any impacts to wetlands.' P. 21.
c. Noise impacts are discussed on page 19 in the Cumulative Impacts section but a basic summary of noise impacts and reference to the noise study is not provided in the Existing Conditions section.
d. The SHPO 'no effect' letter is attached to the DEIS in Attachment G but a general explanation of what the letter means is not included in the Existing Conditions section.

e. The farmland classification figure/soils data (see Attachment E which includes a long list of sub-attachments which are not clearly referenced) is not discussed in the Existing Conditions section of the DEIS."

Response 4: *Additional details provided by the Applicant regarding the wetland delineation, CESIR study, SHPO consultation, noise study, and the FEAF Part 1 land use factors are set forth in the paragraphs below:*

Wetland Delineation and Soil Survey (*Attachment R*)

Evaluation of Project impacts on wetlands and surface water features is required as part of environmental review pursuant to SEQR. A wetland and watercourse delineation dated November 23, 2020 was conducted by Bergmann for 17.1 acres within the Project site ("Study Area"). The wetland and watercourse delineation did not identify any National Wetlands Inventory ("NWI") or NYSDEC mapped wetland features or streams within the Project Area and noted the Project is located in a FEMA flood Zone C - Areas Outside of 500 Year Flood. Thus, the Project Area is not located in a designated floodway, 100-year floodplain, or 500-year floodplain.

The wetland and watercourse field delineation identified one intermittent stream and one palustrine emergent/palustrine unconsolidated bottom ("PEM/PUB") wetland within the Study Area in the far northeast corner of the Project site. The intermittent stream eventually flows into the Little Salmon River, which is mapped by the NYSDEC as a Class C/Standard C(T) stream (910-11) and classified by the NWI mapper as a riverine water body (R3UBH). The Project is sited away from these features to avoid impacts, and Applicant will adhere to any required NYSDEC regulatory setbacks from wetlands. Applicant will engage in consultations with the USACE and NYSDEC to obtain a jurisdictional determination and any other required approvals.

Soil classifications for the Project site were reviewed by the Applicant using the Natural Resources Conservation Service ("NRCS") Franklin County Soil Survey ("Soil Survey"). Applicant obtained results for the 17.1 acres delineated and discussed above (the "Study Area"). According to the Soil Survey results, the Study Area contained five soil types, of which the most prominent were the Adams and Colton ("Abd") soils, 8 to 25 percent slopes, severely eroded, and Colton and Constable ("Cab") gravelly loamy sands, 3 to 8 percent

slopes the most prominent. The Abd and Cab soil types cover approximately 32.4% and 44.2% of the Study Area respectively. None of the soil types in the Study Area are hydric soils. All soil types within the Study Area are considered well drained or moderately well drained and none are considered poorly drained soils. Cab is considered a soil that is Farmland of Statewide Importance, while Abd, along with two other soil types, is not considered prime farmland. Additionally, the Nicholville fine sandy loam, 2 to 6 percent slopes, is considered to have all areas as prime farmland, but only makes up approximately 5.2% of the Study Area. Overall, approximately 50.4% of the Study Area is not considered prime farmland, approximately 44.2% is considered a Farmland of Statewide Importance, and approximately 5.2% is considered prime farmland.

CESIR Study (*Attachment O*)

Per the Applicant, interconnection of the Malone Solar Project will not impose any grid safety or performance concerns because the Project will adhere to National Grid's interconnection requirements. During the process of securing hosting capacity, National Grid conducted a Coordinated Electric System Interconnection Review ("CESIR"). The CESIR evaluates the system's planned interconnection, identifies concerns, and implements mitigation measures to maintain appropriate safety factors and performance standards. Some of the concerns identified, and mitigation measures implemented in response, include:

- *3V0 Substation Upgrade to account for Overvoltage.*
- *LTC Bi-directional Control Co-generation Capability to address Substation*
- *Regulation for Reverse Power.*
- *National Grid Protection and Control Package to mitigate Unintentional*
- *Islanding/Required EMS Visibility for Generation Sources*
- *New Recloser Installation for Fault Sensitivity.*

National Grid will not allow any projects to connect to the grid if they have not taken measures to improve the grid. Applicant has stated that the Malone Solar Project will comply with all utility requirements for grid improvement by implementing the mitigation measures.

SHPO Consultation (*Attachment S*)

Consultation with the New York State Historic Preservation Office ("SHPO") evaluates potential impacts of a project on historic properties, including archaeological and/or historic resources. Impacts to historic and/or archaeological resources are required for

consideration as part of environmental review pursuant to SEQR. Upon evaluating potential impacts of this Project on historic and archaeological resources in accordance with Section 106 of the National Historic Preservation Act of 1966, SHPO issued a letter, dated December 1, 2020. SHPO that determined no historic properties, including archaeological and/or historic resources will be affected by this Project.

Noise Study Memo *(Attachment T)*

To evaluate potential impacts of noise emanating from the proposed solar facility, a noise study was completed for Cipriani Energy Group by Berlin Acoustics, dated October 19, 2022. The noise study concluded that the perceived sound level from the Project at the nearby correctional facility and the nearest residence will be below the threshold of human hearing and that sound emanating from the proposed solar facility will not be audible to the human ear, except at very close range to the on-site inverter.

FEAF Part 1 (*Attachment A*)

A Full Environmental Assessment Form Part 1 ("FEAF Part 1") dated August 26, 2021 was submitted to the Town of Malone Town Board early in the SEQRA review process. Information regarding overall Project characteristics, planning and zoning, geologic setting, nearby natural resources, and surrounding land uses was provided in the FEAF Part 1. The August 26, 2021 FEAF Part 1 is summarized below:

The Project is located within a sparsely populated neighborhood that contains a mix of land uses interspersed with patches of forest. Of note is the presence of two medium- and one high-security correctional facilities along Bare Hill Road and Brand Road.

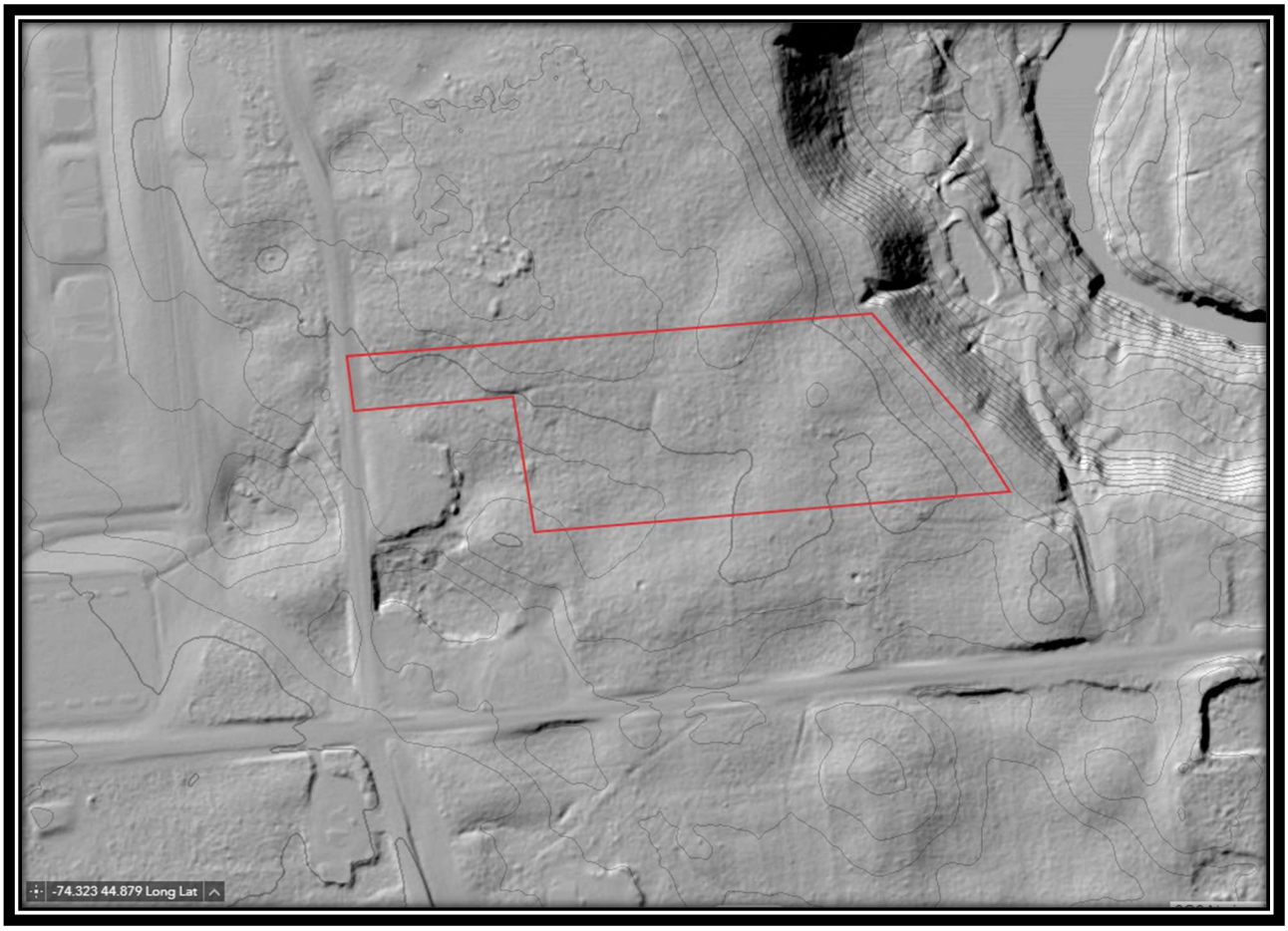
As of 2021, natural resources in the Project site did not include any NYSDEC-designated significant natural communities, federal or NYS-listed threatened or endangered species, federally designated Critical Habitat or habitat identified for threatened or endangered species, or NYS-listed rare or special concern plant or animal species. Similarly, as of August 2021 the Project site was not located within or adjacent to any NYS-designated agricultural district, National Natural Landmarks, NYS-listed Critical Environmental Areas or any rivers designated under the Wild, Scenic, and Recreational Rivers Program 6 NYCRR 666.

Further, the average depth to bedrock on the Project site is approximately 6.56 feet, with no known bedrock outcroppings or unique geological features, and the average depth to the water table is approximately 4.77 feet. Slopes within the Project site are primarily 0-10% grade, with a proportion of slopes 15% or greater along the small portion of the Project Site closest to the Little Salmon River.

Per the Applicant, when choosing the location for a solar energy facility, it is important to ensure that there are sufficient support services to respond to unforeseen emergencies. The Project site is located within two miles of the Malone Fire Department and within 0.5 mile of the office of Franklin County emergency services. The Project site would further be served by the Franklin County Sherriff's Office. Another key consideration for siting of the Project is access to utility infrastructure. The Project is to be interconnected to Malone 895 Substation via Feeder 89551 at Pole 19 on Bare Hill Road. Protective equipment used to evaluate and control the system's connection with the grid is all ground mounted to eliminate the introduction of customer owned utility poles. The ground mounted protection equipment includes a utility owned recloser, a customer owned Gang Operated Air Break switch ("GOAB"), and customer owned fused cutouts. This equipment can be accessed via a 20-foot wide pervious gravel driveway. Emergency services will have access to the site via a 20-foot wide double swing gate with a knox box.

In terms of visual setting, the Project site is located on a relatively flat tract of land directly upslope to the west from the Little Salmon River. The Project site lies east of Bare Hill Road and north of Brand Road, neither of which are designated as scenic highways. The Project site ranges in elevation from approximately 650 to 660 feet above sea level. Surrounding parcels are similar in elevation, except for the area around the Little Salmon River to the east which is approximately 100 feet lower. This is shown in the USGS National Map National Boundaries Dataset hillshade elevation image shown in Figure 1.

Figure 1. Hillshade Map of Project Area



(USGS, The National Map National Boundaries Dataset, 2023)

Comment 5: "The Town would like more detail added to the FEIS to explain whether there are any grid interconnection concerns (reference in text to the CESIR in Section 5.1/Energy/Utility Facilities)."

Response 5: *As stated in Section 2.3 of this FEIS, Section 5.1 of the DEIS noted integration with the regional power grid and interconnection with National Grid's power system. Section 6 of National Grid's CESIR study (**Attachment O**) details the work and cost associated with interconnecting the Project to the grid. The CESIR evaluates the system's planned interconnection, identifies concerns, and implements mitigation measures to maintain*

appropriate safety factors and performance standards. The CESIR identified the following required system upgrades that must be made in order to interconnect the Project:

a. *3V0 Substation Upgrade to account for Overvoltage.*
b. *LTC Bi-directional Control Co-generation Capability to address Substation Regulation for Reverse Power.*
c. *National Grid Protection and Control Package to mitigate Unintentional Islanding/Required EMS Visibility for Generation Sources.*
d. *New Recloser Installation for Fault Sensitivity.*

National Grid requires projects connecting to the grid to improve and upgrade the grid, as noted in the CESIR. Applicant has stated that the Malone Solar Project will comply with all utility requirements for grid improvement and will make the required upgrades.

Comment 6: Response to comment #6 stating, "The DEIS includes a note about Photo Simulations but does not include a findings summary. A summary would be helpful in the FEIS to assist with impact determination.

Response 6: *As stated in Section 2.2 of this FEIS, the DEIS included photographic simulations, dated October 5, 2022, created for five separate viewpoints to illustrate the Project components and the potential visual changes to the existing landscape (**Attachment J**). The simulations were used to determine the level of contrast between the existing landscape and the expected landscape after the Project is constructed. After changes were made to the Project layout, as illustrated in Section 2.1 of this FEIS, updated photographic simulations were completed, dated October 16, 2024 (**Attachment K**). In the latest photographic simulations, the photographic simulation showing the viewpoint at the proposed entrance and access road for the proposed Project was updated (Location 1). This viewpoint depicts a gravel access road extending far back from the road cutting through the tree line but does not depict any visuals of the proposed solar array. The only change between the photographic simulations conducted in 2022 and those conducted in 2024 with the updated Project layout is that the utility poles by the entrance are replaced by the pad-mounted electric equipment as a result of the inclusion of the UGE. Additionally, the updated photographic simulations depict the gate on the entrance road located further back from the road, further concealing the gate and Project. No changes to any of the other photographic simulations showing viewpoints surrounding the Project were made.*

Comment 7: "In Section 9 Summary and Conclusions it says the document was prepared to 'respond to concerns raised by the Town of Malone PB as noted in the SEQR Positive Declaration' but it was the Town Board who issued the positive declaration."

Response 7: *As noted in Section 2.3 of this FEIS, the DEIS incorrectly referenced the Town of Malone Planning Board in Section 9, Page 25, when referencing concerns raised by the SEQR Positive Declaration. The Town of Malone Town Board is the entity who issued the SEQR Positive Declaration*

Comment 8: "Please confirm the height of the PV panels. Per page 4 of the EIS, the maximum panel tilt height will be 8.6 feet but the glare analysis indicated a height of 4.5 feet."

Response 8: *The glare analysis, per standard practice for these analyses, uses the centroid height and not the maximum tilt height of the panels. Thus, the original glare study, dated May 2, 2023, used 4.5 feet since that was the centroid height of the PV panels. The updated glare analysis, dated October 14, 2024;* ***Attachment I****), also used the centroid height which, as noted in Section 2.1 in this FEIS, was updated to 5.1 feet based on the updated panel layout.*

Comment 9: "The DEIS Attachment B glint and glare analysis summary indicated 'the analyses represented a fixed tilt system,' however, it appears from the model and from the plans that the system is a tracker system. Please confirm what system is being used."

Response 9: *The solar array system features a single-axis tracker and not a fixed-tilt system. This detail has been revised in the updated glare analysis (****Attachment I****).*

Comment 10: "The DEIS Attachment B glint and glare analysis was conducted at an array height of 4.5 feet above the ground. The provided Drawing Number C009 shows a racking height at 4.5 minimum, but the November 2022 analysis used 6.5 feet. Please explain why the height changed."

Response 10: *The height changed due to an older layout design change. Further, as noted in this FEIS, the Project layout changed again since acceptance of the DEIS, and this centroid height changed to 5.1 feet based on the updated panel layout. This updated centroid height of 5.1 feet was included in the updated glare analysis (**Attachment I**).*

Comment 11: "Clarification of the height of observation points in the DEIS Attachment B glint and glare study is necessary. It is noted that 'the viewing height of the observer in standard first floor building at six feet above ground surface and standard commuter vehicle at five feet above ground surface' but five feet does not match either car or semi-truck height. Please clarify."

Response 11: *The observation heights used in the glint and glare analysis, dated May 2, 2023 (**Attachment H**) used a height of 5 feet for observers in a standard commuter vehicle. The updated glare analysis (**Attachment I**) used heights of 3.5 feet above ground for passenger vehicles and 7.6 feet above ground for commercial trucks per American Association of State Highway and Transportation Officials guidelines. The updated glare analysis with these revised observer heights, found no glare to adjacent properties and viewpoints, and no glare impacts are anticipated.*

3.2. RESPONSE TO COMMENTS FROM THE TOWN OF MALONE TOWN BOARD PUBLIC HEARING

The following are responses to comments documented in the Town of Malone Public Hearing minutes, dated March 27, 2024, including the glare analysis study provided by Calvin Martin (***Attachment Q***). No other written comments were received from the general public (including comments from agencies).

Comment 1: Response to "Calvin Martin had a few concerns; he gave a copy of a glare analysis study (that he conducted himself) and lease agreement to all the members of the board. Martin stated he got a different result study than what Tetra Tech did, the results he received are in the packet he gave the board members. Martin also discussed the lease agreement and stated in the lease there is an exit plan, and they could leave before the project is finished."

Response 1: *The Applicant provided the following response based on the technical nature of the comment. Tetra Tech's glare study (**Attachment I**), conducted by Applicant's consultants with an expertise in studying glint and glare, particularly for solar projects, and Calvin Martin's study, conducted using a non-commercial/student version of ForgeSolar for non-commercial*

purposes differ for multiple reasons. First, Martin's study specifically states "[g]lare analyses do not account for physical obstructions between reflectors and receptors. This includes buildings, tree cover, and geographic obstructions." Since the proposed Project is situated in an area surrounded by extensive tree canopy cover, an obstruction is necessary for glare analyses, as is used in Tetra Tech's study. Incorrectly omitting an obstruction will result in incorrect glare analysis results as it does not account for observation points blocked by the obstruction, in this case, a patch of forest. Further, Martin's study uses an incorrect maximum tracking angle, 60 degrees, which is incorrect for the proposed array, which has a maximum tracking angle of 52 degrees. Further, Martin's study has differences in the centroid height then used for the calculations. His version is limited in capabilities and information it can incorporate in the analyses and, in addition to the significant omission of an obstruction, does not present an accurate representation of the glare from the Project.

*Additionally, regarding Calvin Martin's comment about the lease agreement's "exit plan", the Project's decommissioning plan (**Attachment C**) will be in place before the Project is constructed. As required by the Town's Solar Law, the decommissioning plan is required to have provisions in place which would allow the Town to decommission the Project if it is abandoned.*

Comment 2: Response to "Mike Fournier had a few concerns; he stated there is a satellite program and it shows that where this project is going to be is one mile or less from this runway, the hospital, and the three prisons. Stated battery devices have a history of burning and are toxic. Fournier is worried about how they will evacuate the prisons and hospitals if the toxins end up getting in the buildings when the wind blows around. There are farmlands around this project as well, stated this will be toxic for the farm animals.

Response 2: *The Applicant confirms that the proposed Project does not include any "battery devices," (i.e. battery energy storage systems [BESS]) in the site plans. The Project only includes a proposed solar array.*

Comment 3: Response to "Bruce Burditt, Airport Manager asked how big the project is and what the Town of Malones local law allows."

Response 3: *The Project Footprint is 8.5 acres. The Town of Malone Solar Law(6)(f) allows seven thousand square feet of panels. A use variance will be sought from the Town of Malone Board of Variance and Appeals to construct the Project.*

Comment 4: Response to "Burditt asked when the project is completed will there be poles on the property."

Response 4: *No, there will be no customer owned utility poles. The site plan has been revised to make all protective equipment ground mounted. National Grid is requiring one riser pole (which will be owned by the Utility), as shown on the revised Site Plan Set dated October 17, 2024 (**Attachment E**).*

4. ATTACHMENTS

Attachments included with this document are listed below:

Attachment A – SEQR Documents
Attachment B – Site Location Map
Attachment C – Decommissioning Plan
Attachment D – Panel Specification Sheet with Anti-Reflective Glass Declaration
Attachment E – Updated Site Plan and Landscaping Plan
Attachment F – Updated Pad-mounted Equipment and Proposed UGE
Attachment G – Updated SWPPP
Attachment H – May 2, 2023 Glint and Glare Analysis
Attachment I – Updated Glint and Glare Analysis
Attachment J – October 5, 2022 Photographic Simulations
Attachment K – Updated Photographic Simulations
Attachment L – Memorandum of Lease
Attachment M – Original Landscaping Plan
Attachment N – FAA Determination Letters
Attachment O – CESIR Study
Attachment P – Town of Malone's Comments on the DEIS
Attachment Q – Town of Malone Public Hearing Minutes & Comments
Attachment R – Wetland Delineation and Soil Survey
Attachment S – SHPO No Effect Letter
Attachment T – Noise Study Memo

LIST OF APPENDICES

Appendix 1 – DEIS

Attachment A – SEQR Documents

Full Environmental Assessment Form Part 1

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: Malone Solar Project		
Project Location (describe, and attach a general location map): The proposed project is located at 176 Bare Hill Road in the Town of Malone, Franklin County, New York (44.877356, -74.316233).		
Brief Description of Proposed Action (include purpose or need): The proposed Malone Solar Project consists of a 8.6± acre solar farm (2.0 MW). The project will involve the installation of ground mounted photovoltaic panels as well as the associated access road, electric utility upgrades, and perimeter fencing fro the solar farm.		
Name of Applicant/Sponsor: Yellow 17 LLC c/o Chris Stroud	Telephone: (518) 390-4004 E-Mail: c.stroud@solrealgroup.com	
Address: 125 Wolf Road, Suite 312		
City/PO: Colonie	State: NY	Zip Code: 12205
Project Contact (if not same as sponsor; give name and title/role): Bergmann c/o Eric Redding, PE	Telephone: (518) 556-3631 E-Mail: eredding@bergmannpc.com	
Address: 2 Winners Circle, Suite 102		
City/PO: Albany	State: NY	Zip Code: 12205
Property Owner (if not same as sponsor): Kristopher Pirie	Telephone: N/A E-Mail: N/A	
Address: 21 Washington Street		
City/PO: Malone	State: NY	Zip Code: 12953

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 approves, site plan review, zoning permit and special use permit applications	
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Zoning Code Officer and Planning Board will refer comments and recommendations to Town Board	
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No	National Grid - Utility Connection	
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	SHPO -No effect; NYSERDA -Utility Connection NYSDEC SPDES General Permit GP-0-20-001	
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
A portion of the proposed project is located in a Planned Development District (PD)

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?
Countryside (C) and Planned Development (PD)

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? Requesting Use Variance

C.4. Existing community services.

a. In what school district is the project site located? Malone

b. What police or other public protection forces serve the project site?
Franklin County Sheriff

c. Which fire protection and emergency medical services serve the project site?
Malone Callfiremen Fire and Rescue

d. What parks serve the project site?
Malone Village Memorial Park, Trout River State 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? ±49.6 acres
b. Total acreage to be physically disturbed? ±0.32 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? ±49.6 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: 8 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 _____N/A_____

ii. Dimensions (in feet) of largest proposed structure: _____N/A_____ height; _____N/A_____ width; and _____N/A_____ length

iii. Approximate extent of building space to be heated or cooled: _____N/A_____ 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 0 acres (impervious surface)

_____ Square feet or ±49.6 acres (parcel size)

ii. Describe types of new point sources. Limited use pervious gravel driveway

_____

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)?

Stormwater runoff will be directed to stormwater management features on site.

_____

- 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: 8:00 AM to 6:00 PM
- Saturday: 8:00 to 6:00 PM
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: N/A
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

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:

Noise levels will increase during construction due to construction equipment during the hours of 8:00 - 6:00 PM Monday - Saturday. No significant impact with respect to noise is anticipated during operations. Work will conform to local noise ordinance.

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: 0.1 tons per month (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: Waste will consist of office waste and cardboard items from deliveries. Most of the waste will be recyclable.
- Operation: N/A

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

- Construction: A refuse container will remain on site during construction and be emptied by a licensed hauler as needed.
- 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	0.4±	0.2±	-0.2
• Forested	46.4±	36.6±	-9.8
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	2.4±	12.2±	+9.8
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.3±	0.3±	0
• Wetlands (freshwater or tidal)	0.1±	0.1±	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: Limited Use Pervious Gravel Driveway	0	0.2±	+0.2

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? 6.56 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:
Colton and Constable gravelly loamy sands, 3 to 8% slopes (Cab) 44.3 %
Adams and Colton soils, 8 to 25%, severely eroded (Abd) 34.5 %
Salmon stony very fine sandy loam over till, 20 to 45% slopes (Sce) 12.9 %

d. What is the average depth to the water table on the project site? Average: 4.77 feet

e. Drainage status of project site soils:
☑ Well Drained: 95.5 % of site
☑ Moderately Well Drained: 4.4 % of site
☐ Poorly Drained _____% of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 48.7 % of site
☐ 10-15%: _____% of site
☑ 15% or greater: 51.2 % 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 910-111 Classification C(T)
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... 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: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:
Grey Squirrel | Rabbit | Eastern Chipmunk
White-tailed deer | Raccoon | Migratory birds

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: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No
i. If Yes: acreage(s) on project site? 28.08 acres (property)
ii. Source(s) of soil rating(s): NRCS Franklin County Soil Survey

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: Adirondack Park

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

iii. Distance between project and resource: 4.9 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 Bergmann c/o Eric Redding, PE as Agent Date 8/26/21

Signature Eric Redding Title Discipline Leader

PRINT FORM

EAF Mapper Summary Report

Monday, July 12, 2021 9:11 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]	Yes
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]	910-111
E.2.h.iv [Surface Water Features - Stream Classification]	C(T)
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.

E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
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]	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

Town of Malone

27 Airport Road • Malone, New York 12953

November 22, 2022

Calista T. Montagnola
Agency Program Aide-Environmental Permits
New York State DEC
1115 State Route 86
P.O. Box 296
Ray Brook, New York 12977-0296

Dan Bagrow
NYS Parks, Recreation & Historic Preservation
Peebles Island State Park
P.O. Box 189
Waterford, New York 12188-0189

Thomas King, Senior Counsel
NYSERDA
17 Columbia Circle
Albany, New York 12203-6399

Town of Malone Planning Board
27 Airport Road
Malone, New York 12953

Robert Costa, Assistant Manager
Madelyn Sheehan, Environmental Protection Specialist
Federal Aviation Administration
New York Airport Districts office
1 Aviation Plaza
Jamaica, New York 11434

Yellow 17 LLC
125 Wolf Road, Suite 312
Colonie, New York 12205

RE: 176 Bare Hill Road

Dear Sirs and Madam:

As Lead Agency, the Town of Malone entered the enclosed Resolution adopting a Positive Declaration of Environmental Significance for the Proposed Community Solar Farm to be located at 176 Bare Hill Road under SEQRA.

Should you have any questions, please do not hesitate to contact Supervisor Stewart or the undersigned.

Very truly yours,

Nicole Guerin

Nicole Guerin
Town Clerk

Enclosures

RESOLUTION NO. 325-2022
TOWN OF MALONE TOWN BOARD RESOLUTION ADOPTING A POSITIVE DECLARATION OF ENVIRONMENTAL SIGNIFICANCE FOR THE PROPOSED COMMUNITY SOLAR FARM TO BE LOCATED AT 176 BARE HILL ROAD UNDER SEQRA

WHEREAS, on or about September 3, 2021, Yellow 17, LLC filed an application for a Zoning Permit for the "Malone Solar Project" to be located at 176 Bare Hill Road in the Town of Malone (the "Proposed Action"), and

WHEREAS, as part of its application for a Zoning Permit, the Applicant submitted a Full Environmental Assessment Form dated August 26, 2021, and

WHEREAS, on or about February 11, 2022, Yellow 17, LLC filed a response to a deficiency letter for the Proposed Action with supplemental materials in support of its application, and

WHEREAS, on or about October 12, 2022, Yellow 17, LLC filed supplemental materials in support of its application, and

WHEREAS, the Town Board adopted a Resolution on May 11, 2022, which classified the project as a Type I Action under the New York State Environmental Quality Review Act ("SEQRA"), and

WHEREAS, the Town Board assumed lead agency status pursuant to 6 NYCRR 617.6(b)(1), and

WHEREAS, the Town Board conducted public hearings on the proposed project on June 22, 2022, and July 13, 2022, and

WHEREAS, the Town Board reviewed Part I of the FEAF prepared by the Applicant and prepared Parts 2 and 3 of the Full Environmental Assessment Form, and

WHEREAS, the Town Board has considered the content of the proposed application, Local Laws, the FEAF, communications from interested agencies, and

WHEREAS, the Town Board has considered any relevant public input, and

WHEREAS, the Town Board has thoroughly analyzed any relevant concerns discussed om the attached positive declaration of environmental significance, and has determined that significant adverse environmental impacts may result from the proposed project, and

WHEREAS, upon review of the FEAF and the relevant environmental criteria under SEQRA, the Town Board believes that the preparation of a Draft Environmental Impact Statement ("DEIS") is warranted.

NOW THEREFORE, the Town Board of the Town of Malone finds that the proposed project may have significant adverse impacts to the environment.

AND THEREFORE, the Town Board of the Town of Malone finds that the proposed project may have significant adverse glare impacts to adjoining and nearby properties; and

AND THEREFORE, the Town Board of the Town of Malone further issues as SEQRA Lead Agency, a positive declaration of environmental significance for the Proposed Action, finding there is a potential for at least one or more significantly adverse environmental impacts that may result from the Proposed Action, and incorporating by reference into this resolution the attached Positive Declaration contained in the FEAF Part 3; and

AND THEREFORE, that the Town Board, as Lead Agency, will require the preparation of a DEIS for the review of the proposed Action; and

AND THEREFORE, the Town Board hereby adopts the attached positive declaration of environmental significance and incorporates it herein.

AND THEREFORE, the Town Clerk is hereby directed to enter this resolution and the attached positive declaration of environmental significance in the minutes of this meeting.

AND THEREFORE, the Town Clerk is hereby directed to transmit this positive declaration and resolution to the appropriate agencies in accordance with the requirements of 6 NYCRR 617.12(b).

Motion offered by: Supervisor Andrea Stewart
Second by: Councilor Jody Johnston
CARRIED (5-0) – Supervisor Stewart – Aye Deputy Supervisor Maguire - Aye, Councilor Johnston – Aye Councilor Taylor – Aye Councilor Walbridge - Aye

STATE OF NEW YORK
COUNTY OF FRANKLIN SS:

I, Nicole Guerin, Town Clerk of the Town of Malone, New York, do hereby certify that the foregoing resolution, #325-2022, was duly adopted at a Regular Meeting of the Malone Town Board, held on November 16, 2022; and the same is a true and complete copy of the record on file in the Office of the Town Clerk and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of said Town this 22nd day of November, 2022.

Nicole Guerin

Nicole Guerin

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Agency Use Only [If applicable]
Project :
Date :

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land
Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1) ☑ NO ☐ YES
If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☐	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: _____ _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑NO ☐YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____ _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____ _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☑NO ☐YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☐	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☐	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☐	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☐	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☐	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☐	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☐

l. Other impacts: _____ _____		☐	☐

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☐	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☐	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☐	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☐	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☐	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☐	☐
h. Other impacts: _____ _____		☐	☐

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: _____ _____		☐	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D.2.h, D.2.g) ☑NO ☐YES

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____ _____		☐	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑NO ☐YES

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☐	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☐	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☐	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☐	☐
j. Other impacts: _____ _____		☐	☐

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑NO ☐YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, E1b	☐	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☐	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☐	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	E1 a, E1b	☐	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☐	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☐	☐
h. Other impacts: _____		☐	☐

9. Impact on Aesthetic Resources

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☐ ☐	☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☐ ☐	☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____		☐	☐

10. Impact on Historic and Archeological Resources

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.) ☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical 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.	E3e	☐	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☐	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☐	☐

d. Other impacts: _____ _____		☐	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan. (See Part 1. C.2.c, E.1.c., E.2.q.)

☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 12.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: _____ _____		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)

☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", go to Section 13.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____ _____		☐	☐

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. (See Part 1. D.2.j) ☑ NO ☐ YES

If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: _____ _____		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. (See Part 1. D.2.k) ☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☐	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: _____ _____			

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. (See Part 1. D.2.m., n., and o.) ☐ NO ☑ YES

If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☑
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☑	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may occur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, E1b	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

Agency Use Only [If Applicable]

Project:

Date:

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

Part 3 provides the reasons in support of the determination of significance. The lead agency must complete Part 3 for every question in Part 2 where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.

Based on the analysis in Part 3, the lead agency must decide whether to require an environmental impact statement to further assess the proposed action or whether available information is sufficient for the lead agency to conclude that the proposed action will not have a significant adverse environmental impact. By completing the certification on the next page, the lead agency can complete its determination of significance.

Reasons Supporting This Determination:

To complete this section:

- Identify the impact based on the Part 2 responses and describe its magnitude. Magnitude considers factors such as severity, size or extent of an impact.
- Assess the importance of the impact. Importance relates to the geographic scope, duration, probability of the impact occurring, number of people affected by the impact and any additional environmental consequences if the impact were to occur.
- The assessment should take into consideration any design element or project changes.
- Repeat this process for each Part 2 question where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.
- Provide the reason(s) why the impact may, or will not, result in a significant adverse environmental impact
- For Conditional Negative Declarations identify the specific condition(s) imposed that will modify the proposed action so that no significant adverse environmental impacts will result.
- Attach additional sheets, as needed.

The proposed community solar farm to be located at 176 Bare Hill Road may have significant adverse impacts due to possible glare impacts. During public comments the Board was provided a glare analysis demonstarting significant adverse impact. The Applicant provided a contradicting glare study that concluded there would not be glare impacts. With the contradicting analyses, the Town's experts did not come to a conclusive decision on impacts. Therefore, there may be significant adverse impacts relating to glare.

Determination of Significance - Type 1 and Unlisted Actions

SEQR Status: ☑ Type 1 ☐ Unlisted

Identify portions of EAF completed for this Project: ☑ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF, as noted, plus this additional support information
public comments, proposed application and supplement documents, communications from interested parties, and expert consultant memoranda

and considering both the magnitude and importance of each identified potential impact, it is the conclusion of the
Town of Malone Town Board as lead agency that:

☐ A. This project will result in no significant adverse impacts on the environment, and, therefore, an environmental impact statement need not be prepared. Accordingly, this negative declaration is issued.

☐ B. Although this project could have a significant adverse impact on the environment, that impact will be avoided or substantially mitigated because of the following conditions which will be required by the lead agency:

There will, therefore, be no significant adverse impacts from the project as conditioned, and, therefore, this conditioned negative declaration is issued. A conditioned negative declaration may be used only for UNLISTED actions (see 6 NYCRR 617.7(d)).

☑ C. This Project may result in one or more significant adverse impacts on the environment, and an environmental impact statement must be prepared to further assess the impact(s) and possible mitigation and to explore alternatives to avoid or reduce those impacts. Accordingly, this positive declaration is issued.

Name of Action: Malone Solar Project (176 Bare Hill Road)

Name of Lead Agency: Town of Malone Town Board

Name of Responsible Officer in Lead Agency: Andrea Stewart

Title of Responsible Officer: Town Supervisor

Signature of Responsible Officer in Lead Agency: Andrea Stewart Date: 11/16/2022

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person: Andrea Stewart

Address: 27 Airport Road, Malone, NY 12853

Telephone Number: 518-483-4740

E-mail: supervisor@malonetown.com

For Type 1 Actions and Conditioned Negative Declarations, a copy of this Notice is sent to:

Chief Executive Officer of the political subdivision in which the action will be principally located (e.g., Town / City / Village of)
Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

PRINT FULL FORM

Agency Use Only [If Applicable]

Project :

Date :

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

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Title of Responsible Officer: Town Supervisor

Signature of Responsible Officer in Lead Agency: Date: 11/16/2022

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person: Andrea Stewart

Address: 27 Airport Road, Malone, NY 12853

Telephone Number: 518-483-4740

E-mail: supervisor@malonetown.com

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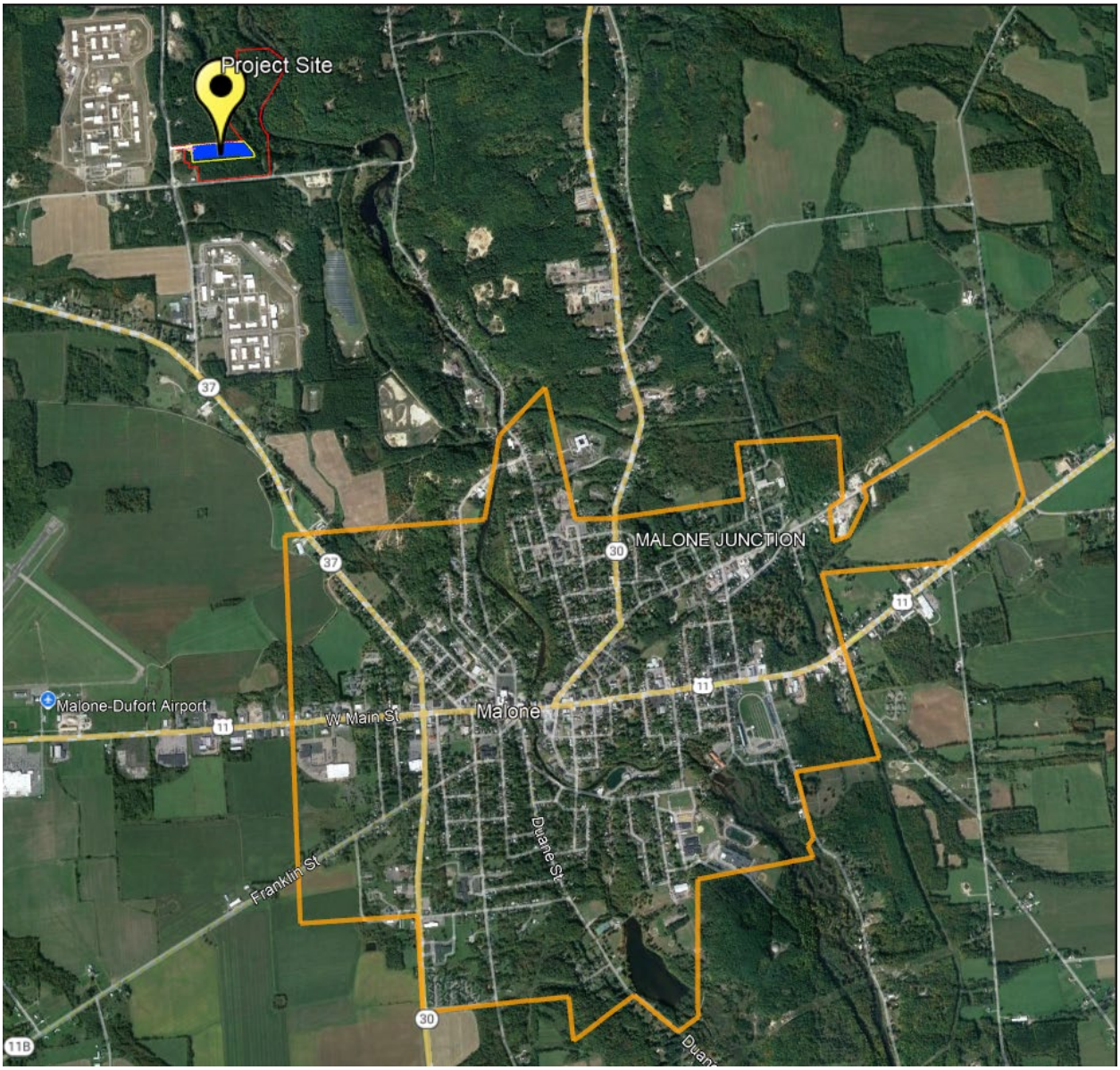
Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

PRINT FULL FORM

Attachment B – Site Location Map

Site Location Map



Attachment C – Decommissioning Plan

Cipriani Energy Group Corp.
125 Wolf Rd, Suite 312, Colonie, NY 12205

Solar Farm Decommissioning Plan

NY, Malone - 176 Bare Hill Rd

August 12, 2021

Table of Contents

Contents **Page**

1. Introduction

Cipriani Energy Group Corp. ("**Cipriani Energy**") proposes to build a photovoltaic (PV) Solar Farm at 176 Bare Hill Rd. Malone NY 12953 with a nameplate capacity of approximately 2 megawatts (MW) alternating current (AC) and be built on a 11 acres of a 49.6 acre parcel.

This Decommissioning Plan ("**Plan**") provides an overview of activities that will occur during the decommissioning phase of the Solar Farm, including; activities related to the restoration of land, the management of materials and waste, projected costs, and a decommissioning fund agreement overview.

The Solar Farm will have a useful life of twenty five (25) to thirty five (35) years. This Plan assumes that a Solar Farm will be dismantled and the Farm Site restored to a state similar to its pre-construction condition at the end of a 35 year life. The Plan also covers the case of the abandonment of the Solar Farm, for any reason; prior to the 35 year maturity date.

Decommissioning of the Solar Farm will include the disconnection of the Solar Farm from the electrical grid and the removal of all Solar Farm components, including:

- Photovoltaic (PV) modules, panel racking and supports;
- Inverter units, substation, transformers, and other electrical equipment;
- Access roads, wiring cables, communication tower, perimeter fence; and,
- Concrete foundations.

This decommissioning plan is based on current best management practices and procedures. This Plan may be subject to revision based on new standards and emergent best management practices at the time of decommissioning. Permits will be obtained as required and notification will be given to stakeholders prior to decommissioning.

2. The Proponent

Cipriani Energy will manage and coordinate the approvals process and obtain all necessary regulatory approvals that vary depending on the jurisdiction, project capacity, and site location.

Contact information for the proponent is as follows:

Full Name of Company: Cipriani Energy Group Corp.

Contact: Christopher H. Stroud

Address: 125 Wolf Rd, Suite 312, Colonie, NY 12205

Telephone: (855) Sun-4-Ever Ext.104

Email: c.stroud@solrealgroup.com

2.1 Project Information

Address: 176 Bare Hill Rd. Malone NY 12953

Tax ID: 84.-1-73.100

Project Size (est.): One Project of 2 MWac

Landowner: Kristopher Pirie

Purchase / Lease: Lease

3. Decommissioning of the Solar Farm

At the time of decommissioning, the installed components will be removed, reused, disposed of, and recycled, where possible. The Farm Site will be restored to a state similar to its pre-construction condition. All removal of equipment will be done in accordance with any applicable regulations and manufacturer recommendations. All applicable permits will be acquired.

3.1 Equipment Dismantling and Removal

Generally, the decommissioning of a Solar Farm proceeds in the reverse order of the installation.

1. The Solar Farm shall be disconnected from the utility power grid.
2. PV modules shall be disconnected, collected, and disposed at an approved solar module recycler or reused / resold on the market. Although the PV modules will not be cutting edge technology at the time of decommissioning, they are estimated to still produce 80% of the original electricity output at year 20 and add value for many years.
3. All aboveground and underground electrical interconnection and distribution cables shall be removed and disposed off-site by an approved facility.
4. Galvanized steel PV module support and racking system support posts shall be removed and disposed off-site by an approved facility.
5. Electrical and electronic devices, including transformers and inverters shall be removed and disposed off-site by an approved facility.
6. Concrete foundations shall be removed and disposed off-site by an approved facility.
7. Fencing shall be removed and will be disposed off-site by an approved facility.

3.2 Environmental Effects

Decommissioning activities, particularly the removal of project components could result in environmental effects similar to those of the construction phase. For example, there is the potential for disturbance (erosion/sedimentation/fuel spills) to adjacent watercourses or significant natural features. Mitigation measures similar to those employed during the construction phase of the Solar Farm will be implemented. These will remain in place until the site is stabilized in order to mitigate erosion and silt/sediment runoff and any impacts on the significant natural features or water bodies located adjacent to the Farm Site.

Road traffic will temporarily increase due to the movement of decommissioning crews and equipment. There may be an increase in particulate matter (dust) in adjacent areas during the decommissioning phase. Decommissioning activities may lead to temporary elevated noise levels from heavy machinery and an increase in trips to the project location. Work will be undertaken during daylight hours and conform to any applicable restrictions.

3.3 Site Restoration

Through the decommissioning phase, the Farm Site will be restored to a state similar to its pre-construction condition.

All project components (discussed in **Table 1**) will be removed. Rehabilitated lands may be seeded with a low-growing species such as clover to help stabilize soil conditions, enhance soil structure, and increase soil fertility.

3.4 Managing Materials and Waste

During the decommissioning phase a variety of excess materials and wastes (listed in **Table 1**) will be generated. Most of the materials used in a Solar Farm are reusable or recyclable and some equipment may have manufacturer take-back and recycling requirements. Any remaining materials will be removed and disposed of off-site at an appropriate facility. CIPRIANI ENERGY will establish policies and procedures to maximize recycling and reuse and will work with manufacturers, local subcontractors, and waste firms to segregate material to be disposed of, recycled, or reused.

CIPRIANI ENERGY will be responsible for the logistics of collecting and recycling the PV modules and to minimize the potential for modules to be discarded in the municipal waste stream. Currently, some manufacturers and new companies are looking for ways to recycle and/or reuse solar modules when they have reached the end of their lifespan. Due to a recent increase in the use of solar energy technology, a large number of panels from a variety of projects will be nearing the end of their lifespan in 25 - 35 years. It is anticipated there will be more recycling options available for solar modules at that time. Cipriani Energy proposes to determine the best way of disposing of the solar modules using best management practices at the time of decommissioning.

Table 1: Management of Excess Materials and Waste

Material / Waste	Means of Managing Excess Materials and Waste
PV panels	If there is no possibility for reuse, the panels will either be returned to the manufacturer for appropriate disposal or will be transported to a recycling facility where the glass, metal and semiconductor materials will be separated and recycled.
Metal array mounting racks and steel supports	These materials will be recycled or disposed off-site at an approved facility.
Transformers and substation components	The small amount of oil from the transformers will be removed on-site to reduce the potential for spills and will be transported to an approved facility for disposal. The step-up transformer and the inverter units will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Inverters, fans, fixtures	The metal components of the inverters, fans and fixtures will be disposed of or recycled, where possible. Remaining components will be disposed of in accordance with the standards of the day.
Gravel (or other granular)	It is possible that the municipality may accept uncontaminated material without processing for use on local roads, however, for the purpose of this report it is assumed that the material will be removed from the project location by truck to a location where The aggregate can be processed for salvage. It will then be reused as fill for construction. It is not expected that any such material will be contaminated.
Geotextile fabric	It is assumed that during excavation of the aggregate, a large portion of the geotextile will be “picked up” and sorted out of The aggregate at the aggregate reprocessing site. Geotextile fabric that is remaining or large pieces that can be readily removed from the excavated aggregate will be disposed of off-site at an approved disposal facility.
Concrete inverter/transformer Foundations	Concrete foundations will be broken down and transported by certified and licensed contractor to a recycling or approved disposal facility.
Cables and wiring	The electrical line that connects the substation to the point of common coupling will be disconnected and disposed of at an approved facility. Support poles, if made of untreated wood, will be chipped for reuse. Associated electronic equipment (isolation switches, fuses, metering) will be transported off-site to be sent back to the manufacturer, recycled, reused, or safely disposed off-site in accordance with current standards and best practices.
Fencing	Fencing will be removed and recycled at a metal recycling facility.
Debris	Any remaining debris on the site will be separated into recyclables/residual wastes and will be transported from the site and managed as appropriate.

3.5 Decommissioning During Construction or Abandonment Before Maturity

In case of abandonment of the Solar Farm during construction or before its 35-year maturity, the same decommissioning procedures as for decommissioning after ceasing operation will be undertaken and the same decommissioning and restoration program will be honored, in as far as construction proceeded before abandonment. The Solar Farm will be dismantled, materials removed and disposed, the soil that was removed will be graded and the site restored to a state similar to its preconstruction condition.

3.6 Decommissioning Notification

Decommissioning activities may require the notification of stakeholders given the nature of the works at the Farm Site. The local municipality, in particular, will be notified prior to commencement of any decommissioning activities. Six months prior to decommissioning, Cipriani Energy will update their list of stakeholders and notify appropriate municipalities of decommissioning activities. Federal, county, and local authorities will be notified as needed to discuss the potential approvals required to engage in decommissioning activities.

3.7 Approvals

Well-planned and well-managed renewable energy facilities are not expected to pose environmental risks at the time of decommissioning. Decommissioning of a Solar Farm will follow standards of the day. Cipriani Energy will ensure that any required permits are obtained prior to decommissioning.

This Decommissioning Report will be updated as necessary in the future to ensure that changes in technology and site restoration methods are taken into consideration.

4. Costs of Decommissioning

The costs below are the current estimated costs to decommission a Solar Farm per MWac, based on guidance from NYSERDA and estimates from the Massachusetts solar market, a mature solar market with experience decommissioning projects. **The values below should be multiplied by a value of 2 for this project.** The salvage values of valuable recyclable materials (aluminum, steel, copper, etc) are not factored into the below costs. The scrap value will be determined on current market rates at the time of salvage.

Tasks	Estimated Cost ($)
Remove Panels	$1,225
Remove Rack Wiring	$1,230
Dismantle Racks	$6,175
Remove and Load Electrical Equipment	$925
Break up Concrete Pads	$750
Remove Racks	$3,950
Remove Cable	$3,250
Remove Ground Screws and Power Poles	$6,925
Remove Fence	$2,425
Grading	$2,000
Seed Disturbed Areas	$125
Truck to Recycling Center	$1,125
Current Total	**$30,100**
Total After 35 Years (2.5% inflation rate)	**$69,691**

NY PVTN Decommissioning Fact Sheet.pdf

5. Decommissioning Bond

Prior to commissioning the Solar Farm, Cipriani Energy will obtain a decommissioning bond in the amount shown as "total after 35 years" in Paragraph 4, adjusted on a pro-rata basis for the estimated system size to guarantee that monies are available to perform the Farm decommissioning. Although Cipriani Energy intends to perform the decommissioning, unforeseen circumstances such Cipriani Energy selling the project to another party or Cipriani Energy going out of business are possible. The bond will remain available to any party performing the decommissioning such as a municipality or a landowner. Alternatively, where mutually acceptable to both parties, an escrow account may be established prior to commissioning.

Decommissioning Bond Calculator		
	2	System Size
	69,691.00	Per MW
	2.5 %	Inflation Rate
	30,100	
		Five year
Yr	Rate per Ac	RENT
1	0	
2	0	
3	0	
4	0	
5	0	
6	0	
7	0	
8	0	
9	0	
10	0	
11	0	
12	0	
13	0	
14	0	
15	0	
16	0	
17	0	
18	0	
19	0	
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21	0	
22	0	
23	0	
24	0	
25	0	
26	0	
27	0	
28	0	
29	0	
30	0	
31	0	
32	0	
33	0	
34	0	
35	0	

Attachment D – Panel Specification Sheet with Anti-Reflective Glass Declaration

ASTRONERGY

ASTRO N7

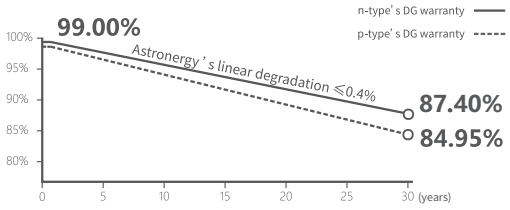
CHSM66RN(DG)/F-BH
Bifacial Series

595~615W

Warranty

15 15-year Product Warranty

30 30-year Linear Power Warranty



Key Features

- TOPCon / Half-cut
- Better temperature coefficient (Pmpp)
- Non-destructive cutting
- PID resistance
- Low BOS cost & LCOE
- Bifacial gain

Assist carbon neutrality

ISO 9001:2015:ISO Quality Management System
ISO 14001:2015:ISO Environment Management System
ISO 45001:Occupational Health and Safety
The first solar company which passed the Nord IEC/TS 62941 certification audit

TOP PERFORMER PVEL member of group kiwa

Tier 1 BloombergNEF

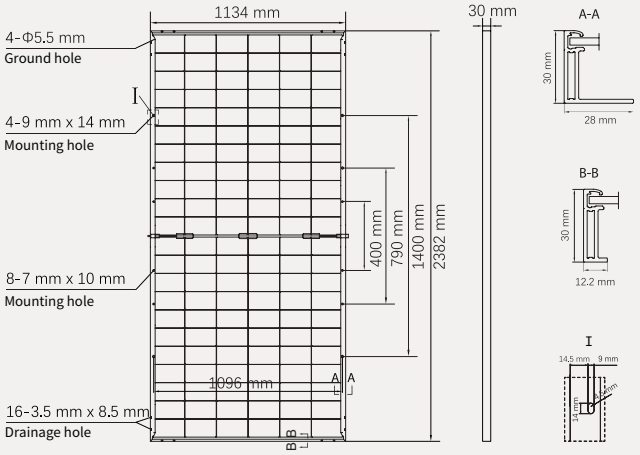
Underwritten by International Insurer

595~615W	0~+3%	22.8%	≤ 1.0%	≤ 0.4%
POWER RANGE	POWER SORTING	MAX MODULE EFFICIENCY	FIRST YEAR POWER DEGRADATION	YEAR 2-30 POWER DEGRADATION

Mechanical Specifications

Outer dimensions (L x W x H)	2382 x 1134 x 30 mm
Cell type	n-type mono-crystalline
No. of cells	132 (6*22)
Frame technology	Aluminum, silver anodized
Front / Back glass	2.0+2.0 mm
Cable length (Including connector)	Portrait: (+)350 mm,(-)250 mm; Customized length
Cable diameter (IEC/UL)	4 mm^2 / 12 AWG
① Maximum mechanical test load	5400 Pa (front) / 2400 Pa (back)
Connector type (IEC/UL)	HCB40 (Standard) / MC4-EVO2A (Optional)
Module weight	33.5 kg
Packing unit	36 pcs / box
Weight of packing unit (for 40'HQ container)	1264 kg
Modules per 40' HQ container	720 pcs (Subject to sales contract)

① Refer to Astronergy crystalline installation manual or contact technical department.
Maximum Mechanical Test Load=1.5×Maximum Mechanical Design Load.



Electrical Specifications

STC: Irradiance 1000W/m^2, Cell Temperature 25° C, AM=1.5

Rated output (Pmpp / Wp)	595	600	605	610	615
Rated voltage (Vmpp / V)	40.92	41.05	41.18	41.31	41.43
Rated current (Impp / A)	14.54	14.62	14.69	14.77	14.84
Open circuit voltage (Voc / V)	48.29	48.44	48.59	48.74	48.89
Short circuit current (Isc / A)	15.70	15.78	15.86	15.94	16.02
Module efficiency	22.0%	22.2%	22.4%	22.6%	22.8%

NMOT: Irradiance 800W/m^2, Ambient Temperature 20° C, AM=1.5, Wind Speed 1m/s

Rated output (Pmpp / Wp)	447.4	451.2	455.0	458.7	462.5
Rated voltage (Vmpp / V)	38.52	38.64	38.76	38.88	39.00
Rated current (Impp / A)	11.62	11.68	11.74	11.80	11.86
Open circuit voltage (Voc / V)	45.87	46.01	46.15	46.30	46.44
Short circuit current (Isc / A)	12.67	12.74	12.80	12.87	12.94

Electrical Specifications (Integrated power)

Pmpp gain	Pmpp / Wp	Vmpp / V	Impp / A	Voc / V	Isc / A
5%	641	41.31	15.51	48.74	16.74
10%	671	41.31	16.24	48.74	17.54
15%	702	41.31	16.98	48.74	18.33
20%	732	41.31	17.72	48.74	19.13
25%	763	41.31	18.46	48.74	19.93

Electrical characteristics with different rear power gain (reference to 610W)

Temperature Ratings (STC)

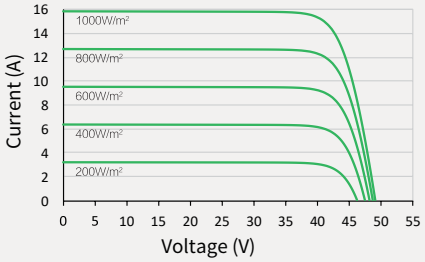
Temperature coefficient (Pmpp)	-0.29%/°C
Temperature coefficient (Isc)	+0.043%/°C
Temperature coefficient (Voc)	-0.25%/°C
Nominal module operating temperature (NMOT)	41±2°C

Operating Parameters

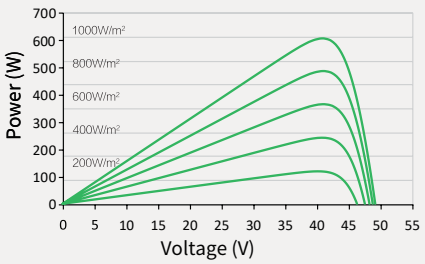
No. of diodes	3
Junction box IP rating	IP 68
Max. series fuse rating	35 A
Max. system voltage (IEC/UL)	1500V_{DC}

Curve

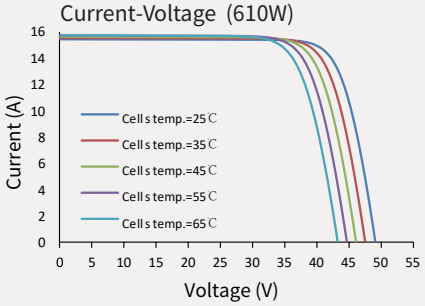
Current-Voltage (610W)



Power-Voltage (610W)



Current-Voltage (610W)



www.astronergy.com

ASTRONERGY

Statement for ARC glass

To whom it may concern,

We, Chint New Energy Technology Co., LTD., hereby confirm that all photovoltaic modules produced by Astronergy have Anti-Reflective Coating (ARC) on the front glass. It can reduce light reflection and hence absorb more solar energy and get more power generation.

Best Regards,

Cyndi Xu Cyndi Xu.

Title: GTS Manager

Signature:

Chint New Energy Technology Co., Ltd.

Feb 19th, 2024

Chint New Energy Technology Co., Ltd. | Add: No. 1 Jisheng Road, Jianshan New Zone Haining 314415 Zhejiang P.R. China
Tel: 0086-571-5603 1888 | Fax: 0086-571-5603 2316 | www.astronergy.com

Attachment E – Updated Site Plan and Landscaping Plan

ARCH D 24x36

PRELIMINARY DEVELOPMENT PLANS FOR
PROPOSED
MALONE SOLAR PROJECT
SOLAR DEVELOPMENT
176 BARE HILL RD
MALONE, NEW YORK

PROJECT CONTACTS

CIVIL ENGINEER
BERGMANN
18 CORPORATE WOODS BOULEVARD
SUITE 400, ALBANY, NY 12211
CONTACT: EVAN COMILLONI, PE
PHONE: 518.389.1111

APPLICANT
CIPRIANI ENERGY GROUP CORP.
125 WOLF ROAD, SUITE 312
COLONIE, NY 12205
CONTACT: MICHAEL QUINN
PHONE: 855.786.4383 EXT. 112

OWNER
KRISTOPHER PIRIE
21 WASHINGTON ST
MALONE, NY 12919

SITE LOCATION MAP
1"=1000'

N

DRAWING INDEX

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

18 Corporate Woods Blvd Circle, Suite 400
Albany, NY 12211
www.bergmannpc.com
office: 518.862.0325

CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES
10/17/2024	LANDSCAPE PLAN

STATE OF NEW YORK
ERIC C. REDDING
LICENSED PROFESSIONAL ENGINEER
092442

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

COVER

Drawing Number

C000

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SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING HELD TO INCLUDE PROJECT MANAGER, OPERATOR'S ENGINEER, CONTRACTOR, AND SUB-CONTRACTORS PRIOR TO LAND DISTURBING ACTIVITIES.
2. CONSTRUCT CONSTRUCTION ENTRANCE/EXIT AT LOCATIONS DESIGNATED ON PLANS.
3. INSTALL PERIMETER SILT FENCE.
4. HAVE A QUALIFIED PROFESSIONAL CONDUCT AN ASSESSMENT OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE CONSTRUCTION IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
6. USE THE EXISTING GRAVEL ROAD DURING CONSTRUCTION.
7. STRIP TOPSOIL AND STOCKPILE IN A LOCATION ACCEPTABLE TO CONSTRUCTION MANAGER. WHEN STOCKPILE IS COMPLETE, INSTALL PERIMETER SILT FENCE, SEED SURFACE WITH 100% PERENNIAL RYEGRASS MIXTURE AT A RATE OF 2-4 LBS. PER 1000 SF. APPLY 90-100 LBS PER 1000 SF OF MULCH.
8. COMMENCE EARTHWORK CUT AND FILLS. THE WORK SHALL BE PROGRESSED TO ALLOW A REASONABLE TRANSFER OF CUT AND FILL EARTH FOR ROUGH GRADING AND EARTH MOVING. THE CONTRACTOR WILL BE GIVEN SOME LATITUDE TO VARY FROM THE FOLLOWING SCHEDULE IN ORDER TO MEET THE FIELD CONDITIONS ENCOUNTERED. CONTRACTOR SHALL REVIEW VARIATIONS TO SWPPP WITH DESIGN ENGINEER AND QUALIFIED PROFESSIONAL PRIOR TO IMPLEMENTATION.
9. REMOVE THE EXISTING GRAVEL DRIVEWAY AND CONSTRUCT THE PROPOSED PERVIOUS GRAVEL DRIVEWAY AFTER CONSTRUCTION ACTIVITIES SUCH AS THE INSTALLATION OF THE PANELS AND PERIMETER FENCE. THE SUB-GRADE MATERIAL WHERE THE DRIVEWAY IS TO BE INSTALLED SHALL BE DECOMPACTED PER NYSDEC'S "DEEP-RIPPING AND DECOMPACTION" MANUAL, DATED APRIL 2008. CONTRACTOR SHALL AVOID FREQUENT HEAVY TRAFFIC ON THE LIMITED USE PERVIOUS GRAVEL.
10. AS ROADWAY AND ACCESS DRIVES ARE BROUGHT TO GRADE, THEY WILL BE STABILIZED WITH CRUSHED STONE SUBBASE AT A DEPTH SPECIFIED ON PLANS TO PREVENT EROSION AS SOON AS PRACTICABLE.
11. STABILIZE ALL AREAS AS SOON AS PRACTICABLE, IDLE IN EXCESS OF 7 DAYS AND IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
12. INSTALL UTILITIES. TRENCH EXCAVATION/BACKFILL AREAS SHOULD BE STABILIZED PROGRESSIVELY AT THE END OF EACH WORKDAY WITH SEED AND STRAW MULCH AT A RATE OF 100% PERENNIAL RYE GRASS AT 2-4 LBS/1000 SF MULCHED AT 90-100 LBS/1000 SF.
13. STABILIZE ALL AREAS IDLE IN EXCESS OF 7 DAYS IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
14. REMOVE TEMPORARY CONSTRUCTION EXITS AND PERIMETER SILT FENCE ONCE SITE HAS ACHIEVED 80% UNIFORM STABILIZATION.

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS, THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES FIELD STAKED BEFORE STARTING WORK BY CALLING 1-800-962-7962.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. HIGHWAY DRAINAGE ALONG ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF MUD, DEBRIS ETC. AT ALL TIMES.
4. THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER BEFORE DEVIATING FROM THESE PLANS.
5. IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
6. IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING DEMOLITION/CONSTRUCTION, ALL WORK SHALL STOP AND THE FRANKLIN COUNTY DEPARTMENT OF PUBLIC HEALTH AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DEVELOPER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND THE DEVELOPMENT PLANS ARE MODIFIED AS MAY BE NECESSARY.
7. EXCAVATED WASTE MATERIAL REMOVED FROM THE SITE SHALL BE PLACED AT A LOCATION ACCEPTABLE TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
8. AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECTS CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. UNLESS COVERED BY THE CONTRACT SPECIFICATIONS OR AS NOTED ON THE PLANS, ALL WORK SHALL CONFORM TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JANUARY 1, 2020 AND ANY SUBSEQUENT APPENDICES.

WASTE/HAZARDOUS MATERIAL PRACTICES:

1. WHENEVER POSSIBLE COVERED TRASH CONTAINERS SHOULD BE USED.
2. DAILY SITE CLEANUP IS REQUIRED TO REDUCE DEBRIS AND POLLUTANTS IN THE ENVIRONMENT.
3. CONTRACTOR SHALL PROVIDE A SAFE STORAGE SPACE FOR ALL PAINTS, STAINS AND SOLVENTS INSIDE A COVERED STORAGE AREA.
4. ALL FUELS, OILS, AND GREASE MUST BE KEPT IN CONTAINERS AT ALL TIMES.

EROSION & SEDIMENT CONTROL NOTES:

1. INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE PLAN PRIOR TO THE START OF ANY EXCAVATION WORK. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE GOVERNING MUNICIPAL REQUIREMENTS.
2. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER REPLACE TOPSOIL TO A MINIMUM 4" DEPTH WITH TOPSOIL OR AMENDED SOIL. ALL DISTURBED AREAS TO BE SEEDED TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
3. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATIVE COVER HAS BEEN ACHIEVED.
5. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL OR AMENDED TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
7. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
8. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
9. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
10. DUST SHALL BE CONTROLLED BY WATERING.
11. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
12. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. THE CONTRACTOR SHALL PROVIDE A QUALIFIED INSPECTOR TO INSPECT THE PROJECT AT THE END OF EACH WORK WEEK AND PROVIDE A REPORT AT LEAST ONCE PER WEEK.
2. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, FRANKLIN COUNTY PUBLIC HEALTH DEPARTMENT, AND THE TOWN OF MALONE REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) UNTIL GROUND COVER IS ESTABLISHED.
4. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER. REPLACE TOPSOIL TO A MINIMUM 4" DEPTH, ALL DISTURBED AREAS TO BE HYDROSEEDED AS DIRECTED BY THE CONSTRUCTION MANAGER TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
5. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATION HAS BEEN ACHIEVED.
7. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED WHEN THEY HAVE REACHED THE DESIGN LIFE INDICATED IN THE NYS GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL DESIGN MANUAL OR EVERY THREE MONTHS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
9. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL AND EROSION CONTROL STRUCTURES THROUGHOUT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
11. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
12. DUST SHALL BE CONTROLLED BY WATERING.
13. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
14. EROSION CONTROL MEASURES SHOULD BE RELOCATED INWARD AS PERIMETER SLOPE CONSTRUCTION PROGRESSES AND RECONSTRUCTED TO THE NYS STANDARDS & SPECIFICATION AT THE END OF EACH DAY.
15. PERIMETER AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH PROGRESSIVELY AT MINIMUM AT THE END OF EACH WEEK WITH 100% PERENNIAL RYEGRASS MIX AT A RATE OF 2-4 LBS PER 1000 SF AND MULCH 90-100 LBS PER 1000 SF OF WEED FREE STRAW.
16. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

SITE STABILIZATION:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENTS MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ALONG THE CONTOUR, NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. BEFORE SEEDING IS APPLIED THE CONTRACTOR SHALL SPREAD SOIL TO PREVENT PONDING AND CONFIRM THAT SOIL WILL SUSTAIN THE SEED GERMINATION AND ESTABLISHMENT OF VEGETATION.
5. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE. COMPACTED SOILS SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES, ALONG CONTOUR WHEREVER POSSIBLE, PRIOR TO SEEDING.
6. TOPSOIL OR AMENDED SOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A MINIMUM DEPTH OF 6 INCHES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS.
7. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
8. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE ½" TO ¾". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
9. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° F ARE TYPICALLY REQUIRED, APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
10. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
11. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
12. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
13. LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AN EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS.
14. ONCE A SECTION OF THE ALIGNMENT HAS BEEN STABILIZED, NO CONSTRUCTION TRAFFIC SHALL OCCUR TO REMOVE ANY BMPS UNTIL THE SECTION HAS ACHIEVED 80% PERENNIAL VEGETATIVE COVER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

M:\Cipriani Energy Group\014859.09 Cipriani Energy - Malone Solar Project\4.0 Dwgs\4.1 Civil\14859090C001_General Notes.dwg

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MALONE, NY 12953

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10/17/2024	LANDSCAPE PLAN

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ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

GENERAL NOTES

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C001

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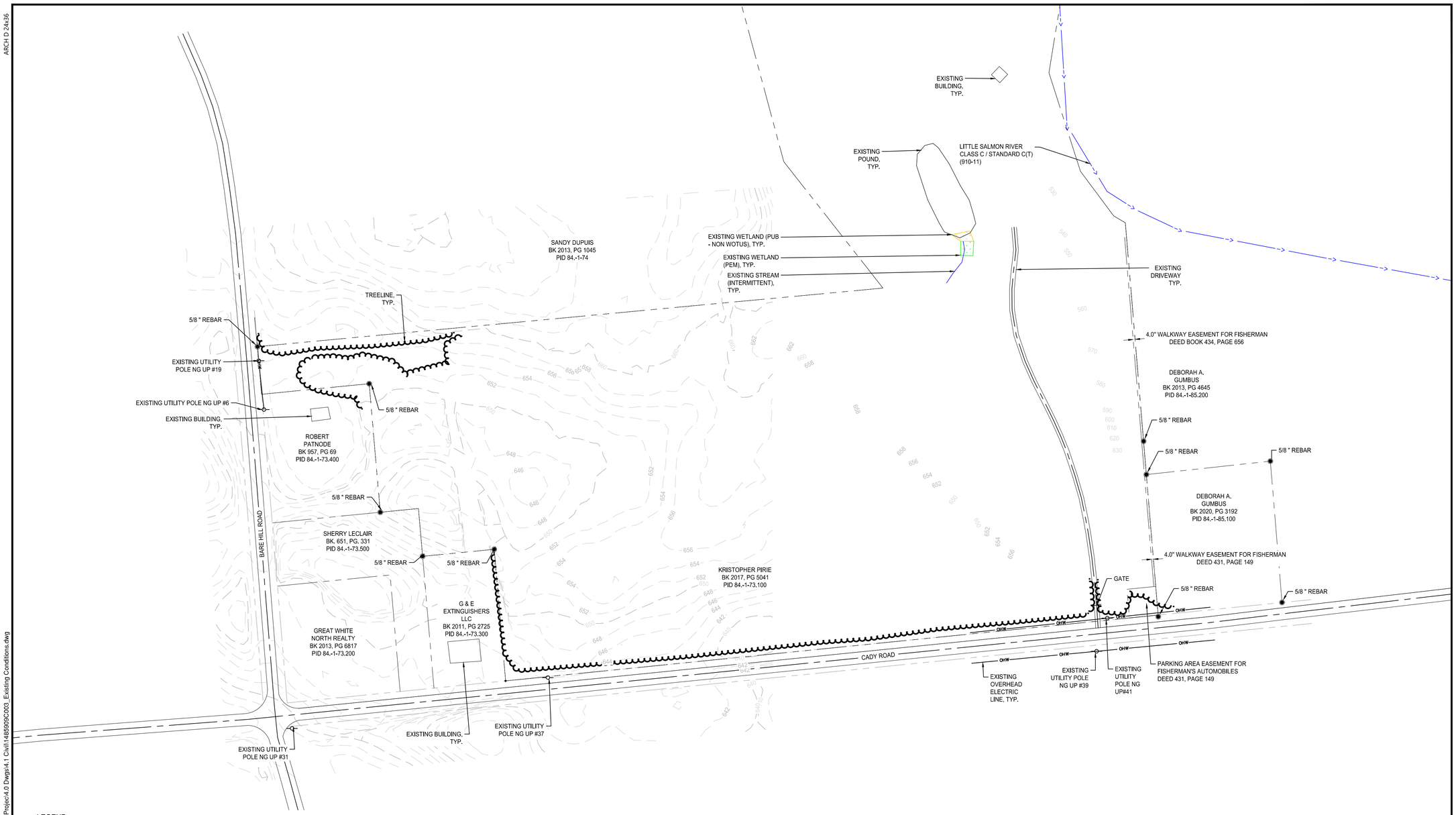
Sheet Name

AREA PARCEL PLAN

Drawing Number

C002



LEGEND

- PROPERTY LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- ROAD CENTERLINE
- OHE — OHE — OVERHEAD WIRE
- STREAM CENTERLINE
- CONTOUR - MAJOR
- CONTOUR - MINOR
- SWL — SWL — SWALE CENTERLINE
- EDGE OF ASPHALT
- EXISTING TREELINE
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- UTILITY POLE
- FOUND IRON PIPE
- FOUND REBAR
- FOUND IRON ROD
- FOUND CONCRETE MONUMENT
- EXISTING SIGN

SURVEY NOTES

SURVEY BY PROGRESSIVE LAND SURVEY SERVICES, PLLC AND IS BASED ON A FIELD SURVEY IN DECEMBER 2020. THIS PLAN IS DATED 12/17/20.

COORDINATE SYSTEM: STATE PLANE NEW YORK EAST NAD83(2011), US SURVEY FEET

SURVEY LOCATION: CADY ROAD/BARE HILL ROAD, MALONE, FRANKLIN COUNTY, NEW YORK, 12953 (TAX ID: 84.-1-73.100)
SITE NAME: MALONE

PARCEL BOUNDARIES AS SHOWN HEREON ARE THE RESULT OF LIMITED TITLE RESEARCH TO DETERMINE PROPERTY LINES NEAREST THE PROJECT AREA. BOUNDARIES ARE NOT THE RESULT OF A COMPREHENSIVE BOUNDARY SURVEY AND ARE WITHOUT THE BENEFIT OF A FULL AND ACCURATE TITLE REPORT. THIS SURVEY IS SUBJECT TO REVISION UPON RECEIPT OF AN UPDATED TITLE REPORT AND COMPLETION OF A FULL BOUNDARY SURVEY. SURVEY WAS PREPARED IN ACCORDANCE WITH A CONTRACT WITH BERGMANN & ASSOCIATES ENTITLED "BERGMANN_NYS_10.1.3_PROPOSAL_REV1", DATED 11/17/2020.

LIDAR WAS OBTAINED FROM THE GIS.NY.GOV WEBSITE AND USED AS A BASE FOR THE OVERALL SURFACE. ACTUAL GROUND SURVEY WAS SUPPLEMENTED WHERE APPLICABLE.

LAND OWNER INFORMATION WAS COMPILED FROM THE FRANKLIN COUNTY ASSESSORS INFORMATION AT THE TIME OF THIS SURVEY.

THE LOCATION OF UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT ALWAYS KNOWN AND OFTEN MUST BE ESTIMATED. IF ANY UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS EXIST OR ARE SHOWN, THE IMPROVEMENTS OR ENCROACHMENT ARE NOT COVERED BY THIS CERTIFICATE.

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Designer	Reviewer
AWG	EWC
Date Issued	Project Number
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Sheet Name

EXISTING CONDITION PLAN

Drawing Number

C003

SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C" COUNTRY SIDE DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 18 CORPORATE WOODS, SUITE 400 ALBANY, NY 12211 (518) 389-1111		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	75 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- EXISTING REBAR

N

0 100 200 300 FT

1" = 100' SCALE BAR

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Designer	Reviewer
AWG	EWC
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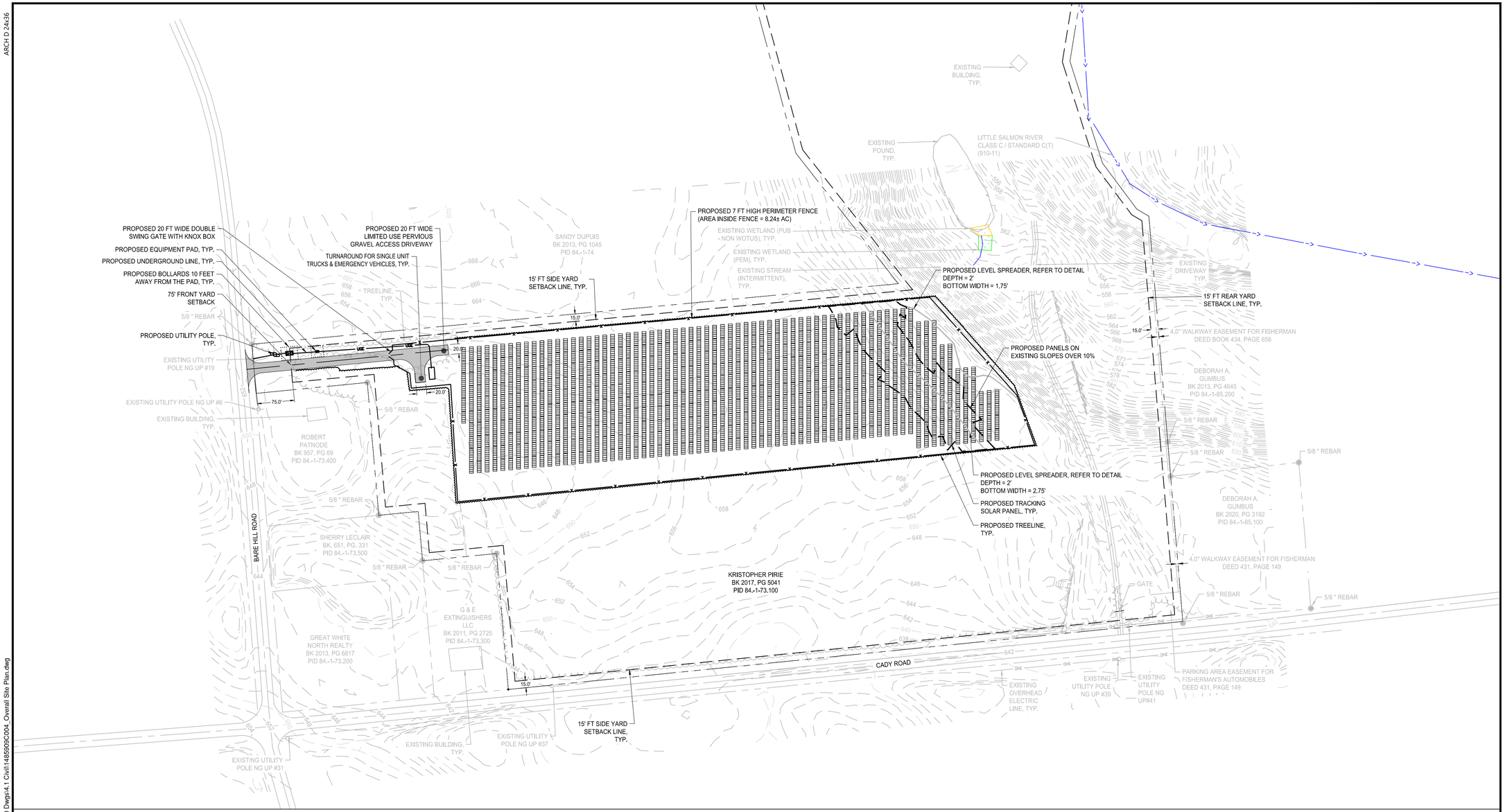
Sheet Name

OVERALL SITE PLAN

Drawing Number

C004



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C" COUNTRYSIDE DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 18 CORPORATE WOODS, SUITE 400 ALBANY, NY 12211 (518) 389-1111		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	75 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- PROPOSED PANELS ON EXISTING SLOPES OVER 10%
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- EXISTING REBAR

GENERAL NOTES

1. CONTRACTOR SHALL INSTALL ADDITIONAL LEVEL SPREADERS THROUGHOUT THE SITE AS NEEDED IF THE STABILIZED SOILS ARE ERODING AND SHEET FLOW CANNOT BE MAINTAINED. LEVEL SPREADERS SHALL BE PROTECTED DURING CONSTRUCTION FROM SEDIMENT. AT THE END OF CONSTRUCTION THE CONTRACTOR SHALL CLEAN SEDIMENT/DEBRIS FROM THE LEVEL SPREADERS AND ENSURE THEY ARE IN GOOD CONDITION.

N

0 100 200 300 FT

1" = 100' SCALE BAR

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES
10/17/2024	LANDSCAPE PLAN

STATE OF NEW YORK
ERIC C. REDDING
LICENSED PROFESSIONAL ENGINEER
092442

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

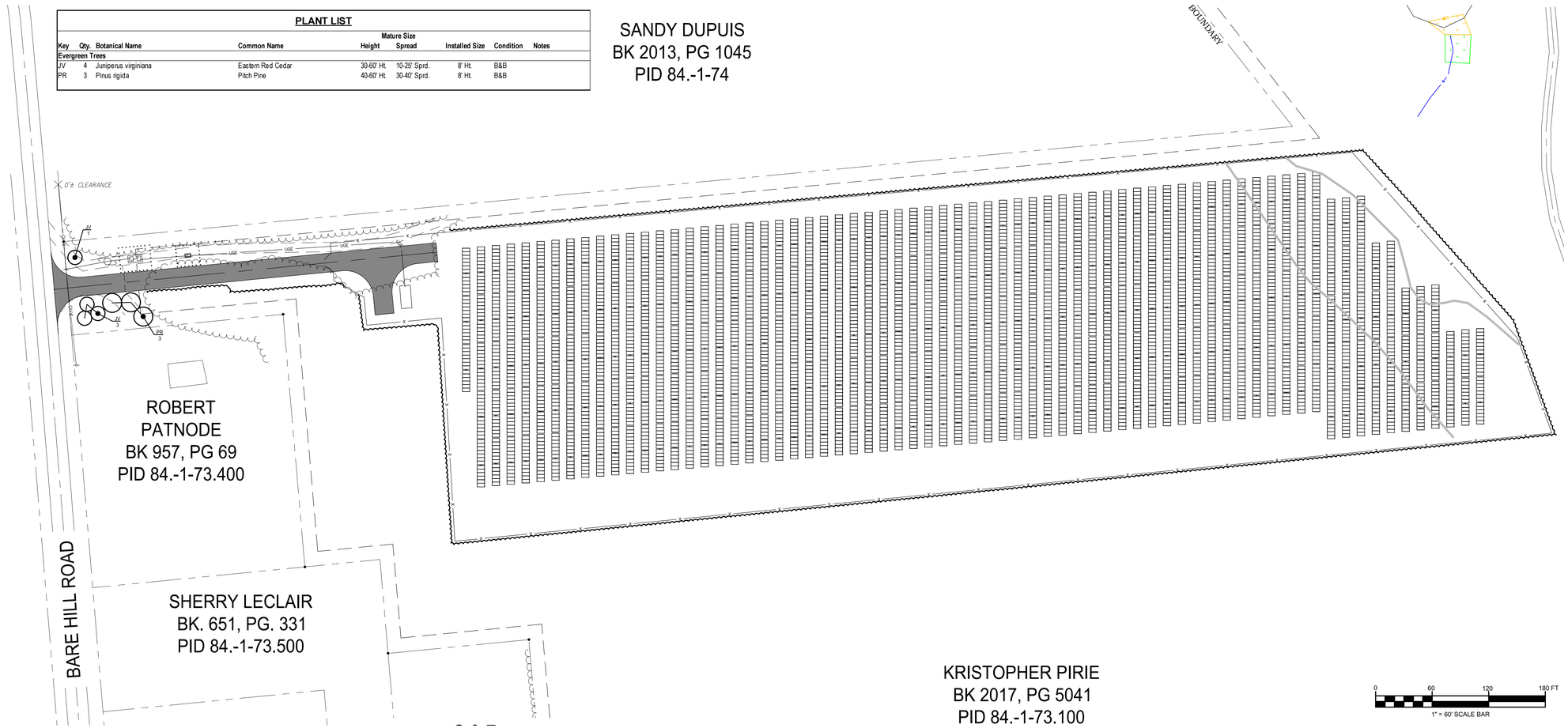
SITE PLAN

Drawing Number

C005

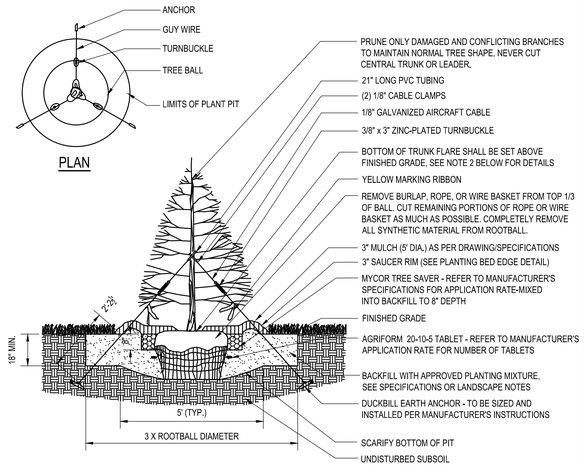
ARCH D 24x36

PLANT LIST								
				Mature Size				
Key	Qty.	Botanical Name	Common Name	Height	Spread	Installed Size	Condition	Notes
Evergreen Trees								
JV	4	Juniperus virginiana	Eastern Red Cedar	30-60' Ht.	10-25' Sprd.	8' Ht.	B&B	
PR	3	Pinus rigida	Pitch Pine	40-60' Ht.	30-40' Sprd.	8' Ht.	B&B	



LANDSCAPE NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
2. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK", ANSI, Z60.1 (LATEST EDITION), REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
3. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY AT THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
4. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF OWNER'S REPRESENTATIVE.
5. ALL TREES MUST BE STRAIGHT TRUNKED, INJURY FREE, AND FULL HEADED.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
7. ANY DISCREPANCY WITH QUANTITIES, LOCATIONS AND / OR FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
8. MULCH ALL ISLANDS AND PLANTINGS IN LAWN AREAS WITH DOUBLE GROUND HARDWOOD BARK MULCH. MULCH SHALL BE AGED A MIN. OF ONE (1) YEAR FOR PARTIAL DECOMPOSITION. IT SHALL BE SCREENED TO EXCLUDE PARTICLES LARGER THAN ONE (1) INCH IN DIAMETER. MATERIAL SHALL BE COMPOSED OF BARK AND HAVE A LOW WOOD CONTENT WITH NO HIDDEN WOODS FROM CONSTRUCTION DEBRIS, PALLETS OR PRESSURE TREATED LUMBER AND BE FREE OF WEEDS, SEEDS, AND GREEN LEAF MATTER. IT SHALL BE NATURALLY DARK BROWN IN COLOR. NO DYED MULCH WILL BE ACCEPTED. MULCH DEPTH SHALL BE THREE (3) INCHES UNLESS OTHERWISE DIRECTED.
9. ANY PLANT WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO FINAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS (INCLUDING, BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, AND REMOVAL OF STAKES AND GUYS) AND LAWN AREAS UNTIL FINAL ACCEPTANCE BY THE OWNER.
11. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR, BEGINNING ON THE DATE OF FINAL ACCEPTANCE, THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE THE END OF THE GUARANTEE PERIOD.
12. ALL AREAS DISTURBED BY UTILITY INSTALLATION AND SITE GRADING ACTIVITY SHALL RECEIVE APPROVED TOPSOIL (TO A COMPACTED DEPTH OF FOUR (4) INCHES, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING MUNICIPALITY), BE FINE GRADED, SEEDED, MULCHED AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
13. ALL TOPSOIL SHALL BE SCREENED LOAM SURFACE SOIL, FREE OF STONES AND SHALL HAVE THE FOLLOWING MINIMUM REQUIREMENTS:
    a) AN ORGANIC CONTENT OF 6-12%
    b) SOIL ACIDITY RANGE OF pH 5.5 TO pH 7.6
    c) SOLUBLE SALTS OF 1000 PPM OR LESS
    d) MAXIMUM CLAY CONTENT OF 15-20%
14. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING, AT THEIR EXPENSE, A CERTIFIED SOIL TEST ANALYSIS OF ON SITE AND / OR IMPORTED TOPSOIL. TOPSOIL ANALYSIS TO INCLUDE THE FOLLOWING DATA:
    a) pH FACTOR.
    b) MECHANICAL ANALYSIS, INCLUDING SIEVE ANALYSIS PROVIDING SEPARATE SAND, SILT AND CLAY PERCENTAGES.
    c) PERCENTAGE OF ORGANIC CONTENT BY WEIGHT
    d) NUTRIENT LEVELS INCLUDING NITROGEN, PHOSPHOROUS AND POTASSIUM.
15. SHOULD TESTS AND ANALYSIS INDICATE THAT SOIL PROPOSED FOR USE IS DEFICIENT IN ANY OF THE ABOVE REQUIREMENTS; A SYSTEM OF AMELIORATING MAY BE PROPOSED FOR APPROVAL. ANY SYSTEM PROPOSED SHALL PROVIDE FOR AN ACIDITY RANGE OF Ph 5.5 TO 7.6 INCLUSIVE.
16. COMPOST SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
    a) ORGANIC CONTENT OF 35-60% (DRY WEIGHT BASIS)
    b) LOOSE AND FRIABLE WITH MOISTURE CONTENT OF 35-60% (WET WEIGHT BASIS)
    c) PARTICLE SIZE SHALL BE <1/2 INCH (100% PASSING)
    d) SOLUBLE SALTS CONCENTRATION SHALL BE <4.0 MMHOS/CM (DS/M), MAXIMUM
    e) pH RANGE OF 6.0-8.5
17. PLANTING MIX FOR PLANT PITS SHALL BE COMPOSED OF (2) PARTS APPROVED IMPORTED OR ON-SITE SCREENED TOPSOIL AND (1) PART COMPOST.
18. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE PLAN ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITY LINES ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES AND SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE INSTALLATION.
19. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PLANT MATERIAL PER DETAILS. ANY DEVIATIONS FROM THE DETAIL MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
20. UPON FINAL ACCEPTANCE OF THE LANDSCAPE INSTALLATION, THE OWNER WILL ASSUME MAINTENANCE OF THE LANDSCAPED AREAS.
21. EXISTING TREES TO REMAIN SHALL BE PROTECTED BY INSTALLING A TEMPORARY FENCE AT THE OUTER LIMITS OF THE TREE CANOPY.
22. DISTURBED AREAS DUE TO CONSTRUCTION / PLANTING ACTIVITIES SHALL BE RESTORED WITH TOPSOIL (4" COMPACTED DEPTH) AND A GENERAL LAWN SEED MIX. SEED MIX SHALL BE LOCALLY SOURCED AND COMPRISED OF A MIX OF RYE GRASS, FESCUE, AND KENTUCKY BLUEGRASS (MIN. 3 VARIETIES EACH).



NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   - FOR SANDY OR LOAMY SOILS: 1"
   - FOR CLAY OR POORLY DRAINED SOILS: 3"
   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE.

EVERGREEN TREE PLANTING

N.T.S.

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STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
MS	ES
Date Issued	Project Number
10/18/2024	14859.09

Sheet Name

LANDSCAPE PLAN

Drawing Number

C006

of 12

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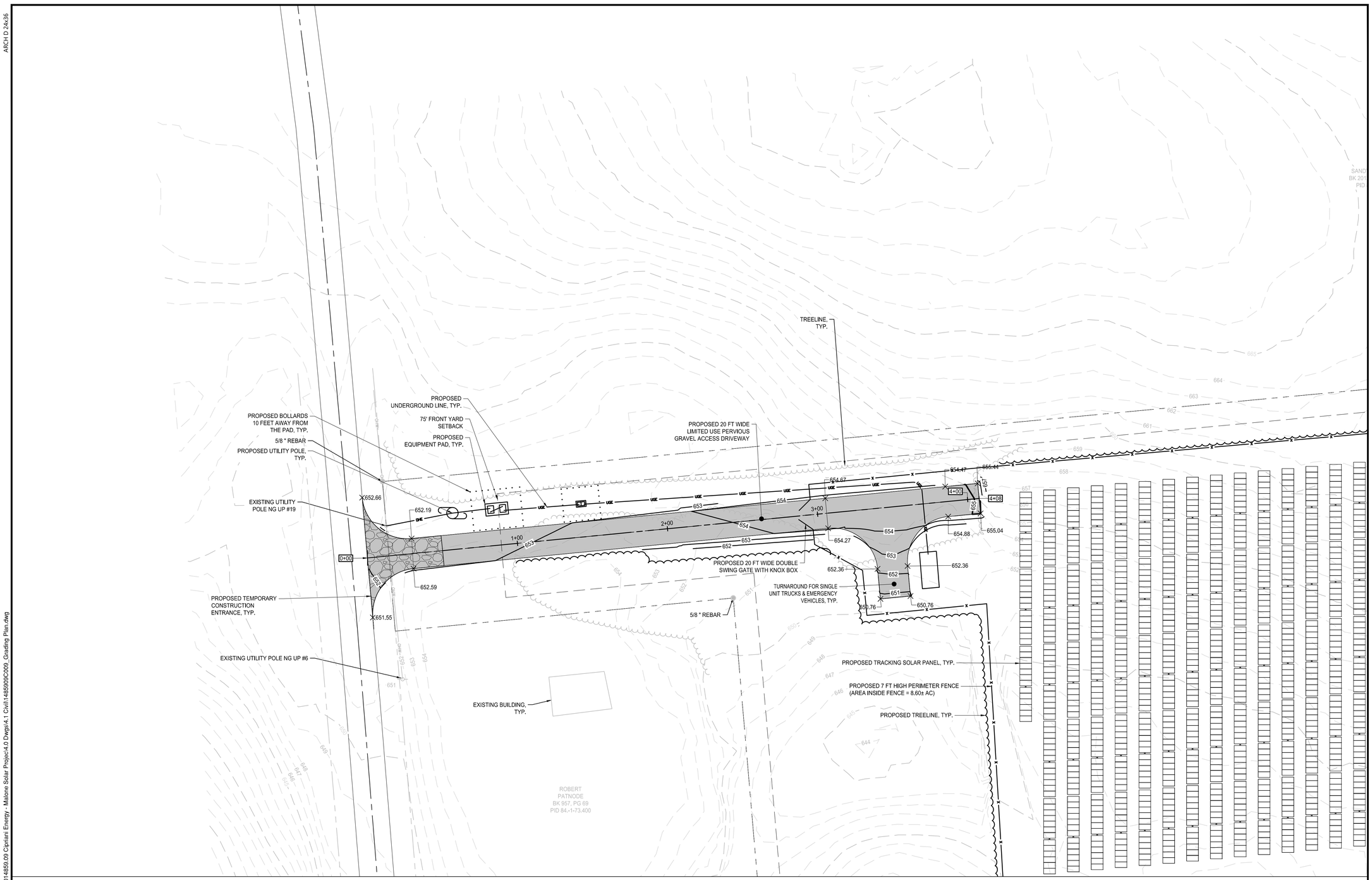

GRADING & EROSION & SEDIMENT CONTROL LEGEND

- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- LOD — LOD — APPROXIMATE LIMITS OF DISTURBANCE
- DRIVEWEAY SECTION ALIGNMENT
- SILT — PROPOSED SILT FENCE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISITNG MAJOR CONTOUR
- EXISTING MINOR CONTOUR

N

0 30 60 90 FT

1" = 30' SCALE BAR

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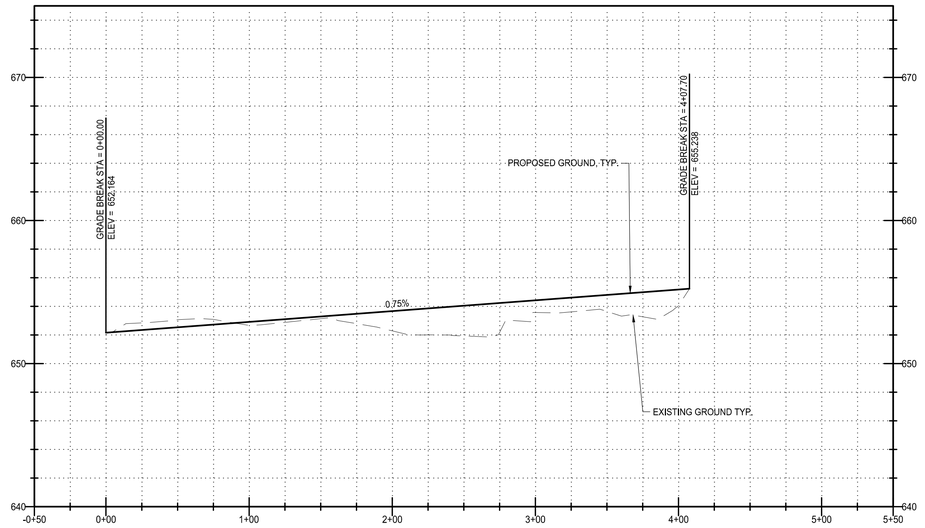
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

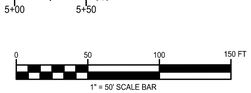
GRADING & EROSION CONTROL PLAN

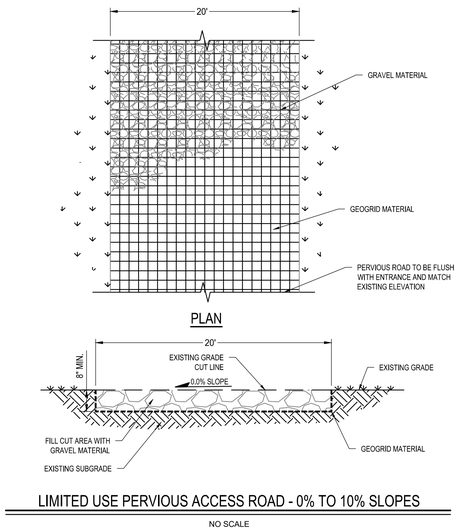
Drawing Number

C007



DRIVEWAY SECTION (STA. 0+00 TO 4+07.64)
1"=5' VERTICAL
1"=50' HORIZONTAL





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

NO SCALE

GEOGRID MATERIAL NOTES:

1. THE GEOGRID, OR COMPARABLE PRODUCT, IS INTENDED FOR USE IN 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 SPECIFICATION OF NYSDOT 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 DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE MEETING NYSDOT 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

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 OF POTENTIAL REDUCTION OF NATIVE INFILTRATION RATES DIE 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

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)
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 IN SITU SOIL. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
5. GRADE ROADWAY, WHERE NECESSARY, TO NATIVE SOILS 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 STORM WATER DRAINAGE.
7. ROADWAY WIDTH TO BE DETERMINED BY CLIENT.
8. THE LIMITED USE PERVIOUS ACCESS ROAD CROSS SLOPE SHALL BE 1.5% IN MOST CASES AND SHOULD NOT EXCEED 6%. 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 THE INITIAL PHASES OF CONSTRUCTION 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 ARES, 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 THE 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 DISCHARGE 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-CONSTRICTION 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 USED 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-0-20-001 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.

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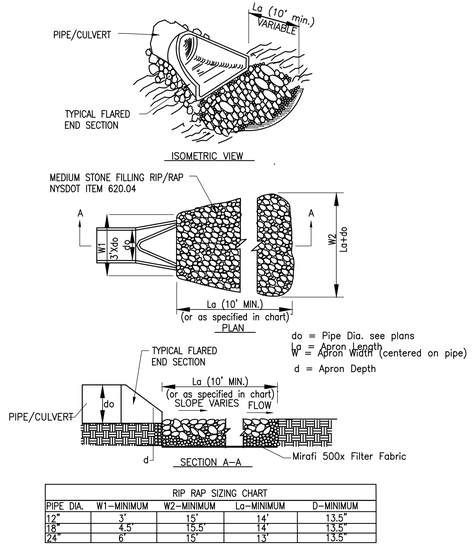
Sheet Name

GRADING PLAN DETAILS

Drawing Number

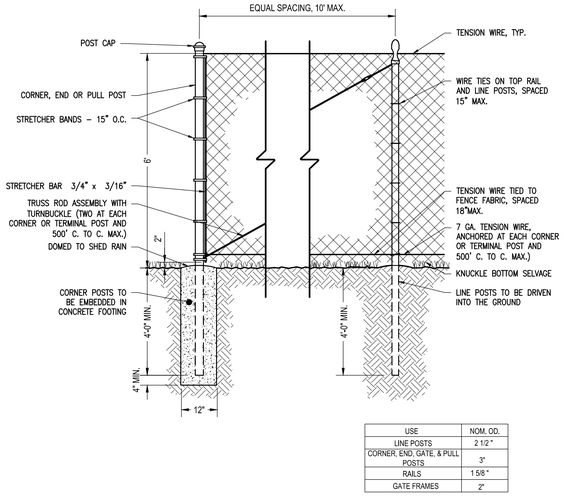
C008



RIP RAP SIZING CHART				
PIPE DIA.	W1-MINIMUM	W2-MINIMUM	La-MINIMUM	D-MINIMUM
12"	3'	15'	14'	13.5"
18"	4.5'	15.5'	14'	13.5"
24"	6'	15'	13'	13.5"

NOTES:
1. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NO LESS THAN 6".
2. NSTALL FILTER MIRAFI 500X OR APPROVED EQUAL FILTER FABRIC BETWEEN RIP-RAP AND SUBBGRADE

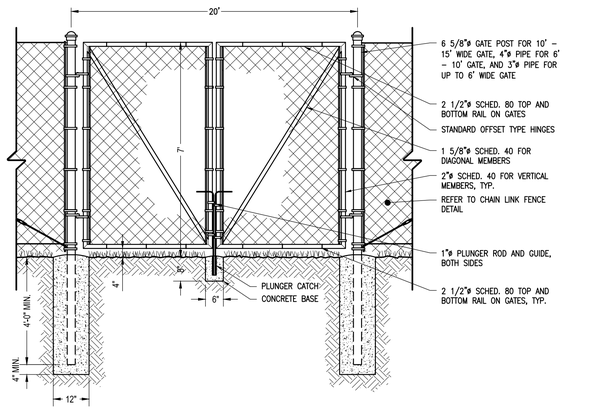
OUTLET PROTECTION RIP-RAP APRON
N.T.S.



USE	NOM. OD.
LINE POSTS	2 1/2"
CORNER, END, GATE, & PULL POSTS	3"
RAILS	1 5/8"
GATE FRAMES	2"

NOTES:
1. ALL POSTS SHALL BE PLUMB
2. WIRE TIES SHALL BE PLACED 15" ON CENTER ALONG TOP RAIL AND LINE POSTS.
3. LINE POSTS SHALL BE DRIVEN INTO THE GROUND.
4. CORNER POSTS SHALL BE EMBEDDED IN 12" DIAMETER CONCRETE FOOTING.

CHAIN-LINK FENCE DETAIL
N.T.S.



NOTES:
1. ALL POSTS SHALL BE PLUMB
2. WELD ALL PIPE CONNECTIONS.
3. GATE FABRIC TO MATCH FENCE FABRIC. PROVIDE MATCHING POST CAPS WHERE REQUIRED.
4. NOTCH CURBS TO MAINTAIN 4" HEIGHT BETWEEN BOTTOM OF GATE AND GRAVEL.
5. PROVIDE EMBEDDED METAL SLEEVE AND HOLD OPEN FOR EACH LEAF OF GATE.
6. CONTRACTOR SHALL INSTALL A KNOX BOX NEXT TO GATE FOR FIRE DEPARTMENT ACCESS

CHAIN-LINK FENCE GATE DETAIL
N.T.S.

NOTES:

1. FENCE SHALL BE INSTALLED ON A LEVEL GRADE. EXTEND ENDS OF FENCING UPHILL SO BOTTOM OF FENCE IS AT AN ELEVATION ABOVE TOP OF FENCE.

2. SEDIMENT MUST BE REMOVED FROM SILT BARRIER FENCING WHEN HEIGHT OF SILT REACHES A MAXIMUM OF 9" AGAINST SILT FENCE.

3. MAXIMUM SLOPE LENGTHS CONTRIBUTING TO SILT FENCE MUST NOT EXCEED THE LENGTH BELOW:

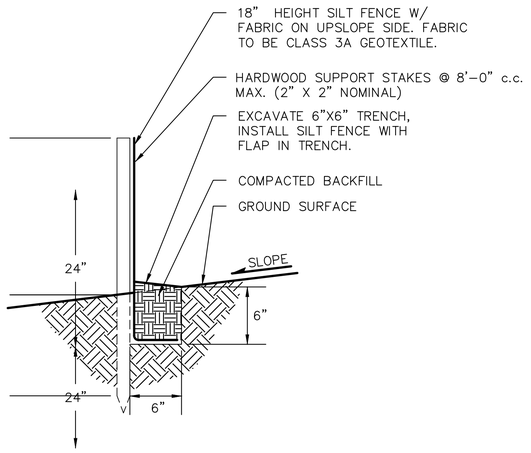
SLOPE percent	SLOPE LENGTH feet
0 - 2	250
< 5	100
< 10	50
< 15	35
< 20	25
< 25	20
< 40	15
< 50	10

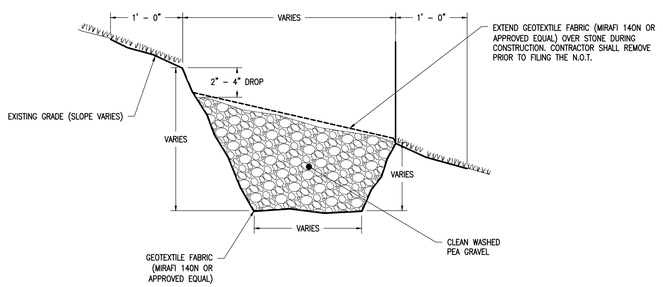
4. FABRIC SHALL BE FASTENED TO POSTS WITH METAL FASTENERS AND REINFORCING MATERIAL PLACED BETWEEN THE FABRIC AND FASTENER.

5. SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH STORM EVENT. SILT FENCE WHICH HAS BEEN UNDERMINED OR OVERTOPPED SHALL BE REPLACED WITH A STONE FILTER OUTLET.

COMPOST FILTER SOCK - SILT FENCE EQUIVALENCY CHART		
COMPOST FILTER SOCK	STACKED COMPOST FILTER SOCK	SILT FENCE
12" COMPOST FILTER SOCK	--	STANDARD 18" SILT FENCE
18" COMPOST FILTER SOCK	3 - 12" SOCKS	REINFORCED 30" SILT FENCE
24" COMPOST FILTER SOCK	2 - 18" SOCKS, 1 - 12" SOCK	SUPER SILT FENCE

SILT FENCE DETAIL
N.T.S.





NOTES:
1. LEVEL SPREADERS SHOULD BE INSPECTED EVERY 2 TO 3 YEARS FOR EXCESS SEDIMENTATION AND CLOGGING. REPLACE PEA GRAVEL IF NECESSARY.
2. CONTRACTOR TO PROVIDE AS-BUILTS TO THE TOWN OF THE SIZE AND LOCATIONS OF THE LEVEL SPREADERS.
3. LEVEL SPREADERS SHALL BE SPACE PER NYSDEC GUIDLINES FOR WATERBARS AS FOLLOWS: 5% TO 10% - 100' SPACING, 10% TO 20% - 75' SPACING, 20 TO 35% - 50' SPACING.
4. EXTEND GEOTEXTILE FABRIC OVER STONE DURING CONSTRUCTION. CONTRACTOR SHALL REMOVE THE GEOTEXTILE FABRIC PRIOR TO FILING THE NOTICE OF TERMINATION.
5. REFER TO SITE PLANS FOR DIMENSIONS.

LEVEL SPREADER DETAIL
N.T.S.

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES
10/17/2024	LANDSCAPE PLAN

NOT FOR CONSTRUCTION

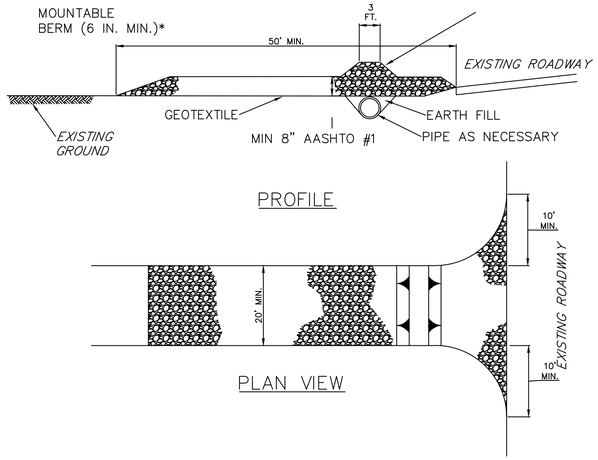
Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

DETAILS I

Drawing Number

C009

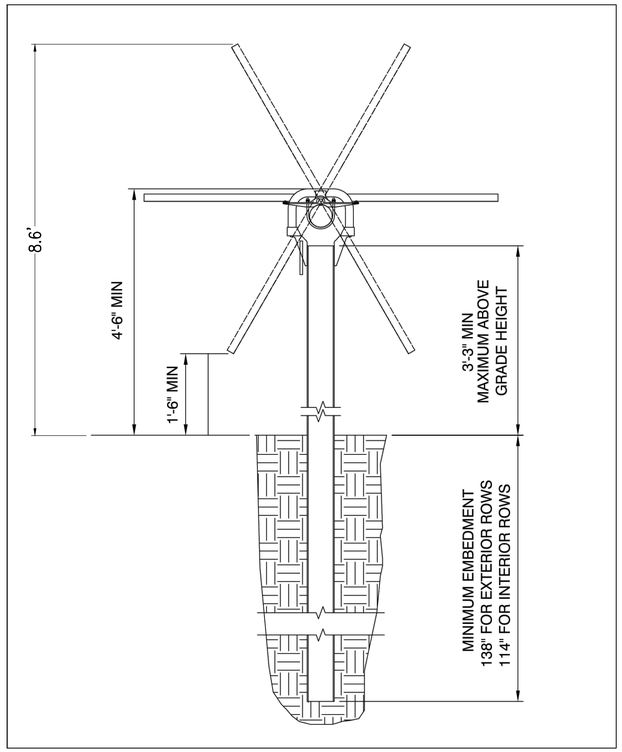


* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



TRACKER PANEL DETAIL
NO SCALE

GENERAL NOISE NOTES:

1. PROPOSED DECIBELS FOR SPECIFIED INVERTERS WILL BE APPROXIMATELY 69 dBA AT 5 FEET AND 70 DEGREES FAHRENHEIT.
2. PROPOSED DECIBELS FOR SPECIFIED TRACKER MOTORS WILL BE APPROXIMATELY 80 dBA AT 5 FEET AND 70 DEGREES FAHRENHEIT.

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

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10/17/2024	LANDSCAPE PLAN

STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

DETAILS II

Drawing Number

C010

11 of 12

ARCH D 24x36

NOTES:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE TEMPORARILY STABILIZED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
4. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 INCHES MINIMUM. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE.
5. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OF SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
6. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE 1/2" TO 3/4". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
7. BLANKETING SHALL BE USED ON ALL SLOPES 3H:1V OR STEEPER OR AS NOTED ON THE PLANS.
8. PERMANENT STABILIZATION SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EARTH DISTURBANCE.

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Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

DETAILS III

Drawing Number

C011

12 of 12

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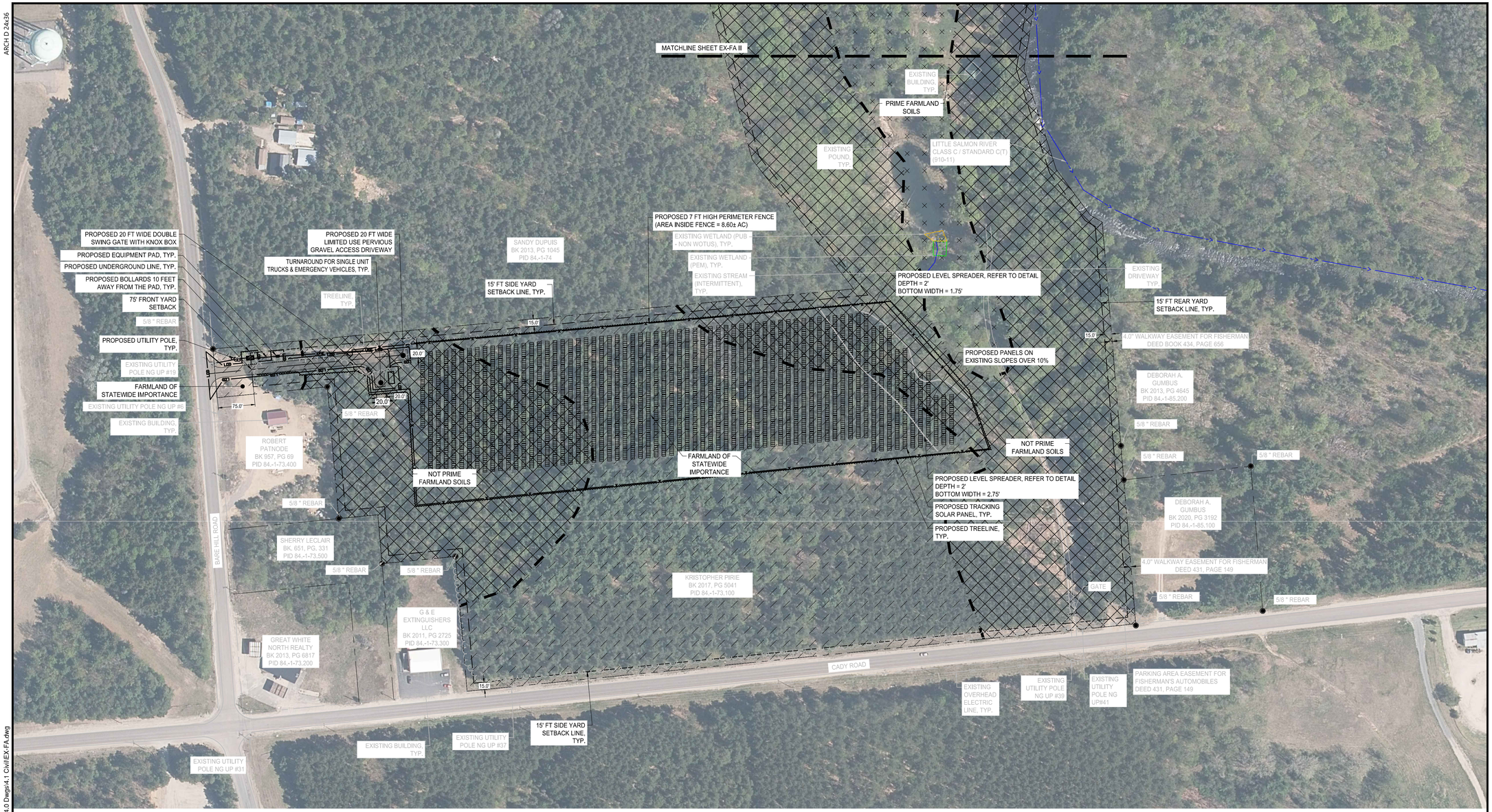

SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C-G" GENERAL COMMERCIAL DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 18 CORPORATE WOODS, SUITE 400 ALBANY, NY 12211 (518) 389-1111		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	100 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

NOTES

1. REQUIRED ZONING STANDARDS REFLECT THE MOST STRICT RESIDENTIAL ZONING REQUIREMENTS OF THE TOWN OF MALONE PER SECTION 79-10.1 "C-G GENERAL COMMERCIAL DISTRICT USES".

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- PALUSTRINE FORESTED WETLAND (PFO)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- FARMLAND CLASSIFICATION BOUNDARY
- NOT PRIME FARMLAND
- PRIME FARMLAND
- FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND DISTURBANCE TABLE			
FARMLAND CLASSIFICATION	EARTHWORK DISTURBANCE AREA	PERMANENT DISTURBANCE	PROJECT FOOTPRINT AREA (ACRES)
PRIME FARMLAND	0.00 AC.	0.00 AC.	10.92 AC.
FARMLAND OF STATEWIDE IMPORTANCE	0.13 AC.	0.13 AC.	17.16 AC.
NOT PRIME FARMLAND	0.20 AC.	0.20 AC.	21.52 AC.
TOTAL DISTURBANCE	0.33 AC.	0.33 AC.	49.60 AC.

N

0 80 160 240 FT

1" = 80' SCALE BAR

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

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STATE OF NEW YORK
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LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

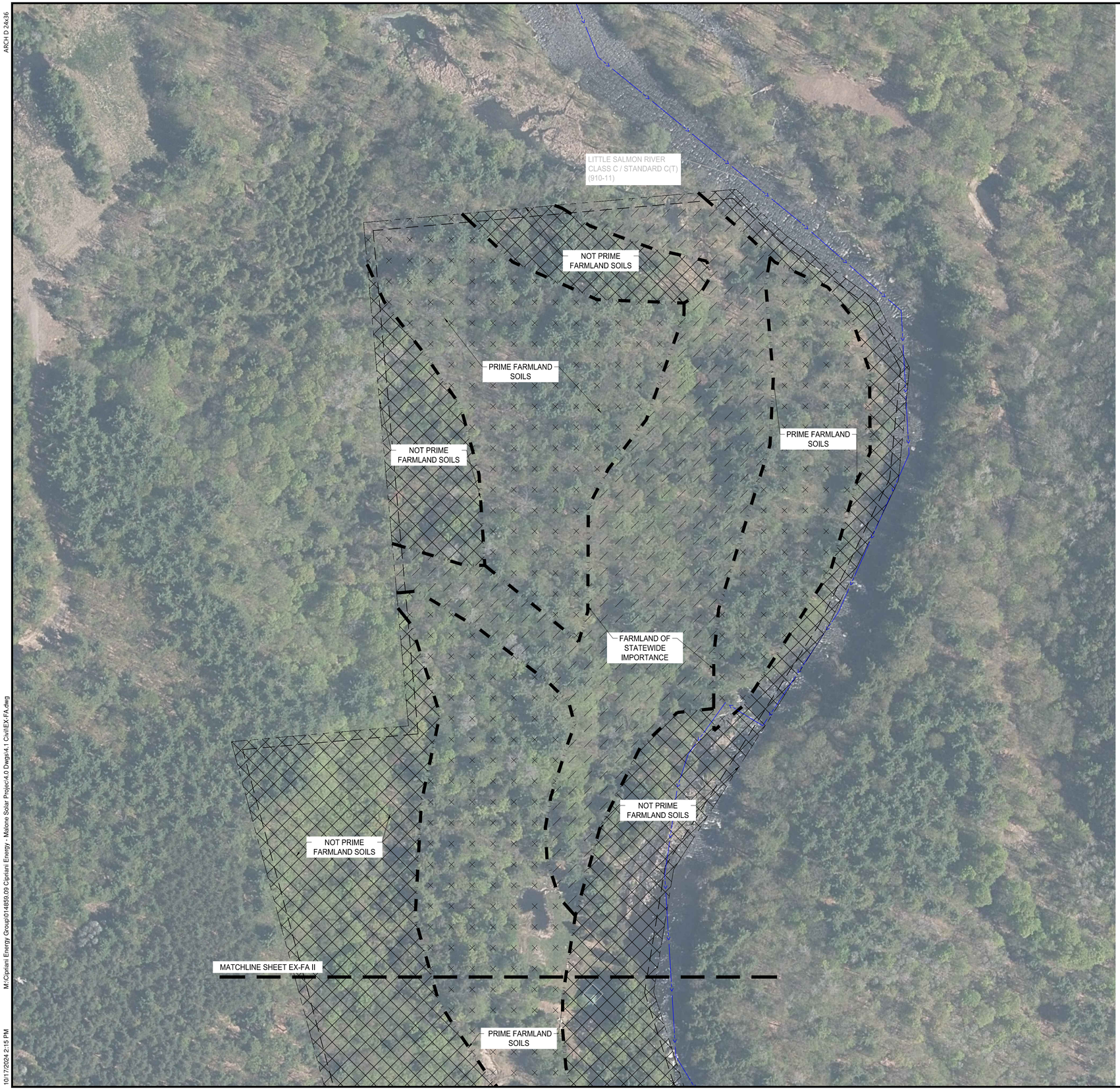
Sheet Name

FARMLAND CLASSIFICATION EXHIBIT

Drawing Number

EX-FA I

1 of 2



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0 80 160 240 FT

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YELLOW 17 LLC

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STATE OF NEW YORK
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092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

FARMLAND CLASSIFICATION EXHIBIT

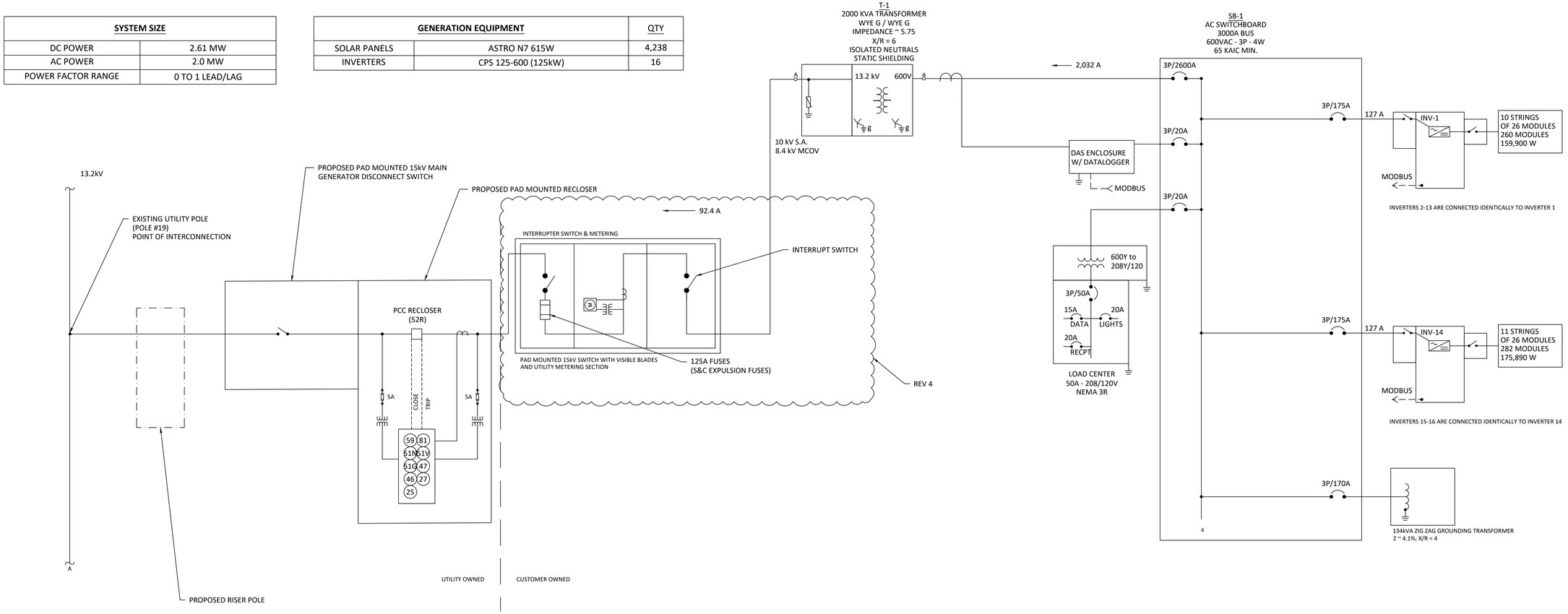
Drawing Number

EX-FA II

Attachment F – Updated Pad-mounted Equipment and Proposed UGE

SYSTEM SIZE	
DC POWER	2.61 MW
AC POWER	2.0 MW
POWER FACTOR RANGE	0 TO 1 LEAD/LAG

GENERATION EQUIPMENT		QTY
SOLAR PANELS	ASTRO N7 615W	4,238
INVERTERS	CPS 125-600 (125kW)	16



Inverters 1-16		
PARAMETER	**UNIT**	**VALUE**
Max Power Rating	kWac	125
Output Voltage	Vac	600
Phase		3
String Voltage	Voc Temp Corrected	1431

Inverter Protective Settings (UL 1741 SA&SB)				
Internal Protective Setting	**Trip Output**	**E Setting**	**Setting**	**G Time(sec)**
27-1 Undervoltage	X	0.50	300 V	1.10
27-2 Undervoltage	X	0.88	528 V	2.00
59-1 Overvoltage	X	1.10	660 V	2.00
59-2 Overvoltage	X	1.20	720 V	0.16
81U-1 Underfrequency	X		56.5 Hz	0.16
81U-2 Underfrequency	X		58.5 Hz	300.0
81O-1 Overfrequency	X		61.2 Hz	300.0
81O-2 Overfrequency	X		62 Hz	0.16
Alarm	X			
Primary Voltage (L-L)			600 V	

FOR INTERCONNECTION PURPOSES ONLY
NOT FOR CONSTRUCTION

Malone Solar, LLC
176 Bare–Hill Road
Malone, NY 12953

STATE OF NEW YORK
MARK TRAVIS EDSALL
103550-01
PROFESSIONAL ENGINEER
LICENSED
05/20/2024

Rev #	Description	By	Date
04	ADD INTERRUPT SWITCH	MTE	6/14/24
03	CHANGE EQUIPMENT ORDER	MTE	6/12/24
02	ADD UTILITY DISCONNECT SWITCH	MTE	6/05/24
01	CHANGE RECLOSER TO PAD MOUNTED	MTE	5/23/24

Plan Status
Issued for Interconnection

Sunstone Engineering Group, LLC
PO Box 262
Harvey's Lake, Pa 18618

570–519–2374

Client
CIPRIANI ENERGY GROUP

125 Wolf Road, Suite 312
Colonie, NY 12205

1–855–786–4383

Site Name
Malone Solar, LLC

Drawing Title
Single Line Diagram

Scale	Date	Drawn	Checked
As shown	05/20/2024	MTE	MTE

Project #	Rev #	Drawing #
CEG 013	04	SLD

Attachment G – Updated SWPPP

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

Malone Solar Project

TOWN OF MALONE
STORMWATER POLLUTION PREVENTION PLAN

Town of Malone
Franklin County, New York
September 16, 2022
Revised July 19, 2024

PREPARED FOR:

Yellow 17 LLC c/o Dana Pickett
125 Wolf Road, Suite 312
Colonie, NY 12205

PREPARED BY:

Bergmann

18 Corporate Woods Blvd, 4th Floor
Albany, NY 12211

Phone: 518.862.0325

Stormwater Pollution Prevention Plan (SWPPP)

MALONE SOLAR PROJECT – YELLOW 17 LLC – TOWN OF MALONE
INSTRUCTIONS TO OWNER/OPERATOR/OPERATOR'S ENGINEER AND CONTRACTORS

Responsibilities for Compliance with Storm Water Discharge Permit Regulations at Construction Sites

Operator's Engineer's Responsibilities:

1. Prepare the SWPPP using good engineering practices, Best Management Practices, and in compliance with all federal, state and local permit requirements. This preparation shall also include providing a description of the Project as it relates to site ownership and development responsibilities. The Operator's Engineer shall also prepare the SWPPP Ledger for use in the implementation and documentation of the SWPPP at the Project during Construction Activities.
2. Prepare the NOI form for the Operator's signature and forward to Operator for signature; submit the signed form to the appropriate regulatory agency along with any required fees and attachments. SWPPP must be complete prior to NOI submittal.
3. Include a signed NOI in the SWPPP prepared for the Project.
4. Participate at the pre-construction meeting with Contractor and appropriate subcontractors, which should include a review with all parties of the requirements of the SWPPP, if requested by Operator.
5. Review Contractor's SWPPP records on a periodic basis to ensure compliance with requirements for reports and inspection and maintenance logs, if requested by Operator.
6. Certify to Operator the Contractor's compliance with SWPPP record keeping requirements, if requested by Operator.

Operator's Responsibilities:

1. Have an authorized corporate officer sign the NOI and SWPPP Certification Statement.
2. Schedule and conduct a SWPPP Pre-Construction Meeting with the Operator's Engineer, Contractor and appropriate subcontractors, which should include a review with all parties the requirements under the SWPPP.
3. Require the Contractor to implement fully the SWPPP prepared for the site by the Operator's Engineer.
4. Forward a copy of the original permit certificate received from the regulatory agency to the Owner (if different than the operator), the Municipality's Representative, the MS4 (if applicable and if different from the municipality), the Operator's Engineer and the Contractor for inclusion in the SWPPP Ledger and display at the Project.
5. Ensure (through periodic observations by Operator's Engineer) and document that the Contractor is implementing the controls, inspections, maintenance, record-keeping, and all other requirements of the SWPPP.
6. File an appropriately signed Notice of Termination ("NOT") form when site work construction is completed and stabilization is achieved in accordance with the General Permit.
7. Request and receive all SWPPP records from the Contractor and archive those records for a minimum of five (5) years after the NOT is filed.

Contractor's Responsibilities:

1. Sign the SWPPP Contractor's Certification Form in the SWPPP prepared for the Project (Appendix H).
2. Provide subcontractor training and require all subcontractors to sign the Subcontractor's Certification Form in the SWPPP prepared for the Project (Appendix I).
3. Identify a trained individual (i.e. *Trained Contractor*) who will be responsible for implementing the SWPPP and will be on-site during all soil disturbing activities.
4. Implement the Erosion and Sediment Control Plans, and other requirements of the SWPPP.
5. Provide *Trained Contractors*, and documentation of qualifications, for the controls implemented at the Project.
6. Conduct all necessary inspections at the required intervals and prepare and retain written documentation of those inspections and all other written documentation required by the Construction General Permit.
7. Keep a copy of the SWPPP, all NOI's, permit certificates, permit language, Materials Management Process (MMP), inspection records, and other required records on the Project.
8. Post in a prominent place at the Project entrance and inside the job trailer office wall those documents required to be posted under the terms of the Construction General Permit including, the NOI (Appendix D), Letter of Acknowledgement, etc.
9. Update and make changes to the SWPPP and supporting documents (such as the BMPs) as needed and with the approval of the Operator and the Operator's Engineer.
10. Prepare and sign a NOT form when site work construction is completed and stabilization is achieved in accordance with the General Permit.
11. Transfer the SWPPP documents, along with all NOI's, permit certificates, NOT's, and written records required by the Construction General Permit to the Operator for archiving.

Off-site borrow or fill locations

The General Permit applies to construction activities involving soil disturbances of one (1) or more acres. This may require off-site borrow, fill, and material storage sites to be permitted under the NOI and covered by the SWPPP for the construction site, only if the off-site sites are used solely for that one project. If an off-site borrow or fill location or material storage site is operated by a subcontractor for more than one project, the Operator of this multi-use site must obtain a separate NOI. The multi-use site must be covered under its own Project Permit. A Construction General Permit from a state, local, or appropriate governmental agency may have different requirements relating to off-site borrow or excess (waste) locations. The Operator's Engineer must determine any applicable permit requirements for off-site borrow or excess (waste) locations. The requirements must be incorporated into the SWPPP, where applicable. If a separate General Permit coverage is required for these activities, a copy of the coverage must be provided in the SWPPP.

TABLE OF CONTENTS

APPENDIX A: WRITTEN STORM WATER POLLUTION PREVENTION PLAN

I. SCOPE

A. PURPOSE:

1. Development and proper implementation of the New York State Department of Environmental Conservation (NYSDEC), State Pollutant Discharge Elimination System (SPDES) Construction General Permit governing stormwater discharges during construction and the National Pollutant Discharge Elimination System (NPDES) Construction General Permit governing storm water discharges during construction, and in accordance with Erosion and Sediment Control practices is critical. The Contractor's participation in this program is mandatory and its non-compliance is subject to various remedies, including without limitation, monetary set-offs, withholding payments; reimbursement for costs, expenses (including reasonable attorney's fees), fines and civil penalties incurred by the Operator. This section provides a descriptive explanation of the Storm Water Pollution Prevention Program and required Contractor participation.

B. SPDES CONSTRUCTION GENERAL PERMIT FOR STORM WATER DISCHARGE FROM CONSTRUCTION SITES:

1. Regulations promulgated by the NYSDEC to regulate the discharge of storm water from Construction Activity on sites where one (1) or more acre of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the SPDES General Permit for Stormwater Discharges from Construction Activities (GP-0-20-001). In order to use the Construction General Permit, a Notice of Intent (NOI) form must be completed and mailed to the NYSDEC. Authorization to discharge stormwater under the General Permit will be effective when the owner or operator has satisfied all of the criteria listed in Part II, B of the SPDES General Permit for Construction Activity (GP-0-20-001).

C. NOTICE OF INTENT:

1. The Operator will petition the NYSDEC for stormwater discharges during construction at this site to be covered by the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-20-001, following completion of this SWPPP. An NOI form will be filed by the Operator. Authorization to discharge stormwater from Construction Activities is effective five (5) or (60) calendar days after the NYSDEC receives the complete NOI.

D. RESPONSIBILITIES OF CONTRACTOR REGARDING THE CONSTRUCTION GENERAL PERMIT:

1. The Contractor shall manage the discharge of stormwater from the site in accordance with the NYSDEC General Permit for Stormwater Discharges from Construction Activities and the following provisions:

a) The Contractor shall be responsible for conducting the Storm Water Management practices in accordance with the permit.

b) The Contractor shall be responsible for providing *Trained Contractors* (See GP-0-20-001 for definition) to conduct the inspections required by the SWPPP.

c) The Contractor shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the Contractor's failure to comply with the permit provisions.

E. PRE-CONSTRUCTION MEETING:

1. A Pre-Construction SWPPP Meeting shall be mandatory and occur before any land disturbing activities are started. The Certification and Training Program have been developed to stress the importance of the following topics:

a) Erosion and sediment control for water quality protection

b) Implementation of Erosion and Sediment Control Plans

c) The importance to proper installation of erosion and sediment control measures

d) Regular inspection by **Qualified Inspector** of erosion and sediment control measures

e) Diligent maintenance to erosion and sediment control measures

f) Contemporaneous preparation of accurate and complete records regarding inspection and maintenance of erosion and sediment control measures

g) Record-keeping for inspections and maintenance activities

F. SWPPP CERTIFICATION REQUIREMENTS FOR THE CONTRACTOR AND SUBCONTRACTOR(S):

1. The SWPPP shall provide forms for both the Contractor and Subcontractor(s) identifying the Company Name, Business Address and Telephone Number along with the Responsible Person for the Contractor and all Subcontractors who will implement the measures identified in the SWPPP. **The Contractor shall sign, the Contractor's Certification Statement** (Appendix H) **and all Subcontractors shall sign the Subcontractor's Certification Statement** (Appendix I) verifying they have been instructed on how to comply with and fully understand the requirements of the NYSDEC and SWPPP. **These certifications must be signed by a responsible corporate officer or other party meeting the "Signatory Requirements" in Part VII Section H & Part III.A.5. of the NYS DEC SPDES General Permit for Stormwater Runoff from Construction Activity (GP-0-20-001), on behalf of each entity, prior to the beginning of any Construction Activities and shall be filed in the Project's SWPPP.**

G. SWPPP LOCATION REQUIREMENTS:

1. The SWPPP Ledger is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the Project, shall be readily available upon request by the Operator's personnel or NYSDEC or any other agency with regulatory authority over storm water issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. A copy of the General Permit (GP-0-20-001), NOI, NOI Acknowledgment Letter, SWPPP, and inspection reports shall be maintained at the construction site until all disturbed areas have achieved final stabilization and the Notice of Termination 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; that is accessible during normal working hours to an individual performing a compliance inspection.

H. SWPPP:

1. **A minimum of two (2) copies of the SWPPP, in three (3) ring binders shall be provided by the Operator's Engineer.** One (1) copy shall be provided for use by the General Contractor and one (1) copy shall be provided as an original.

I. INSPECTIONS AND RECORD-KEEPING: Inspections are required per the General Permit GP-0-20-001 by a qualified inspector.

1. INSPECTOR QUALIFICATIONS:

a) Inspections must be conducted by a "Qualified" Inspector. "Qualified" is defined as a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the Construction Activity such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control(CPESC), licensed Landscape Architect. It also means that someone working under the direct supervision of a licensed Professional Engineer, or Landscape Architect, provided that person has training in the principles and practices or erosion and sediment control. Training in the principles and practices of erosion and sediment control means that an individual performing the site inspection has received four (4) hours of training, endorsed by the Department, from a Soil and Water Conservation District, CPESC, Inc. or other department endorsed entity in proper erosion and sediment control principles no later than two (2) years from the date of the current general permit issued. After receiving the initial training, an individual working under the direct supervision of a licensed Professional Engineer or licensed Landscape Architect shall receive four (4) hours of training every three (3) years. Inspections of post construction stormwater management practices that include structural components, such as a dam for impoundment, shall be performed by a licensed Professional Engineer.

2. RAINFALL MONITORING:

a) A rain gage should be maintained on the site and a record of the rainfall amounts (in tenths of an inch) and dates shall be recorded every 24 hours on the Rain Log (Appendix P).

3. INSPECTOR RESPONSIBILITIES:

a) The Qualified Inspector shall be trained in all the inspection and maintenance practices necessary for keeping the Erosion and Sediment Controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of Qualified Inspector training will be kept on site with the SWPPP.

4. INSPECTION PROCEDURES:

a) Inspections must include all areas of the site disturbed by Construction Activities and areas used for storage of materials that are exposed to precipitation. Qualified Inspectors must look for evidence of, or the potential for, pollutants entering the storm water conveyance system. Erosion and Sediment Control measures identified in the SWPPP must be observed to ensure proper operation. Discharge locations must be inspected to ascertain whether Erosion and Sediment Control measures are effective in preventing significant impacts to Waters of the United States, where accessible. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. Locations where vehicles enter or exit the site must be inspected for evidence of off-site tracking. The following inspection and maintenance practices will be used to maintain Erosion and Sediment Controls and stabilization measures:

(1) All control measures will be inspected at least at the frequency identified in this Section. The minimum inspection frequency shall be once every seven (7) calendar days.

(2) All measures will be maintained in good working order; if repairs or other measures are found to be necessary, they will be initiated within 24 hours of report, and completed within 48 hours of report and documented with photos.

(3) Built up sediment will be removed from silt fence when it has reached 25% of the height of the fence.

(4) Silt fences will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.

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

(6) An Inspection Report (Appendix J) will be completed after each inspection. Copies of the report forms to be completed by the Qualified Inspector(s) are included in this SWPPP. These reports shall be provided to the Town of Warrensburg within 24 hours of completion.

(7) The Contractor's Superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.

(8) Disturbed Areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

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

(10) Spills or Releases of Hazardous Substances or Oil in excess of reportable quantities (as established under 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302) must be reported.

5. MONITORING:

a) Contractor shall be required to inspect daily per GP-0-20-001, Part IV.B.1.

6. THIRD PARTY INSPECTIONS:

a) Where required or requested by the Operator, third party inspections by the design engineer shall be in addition to and shall not replace inspections by the Contractor (Qualified Inspector). The third-party inspector shall complete and sign any inspection report and include a copy of the report in the SWPPP following each inspection.

7. RECORDKEEPING:

a) It is imperative that documentation of the inspection and maintenance of all erosion and sediment control measures as soon as possible after the inspection and/or maintenance is completed. The inspection reports identify any incidents of non-compliance with the permit conditions. Where a report does not identify any incidents of non-compliance, the report must

contain a certification that the Project is in compliance with the SWPPP and the Construction General Permit or other applicable State Permit. The report must be signed in accordance with the General Permit (GP-0-20-001). These records are used to prove that the required inspection and maintenance were performed and shall be placed in the SWPPP Ledger. In addition to inspection and maintenance reports, records should be kept of the Construction Activities that occur on the site. The Contractor shall retain copies of the SWPPP, all reports and data for a minimum of **five (5) years** after the project is complete in paper and CD format.

The forms found in this SWPPP shall be used by the Qualified Inspector(s) and/or the *Trained Contractor* (as applicable) to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order. The following list identifies the required Inspection and Maintenance documentation and record keeping that must be maintained by the Contractor under this SWPPP:

Appendix J: Inspection Report

Appendix K: Stabilization Schedule

Appendix L: Implementation Schedule

Appendix M: Modification Report

Appendix N: Final Stabilization/Notice of Termination Checklist

Appendix O: Reportable Quantity Release Form

Appendix P: Project Rainfall Log

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

8. OTHER RECORD KEEPING REQUIREMENTS:

a) The Contractor shall keep the following records related to Construction Activities at the site:

(1) Dates when major grading activities occur and the areas which were graded

(2) Dates and details concerning the installation of structural controls

(3) Dates when Construction Activities cease in an area

(4) Dates when stabilization measures are initiated

(5) Dates when an area is stabilized, either temporarily or permanently

(6) Dates of rainfall and the amount of rainfall

(7) Dates and descriptions of the character and amount of any spills of Hazardous Substances or Oil

(8) Records of reports filed with regulatory agencies if reportable quantities of Hazardous Substances or Oil spilled

J. SWPPP MODIFICATIONS: The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever:

1. There is a change in design, construction, operation, or maintenance at the construction site that has or could have a significant effect on the discharge of pollutants to the Waters of the United States that has not been previously addressed in the SWPPP. In addition to modifying the SWPPP, the site map may also require an amendment.

2. Inspections or investigations by site staff, or by local, state or federal officials, determine that the discharges the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site. Modifications that are the result of an inspection must be initiated within 24 hours and completed within 48 hours.

3. Based on the results of an inspection, it must be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection.

4. There is a release containing a Hazardous Substance or Oil in an amount equal or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302 occurs during a 24-hour period. Revisions to the SWPPP must be completed within seven (7) calendar days of knowledge of the release.

Any such changes to the SWPPP must be made in writing on the Modification Report (Appendix M) within seven (7) days of the date such modification or amendment is made. Changes must also be drawn on the Progress Drawing.

K. FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE: A site can be considered finally stabilized when all soil disturbing activities have been completed and:

1. A uniform perennial vegetative cover with a density of **80%** for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established.

2. The facility no longer discharges storm water associated with Construction Activities.

3. A Notice of Termination (NOT) form filed by the Operator(s) with the NYSDEC. The NOT must be submitted within thirty (30) days of final stabilization.

The Operator's Project Manager must provide a completed copy of the NOT to the Contractor for inclusion in the SWPPP. This filing terminates coverage under the Construction General Permit and terminates the Contractor's responsibility to implement the SWPPP, but the requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed. Upon achieving this milestone, the Contractor shall also submit "Final Stabilization Certification/Notice of Termination Checklist" (Appendix N).

II. PROJECT NAME AND LOCATION

Malone Solar Project
176 Bare Hill Road
Town of Malone
Franklin County
74.316761 W, 44.877286 N

A general location map (Appendix B) with enough detail to identify the location of the construction site, direction of storm water flow, the receiving waters within one (1) mile of the site, surface waters and Wetlands, storm water discharge locations and other areas as required by *NYSDEC* is included in Appendix B.

III. OPERATOR'S NAME AND ADDRESS

Yellow 17 LLC
Dana Pickett
125 Wolf Road, Suite 312
Colonie, New York 12205

IV. PROJECT DESCRIPTION

This SWPPP is for the Malone Solar Project installation for Yellow 17 LLC in the Town of Malone, NY. The project is located within the Town of Malone, Franklin County, New York. The entire property is approximately 55.36± acres. This SWPPP addresses all the proposed work to be done at the new Malone Solar project (Appendix C).

The total project disturbance area will not exceed 5.0 acres at any one time. The approximate start of construction is Spring 2023 with an expected end of construction by Fall 2023. General soil disturbing activities will include:

- Installation of solar racking
- Panel installation
- Trenching for wiring of panels
- Finalization of connection to the grid
- Vegetation clearing and grubbing
- Construction of entrance driveway
- Final grading

V. EXISTING SITE CONDITIONS

The project site tributary area is approximately 8.6± acres. The topography of the project site ranges from elevations of 494 feet to 662 feet. The site has slopes ranging from 0.5% to 72.5%. The project site consists of mostly forested areas as well as a small dirt driveway, a pond, and wetlands. The site drains east towards Little Salmon Creek, south towards Brand Road, and west towards Bare Hill Road.

VI. NAME OF RECEIVING WATERS

The site discharges east to an on-site wetland, pond and offsite to Little Salmon Creek.

VII. DESCRIPTION OF SOILS

Soil Types within the Subject Area

Symbol	Soil Name	Hydrologic Soil Group
Aab	Adams and Wallace loamy sands 3 to 8 percent slopes	A
Abd	Adams and Colton soils, 8 to 25 percent, severely eroded	A
Bda	Birdsall loam, 0 to 2 percent slopes	C/D
Cab	Colton and Constable gravelly and cobbly loamy sands, 3 to 8 percent	A
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	D
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	B/D
Oba	Ondawa and Genesee fine sandy loams, high bottoms, 0 to 2 percent slopes	A
Saa	Saco and Sloan soils, 0 to 2 percent slopes	B/D
Sbb	Salmon very fine sandy loam, 2 to 6 percent slopes	B
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	C
W	Water	
Wga	Walpole loamy sand, neutral variant, over clay, 0 to 3 percent slopes	B/D

More information pertaining soils can be found in the Soil Map included in the Stormwater Management (Appendix R) section of this report.

VIII. EROSION AND SEDIMENT CONTROLS

A. The project will utilize temporary and permanent erosion and sediment control practices to prevent sediment from leaving the project area. A list of the practices anticipated are as follows:

Temporary Structural					
	BMP	**Notes**		**BMP**	**Notes**
☐	Inlet Protection		☐	Brush Barrier	
☐	Outlet Protection		☐	Temporary Stream Crossing	
☐	Perimeter Protection		☐	Pipe Slope Drain	
☒	Stabilized Construction Entrance/Exit		☐	Wind Fence	
☐	Stone Staging Area		☐	Temporary Diversion Channels	
☐	Temporary Sediment Basin		☐	Temporary Diversion Berms	
☐	Temporary Gravel and Riprap Sediment Trap		☐	Other	
☐	Temporary Rock Dam Sediment Trap		☐	Other	
☐	Check Dam		☐	Other	
☒	Sediment Fence		☐	Other	
☒	Temporary Seeding		☐	Other	
☒	Temporary Mulching		☐	Other	
☐	Rolled Erosion Control Product (RECP)		☐	Other	
☐	Slope Tracking (Soil Roughening)		☐	Other	
☐	Watering to Minimize Wind Erosion		☐	Other	
Permanent Stabilization					
	BMP	**Notes**		**BMP**	**Notes**
☐	RECP (3 horizontal to 1 vertical)		☐	Vegetation Protection	
☒	Permanent Seeding		☐	Sod	
☐	Permanent Planting (vegetative landscaping)		☐	Other	
☒	Mulching		☐	Other	

Permanent Structural					
	BMP	**Notes**		**BMP**	**Notes**
☐	Outlet Protection		☐	Stormwater Channel	
☐	Storm Drainage System		☐	Retaining Wall	
☐	Curb		☐	Gradient Terrace	
☐	Stormwater Pond		☐	Stormwater Retention Pond	
☐	Stormwater Infiltration		☐	Stormwater Filtration	
☐	Bio Swale		☐	Bio Retention Basin	
☒	Pervious pavement		☐	Vortsentry VS70	
☐	Other		☐	Other	

B. Sequence of Major Construction Activities

The Contractor will be responsible for implementing the following Erosion and Sediment Control and Storm Water Management control measures. The Contractor may designate these tasks to certain subcontractors as he sees fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor. The order of activities will be as follows (refer to the Erosion and Sediment Control / SWPPP Plan Sheet C006 & C007):

Construction Sequence

1. Pre-construction meeting held to include project manager, operator's engineer, town representative, contractor, and sub-contractors prior to land disturbing activities.
2. Construct construction entrance/exit at locations designated on plans.
3. Install perimeter silt fence and stacked silt sock.
4. Have a qualified professional conduct an assessment of the site prior to the commencement of construction.
5. Begin clearing and grubbing operations. Clearing and grubbing operations shall be done only in areas where earth work will be performed and only in areas where construction is planned to commence within fourteen (14) days after clearing and grubbing.
6. Use the existing gravel road during construction. In addition, construct temporary gravel driveway to be utilized for the remainder of the project area.
7. Strip topsoil and stockpile in a location acceptable to construction manager. When stockpile is complete, install a perimeter silt sock, seed surface with 100% perennial ryegrass mixture at a rate of 2-4 lbs. per 1000 square feet. Apply 90-100 lbs. per 1,000 square feet of mulch.
8. Commence earthwork cut and fills. The work shall be progressed to allow a reasonable transfer of cut and fill earth for rough grading and earth moving. The contractor will be given some latitude to vary from the following schedule in order to meet the field conditions encountered. Contractor shall review variations to SWPPP with Design Engineer and qualified professional prior to implementation.

9. Remove temporary gravel construction driveway and construct the proposed pervious gravel driveway after construction activities such as the installation of panels and perimeter fence. The sub-grade material, where the driveway is to be installed shall be decompacted per NYSDEC's "Deep-ripping and decompaction" manual, dated April 2008. Contractor shall avoid frequent heavy traffic on the limited use pervious gravel.
10. As roadway and access drives are brought to grade, they will be stabilized with crushed stone subbase at a depth specified on plans to prevent erosion as soon as practicable.
11. Stabilize all areas as soon as practicable, idle in excess of seven (7) days and in which construction will not commence within fourteen (14) days.
12. Install underground electrical conduit via open trench. Trench excavation/backfill areas should be stabilized progressively at the end of each workday with seed and straw mulch at a rate of 100% perennial rye grass at 2-4 lbs/1000 square feet mulched at 90-100 lbs/1000 square feet.

1. Stabilize all areas idle in excess of 7 days in which construction will not recommence within 14 days.

   Remove temporary construction exits and perimeter silt sock once site has achieved 80% uniform stabilization.
2. Install perimeter fence.
3. Prior to installation of solar modules, supporting steel posts will be installed, generally pile driven to minimize ground disturbance. The solar modules will be mounted by hand to the steel posts and all necessary electrical, communications, and other connections will be made.
4. Construct concrete equipment pad for the installation of the inverter and transformer. Inverters shall be installed in pre-fabricated lockable containers or in an outdoor installation protected with weather-proof material to NEMA 3S protection degree. Minimum grading may be anticipated for the construction of the concrete equipment pad.
5. Once the underground electrical conduit is installed, the necessary interconnection line will be made to the existing electrical grid.

B. Storm Water Management

Yellow 17 LLC will be responsible for all maintenance of the stormwater management facilities associated with the project.

According to the definition set forth in the SPDES General Permit, altering the hydrology from Pre to Post-Development conditions means that "the post-development peak flow rates has increased by more than 5% of the pre-development condition for the design storm of interest". The proposed solar farm project is considered as "Land clearing and grading for the purposes of creating vegetated open space, excluding projects that alter hydrology from pre to post-development" in Appendix B of the General Permit. The project will not alter the site's hydrology from Pre to Post-Development conditions and is therefore classified as a construction activity that requires the preparation of a SWPPP that only includes erosion and sediment controls. Detailed information is included in the Stormwater Management Report (Appendix R).

The gravel driveway on-site is designed using a limited use pervious gravel section approved by the NYSDEC, which classifies as a pervious surface. The project does not propose any increase in impervious area on-site, therefore, stormwater quality treatment is not required.

C. Post Construction Stormwater BMP Operation and Maintenance Plan

An Operations and Maintenance Plan is included to address the inspection, operation and maintenance of all post construction BMPs identified in this plan. The Contractor is responsible for proper installation, maintenance and functioning of all best management practices shown on the drawings until final stabilization is achieved. The Owner shall be responsible for the continued maintenance of the best management practices.

II. OTHER CONTROLS

A. Off-Site Vehicle Tracking

1. Dump trucks hauling material from the construction site will be covered with a tarpaulin. The job Contractor's Superintendent will be responsible for seeing that these procedures are followed.

2. Rock construction entrance to be installed as site conditions warrant or at the request of the engineer or inspector.

B. Excavation Spoil Materials

1. Excavation spoil materials may be generated during excavations including, but not limited to roadway and utilities installation. These materials must be properly managed to prevent them from contributing to storm water discharges. The materials generated from the development of this Project will be managed by the following method: Stockpiled on-site, the general site contractor to specify location and provide erosion control for excavated spoil materials or the material shall be hauled off-site and disposed of in an appropriate manner.

C. Dust Control

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

a) Covering 30% or more of the soil surface with a non-erodible material.

b) Roughening the soil to produce ridges perpendicular to the prevailing wind. Ridges should be about six (6) inches in height.

c) Frequent watering of excavation and fill areas.

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

D. Equipment Service Area

1. The Contractor shall identify an area on the Erosion and Sediment Control Plan for equipment cleaning, maintenance and repair. This area shall be protected by a temporary perimeter berm preventing all surface runoff from leaving the area, or equivalent measure, and shall be located no closer than 100' from any Waters of the United States or state, and shall be located no closer than 50' from any storm inlet. External washing of trucks and other construction vehicles must be confined to this area. No engine degreasing or asphalt equipment or tool washing is permitted.

E. Material Stockpiles

1. Stormwater runoff to and from material stockpiles shall be controlled to prevent materials from creating a diversion of surface water to disturbed soils or from entering the surface water. Topsoil stockpiles shall be surrounded with perimeter sediment control measures such as silt fence and be covered with non-erosive material as soon as practicable but no longer than 14 days after completion of the pile. Non-erosive material may include temporary seeding with straw mulch and tackifier, mulch, or other material providing suitable cover.

F. Masonry Mixing Area

1. Non-stormwater discharges into storm drainage systems or waterways containing slurries from concrete or mortar mixing operations shall not be permitted. Masonry mixing areas shall be located a minimum distance of 100 linear feet from drainage ways, inlets and surface waters and all storm water runoff from these areas shall be contained by a berm or other measures. Run-on water to these areas will be diverted to prevent mixing of clean water and water contaminated with concrete slurry.

III. COMPLIANCE WITH OTHER STATE AND LOCAL REGULATIONS

A. At a minimum, the Contractor will obtain copies of any and all local and state regulations which are applicable to Storm Water Management, Erosion and Sediment Control, and pollution minimization at this Project and will comply fully with such regulations. The Contractor will submit written evidence of such compliance if requested by the Operator or any agent of a regulatory body. The Contractor will comply with all conditions of the *NYSDEC* General Permit for Stormwater Discharges from Construction Activities including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the Project and allowing regulatory personnel access to the Project and to records in order to determine compliance. The Contractor shall also comply with any additional or more stringent requirements imposed by the permit issued by an approved state storm water program, or with permits issued, or requirements imposed by the Town to which the Project discharges storm water. Requirements with which the Contractor must comply include installation of post-construction measures required by the State, County, or City.

IV. MATERIALS MANAGEMENT PLAN

A. Progress Drawing

1. A Progress Drawing consisting of a print of the Erosion and Sediment Control Plans shall be posted inside the job trailer wall. The Progress Drawing will be used to record the locations of the Job Trailer, Sanitary Waste Facilities, Solid Waste Facilities, Fuel Storage Area, Equipment Service Area, and Concrete Washout Pit. Any time any of these facilities are relocated on the site, a new location will be noted on the Progress Drawing and a Modification Report (Appendix M) will be prepared.

B. Materials Covered

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

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

Soil stabilization additives

C. Materials Management Practices

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

1. Good Housekeeping

The following good housekeeping practices will be followed onsite during construction:

a) An effort will be made to store only enough products required to do the job.

b) All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or in a containment area. At a minimum, all containers will be stored with their lids on when not in use. Drip pans shall be provided under all dispensers.

c) Products will be kept in their original containers with the original manufacturer's label in legible condition.

d) Substances will not be mixed with one another unless recommended by the manufacturer.

e) Whenever possible, all of a product will be used up before disposing of the container.

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

g) The Contractor's Superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

2. Hazardous Substances

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

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

b) Original labels and SDS's will be procured and used for each product.

c) If surplus product must be disposed manufacturer's and local/state/federal required methods for proper disposal must be followed.

3. Hazardous Waste

It is imperative that all Hazardous Waste be properly identified and handled in accordance with all applicable Hazardous Waste Standards, including the storage, transport and disposal of the Hazardous Wastes. There are significant penalties for the improper handling of Hazardous Wastes. It is important that the Site Superintendent seeks appropriate assistance in making the determination of whether a substance or material is a Hazardous Waste. For example, Hazardous Waste may include certain Hazardous Substances, as well as pesticides, paints, paint solvents, cleaning solvents, pesticides, contaminated soils, and other materials, substances or chemicals that have been discarded (or are to be discarded) as being out-of-date, contaminated, or otherwise unusable, and can include

the containers for those substances; other materials and substances can also be or become Hazardous Wastes, however. The Contractor's Superintendent is also responsible for ensuring that all site personnel are instructed as to these Hazardous Waste requirements and also that the requirements are being followed.

4. Product Specific Practices

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

a) Petroleum Products

(1) All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Petroleum storage tanks shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters. Maximum total aggregate above ground storage capacity (for the total permit area) shall not exceed 1,320 gallons (which includes both bulk and equipment operational storage volumes in fuel tanks 55 gallons and greater). Total aggregate petroleum storage exceeding 1,320 gallons shall require preparation, certification (using a Professional Engineer or providing a Self-Certified SPCC Plan if applicable) and implementation of a Spill Prevention Control and Countermeasures (SPCC) Plan. The SPCC Plan must be prepared and fully implemented prior to the commencement of work. The SPCC Plan, if needed, will be furnished by the Contractor. Any petroleum storage tanks stored onsite will be located within a containment area that is designed with an impervious surface between the tank and the ground. The secondary containment must be designed to provide a containment volume that is equal to 110% of the volume of the largest tank. Any mobile petroleum tank shall be parked in a vehicular service area surrounded by a berm that provides a containment volume that is equal to 110% of the volume of the largest tank. Containment must provide sufficient volume to contain expected precipitation and 110% volume of the largest tank. Accumulated rainwater or spills from containment areas are to be promptly pumped into a containment device and disposed of properly by a licensed Hazardous Waste transporter. Drip pans shall be provided for all dispensers. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations. The location of any fuel tanks and/or equipment storage areas must be identified on the PROGRESS DRAWING by the Contractor once the locations have been determined.

b) Fertilizers

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

c) Paints, Paint Solvents, and Cleaning Solvents

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

d) Concrete Wastes

(1) Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in specifically designated diked and impervious washouts which have been prepared to prevent contact between the concrete wash and storm water. 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 washout. Waste concrete may be poured into forms to make riprap or other useful concrete products. Proper signage designating the "Concrete Washout" shall be placed near the facility. Concrete Washouts shall be located at minimum 100 linear feet from drainage ways, inlets and surface waters.

(2) The hardened residue from the concrete wash out areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the Contractor. Maintenance of the washout is to 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. Facility shall not be filled beyond 95% capacity and shall be cleaned out once 75% full unless a new facility is constructed. The Contractor's Superintendent will be responsible for seeing that these procedures are followed.

(3) 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. Residue from saw-cutting and grinding shall be collected by vacuum and disposed of in the concrete washout facility.

(4) **The Project may require the use of multiple concrete wash out areas.** These concrete wash out areas are to be made available to all trades and subcontractors working on the Project. The Contractor may designate certain wash out areas for particular trades or subcontractors, but the Contractor is responsible for the management of all concrete washout areas on the Project. All concrete wash out areas will be located in an area where the likelihood of the area contributing to storm water discharges is negligible. If required, additional BMPs must be implemented to prevent concrete wastes from contributing to storm water discharges. The location of concrete wash out area(s) must be identified on the PROGRESS DRAWING by the Contractor once the locations have been determined.

e) Solid and Construction Wastes

(1) All waste materials will be collected and stored in an appropriately covered container and/or securely contained metal dumpster rented from a local waste management company which must be a licensed solid waste management company. The dumpster will comply with all local and state solid waste management regulations.

(2) All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of once per week or more often if necessary. Once building construction has commenced, the dumpster will be emptied a minimum of once per week or when 95% full, or more often if necessary, to prevent over-flow and the trash will be hauled to a landfill. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.

(3) All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. Solid waste containers shall be located no less than 50 feet from any storm inlet, drainage way, or surface water. If required, additional BMPs must be implemented, such as gravel bags, wattles, dikes, berms, and fences around the base to prevent wastes from contributing to storm water discharges. The location of waste dumpsters and roll-off containers must be identified on the PROGRESS DRAWING by the Contractor once the locations have been determined.

f) Sanitary Wastes

(1) A minimum of one portable sanitary unit will be provided for every ten (10) workers on the site. All sanitary waste will be collected from the portable units a minimum of one time per week by a licensed portable facility provider in complete compliance with local and state regulations.

(2) All sanitary waste units will be located in an area where the likelihood of the unit contributing to storm water discharges is negligible. Additional containment BMPs must be implemented, such as gravel bags or specially designed plastic skid containers around the base, to prevent wastes from contributing to storm water discharges. The location of sanitary waste units must be identified on the PROGRESS DRAWING by the contractor once the locations have been determined.

g) Contaminated Soils

(1) Any contaminated soils (resulting from spills of Hazardous Substances or Oil or discovered during the course of construction) which may result from Construction Activities will be contained and cleaned up in accordance with applicable state and federal regulations. Contaminated soils not resulting from Construction Activities, or which pre-existed Construction Activities, but which are discovered by virtue of Construction Activities, should be reported in the same manner as spills, but with sufficient information to indicate that the discovery of an existing condition is being reported. If there is a release that occurs by virtue of the discovery of existing contamination, this should be reported as a spill, if it otherwise meets the requirements for a reportable spill.

D. Spill Prevention and Response Procedures

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

1. In order to prevent or minimize the potential for a spill of Hazardous Substances or Oil to come into contact with storm water, the following steps will be implemented:

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

b) The minimum practical quantity of all such materials will be kept at the Project.

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

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

e) It is the Contractors responsibility to ensure that all Hazardous Waste discovered or generated at the Project site is disposed of properly by a licensed hazardous material disposal company. The

Contractor is responsible for not exceeding Hazardous Waste storage requirements mandated by the EPA or state and local authority.

2. In the event of a spill of Hazardous Substances or Oil, the following procedures must be followed:

   a) **All measures must be taken to contain and abate the spill and to prevent the discharge of the Hazardous Substance or Oil to storm water or off-site. (The spill area must be kept well ventilated and personnel must wear appropriate protective clothing to prevent injury from contact with the Hazardous Substances.**

   b) **If the release is equal to or in excess of a reportable quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The SWPPP must identify measures to prevent the recurrence of such releases and to respond to such releases. The form in Appendix O must be completed in accordance with this requirement.**

V. CONTROL OF NON-STORM WATER DISCHARGES

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

1. Discharges from fire-fighting activities;
2. Fire hydrant flushings;
3. Waters used to wash vehicles where detergents are not used;
4. Water used to control dust;
5. Potable water including uncontaminated water line flushings;
6. Routine external building wash down that does not use detergents;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated air conditioning or compressor condensate;
9. Uncontaminated ground water or spring water;
10. Foundation or footing drains where flows are not contaminated with process materials such as solvents;
11. Uncontaminated excavation dewatering;
12. Landscape irrigation

VI. HISTORICAL PROPERTIES

A. A review of potential adverse impact to cultural, historic and archaeological resources was conducted. There are no places or properties which are listed or would be eligible for listing on the State or National Register of Historic Places that will be impacted by this construction. The New York State Historic Preservation Office response letter indicating no effect can be found in Appendix S.

VII. INDUSTRIAL ACTIVITIES

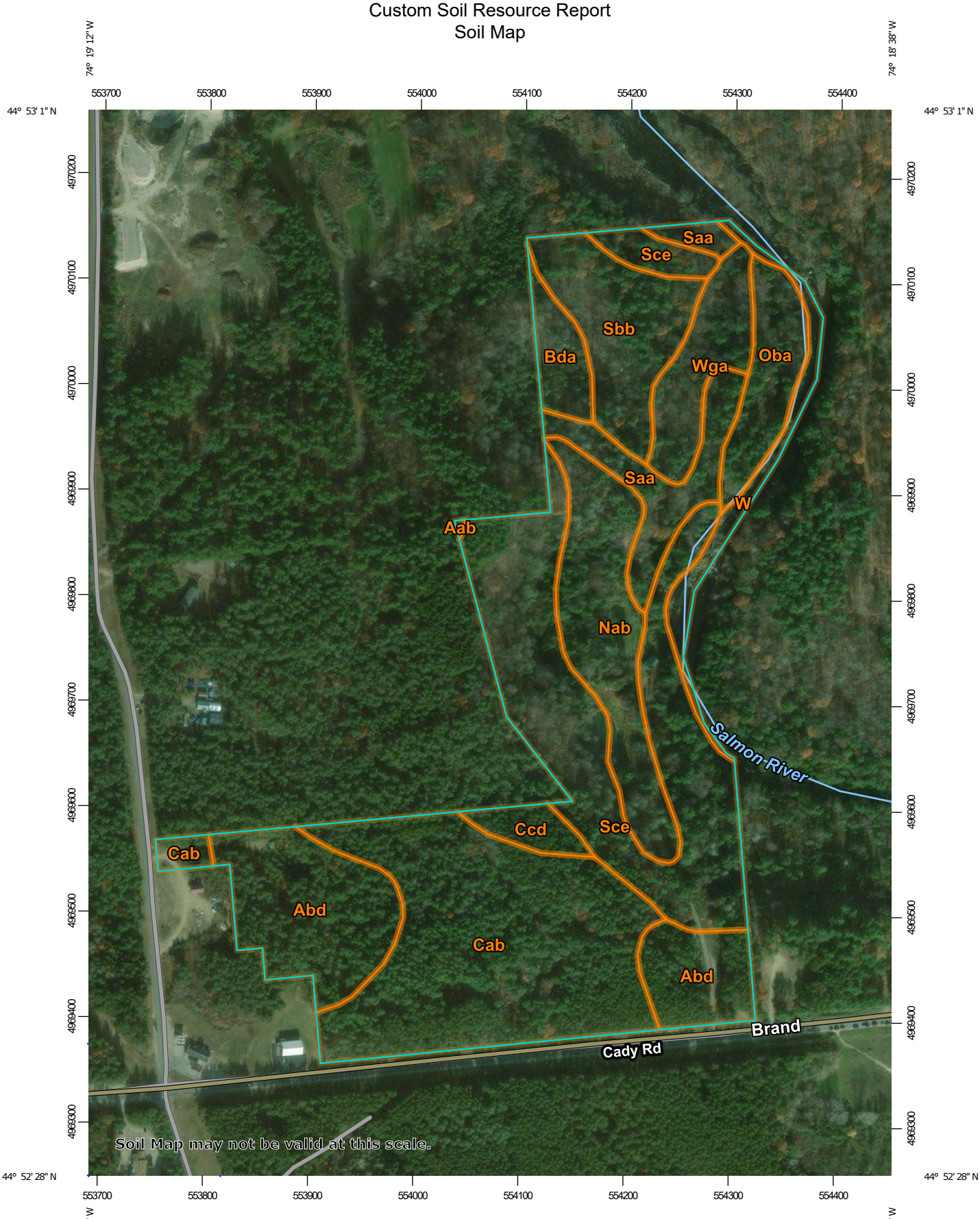
A. There are no discharges planned from industrial activities as part of this project.

VIII. ENHANCED PHOSPHORUS REMOVAL STANDARDS

A. This project is not required to provide enhanced phosphorus removal practices

Appendix B
Site and Soils Mapping

Custom Soil Resource Report
Soil Map



Map Scale: 1:4,920 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 1:24,000.

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: Franklin County, New York
Survey Area Data: Version 5, Sep 1, 2021

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

Date(s) aerial images were photographed: Aug 10, 2014—Nov 11, 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.

Appendix C
Site Plan Set

ARCH D 24x36

PRELIMINARY DEVELOPMENT PLANS FOR
PROPOSED
MALONE SOLAR PROJECT
SOLAR DEVELOPMENT
176 BARE HILL RD
MALONE, NEW YORK

PROJECT CONTACTS

CIVIL ENGINEER
BERGMANN
18 CORPORATE WOODS BOULEVARD
SUITE 400, ALBANY, NY 12211
CONTACT: EVAN COMILLONI, PE
PHONE: 518.389.1111

APPLICANT
CIPRIANI ENERGY GROUP CORP.
125 WOLF ROAD, SUITE 312
COLONIE, NY 12205
CONTACT: MICHAEL QUINN
PHONE: 855.786.4383 EXT. 112

OWNER
KRISTOPHER PIRIE
21 WASHINGTON ST
MALONE, NY 12919

SITE LOCATION MAP
1"=1000'

N

DRAWING INDEX

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

18 Corporate Woods Blvd Circle, Suite 400
Albany, NY 12211
www.bergmannpc.com
office: 518.862.0325

CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
LICENSED PROFESSIONAL ENGINEER
092442

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

COVER

Drawing Number

C000

ARCH D 24x36

SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING HELD TO INCLUDE PROJECT MANAGER, OPERATOR'S ENGINEER, CONTRACTOR, AND SUB-CONTRACTORS PRIOR TO LAND DISTURBING ACTIVITIES.
2. CONSTRUCT CONSTRUCTION ENTRANCE/EXIT AT LOCATIONS DESIGNATED ON PLANS.
3. INSTALL PERIMETER SILT FENCE.
4. HAVE A QUALIFIED PROFESSIONAL CONDUCT AN ASSESSMENT OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE CONSTRUCTION IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
6. USE THE EXISTING GRAVEL ROAD DURING CONSTRUCTION.
7. STRIP TOPSOIL AND STOCKPILE IN A LOCATION ACCEPTABLE TO CONSTRUCTION MANAGER. WHEN STOCKPILE IS COMPLETE, INSTALL PERIMETER SILT FENCE, SEED SURFACE WITH 100% PERENNIAL RYEGRASS MIXTURE AT A RATE OF 2-4 LBS. PER 1000 SF. APPLY 90-100 LBS PER 1000 SF OF MULCH.
8. COMMENCE EARTHWORK CUT AND FILLS. THE WORK SHALL BE PROGRESSED TO ALLOW A REASONABLE TRANSFER OF CUT AND FILL EARTH FOR ROUGH GRADING AND EARTH MOVING. THE CONTRACTOR WILL BE GIVEN SOME LATITUDE TO VARY FROM THE FOLLOWING SCHEDULE IN ORDER TO MEET THE FIELD CONDITIONS ENCOUNTERED. CONTRACTOR SHALL REVIEW VARIATIONS TO SWPPP WITH DESIGN ENGINEER AND QUALIFIED PROFESSIONAL PRIOR TO IMPLEMENTATION.
9. REMOVE THE EXISTING GRAVEL DRIVEWAY AND CONSTRUCT THE PROPOSED PERVIOUS GRAVEL DRIVEWAY AFTER CONSTRUCTION ACTIVITIES SUCH AS THE INSTALLATION OF THE PANELS AND PERIMETER FENCE. THE SUB-GRADE MATERIAL WHERE THE DRIVEWAY IS TO BE INSTALLED SHALL BE DECOMPACTED PER NYSDEC'S "DEEP-RIPPING AND DECOMPACTION" MANUAL, DATED APRIL 2008. CONTRACTOR SHALL AVOID FREQUENT HEAVY TRAFFIC ON THE LIMITED USE PERVIOUS GRAVEL.
10. AS ROADWAY AND ACCESS DRIVES ARE BROUGHT TO GRADE, THEY WILL BE STABILIZED WITH CRUSHED STONE SUBBASE AT A DEPTH SPECIFIED ON PLANS TO PREVENT EROSION AS SOON AS PRACTICABLE.
11. STABILIZE ALL AREAS AS SOON AS PRACTICABLE, IDLE IN EXCESS OF 7 DAYS AND IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
12. INSTALL UTILITIES. TRENCH EXCAVATION/BACKFILL AREAS SHOULD BE STABILIZED PROGRESSIVELY AT THE END OF EACH WORKDAY WITH SEED AND STRAW MULCH AT A RATE OF 100% PERENNIAL RYE GRASS AT 2-4 LBS/1000 SF MULCHED AT 90-100 LBS/1000 SF.
13. STABILIZE ALL AREAS IDLE IN EXCESS OF 7 DAYS IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
14. REMOVE TEMPORARY CONSTRUCTION EXITS AND PERIMETER SILT FENCE ONCE SITE HAS ACHIEVED 80% UNIFORM STABILIZATION.

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS, THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES FIELD STAKED BEFORE STARTING WORK BY CALLING 1-800-962-7962.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. HIGHWAY DRAINAGE ALONG ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF MUD, DEBRIS ETC. AT ALL TIMES.
4. THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER BEFORE DEVIATING FROM THESE PLANS.
5. IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
6. IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING DEMOLITION/CONSTRUCTION, ALL WORK SHALL STOP AND THE FRANKLIN COUNTY DEPARTMENT OF PUBLIC HEALTH AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DEVELOPER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND THE DEVELOPMENT PLANS ARE MODIFIED AS MAY BE NECESSARY.
7. EXCAVATED WASTE MATERIAL REMOVED FROM THE SITE SHALL BE PLACED AT A LOCATION ACCEPTABLE TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
8. AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECTS CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. UNLESS COVERED BY THE CONTRACT SPECIFICATIONS OR AS NOTED ON THE PLANS, ALL WORK SHALL CONFORM TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JANUARY 1, 2020 AND ANY SUBSEQUENT APPENDICES.

WASTE/HAZARDOUS MATERIAL PRACTICES:

1. WHENEVER POSSIBLE COVERED TRASH CONTAINERS SHOULD BE USED.
2. DAILY SITE CLEANUP IS REQUIRED TO REDUCE DEBRIS AND POLLUTANTS IN THE ENVIRONMENT.
3. CONTRACTOR SHALL PROVIDE A SAFE STORAGE SPACE FOR ALL PAINTS, STAINS AND SOLVENTS INSIDE A COVERED STORAGE AREA.
4. ALL FUELS, OILS, AND GREASE MUST BE KEPT IN CONTAINERS AT ALL TIMES.

EROSION & SEDIMENT CONTROL NOTES:

1. INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE PLAN PRIOR TO THE START OF ANY EXCAVATION WORK. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE GOVERNING MUNICIPAL REQUIREMENTS.
2. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER REPLACE TOPSOIL TO A MINIMUM 4" DEPTH WITH TOPSOIL OR AMENDED SOIL. ALL DISTURBED AREAS TO BE SEEDED TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
3. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATIVE COVER HAS BEEN ACHIEVED.
5. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL OR AMENDED TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
7. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
8. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
9. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
10. DUST SHALL BE CONTROLLED BY WATERING.
11. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
12. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. THE CONTRACTOR SHALL PROVIDE A QUALIFIED INSPECTOR TO INSPECT THE PROJECT AT THE END OF EACH WORK WEEK AND PROVIDE A REPORT AT LEAST ONCE PER WEEK.
2. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, FRANKLIN COUNTY PUBLIC HEALTH DEPARTMENT, AND THE TOWN OF MALONE REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) UNTIL GROUND COVER IS ESTABLISHED.
4. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER. REPLACE TOPSOIL TO A MINIMUM 4" DEPTH. ALL DISTURBED AREAS TO BE HYDROSEEDED AS DIRECTED BY THE CONSTRUCTION MANAGER TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
5. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATION HAS BEEN ACHIEVED.
7. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED WHEN THEY HAVE REACHED THE DESIGN LIFE INDICATED IN THE NYS GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL DESIGN MANUAL OR EVERY THREE MONTHS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
9. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL AND EROSION CONTROL STRUCTURES THROUGHOUT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
11. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
12. DUST SHALL BE CONTROLLED BY WATERING.
13. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
14. EROSION CONTROL MEASURES SHOULD BE RELOCATED INWARD AS PERIMETER SLOPE CONSTRUCTION PROGRESSES AND RECONSTRUCTED TO THE NYS STANDARDS & SPECIFICATION AT THE END OF EACH DAY.
15. PERIMETER AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH PROGRESSIVELY AT MINIMUM AT THE END OF EACH WEEK WITH 100% PERENNIAL RYEGRASS MIX AT A RATE OF 2-4 LBS PER 1000 SF AND MULCH 90-100 LBS PER 1000 SF OF WEED FREE STRAW.
16. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

SITE STABILIZATION:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENTS MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ALONG THE CONTOUR, NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. BEFORE SEEDING IS APPLIED THE CONTRACTOR SHALL SPREAD SOIL TO PREVENT PONDING AND CONFIRM THAT SOIL WILL SUSTAIN THE SEED GERMINATION AND ESTABLISHMENT OF VEGETATION.
5. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE. COMPACTED SOILS SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES, ALONG CONTOUR WHEREVER POSSIBLE, PRIOR TO SEEDING.
6. TOPSOIL OR AMENDED SOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A MINIMUM DEPTH OF 6 INCHES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS.
7. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
8. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE ½" TO ¾". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
9. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
10. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
11. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
12. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
13. LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AN EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS.
14. ONCE A SECTION OF THE ALIGNMENT HAS BEEN STABILIZED, NO CONSTRUCTION TRAFFIC SHALL OCCUR TO REMOVE ANY BMPS UNTIL THE SECTION HAS ACHIEVED 80% PERENNIAL VEGETATIVE COVER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

GENERAL NOTES

Drawing Number

C001

ARCH D 24x36

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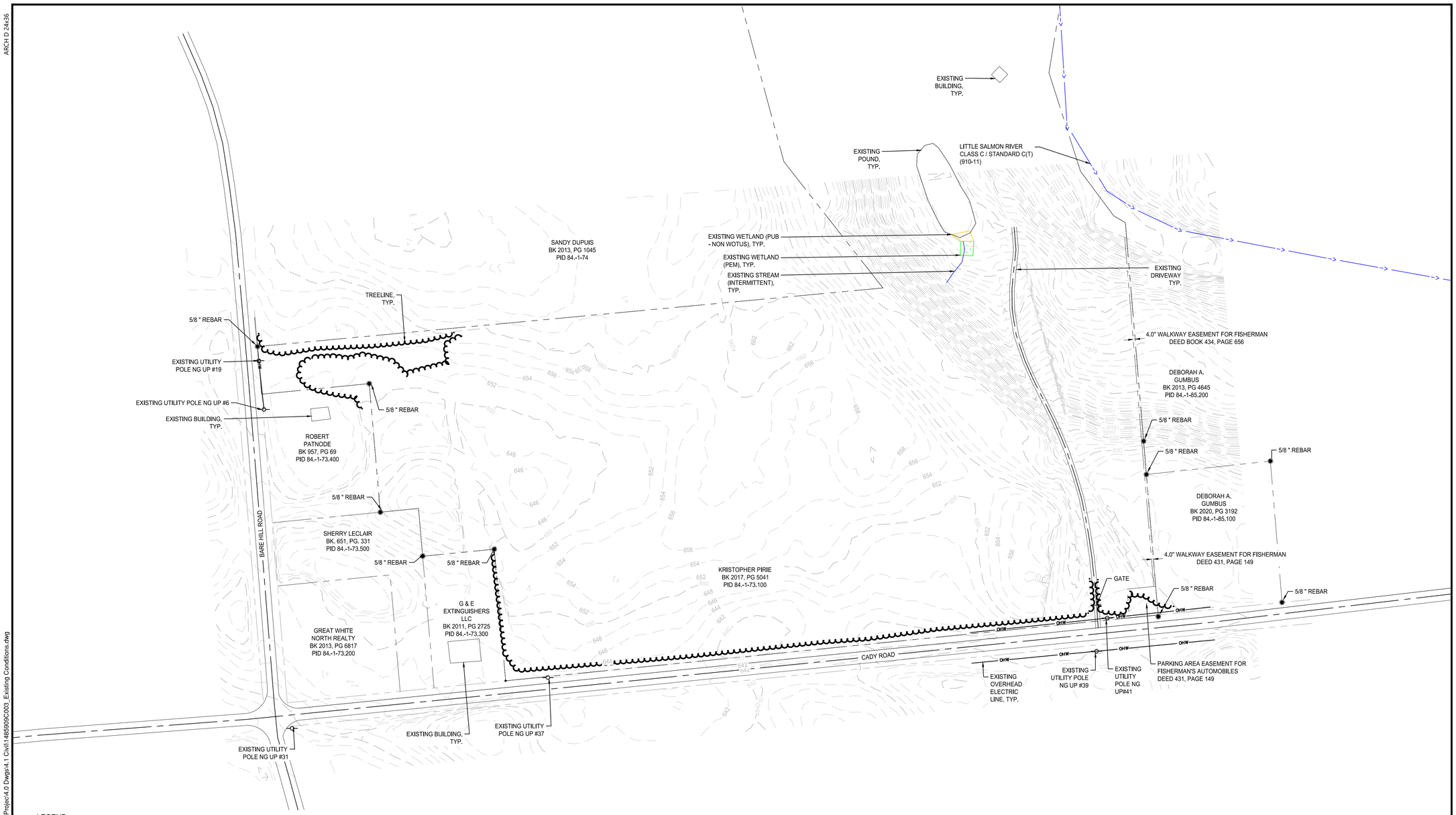
Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

AREA PARCEL PLAN

Drawing Number

C002



LEGEND

- PROPERTY LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- ROAD CENTERLINE
- OVERHEAD WIRE
- STREAM CENTERLINE
- CONTOUR - MAJOR
- CONTOUR - MINOR
- SWALE CENTERLINE
- EDGE OF ASPHALT
- EXISTING TREELINE
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- UTILITY POLE
- FOUND IRON PIPE
- FOUND REBAR
- FOUND IRON ROD
- FOUND CONCRETE MONUMENT
- EXISTING SIGN

SURVEY NOTES

SURVEY BY PROGRESSIVE LAND SURVEY SERVICES, PLLC AND IS BASED ON A FIELD SURVEY IN DECEMBER 2020. THIS PLAN IS DATED 12/17/20.

COORDINATE SYSTEM: STATE PLANE NEW YORK EAST NAD83(2011), US SURVEY FEET

SURVEY LOCATION: CADY ROAD/BARE HILL ROAD, MALONE, FRANKLIN COUNTY, NEW YORK, 12953 (TAX ID: 84.-1-73.100)
SITE NAME: MALONE

PARCEL BOUNDARIES AS SHOWN HEREON ARE THE RESULT OF LIMITED TITLE RESEARCH TO DETERMINE PROPERTY LINES NEAREST THE PROJECT AREA. BOUNDARIES ARE NOT THE RESULT OF A COMPREHENSIVE BOUNDARY SURVEY AND ARE WITHOUT THE BENEFIT OF A FULL AND ACCURATE TITLE REPORT. THIS SURVEY IS SUBJECT TO REVISION UPON RECEIPT OF AN UPDATED TITLE REPORT AND COMPLETION OF A FULL BOUNDARY SURVEY. SURVEY WAS PREPARED IN ACCORDANCE WITH A CONTRACT WITH BERGMANN & ASSOCIATES ENTITLED "BERGMANN_NYS_10.1.3_PROPOSAL_REV1", DATED 11/17/2020.

LIDAR WAS OBTAINED FROM THE GIS.NY.GOV WEBSITE AND USED AS A BASE FOR THE OVERALL SURFACE. ACTUAL GROUND SURVEY WAS SUPPLEMENTED WHERE APPLICABLE.

LAND OWNER INFORMATION WAS COMPILED FROM THE FRANKLIN COUNTY ASSESSORS INFORMATION AT THE TIME OF THIS SURVEY.

THE LOCATION OF UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT ALWAYS KNOWN AND OFTEN MUST BE ESTIMATED. IF ANY UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS EXIST OR ARE SHOWN, THE IMPROVEMENTS OR ENCROACHMENT ARE NOT COVERED BY THIS CERTIFICATE.

N

0 100 200 300 FT
1" = 100' SCALE BAR

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YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

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7/03/2024	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

EXISTING CONDITION PLAN

Drawing Number

C003

SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C" COUNTRY SIDE DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 18 CORPORATE WOODS, SUITE 400 ALBANY, NY 12211 (518) 389-1111		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	75 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- EXISTING REBAR

N

0 100 200 300 FT

1" = 100' SCALE BAR

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7/03/2024	DRAWING UPDATES

STATE OF NEW YORK
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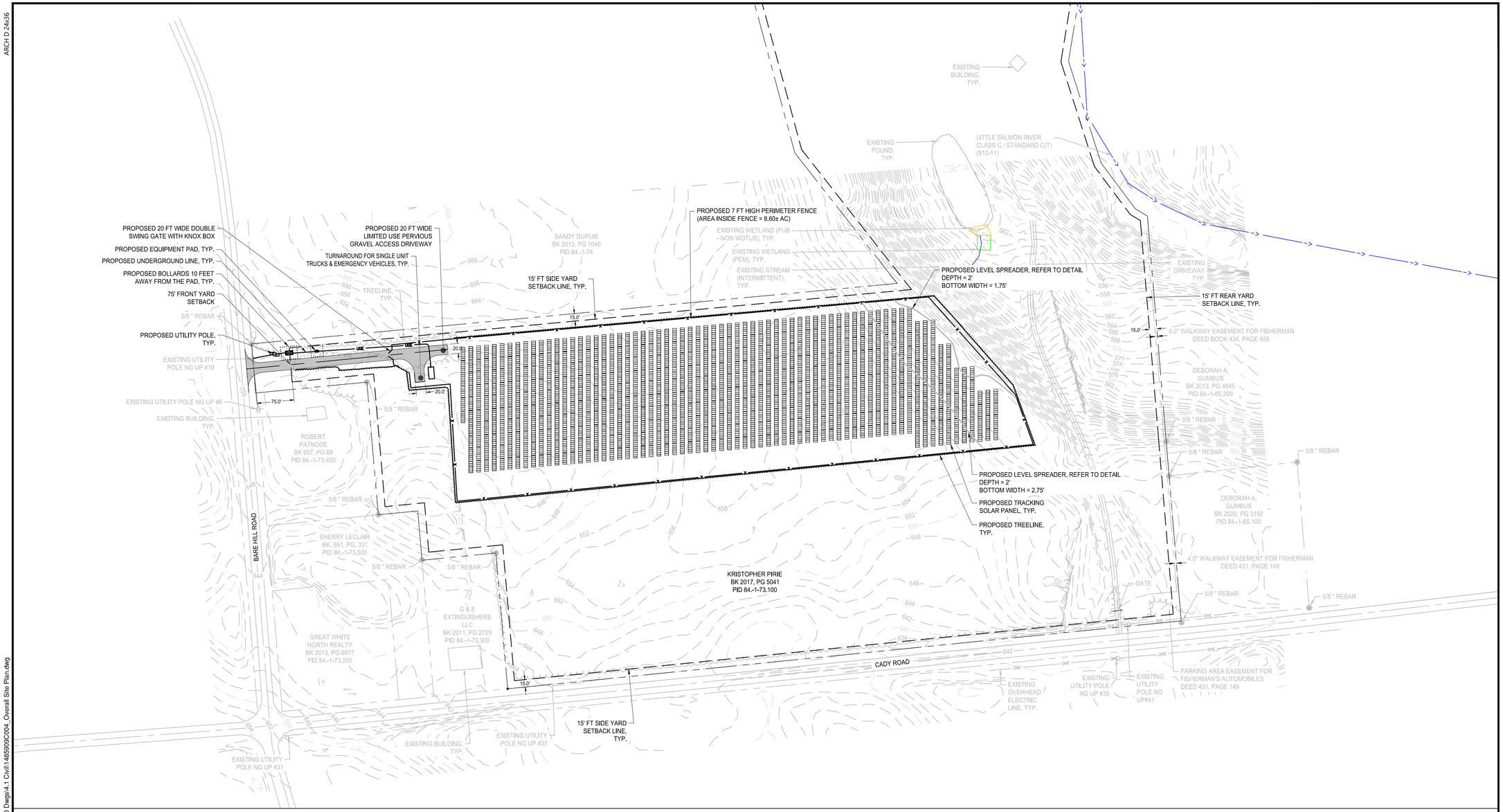
Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

OVERALL SITE PLAN

Drawing Number

C004



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C" COUNTRYSIDE DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 18 CORPORATE WOODS, SUITE 400 ALBANY, NY 12211 (518) 389-1111		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	75 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- EXISTING REBAR

GENERAL NOTES

1. CONTRACTOR SHALL INSTALL ADDITIONAL LEVEL SPREADERS THROUGHOUT THE SITE AS NEEDED IF THE STABILIZED SOILS ARE ERODING AND SHEET FLOW CANNOT BE MAINTAINED. LEVEL SPREADERS SHALL BE PROTECTED DURING CONSTRUCTION FROM SEDIMENT. AT THE END OF CONSTRUCTION THE CONTRACTOR SHALL CLEAN SEDIMENT/DEBRIS FROM THE LEVEL SPREADERS AND ENSURE THEY ARE IN GOOD CONDITION.

N

0 100 200 300 FT

1" = 100' SCALE BAR

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Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

SITE PLAN

Drawing Number

C005

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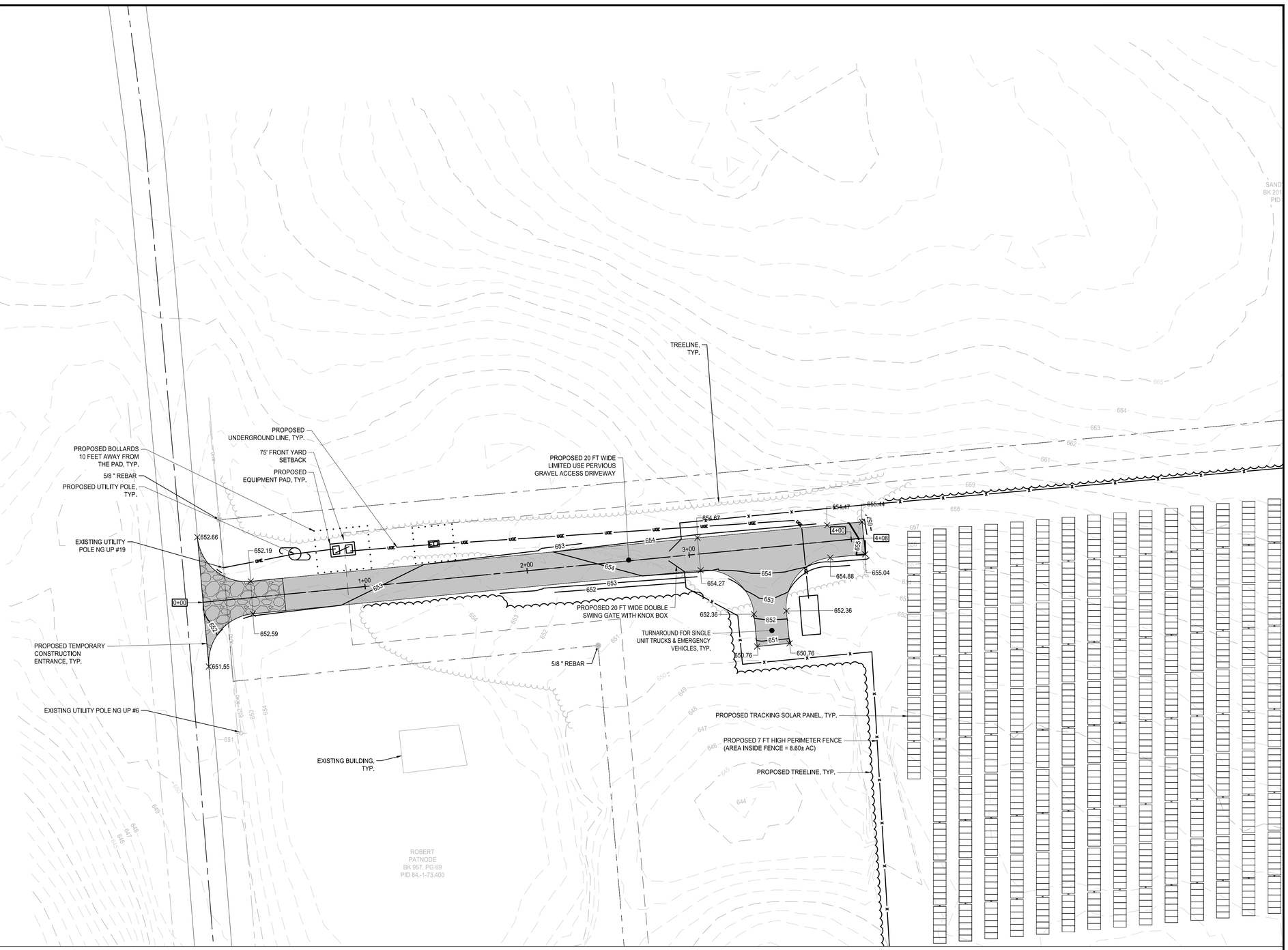

GRADING & EROSION & SEDIMENT CONTROL LEGEND

- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- LOD — LOD — APPROXIMATE LIMITS OF DISTURBANCE
- DRIVEWEAY SECTION ALIGNMENT
- SILT — PROPOSED SILT FENCE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISITNG MAJOR CONTOUR
- EXISTING MINOR CONTOUR

N

0 30 60 90 FT

1" = 30' SCALE BAR

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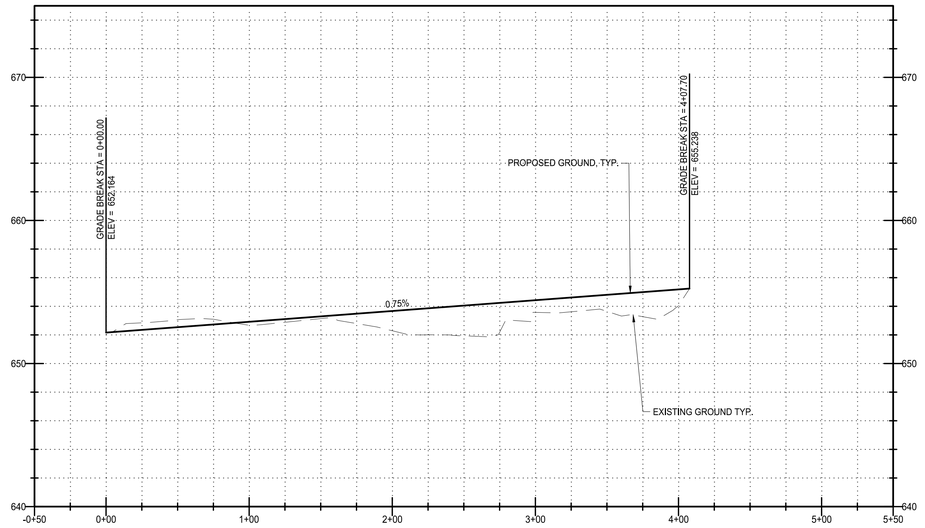
Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

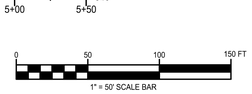
GRADING & EROSION CONTROL PLAN

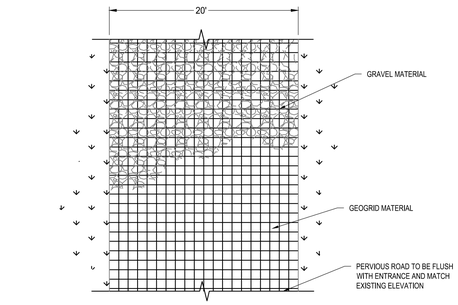
Drawing Number

C006

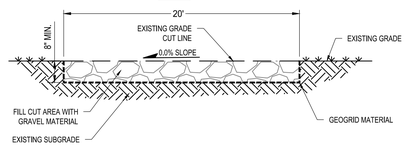


DRIVEWAY SECTION (STA. 0+00 TO 4+07.64)
1"=5' VERTICAL
1"=50' HORIZONTAL





PLAN



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

NO SCALE

GEOGRID MATERIAL NOTES:

1. THE GEOGRID, OR COMPARABLE PRODUCT, IS INTENDED FOR USE IN 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 SPECIFICATION OF NYSDOT 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 DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE MEETING NYSDOT 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

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 OF POTENTIAL REDUCTION OF NATIVE INFILTRATION RATES DIE 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

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)
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 IN SITU SOIL. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
5. GRADE ROADWAY, WHERE NECESSARY, TO NATIVE SOILS 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 STORM WATER DRAINAGE.
7. ROADWAY WIDTH TO BE DETERMINED BY CLIENT.
8. THE LIMITED USE PERVIOUS ACCESS ROAD CROSS SLOPE SHALL BE 1.5% IN MOST CASES AND SHOULD NOT EXCEED 6%. 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 THE INITIAL PHASES OF CONSTRUCTION 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 ARES, 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 THE 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 DISCHARGE 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-CONSTRICTION 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 USED 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-0-20-001 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.

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18 Corporate Woods Blvd Circle, Suite 400
Albany, NY 12211
www.bergmannpc.com
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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
LICENSED PROFESSIONAL ENGINEER
092442

NOT FOR CONSTRUCTION

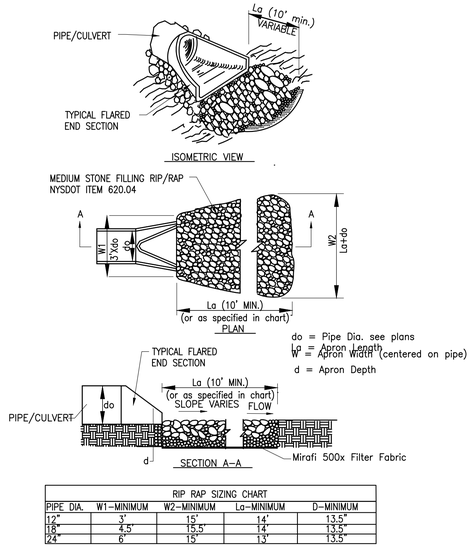
Project Manager	Discipline Lead
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

GRADING PLAN DETAILS

Drawing Number

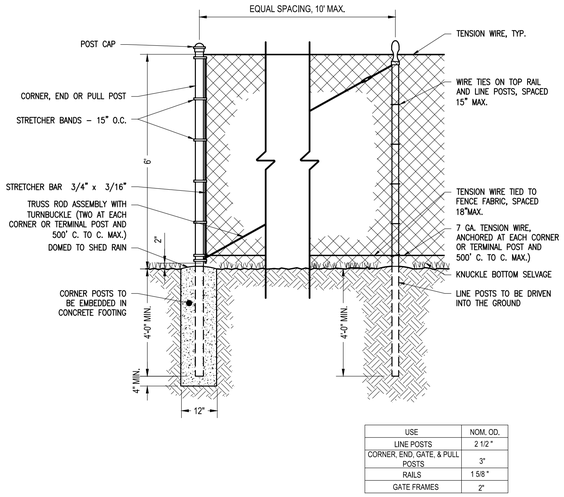
C007



RIP RAP SIZING CHART				
PIPE DIA.	W1-MINIMUM	W2-MINIMUM	La-MINIMUM	D-MINIMUM
12"	3'	15'	14'	13.5"
18"	4.5'	15.5'	14'	13.5"
24"	6'	15'	13'	13.5"

NOTES:
1. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NO LESS THAN 6".
2. NSTALL FILTER MIRAFI 500X OR APPROVED EQUAL FILTER FABRIC BETWEEN RIP-RAP AND SUBBGRADE

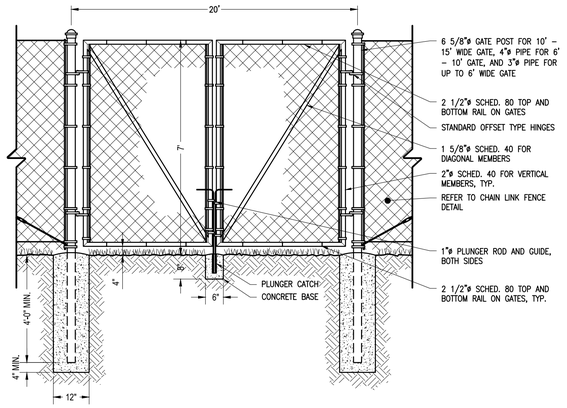
OUTLET PROTECTION RIP-RAP APRON
N.T.S.



USE	NOM. OD.
LINE POSTS	2 1/2 "
CORNER, END, GATE, & PULL POSTS	3"
RAILS	1 5/8 "
GATE FRAMES	2"

NOTES:
1. ALL POSTS SHALL BE PLUMB
2. WIRE TIES SHALL BE PLACED 15" ON CENTER ALONG TOP RAIL AND LINE POSTS.
3. LINE POSTS SHALL BE DRIVEN INTO THE GROUND.
4. CORNER POSTS SHALL BE EMBEDDED IN 12" DIAMETER CONCRETE FOOTING.

CHAIN-LINK FENCE DETAIL
N.T.S.



NOTES:
1. ALL POSTS SHALL BE PLUMB
2. WELD ALL PIPE CONNECTIONS.
3. GATE FABRIC TO MATCH FENCE FABRIC. PROVIDE MATCHING POST CAPS WHERE REQUIRED.
4. NOTCH CURBS TO MAINTAIN 4" HEIGHT BETWEEN BOTTOM OF GATE AND GRAVEL.
5. PROVIDE EMBEDDED METAL SLEEVE AND HOLD OPEN FOR EACH LEAF OF GATE.
6. CONTRACTOR SHALL INSTALL A KNOX BOX NEXT TO GATE FOR FIRE DEPARTMENT ACCESS

CHAIN-LINK FENCE GATE DETAIL
N.T.S.

NOTES:

1. FENCE SHALL BE INSTALLED ON A LEVEL GRADE. EXTEND ENDS OF FENCING UPHILL SO BOTTOM OF FENCE IS AT AN ELEVATION ABOVE TOP OF FENCE.

2. SEDIMENT MUST BE REMOVED FROM SILT BARRIER FENCING WHEN HEIGHT OF SILT REACHES A MAXIMUM OF 9" AGAINST SILT FENCE.

3. MAXIMUM SLOPE LENGTHS CONTRIBUTING TO SILT FENCE MUST NOT EXCEED THE LENGTH BELOW:

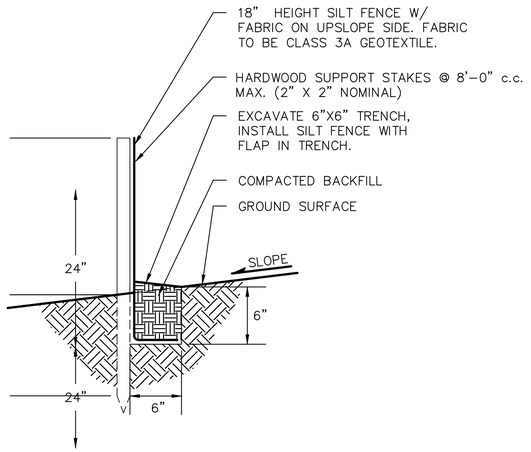
SLOPE percent	SLOPE LENGTH feet
0 - 2	250
< 5	100
< 10	50
< 15	35
< 20	25
< 25	20
< 40	15
< 50	10

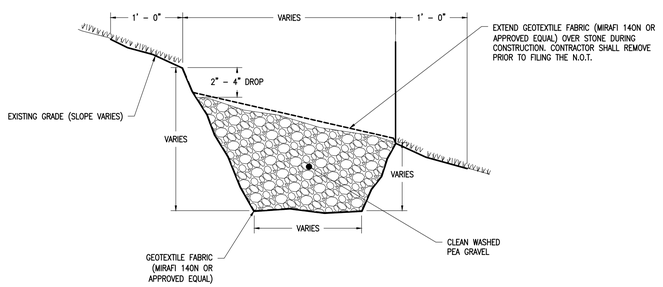
4. FABRIC SHALL BE FASTENED TO POSTS WITH METAL FASTENERS AND REINFORCING MATERIAL PLACED BETWEEN THE FABRIC AND FASTENER.

5. SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH STORM EVENT. SILT FENCE WHICH HAS BEEN UNDERMINED OR OVERTOPPED SHALL BE REPLACED WITH A STONE FILTER OUTLET.

COMPOST FILTER SOCK - SILT FENCE EQUIVALENCY CHART		
COMPOST FILTER SOCK	STACKED COMPOST FILTER SOCK	SILT FENCE
12" COMPOST FILTER SOCK	--	STANDARD 18" SILT FENCE
18" COMPOST FILTER SOCK	3 - 12" SOCKS	REINFORCED 30" SILT FENCE
24" COMPOST FILTER SOCK	2 - 18" SOCKS, 1 - 12" SOCK	SUPER SILT FENCE

SILT FENCE DETAIL
N.T.S.





NOTES:
1. LEVEL SPREADERS SHOULD BE INSPECTED EVERY 2 TO 3 YEARS FOR EXCESS SEDIMENTATION AND CLOGGING. REPLACE PEA GRAVEL IF NECESSARY.
2. CONTRACTOR TO PROVIDE AS-BUILTS TO THE TOWN OF THE SIZE AND LOCATIONS OF THE LEVEL SPREADERS.
3. LEVEL SPREADERS SHALL BE SPACE PER NYSDEC GUIDLINES FOR WATERBARS AS FOLLOWS: 5% TO 10% - 100' SPACING, 10% TO 20% - 75' SPACING, 20 TO 35% - 50' SPACING.
4. EXTEND GEOTEXTILE FABRIC OVER STONE DURING CONSTRUCTION. CONTRACTOR SHALL REMOVE THE GEOTEXTILE FABRIC PRIOR TO FILING THE NOTICE OF TERMINATION.
5. REFER TO SITE PLANS FOR DIMENSIONS.

LEVEL SPREADER DETAIL
N.T.S.

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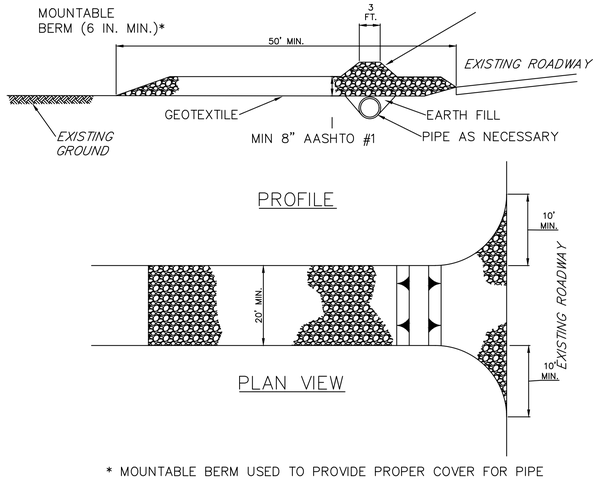
EWC	EWC
Designer	Reviewer
AWG	EWC
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

DETAILS I

Drawing Number

C008

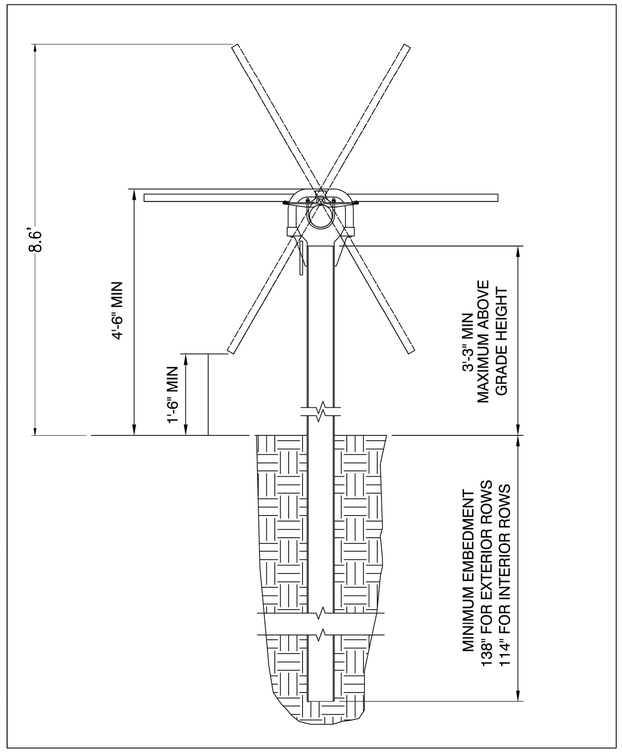


* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



TRACKER PANEL DETAIL
NO SCALE

GENERAL NOISE NOTES:

1. PROPOSED DECIBELS FOR SPECIFIED INVERTERS WILL BE APPROXIMATELY 69 dBA AT 5 FEET AND 70 DEGREES FAHRENHEIT.
2. PROPOSED DECIBELS FOR SPECIFIED TRACKER MOTORS WILL BE APPROXIMATELY 80 dBA AT 5 FEET AND 70 DEGREES FAHRENHEIT.

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Designer	Reviewer
AWG	EWC
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DETAILS II

Drawing Number

C009

UPLAND SEED MIX		
LOW-GROWING WILDFLOWER & GRASS MIX - ERNMX #156		
SEEDING RATE: 20 LB PER ACRE WITH A COVER CROP OF GRAIN RYE AT 30 LB PER ACRE		
SCIENTIFIC NAME	**COMMON NAME**	**% OF MIX**
FESTUCA OVINA	SHEEP FESCUE, VARIETY NOT STATED	63.60%
LOLIUM MULTIFLORUM (L. PERENNE VAR. ITALICUM)	ANNUAL RYEGRASS	17%
LINUM PERENNE SSP. LEWISII	PERENNIAL BLUE FLAX	8%
RUDBECKIA HIRTA	BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE	2%
COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS, COASTAL PLAIN NC ECOTYPE	2%
CHRYSANTHEMUM LEUCANTHEMUM	OXEYE DAISY	2%
CHRYSANTHEMUM MAXIMUM	SHASTA DAISY	1%
CHAMAECRISTA FASCICULATA (CASSIA F.)	PARTRIDGE PEA, PA ECOTYPE	1%
PAPAVER RHOEAS, SHIRLEY MIX	CORN POPPY/SHIRLEY MIX	1%
ACHILLEA MILLEFOLIUM	COMMON YARROW	0.5%
ASTER OBLONGIFOLIUS (SYMPHYOTRICHUM OBLONGIFOLIUM)	AROMATIC ASTER, PA ECOTYPE	0.5%
EUPATORIUM COELESTINUM (CONOCLINIUM C.)	MISTFLOWER, VA ECOTYPE	0.5%
MONARDA PUNCTATA, COASTAL PLAIN SC ECOTYPE	SPOTTED BEEBALM, COASTAL PLAIN SC ECOTYPE	0.5%
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	0.3%
PYCNANTHEMUM TENUIFOLIUM	SLENDER MOUNTAINMINT	0.1%
COMPANY INFORMATION		
ERNST CONSERVATION SEEDS, INC.		
ADDRESS: 8884 MERCER PIKE, MEADVILLE, PA 16335		
PHONE: (800) 873-3321		
WEB: HTTP://WWW.ERNSTSEED.COM		

*OR APPROVED EQUIVALENT

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS					
SOIL AMENDMENT		**PER ACRE**	**PER 1,000 SQ. FT.**	**PER 1,000 SQ. YD.**	**NOTES**
PERMANENT SEEDING	AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST: MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
PERMANENT SEEDING	10-10-20 FERTILIZER	1,000 L.B.	25 LB.	210 LB.	
TEMPORARY SEEDING	AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
TEMPORARY SEEDING	10-10-20 FERTILIZER	500 LB.	12.5 LB.	100 LB.	

COMPOST STANDARDS	
ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

MULCH APPLICATION RATES				
MULCH TYPE	**APPLICATION RATE (MIN.)**			**NOTES**
	PER ACRE	**PER 1,000 SQ. FT.**	**PER 1,000 SQ. YD.**	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY, OR OTHER NATIVE FORAGE GRASSES
WOOD CELLULOSE	1,500 LB.	35 LB.	310 LB.	DO NOT USE ALONE IN WINTER, DURING HOT AND DRY WEATHER OR ON STEEP SLOPES (> 3:1)
WOOD	1,000 LB. CELLULOSE	25 LB.	210 LB.	WHEN USED OVER STRAW OR HAY
WOOD CHIPS	4 - 6 TONS	185 - 275 LB.	1,650 - 2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES

NOTES:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE TEMPORARILY STABILIZED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
4. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 INCHES MINIMUM. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE.
5. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OF SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
6. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE 1/2" TO 3/4". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
7. BLANKETING SHALL BE USED ON ALL SLOPES 3H:1V OR STEEPER OR AS NOTED ON THE PLANS.
8. PERMANENT STABILIZATION SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EARTH DISTURBANCE.

SITE STABILIZATION - SEED MIX
N.T.S.

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Project Manager	Discipline Lead
EWC	**EWC**
Designer	Reviewer
AWG	**EWC**
Date Issued	Project Number
09/04/2021	**14859.09**

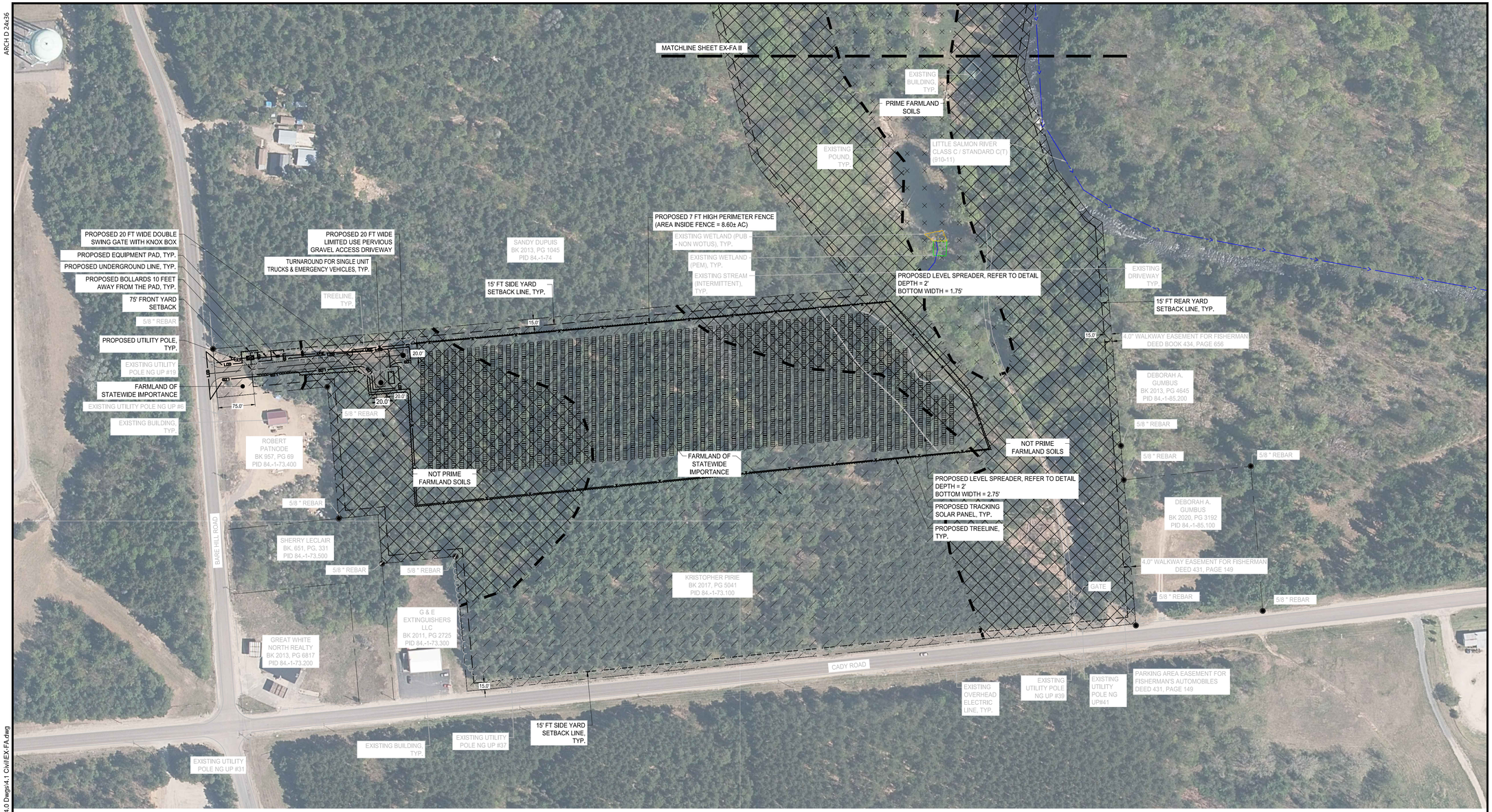
Sheet Name

DETAILS III

Drawing Number

C010

11 of 11



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C-G" GENERAL COMMERCIAL DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 18 CORPORATE WOODS, SUITE 400 ALBANY, NY 12211 (518) 389-1111		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	100 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

NOTES

1. REQUIRED ZONING STANDARDS REFLECT THE MOST STRICT RESIDENTIAL ZONING REQUIREMENTS OF THE TOWN OF MALONE PER SECTION 79-10.1 "C-G GENERAL COMMERCIAL DISTRICT USES".

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- PALUSTRINE FORESTED WETLAND (PFO)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- FARMLAND CLASSIFICATION BOUNDARY
- NOT PRIME FARMLAND
- PRIME FARMLAND
- FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND DISTURBANCE TABLE			
FARMLAND CLASSIFICATION	EARTHWORK DISTURBANCE AREA	PERMANENT DISTURBANCE	PROJECT FOOTPRINT AREA (ACRES)
PRIME FARMLAND	0.00 AC.	0.00 AC.	10.92 AC.
FARMLAND OF STATEWIDE IMPORTANCE	0.13 AC.	0.13 AC.	17.16 AC.
NOT PRIME FARMLAND	0.20 AC.	0.20 AC.	21.52 AC.
TOTAL DISTURBANCE	0.33 AC.	0.33 AC.	49.60 AC.

N

0 80 160 240 FT

1" = 80' SCALE BAR

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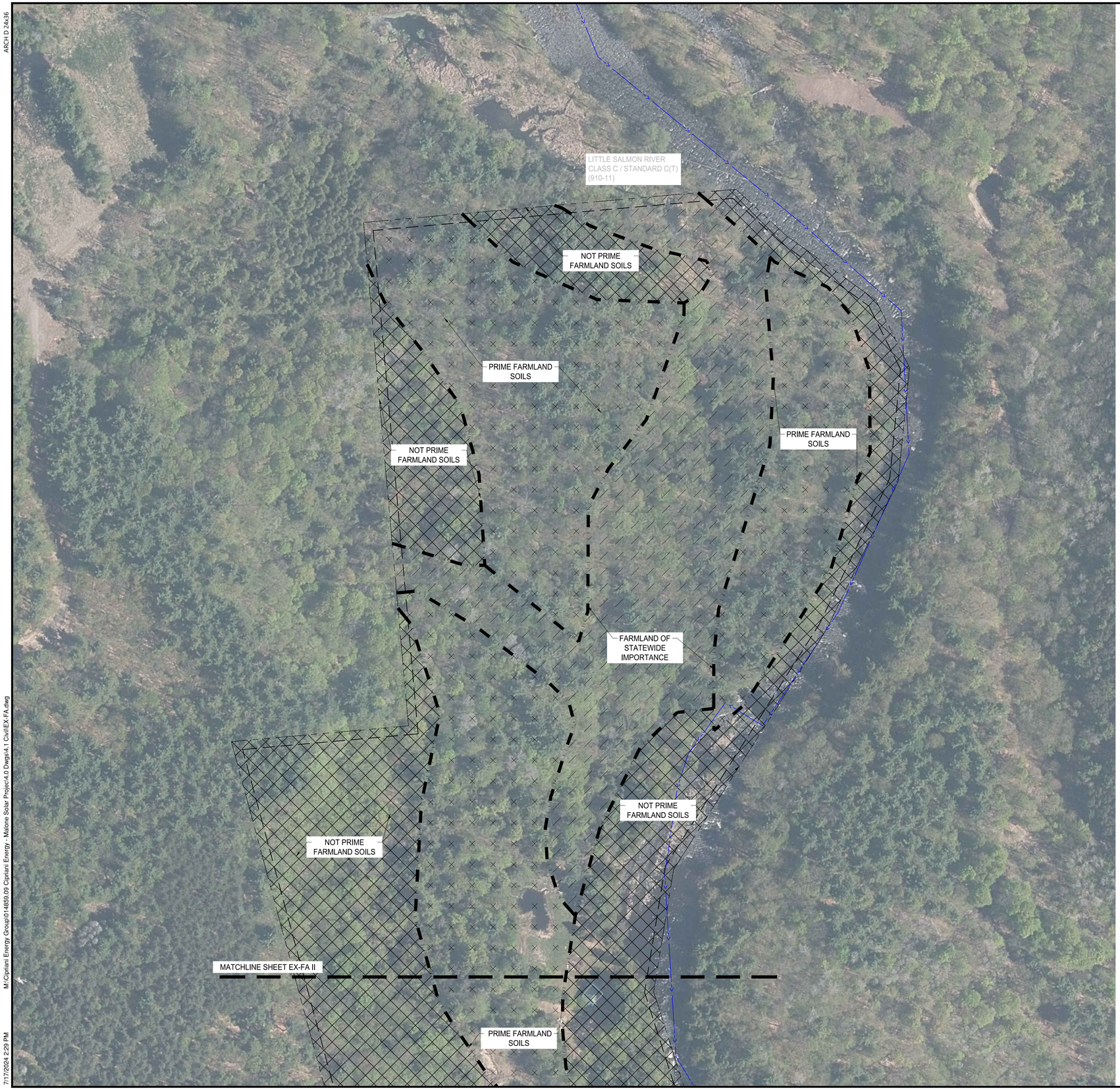
FARMLAND CLASSIFICATION EXHIBIT

Drawing Number

EX-FA I

1 of 2



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0 80 160 240 FT

1" = 80' SCALE BAR

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FARMLAND CLASSIFICATION EXHIBIT

Drawing Number

EX-FA II

ARCH D 24x36

M:\Cipriani Energy Group\014859.09 Cipriani Energy - Malone Solar Project\4.0 Dwgs\4.1 Civil\EX-FA.dwg

7/17/2024 2:29 PM

Appendix D
Notice of Intent (NOI)

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.35

(Submission #: HPM-G0WP-GNQTX, version 1)

Details

Originally Started By	Andrew Graham
Alternate Identifier	Malone Solar Project
Submission ID	HPM-G0WP-GNQTX
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Yellow 17 (and affiliate Cipriani Energy Group Corporation)

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

Owner/Operator Contact Person First Name
Chris

Owner/Operator Mailing Address
125 Wolf Rd

City
Colonie

State
NY

Zip
12205

Phone
5183904004

Email
c.stroud@solrealgroup.com

Federal Tax ID
61-1882167

Project Location

Project/Site Name
Malone Solar Project

Street Address (Not P.O. Box)
176 Bare Hill Road

Side of Street
East

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Malone

State
NY

Zip
12953

DEC Region
5

County
FRANKLIN

Name of Nearest Cross Street
Cady Road

Distance to Nearest Cross Street (Feet)
5

Project In Relation to Cross Street
North

Tax Map Numbers Section-Block-Parcel
84.-1-73.100

Tax Map Numbers
NONE PROVIDED

1. Coordinates

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

Navigate to your location and click on the map to get the X,Y coordinates
44.877877925179604,-74.31500147088623

Project Details

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

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

Pre-Development Existing Landuse
Forest

Post-Development Future Land Use
Other: Solar Farm

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

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

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

Total Site Area (acres)
55.36

Total Area to be Disturbed (acres)
8.6

Existing Impervious Area to be Disturbed (acres)
0.2

Future Impervious Area Within Disturbed Area (acres)
0.2

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

---

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

A (%)
42.3

B (%)
7.8

C (%)
22.6

D (%)
27.3

7. Is this a phased project?
No

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

Start Date
04/03/2023

End Date
09/04/2023

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Wetland, unnamed intermittent stream, and off site river

9a. Type of waterbody identified in question 9?
Wetland/State Jurisdiction On Site (Answer 9b)
Stream/Creek On Site
River Off Site

Other Waterbody Type Off Site Description
Little Salmon River

9b. If "wetland" was selected in 9A, how was the wetland identified?
Delineated by Consultant

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

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

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

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?
NONE PROVIDED

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

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

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

16. What is the name of the municipality/entity that owns the separate storm sewer system?
NONE PROVIDED

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

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

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

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

Required SWPPP Components

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

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

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?
Yes

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

SWPPP Preparer
Bergmann

Contact Name (Last, Space, First)
Redding, Eric

Mailing Address
2 Winner Circle, Suite 102

City
Albany

State
NY

Zip
12205

Phone
5185563631

Email
eredding@bergmannpc.com

Download SWPPP Preparer Certification Form
Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form

3) Scan the signed form
4) Upload the scanned document
Download SWPPP Preparer Certification Form

Please upload the SWPPP Preparer Certification

> SWPPP_Preparer_Certfication_Form-Print.pdf - 09/06/2022 09:48 AM
> **Comment**
> NONE PROVIDED

Erosion & Sediment Control Criteria

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

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

Temporary Structural
Dust Control
Silt Fence
Stabilized Construction Entrance

Biotechnical
None

Vegetative Measures
Mulching
Seeding
Topsoiling

Permanent Structural
Land Grading

Other
NONE PROVIDED

Post-Construction Criteria

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

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Reduction of Clearing and Grading
Locating Development in Less Sensitive Areas

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
NONE PROVIDED

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

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
NONE PROVIDED

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

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

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
NONE PROVIDED

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
NONE PROVIDED

If Yes, go to question 33.
Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

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

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

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

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
NONE PROVIDED

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

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
NONE PROVIDED

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
NONE PROVIDED

If Yes, go to question 36.

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

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

CPv Required (acre-feet)
NONE PROVIDED

CPv Provided (acre-feet)
NONE PROVIDED

36a. The need to provide channel protection has been waived because:
NONE PROVIDED

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

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
2.58

Post-Development (CFS)
2.58

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
15.85

Post-Development (CFS)
15.85

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

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

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

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.
This project meets Scenario 1 from April 5, 218 Guidance from the DEC on " Solar Panel Construction Stormwater Permitting/SWPPP Guidance". Construction does not alter the hydrology from pre-to-post development conditions according to Appendix A of GCP, for the definition of "Alter the hydrology...,". The necessary site assessment/hydrology analysis is located in Appendix R of the SWPPP Report. This project proposes an NYDEC approved Limited use Pervious Gravel Driveway for access and only proposes a small, negligible amount of impervious area for the required electrical equipment (inverter/transformer), Which includes one concrete pad totaling 270 square feet (0.001 acres).

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs
Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

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

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

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

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

Total Contributing Impervious Area for Hydrodynamic
NONE PROVIDED

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

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

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

Manufacturer of Alternative SMP
NONE PROVIDED

Name of Alternative SMP
NONE PROVIDED

Other Permits

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

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

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

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
No

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
NONE PROVIDED

MS4 SWPPP Acceptance Form Download
Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload
NONE PROVIDED
Comment
NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download
Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.

Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

> Owner_Operateor Cert_Signed.pdf - 09/06/2022 10:59 AM
> **Comment**
> NONE PROVIDED

Attachments

Date	Attachment Name	Context	User
9/6/2022 10:59 AM	Owner_Operateor Cert_Signed.pdf	Attachment	Andrew Graham
9/6/2022 9:48 AM	SWPPP_Preparer_Certfication_Form-Print.pdf	Attachment	Andrew Graham

Appendix E

NYS DEC SPDES General Permit for Stormwater Discharges from Construction Activity

(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

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

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

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

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

B. Effluent Limitations Applicable to Discharges from Construction Activities

*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

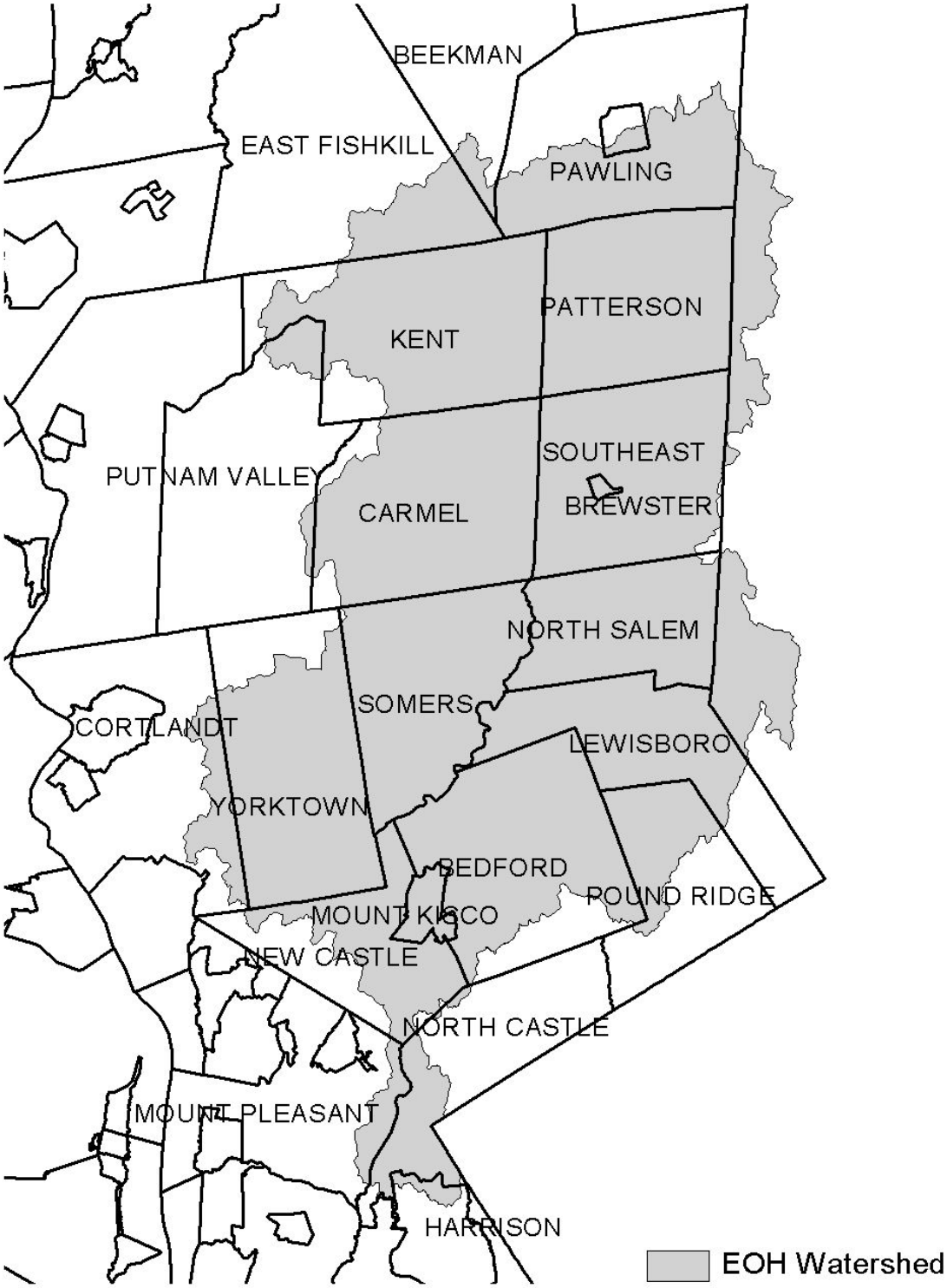


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

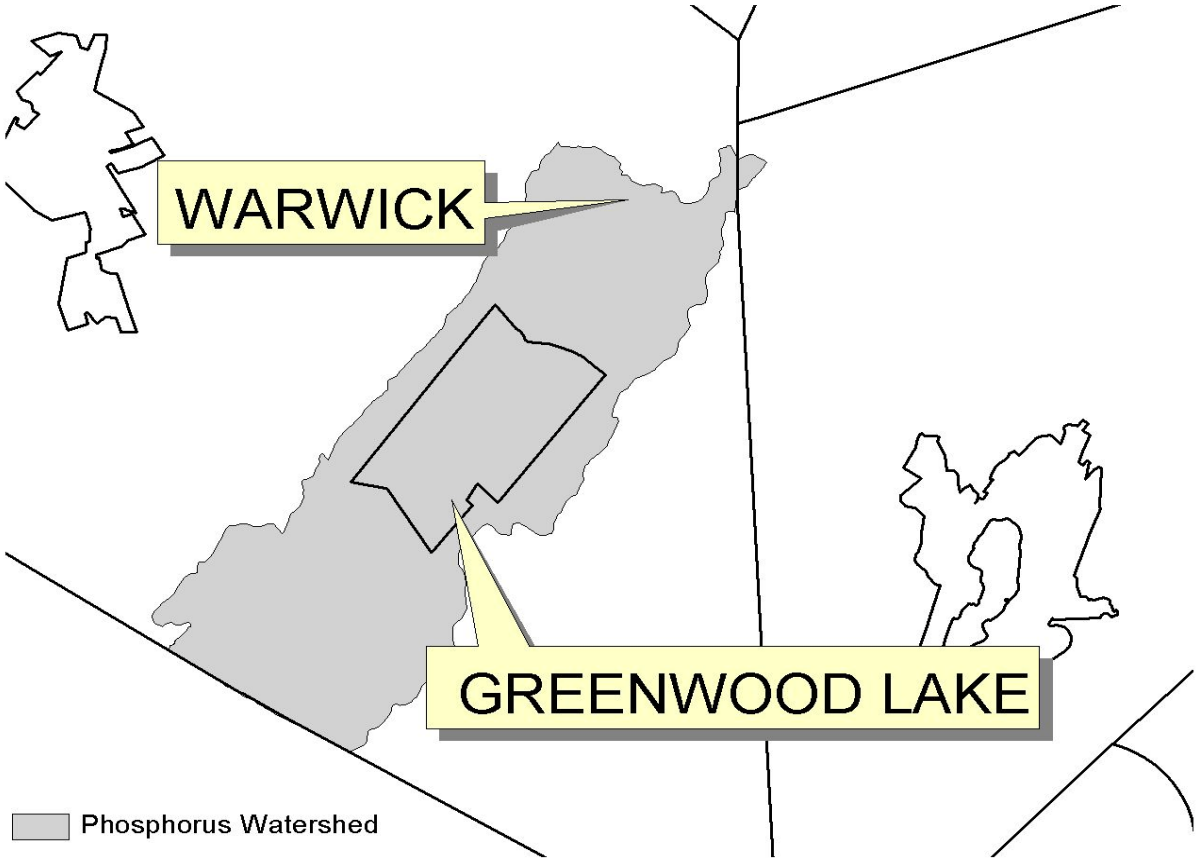


Figure 4 - Oscawana Lake Watershed

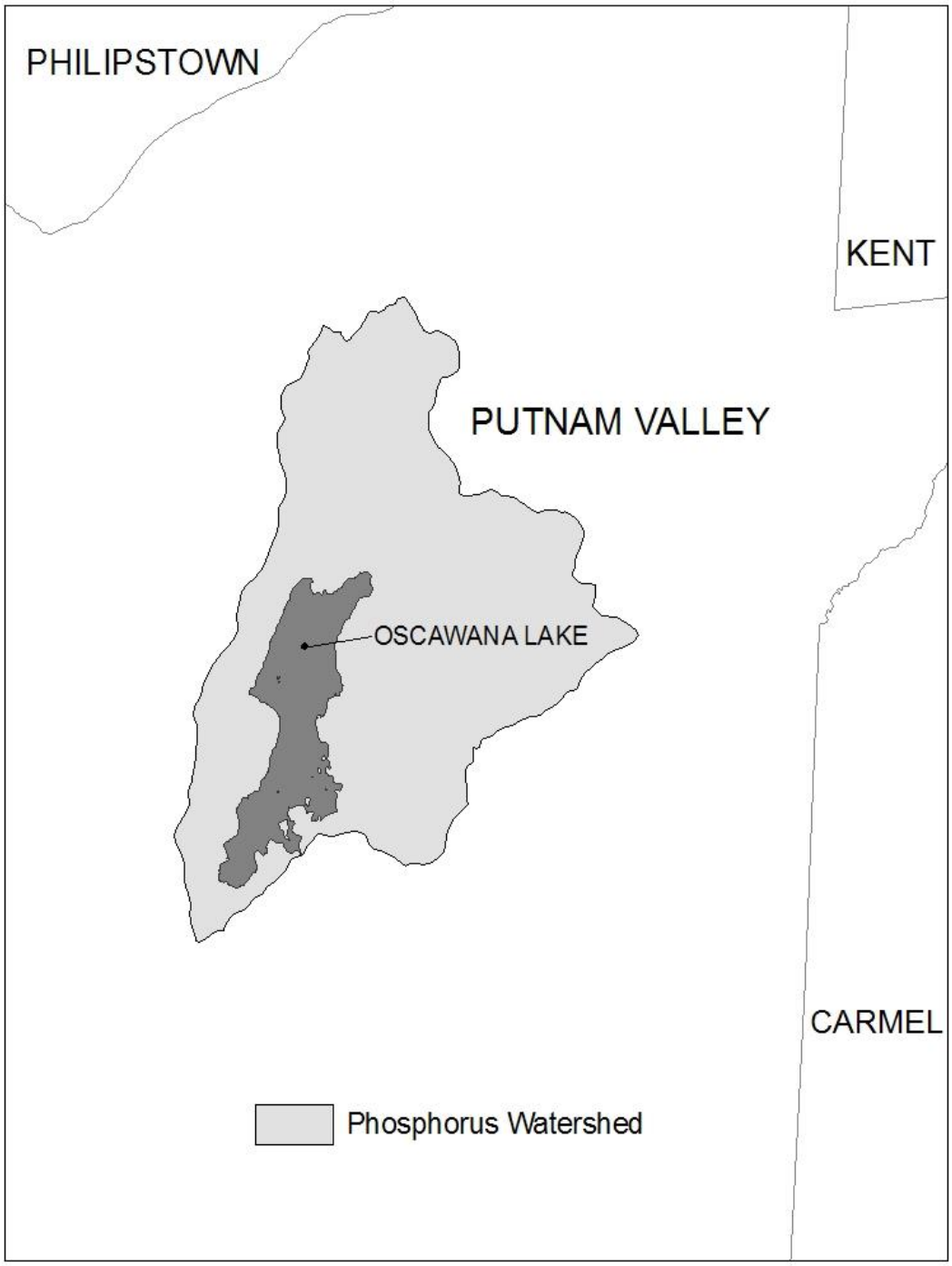
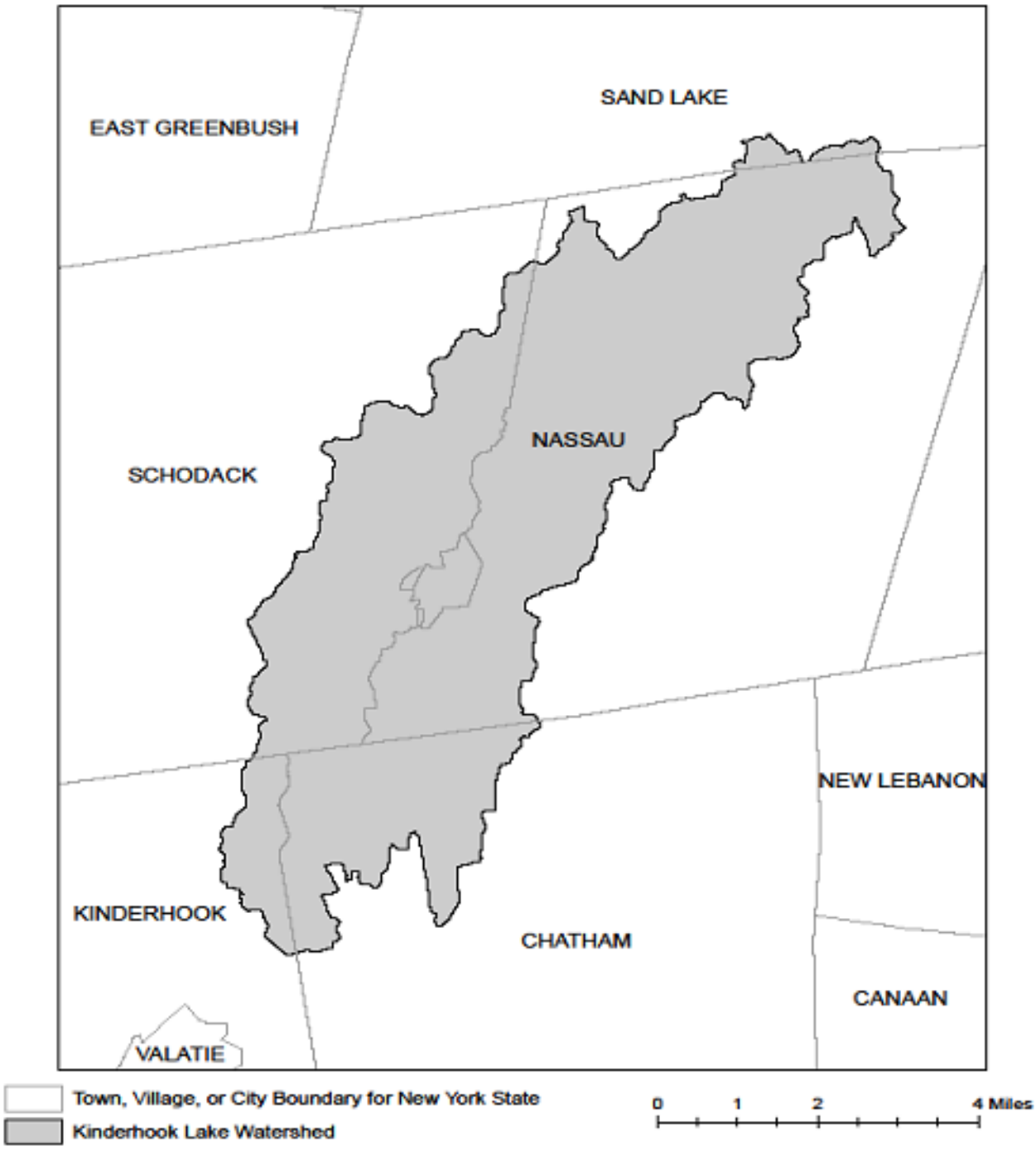


Figure 5 - Kinderhook Lake Watershed



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 E-1

Solar Panel Construction Stormwater Permitting/SWPPP Guidance

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water, Bureau of Water Permits
625 Broadway, Albany, New York 12233-3505
P: (518) 402-8111 | F: (518) 402-9029
www.dec.ny.gov

M E M O R A N D U M

TO: Regional Water Engineers

FROM: Robert Wither, Chief, South Permit Section

SUBJECT: Solar Panel Construction Stormwater Permitting/SWPPP Guidance

DATE: April 5, 2018

Issue

The Department is seeing an increase in the number of solar panel construction projects across New York State. This has resulted in an increase in the number of questions on Construction General Permit (CGP) and Stormwater Pollution Prevention Plan (SWPPP) requirements from design professionals because the current CGP (GP-0-15-002) does not include a specific reference to the SWPPP requirements for solar panel projects in Tables 1 and 2 of Appendix B. To address this issue, the Division of Water (DOW) has developed the following guidance on CGP/SWPPP requirements for the different types of solar panel projects.

Scenario 1

The DOW considers solar panel projects designed and constructed in accordance with the following criteria to be a "*Land clearing and grading for the purposes of creating vegetated open space (i.e. recreational parks, lawns, meadows, fields)*" type project as listed in Table 1, Appendix B of the CGP. Therefore, the SWPPP for this type of project will typically just need to address erosion and sediment controls.

1. Solar panels are constructed on post or rack systems and elevated off the ground surface,
2. The panels are spaced apart so that rain water 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 rain water 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 CGP),
5. The project does not include the construction of any traditional impervious areas (i.e. buildings, substation pads, gravel access roads or parking areas, etc.),
6. Construction of the solar panels will not alter the hydrology from pre-to post development conditions (see Appendix A of the CGP, for definition of "Alter the hydrology…"). Note: The design professional shall perform the necessary site assessment/hydrology analysis to make this determination.

*Refer to Maryland's "Stormwater Design Guidance- Solar Panel Installations" attached for guidance on panel installation.
**See notes below for additional criteria.

Scenario 2

If the design and construction of the solar panels meets all the criteria above, except for item 6, the project will fall under the "*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*" project type as listed in Table 2, Appendix B of the CGP. Therefore, the SWPPP for this type of project must address post-construction stormwater practices designed in accordance with the sizing criteria in Chapter 4 of the NYS Stormwater Management Design Manual, dated January 2015 (Note: Chapter 10 for projects in NYC EOH Watershed). The Water Quality Volume (WQv)/Runoff Reduction Volume (RRv) sizing criteria can be addressed by designing and constructing the solar panels in accordance with the criteria in items 1 – 4 above, however, the quantity control sizing criteria (Cpv, Qp and Qf) from Chapter 4 (or 10) of the Design Manual must still be addressed, unless one of the waiver criteria from Chapter 4 can be applied. **See notes below for additional criteria.

**** Notes**

- Item 1: For solar panel projects where the panels are mounted directly to the ground (i.e. no space below panel to allow for infiltration of runoff), the SWPPP must address post-construction stormwater management controls designed in accordance with the sizing criteria in Chapter 4 of the NYS Stormwater Management Design Manual, dated January 2015 (Note: Chapter 10 for projects in NYC EOH Watershed).

- Item 5: For solar panel projects that include the construction of traditional impervious areas (i.e. buildings, substation pads, gravel access roads or parking areas, etc.), the SWPPP must address post-construction stormwater management controls for those areas of the project. This applies to both Scenario 1 and 2 above.

cc: Carol Lamb-Lafay, BWP
Dave Gasper, BWP

Stormwater Design Guidance – Solar Panel Installations

Revisions to Maryland's stormwater management regulations in 2010 require that environmental site design (ESD) be used to the maximum extent practicable (MEP) to mimic natural hydrology, reduce runoff to reflect forested wooded conditions, and minimize the impact of land development on water resources. This applies to any residential, commercial, industrial, or institutional development where more than 5,000 square feet of land area is disturbed. Consequently, stormwater management must be addressed even when permeable features like solar panel installations exceed 5,000 square feet of land disturbance.

Depending on local soil conditions and proposed imperviousness, the amount of rainfall that stormwater requirements are based on varies from 1.0 to 2.6 inches. However, addressing stormwater management does not mean that structural or micro-scale practices must be constructed to capture and treat large volumes of runoff. Using nonstructural techniques like disconnecting impervious cover reduces runoff by promoting overland filtering and infiltration. Commonly used with smaller or narrower impervious areas like driveways or open roads, the Disconnection of Non-Rooftop Runoff technique (see pp. 5.61 to 5.65 of the **2000 Maryland Stormwater Design Manual**[1]) is a low cost alternative for treating runoff in situations like rows of solar panels.

When non-rooftop disconnection is used to treat runoff, the following factors should be considered:

- The vegetated area receiving runoff must be equal to or greater in length than the disconnected surface (e.g., width of the row of solar panels)
- Runoff must sheet flow onto and across vegetated areas to maintain the disconnection
- Disconnections should be located on gradual slopes (≤ 5%) to maintain sheetflow. Level spreaders, terraces, or berms may be used to maintain sheetflow conditions if the average slope is steeper than 5%. However, installations on slopes greater than 10% will require an engineered plan that ensures adequate treatment and the safe and non-erosive conveyance of runoff to the property line or downstream stormwater management practice.
- Disconnecting impervious surfaces works best in undisturbed soils. To minimize disturbance and compaction, construction vehicles and equipment should avoid areas used for disconnection during installation of the solar panels.
- Groundcover vegetation must be maintained in good condition in those areas receiving disconnected runoff. Typically this maintenance is no different than other lawn or landscaped areas. However, areas receiving runoff should be protected (e.g., planting shrubs or trees along the perimeter) from future compaction.

Depending on the layout and number of panels installed, the disconnection of non-rooftop runoff technique may address some or all of the stormwater management requirements for an individual project. Where the imperviousness is high or there is other infrastructure (e.g., access roads, transformers), additional runoff may need to be treated. In these situations, other ESD techniques or micro-scale practices may be needed to provide stormwater management for these features.

Example 1 – Using Non-Rooftop Disconnection Where the Average Slope ≤ 5%

Several rows of solar panels will be installed in an existing meadow. The soils within the meadow are hydrologic soil group (HSG) B and the average slope does not exceed 5%. Each row of panels is 10 feet wide and the distance between rows is 20 feet. The rows of solar panels will be installed according to Figure 1 below. In this scenario, the disconnection length is the same as the distance between rows (20 feet) and is greater than the width of each row (10 feet). Therefore, each row of panels is adequately disconnected and the runoff from 1.0 inch of rainfall is treated.

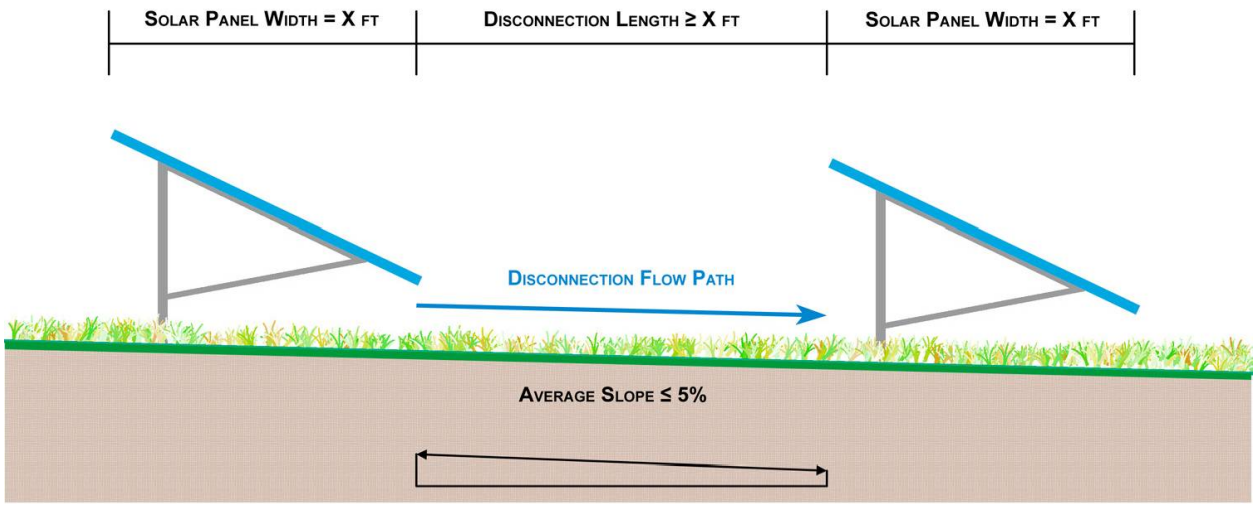


Figure 1. Typical Installation - Slope ≤ 5%

Example 2 – Using Non-Rooftop Disconnection Where the Average Slope ≥ 5% but ≤ 10%

Several rows of solar panels will be installed in an existing meadow. The soils within the meadow are hydrologic soil group (HSG) B and the average slope is greater than 5% but less than 10%. Each row of panels is 10 feet wide and the distance between rows is 20 feet. The rows of solar panels will be installed as shown in Figure 2 below. The disconnection length is the same as the distance between rows (20 feet) and is greater than the width of each row (10 feet). However, in this example, a level spreader (typically 1 to 2-foot wide and 1 foot deep) has been located at the drip edge of each row of panels to dissipate energy and maintain sheetflow.

Discussion

To meet State and local stormwater management requirements, ESD must be used to the MEP to reduce runoff to reflect forested conditions. While all reasonable options for implementing ESD must be investigated, minimally, the runoff from 1 inch of rainfall must be treated. In each of the examples above, there may be additional opportunities to implement ESD techniques or practices and reduce runoff that should be explored. However, simply disconnecting the runoff from the solar panel arrays captures and treats the runoff from 1.0 inch of rainfall. Where imperviousness is low and soil conditions less optimal (e.g., HSG C or D), this may be sufficient to completely address stormwater management requirements. In more dense applications or in sandy soils, additional stormwater management may be required.

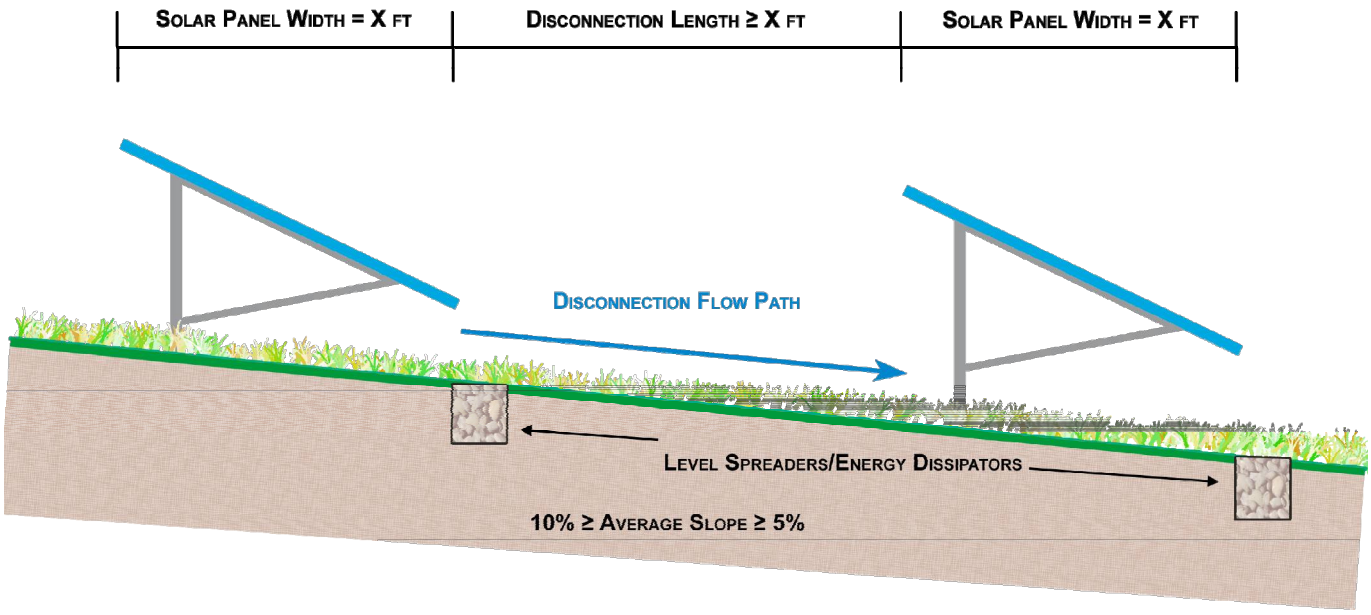


Figure 2. Typical Installation – Slope ≥ 5% but ≤ 10%

Conclusion

The primary purpose of Maryland's stormwater management program is to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources. Any land development project that exceeds 5,000 square feet of disturbance, including solar panel projects, must address stormwater management. However, for solar panels, stormwater management may be provided in a cost-effective manner by disconnecting each row of panels and directing runoff over the vegetated areas between the individual rows.

Resources

[1] 2000 Maryland Stormwater Design Manual, Volumes I and II, MDE, October 2000 (http://www.mde.state.md.us/programs/Water/StormwaterManagementProgram/MarylandStormwaterDesignManual/Pages/Programs/WaterPrograms/SedimentandStormwater/stormwater_design/index.aspx)

Appendix F

Stormwater Pollution Prevention Plan Certification

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges From Construction Activity (GP-0-20-001)

Project Site Information

Project/Site Name

Malone Solar Project

Owner/Operator Information

Owner/Operator (Company Name/Private Owner/Municipality Name)

Yellow 17 LLC

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Eric	C	Redding
First name	MI	Last Name

Signature

9/2/2021

Date

Revised: January 2020

Appendix G
Notice of Termination (NOT)

New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505
(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ___ ___ ___ ___ ___ ___

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person: | 4a.Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. □ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. □ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ___ ___ ___ ___ ___ ___
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. □ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? □ yes □ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? □ yes □ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

_____

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? □ yes □ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

□ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.

□ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).

□ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.

□ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____ (acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? □ yes □ no

(If Yes, complete section VI - "MS4 Acceptance" statement

V. Additional Information/Explanation:

(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:	
Title/Position:	
Signature:	Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:	
Title/Position:	
Signature:	Date:

(NYS DEC Notice of Termination - January 2015)

Appendix H
General Contractor's Certification

STORM WATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

CONTRACTOR'S CERTIFICATION*:*

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

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Date: _____

Received by: _____
[Name]

Appendix I
Subcontractor's Certification

STORM WATER POLLUTION PREVENTION PLAN
SUBCONTRACTOR'S CERTIFICATION

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

SUBCONTRACTOR'S CERTIFICATION:

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

Name: _____
(Print)

Signature: _____

Title: _____

Company Name: _____

Address: _____

Telephone Number: _____

Date: _____

Scope of Services: _____

Date: _____

Received by: _____
[Name]

Appendix J
Inspection Form/Report

STORMWATER POLLUTION PREVENTION PLAN

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

Inspections/reports must be completed a minimum of once every seven calendar days.

Inspection Type: ☐ **Routine (every 7 calendar days)** ☐ **Other** _____

Date: _____ **Week Ending:** _____

Weather/Storm Event Information:

Storm Start Time: _____ **Storm Duration:** _____

Approximate Amount of Rainfall (inches): _____

Based on the results of the inspection, necessary control modifications shall be implemented within seven (7) calendar days. These reports shall be kept on file as part of the Storm Water Pollution Prevention Plan for at least five (5) years from the date of completion and submission of the Final Stabilization Certification/Termination Checklist and Notice of Termination. A copy of the SWPPP shall be kept at the site at all times during construction.

Practices in need of repair:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Item not corrected from previous inspection:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Name of Inspector:_____**Title of Inspector: :**_____

Inspector's Signature: _____

Compliance Certification

I certify that, based on no incidents of non-compliance identified during the inspection, the site is in compliance with the SWPPP and the Construction General Permit.

Name of Duly Authorized Representative (Printed): _____

Signature of Duly Authorized Representative: _____

Date: _____

***Note: Only to be signed when the site is in full compliance with the SWPPP and the Construction General Permit.**

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;

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

Qualified Inspector (print name)	**Qualified Inspector Signature**	**Date of Inspection**

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

CONSTRUCTION DURATION INSPECTIONS

Maintaining Water Quality

Yes No NA
[ ] [ ] [ ] Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ] [ ] [ ] Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ] [ ] [ ] All disturbance is within the limits of the approved plans.
[ ] [ ] [ ] Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping
1. General Site Conditions
Yes No NA
[ ] [ ] [ ] Is construction site litter and debris appropriately managed?
[ ] [ ] [ ] Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ] [ ] [ ] Is construction impacting the adjacent property?
[ ] [ ] [ ] Is dust adequately controlled?

2. Temporary Stream Crossing
Yes No NA
[ ] [ ] [ ] Maximum diameter pipes necessary to span creek without dredging are installed.
[ ] [ ] [ ] Installed non-woven geotextile fabric beneath approaches.
[ ] [ ] [ ] Is fill composed of aggregate (no earth or soil)?
[ ] [ ] [ ] Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

Runoff Control Practices

1. Excavation Dewatering
Yes No NA
[ ] [ ] [ ] Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ] [ ] [ ] Clean water from upstream pool is being pumped to the downstream pool.
[ ] [ ] [ ] Sediment laden water from work area is being discharged to a silt-trapping device.
[ ] [ ] [ ] Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader
Yes No NA
[ ] [ ] [ ] Installed per plan.
[ ] [ ] [ ] Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
[ ] [ ] [ ] Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales
Yes No NA
[ ] [ ] [ ] Installed per plan with minimum side slopes 2H:1V or flatter.
[ ] [ ] [ ] Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ] [ ] [ ] Sediment-laden runoff directed to sediment trapping structure

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
1. Stabilized Construction Entrance
Yes No NA
[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence
Yes No NA
[ ] [ ] [ ] Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
[ ] [ ] [ ] Joints constructed by wrapping the two ends together for continuous support.
[ ] [ ] [ ] Fabric buried 6 inches minimum.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation is ___% of design capacity.

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)
Yes No NA
[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is 1acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts 3-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.
Sediment accumulation ___% of design capacity.

4. Temporary Sediment Trap
Yes No NA
[ ] [ ] [ ] Outlet structure is constructed per the approved plan or drawing.
[ ] [ ] [ ] Geotextile fabric has been placed beneath rock fill.
Sediment accumulation is ___% of design capacity.

5. Temporary Sediment Basin
Yes No NA
[ ] [ ] [ ] Basin and outlet structure constructed per the approved plan.
[ ] [ ] [ ] Basin side slopes are stabilized with seed/mulch.
[ ] [ ] [ ] Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
Sediment accumulation is ___% of design capacity.

Miscellaneous
1. Site Photos
Yes No NA
[ ] [ ] [ ] Site photos have been included with the report that depicts properly installed practices and identified deficiencies needing corrective action. If no, please state why below.

_____
_____
_____
_____
_____
_____

<u>Note</u>: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

Appendix K
Stabilization Form

STORM WATER POLLUTION PREVENTION PLAN

Stabilization Schedule for Major Grading Activities

PROPOSED MALONE SOLAR PROJECT – YELLOW 17 LLC – TOWN OF MALONE, NY

			Note: When these activities cease and if activities cease for more than 14 days these columns need to be completed.					
Major Site Construction Activity Areas	**Begin Date**	**Completion Date**	**Temporary Cease Date**	**Resume Date**	**Begin Date for Stabilization Temporary**	**Begin Date for Stabilization Permanent**	**Type of Stabilization (List measures used such as stone, seeding, mulch, landscaping, etc…)**	**Contractor Responsible for Work**
Temp. Gravel Const. Entrance								
Existing Pavements and Structures Removed, Utilities Removed/Relocated								
Mass Grading								
Access Drives Constructed								
Walkways Constructed								
Building Foundation								
Storm Sewers and Utility Installations								
Pervious Areas Stabilized								

Appendix L
Implementation Form

STORM WATER POLLUTION PREVENTION PLAN
IMPLEMENTATION SCHEDULE

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

***To be completed prior to initiation of construction by the contractor.**

The Contractor will be responsible for implementing all Erosion and Sediment Control and Storm Water Management control structures. The Contractor may designate these tasks to certain subcontractors as they see fit, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the Contractor.

Construction Activity	*Proposed Initiation Date	*Proposed Completion Date	Actual Initiation Date	Actual Completion Date	Contractor Responsible for Implementation
Preconstruction Meeting					
Temporary Construction Access					
Material laydown / staging area prep					
Install inlet protection					
Install perimeter protection					
Stabilize all areas					
Remove inlet protection					
Clean storm sewers					
Final inspection					

Appendix M
Modification Log/Report Form

STORM WATER POLLUTION PREVENTION PLAN
MODIFICATION LOG

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

CHANGES REQUIRED FOR STORM WATER POLLUTION PREVENTION PLAN

The SWPPP must be amended whenever there is a change in design, construction, operation, or maintenance at the construction site that has a significant effect on the discharge of pollutants to the Waters of the United States that has not been previously addressed in the SWPPP, if inspections or investigations by site staff, local, state or federal officials determine that discharges are causing water quality exceedances or the SWPPP is ineffective in eliminating or significantly minimizing pollutants in storm water discharges from the construction site, or based on the results of an inspection, or there is a release containing a Hazardous Substance or Oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24 hour period, the SWPPP must be modified to include additional or modified BMPs designed to correct identified problems. Revisions to the SWPPP must be completed within seven (7) calendar days following the inspection. Modifications that are the result of inspections shall be initialed within 24 hours and completed within 48 hours. All modifications are to be referenced on both the forms and on a Progress Drawing.

MODIFICATION LOG

MODIFICATION NUMBER*	DATE	BRIEF DESCRIPTION	PROJECT MANAGER REVIEW

***Modification Log Number to correspond with Modification Report Number**

STORM WATER POLLUTION PREVENTION PLAN
MODIFICATION REPORT

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

NUMBER _____ **DATE _____**

TO:
ADDRESS:

TELEPHONE:
FACSIMILE:
SENT VIA: ☐ **Facsimile** ☐ **Courier** ☐ **US Mail**

INSPECTOR: _____ **_____**
(Print Name) **(Inspector Signature)**

QUALIFICATIONS OF INSPECTOR: _____

CHANGES REQUIRED TO THE STORMWATER POLLUTION PREVENTION PLAN:
_____
_____
_____
_____
_____
_____
_____
_____

REASONS FOR CHANGES:
_____
_____
_____
_____
_____
_____
_____

TO BE PERFORMED BY: _____ **ON OR BEFORE: _____**

Project Manager: _____

Other Operator: _____

Appendix N
Final Stabilization Form/Termination Checklist

STORM WATER POLLUTION PREVENTION PLAN

FINAL STABILIZATION CERTIFICATION /NOTICE OF TERMINATION CHECKLIST

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

1. ☐ **All soil disturbing activities are complete and the facility no longer discharges storm water associated with Construction Activities.**

2. ☐ **Temporary Erosion and Sediment Control Measures have been removed or will be removed at the appropriate time.**

3. ☐ **All areas of the Construction Site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 80% or equivalent measures have been employed.**

CONTRACTOR'S CERTIFICATION*:*

"I certify under penalty of law that all storm water discharges associated with Construction Activity from the identified project that are authorized by the NPDES Construction General Permit have been eliminated and that all disturbed areas and soils at the construction site have achieved Final Stabilization and all temporary erosion and sediment control measures have been remove in addition all permanent stormwater structures have been constructed as described in the SWPPP"

Company Name: _____

Name (Print):_____

Signature: _____

Title: _____

Date: _____

Date: _____

Received by: _____
[Name]

Appendix O
Reportable Quantity Release Form

STORM WATER POLLUTION PREVENTION PLAN
REPORTABLE QUANTITY RELEASE FORM

CONSTRUCTION SITE –
MALONE SOLAR PROJECT – YELLOW 17 LLC
TOWN OF MALONE
FRANKLIN COUNTY, NEW YORK
STORMWATER POLLUTION PREVENTION PLAN

The discharges of Hazardous Substances or Oil in storm water discharges from construction sites must be prevented or minimized in accordance with the SWPPP. Where a release containing a Hazardous Substance or Oil in an amount equal to or in excess of a reportable quantity established under 40CFR Part 110, 40CFR Part 117 and 40CFR Part 302 occurs, the following steps must be taken:

1. **All measures must be taken to contain and abate the spill and to prevent the discharge of Hazardous Substances or Oil to storm water or off-site.**

2. **Contact the Project Manager or Operator's Engineer immediately upon knowledge of release.**

3. **If a release is equal to or in excess of a reportable quantity, the SWPPP must be modified within seven (7) calendar days of knowledge of the discharge to provide a description of the release, the circumstances leading to the release, and the date of the release. The plans must identify measures to prevent the recurrence of such releases and to respond to such releases**

Date of Spill	Material Spilled	Approximate Quantity of Spill (in gallons)	Agency(s) Notified	Date of Notification	SWPPP Revision Date

Appendix P
Project Rainfall Log

YEAR 2022

PROPOSED MALONE SOLAR PROJECT
YELLOW 17 LLC – TOWN OF MALONE, NEW YORK
STORM WATER POLLUTION PREVENTION PLAN
PROJECT RAINFALL LOG

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Day												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
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19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
PM Initials												

Note: Rainfall amounts are to be based on a 24-hour rainfall event, instead of a cumulative total of rainfall over several days.

Appendix Q
Pre-Construction Meeting Forms

STORM WATER POLLUTION PREVENTION PLAN
PRE-CONSTRUCTION MEETING AGENDA AND ATTENDANCE RECORD

PROPOSED MALONE SOLAR PROJECT
YELLOW 17 LLC – TOWN OF MALONE, NEW YORK
STORM WATER POLLUTION PREVENTION PLAN

Topic	Discussed	Further action or Information Required (Yes or No)
Overview of SPDES Permit Program		
General Discussion of SWPPP and Records Retention Requirements		
Phasing of Project		
Review of Erosion and Sediment Control Plans (to include all temporary and permanent structural and stabilization measures)		
Locating solid waste containers, portable toilets, concrete washout areas, fueling areas and tank storage area on Progress Drawing		
Posting the Progress Drawing (marked on the Erosion and Sediment Control Plans) at job trailer		
Posting requirements for the Notice of Intent (NOI), Must be posted at Project entrance and inside job trailer wall.		
Allowable non-storm water discharges and handling procedures		
Materials management to include proper material storage, etc.		
Signatory Authorization Delegation		
Contractor's Certification		
Subcontractor's Certification		
Inspection form and required inspection timeframe		
Stabilization schedule		
Implementation schedule		
Modification report and modifying plans		
Final stabilization		
Reportable quantity release procedures		
Rain gage requirement and rainfall logs		
State specific requirements		
Import/Export – Fill and Spoil Materials		
SWPPP accessibility to regulatory officials		
Inspections – assisting and cooperating with regulatory officials – inspection reports and notices of violation (any response must be coordinated through Project Manager)		

Attendance Roster **Date: _____**

Name	Company	Telephone Number	Signature

Attendance Roster (continued)

Name	Company	Telephone Number	Signature

Items which require further action or additional information: _____
_____
_____

Additional items discussed (not addressed above): _____
_____
_____
_____
_____
_____
_____

***This completed form must be included in both the Project Manager's and Construction Site SWPPP Ledger.**

Appendix R
Stormwater Management Report

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

MALONE SOLAR PROJECT

TOWN OF MALONE
STORMWATER MANAGEMENT REPORT

Town of Malone
Franklin County, New York
September 16, 2022
Revised July 19, 2024

PREPARED FOR:

Yellow 17 LLC c/o Dana Pickett
125 Wolf Road, Suite 312
Colonie, NY 12205

PREPARED BY:

Bergmann

18 Corporate Woods Blvd, 4th Floor
Albany, NY 12211

Phone: 518.862.0325

Table of Contents

Section I General Information

A. PROJECT DESCRIPTION

The Malone Solar Project is located within the Town of Malone, Franklin County, New York. The project consists of a limited use pervious gravel driveway, solar arrays with appurtenant utilities. The proposed solar project will be constructed on parcel 84.-1-73.100. The site is proposed to be developed in a single phase, with the full development covering a total of 8.6± acres, no more than 5 acres will be disturbed at any given time. The project will use a temporary driveway for site access. The construction of the limited use pervious gravel driveway will be completed following installation and connection of the solar panels.

B. SOIL CLASSIFICATION

According to the Natural Resources Conservation Service website (NRCS), there are twelve (12) mapped soil units identified on the project property. Colton and Constable gravelly and cobbly loamy sands, 3 to 8 percent is the dominant soil type and is located on approximately 24.5% of the project area. These soils have a high infiltration rate (high runoff potential) when thoroughly wet and have a high rate of water transmission.

The complete list of soils found on the project site is identified in the table below.

Table I
Soil Summary

Symbol	Soil Name	Hydrologic Soil Group
Aab	Adams and Wallace loamy sands 3 to 8 percent slopes	A
Abd	Adams and Colton soils, 8 to 25 percent, severely eroded	A
Bda	Birdsall loam, 0 to 2 percent slopes	C/D
Cab	Colton and Constable gravelly and cobbly loamy sands, 3 to 8 percent	A
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	D
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	B/D
Oba	Ondawa and Genesee fine sandy loams, high bottoms, 0 to 2 percent slopes	A
Saa	Saco and Sloan soils, 0 to 2 percent slopes	B/D

Sbb	Salmon very fine sandy loam, 2 to 6 percent slopes	B
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	C
W	Water	
Wga	Walpole loamy sand, neutral variant, over clay, 0 to 3 percent slopes	B/D

Section II Hydrology

A. METHODOLOGY

Stormwater runoff rates discharged from the site under the existing conditions provide the basis on which to compare the impacts of the proposed site improvements. The areas draining to each analysis point are delineated using topographic survey maps and grading plans. HydroCAD 10.0 by HydroCAD Software Solutions LLC was used to model the existing and proposed condition.

The parameters required to calculate stormwater runoff are area, curve number, and time of concentration. Each drainage area is evaluated using the guidelines described in USDA Soil Conservation Service's TR-55 to determine the curve number and time of concentration.

The runoff curve number (CN) is based on a weighted average of ground cover and soil type. The underlying soil types are described in county soil maps. Site and grading plans and survey maps outline existing and proposed ground cover. CN values for specific locations are determined from the tables presented in TR-55. The CN value for the limited use gravel pavement was calculated manually using the SCS runoff curve number equation provided in TR-55.

Time of concentration (Tc) represents the amount of time it takes for runoff to travel from the hydraulically most distant point of the watershed to the point of analysis. Surface roughness, slope, channel shape and flow patterns are the factors that affect the time of concentration. Stormwater runoff flows through the drainage area as sheet flow, shallow concentrated flow, open channel flow, or concentrated flow (such as in storm sewers). The sum of the travel times over the various surfaces within the assumed flow path for a specific drainage area determines that area's time of concentration. The figures and formulas in TR-55 are employed to compute travel times for sheet flow and shallow concentrated flow.

B. EXISTING CONDITIONS

Though the project area has been identified as 10± acres, the drainage area analyzed has been calculated to be 53± acres. This drainage area is further categorized into three sub areas with site runoff conveyed via sheet flow and shallow concentrated flow. The parcel to be developed consists of grass, wooded areas, a pond, Little Salmon River, a dirt driveway and a house.

Table II
Existing Conditions Summary

Drainage Area	Description	Size (ac)	Composite Cn	Tc (min)
E-1	This area consists of woods, grass, a portion of a dirt driveway and a house. This area drains to the south west via sheet flow, shallow concentrated flow designated as Design point #1 (DP-1).	14.685	30	70.4
E-2	This area consists of woods and grass. This area drains to the south via sheet flow, shallow concentrated flow and ultimately discharges to Brand road designated as Design point #2 (DP-2).	8.987	30	40.5
E-3	This area consists of woods, a pond, wetlands, a dirt driveway and grass. This area drains to the east via sheet flow, shallow concentrated flow and ultimately discharges to Little Salmon River designated as Design point #3 (DP-3).	29.306	57	79.3

C. PROPOSED CONDITIONS

The proposed drainage area comprises a total of 53± acres. In the proposed (post-development) condition, the site will be comprised of three sub areas that represents all of the site runoff. The three sub areas are labeled P-1, P-2 and P-3. The runoff from the sub areas will drain via sheet flow and shallow concentrated flow to their designated design points as it does in the pre-development conditions.

Table III
Proposed Conditions Summary

Drainage Area	Description	Size (ac)	Composite Cn	Tc (min)
P-1	This area consists of woods, grass, a portion of a dirt driveway, a house, solar panels, driveway, and utility pad. This area drains to the southwest via sheet flow, shallow concentrated flow designated and ultimately discharges to Bare Hill Road as Design point #1 (DP-1).	14.685	30	36.3
P-2	This area consists of woods, grass, and solar panels. This area drains to the south via sheet	8.987	30	22.5

	flow, shallow concentrated flow and ultimately discharges to Brand Road designated as Design point #2 (DP-2).			
P-3	This area consists of woods, a pond, wetlands, a dirt driveway and grass. This area drains to the east via sheet flow, shallow concentrated flow and ultimately discharges to Little Salmon River designated as Design point #3 (DP-3).	29.306	57	79.3

Section III Stormwater Management & SPDES Phase II Requirements

State Pollutant Discharge Elimination System (SPDES)

Since the subject site will have land disturbance of more than 1-acre a State Pollutant Discharge Elimination System (SPDES) permit will be completed as part of the project. A Storm Water Pollution Prevention Plan (SWPPP) will be developed in accordance with the EPA Phase II regulations. The SWPPP will be for the most part modeled on the New York State DEC Guidelines and will meet the following criteria as the principle objectives contained in an approved SWPPP.

1) Reduction or elimination of erosion and sediment loading to water-bodies during construction activities.
2) Control the impact of storm water runoff on the water quality of the receiving waters.
3) Control the increase volume and peak runoff rate of runoff during and after construction.
4) Maintenance of storm water controls during and after completion of construction.

The aforementioned objectives will be accomplished by incorporating the several of the design criteria outlined within the Technical Guidelines provided by New York State Department of Environmental Conservation, Stormwater Management Design Manual and summarized below.

A. WATER QUALITY VOLUME

The New York State Department of Environmental Conservation, Stormwater Management Design Manual was used to determine the water quality criteria. Specifically, the unified storm water sizing criteria was followed for water quality to meet the State of New York pollutant goals. The water quantity volume is intended to improve water quality by capturing and treating 90% of the average annual storm water runoff volume.

The following equation is given within the design manual for calculating the water quality storage volume.

$$WQ_v = \frac{(P)\,(R_v)(A)}{12}$$

where:

WQ_v = water quality volume (acre-ft)
P = 90% Rainfall Event Number (1" was used per ICW Guidelines)
R_v = 0.05 + 0.009 (I) , where I is percent of impervious cover

A = site area (acres)

The proposed project is using a limited use pervious gravel section for the design of the gravel driveway. This driveway section is considered a pervious surface. Per New York State Department of Environmental Conservation 2018 Solar guidelines, proposed solar panels placed on existing slopes over 10% is considered impervious. The surface area of all applicable panels has been delineated and used in the water quality equation seen above. The impervious area associated with the equipment pads is negligible and therefore, the total water quality storage volume required is 1200 ft^3, corresponding with 0.35 acres of proposed panels on slopes over 10%. This water quality volume will be treated by the two level spreaders on the east side of the site with a combined void volume of 1331 ft^3. Note: an allowable void space of 40% of the total trench volume was considered to account for the storage volume of the WQv. All calculations are shown in Appendix R-4: Water Quality Volume Calculations.

B. CHANNEL PROTECTION VOLUME

The proposed project is using a limited use pervious gravel section for the design of the gravel driveway. This driveway section is considered a pervious surface. The proposed design will not alter the hydrology from pre to post-development conditions and therefore, the need to provide the total channel protection storage volume is not required. In the event that channel protection is required, the New York State Department of Environmental Conservation, Stormwater Management Design Manual will be used to determine the water quantity criteria. Specifically, mitigating the 10-year and 100-year post-development runoff rates to the predevelopment runoff rates and providing the 24-hour extended detention for the 1-year storm event.

C. RUNOFF REDUCTION VOLUME

The Runoff Reduction Volume (RRv) is not required because the project will not alter the hydrology from pre to post-development conditions. Gravel level spreaders are also proposed to provide WQv treatment for the proposed solar panels over 10%. Gravel level spreaders by nature will capture runoff and promote infiltration into the subsurface, thus providing inherit runoff reduction.

D. OVERBANK FLOOD

Overbank Flood protection is provided by controlling the peak discharge from the 10-year storm to 10-year predevelopment rates. This requirement is being satisfied as the proposed development peak flow rate from the 10-year storm lower than the pre-development peak flow rate.

E. EXTREME STORM

Extreme Storm protection is provided by controlling the peak discharge from the 100-year storm to 100-year predevelopment rates. This requirement is being satisfied as the proposed development peak flow rate from the 100-year storm is lower than the pre-development peak flow rate.

Section IV Summary of Findings

A. Summary of Results

The following tables shows a summary of comparison pre-development and post-development flow rates. The values account for the full development of the site in all phases.

Table IV – Existing and Proposed Peak Discharge for the 1-year Storm (cfs)

Existing Drainage Area Proposed Drainage Area	1-year Design Storm Discharge	
	Existing	Proposed
E-1 P-1	0	0
E-2 P-2	0	0
E-3 P-3	0.7	0.7

Table V – Existing and Proposed Peak Discharge for the 10-year Storm (cfs)

Existing Drainage Area Proposed Drainage Area	10-year Design Storm Discharge	
	Existing	Proposed
E-1 P-1	0	0
E-2 P-2	0	0
E-3 P-3	2.58	2.58

Table VI – Existing and Proposed Peak Discharge for the 100-year Storm (cfs)

Existing Drainage Area Proposed Drainage Area	100-year Design Storm Discharge	
	Existing	Proposed
E-1 P-1	0.05	0.05
E-2 P-2	0.03	0.03
E-3 P-3	15.77	15.77

As depicted in the above tables, the peak discharge from the site for each of the design storms will remain the same after this project is constructed and the stormwater management plan is implemented. Therefore, the proposed project does not alter the hydrology of the site from pre to post-development conditions.

B. Conclusion

Based on the calculations attached in the appendices of this report, the proposed stormwater runoff will remain the same for all of the design storms under proposed conditions and the required water quality treatment for the proposed solar panels on existing slopes over 10% has been provided via gravel level spreaders.

Appendix R-1

Existing Conditions Drainage Map

And HydroCAD Report

ARCH D 24x36

M:\Cipriani Energy Group\014859.09 Cipriani Energy - Malone Solar Project\3.0 Design\3.4 Calcs\DR.EX.dwg

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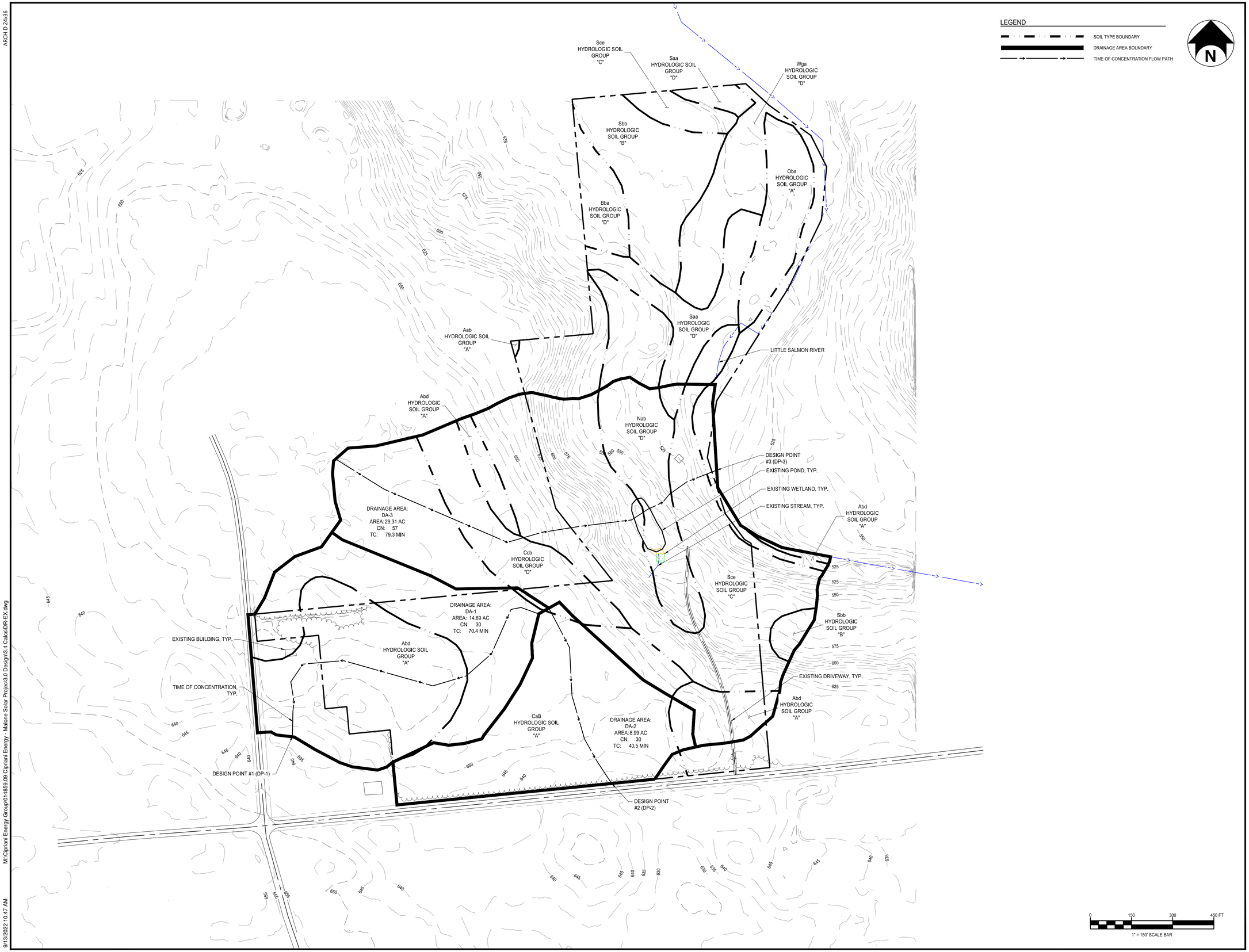

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ARCHITECTS ENGINEERS PLANNERS

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION

NOT FOR CONSTRUCTION

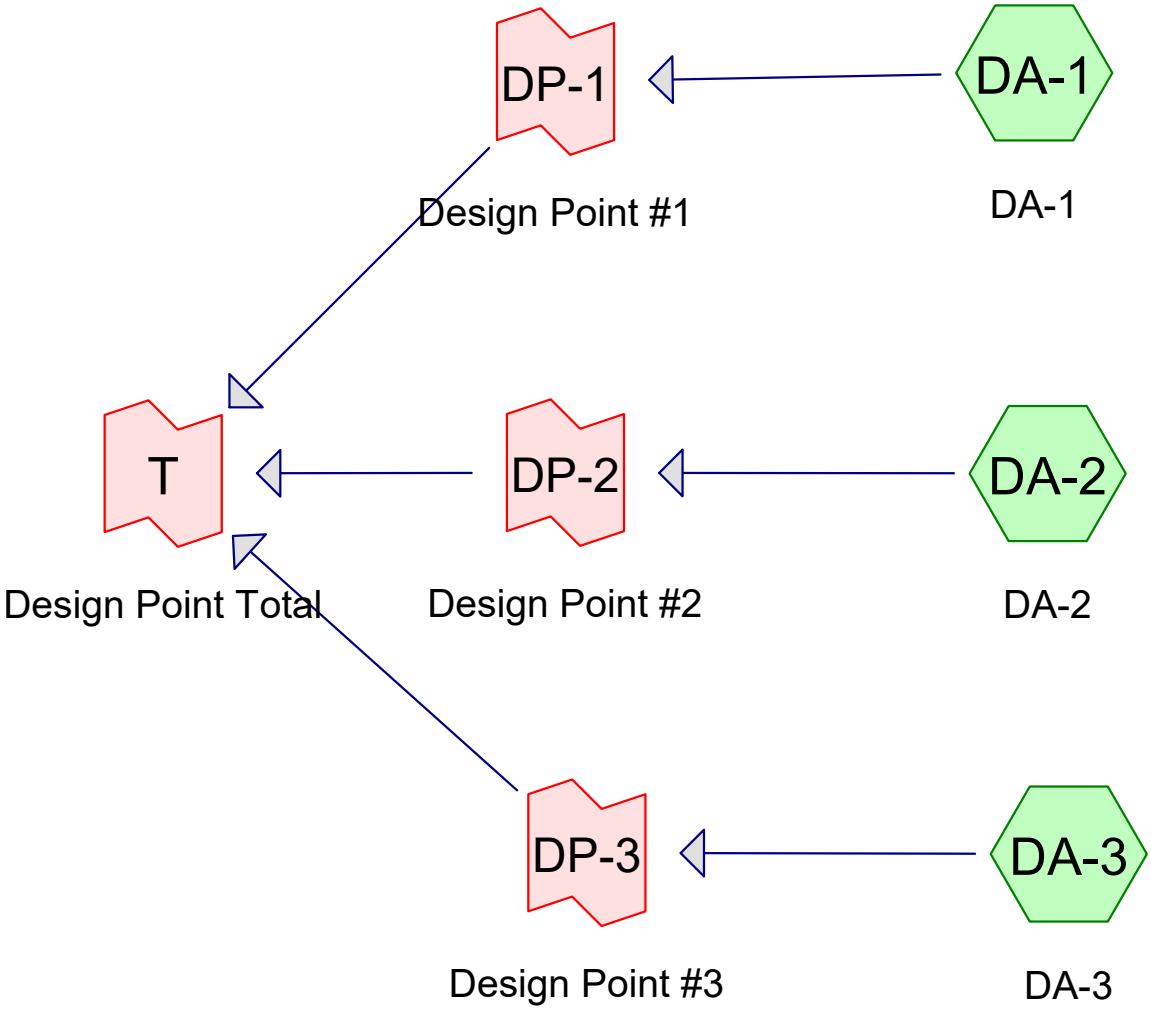
Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	WDP
Date Issued	Project Number
08/14/2022	14859.09

Sheet Name

EXISTING CONDITIONS DRAINAGE MAP

Drawing Number

DR-EX



Subcat Reach Pond Link

Routing Diagram for DR-EX
Prepared by VRTHOR2012, Printed 9/13/2022

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NRCC 24-hr	A	Default	24.00	1	1.94	2
2	10-Year	NRCC 24-hr	A	Default	24.00	1	3.21	2
3	100-Year	NRCC 24-hr	A	Default	24.00	1	5.49	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.490	30	Meadow, non-grazed, HSG A (DA-1, DA-2)
0.030	98	Paved parking, HSG C (DA-1, DA-3)
1.150	98	Water Surface, HSG C (DA-3)
31.970	30	Woods, Good, HSG A (DA-1, DA-2, DA-3)
0.440	55	Woods, Good, HSG B (DA-3)
13.280	70	Woods, Good, HSG C (DA-3)
3.600	77	Woods, Good, HSG D (DA-3)
52.960	**45**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
34.460	HSG A	DA-1, DA-2, DA-3
0.440	HSG B	DA-3
14.460	HSG C	DA-1, DA-3
3.600	HSG D	DA-3
0.000	Other	
52.960		**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
2.490	0.000	0.000	0.000	0.000	2.490	Meadow, non-grazed	DA-1, DA-2
0.000	0.000	0.030	0.000	0.000	0.030	Paved parking	DA-1, DA-3
0.000	0.000	1.150	0.000	0.000	1.150	Water Surface	DA-3
31.970	0.440	13.280	3.600	0.000	49.290	Woods, Good	DA-1, DA-2, DA-3
34.460	**0.440**	**14.460**	**3.600**	**0.000**	**52.960**	**TOTAL AREA**	

Time span=1.00-42.00 hrs, dt=0.05 hrs, 821 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=14.680 ac 0.14% Impervious Runoff Depth=0.00"
Flow Length=1,391' Tc=70.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment DA-2: DA-2 Runoff Area=8.980 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=695' Tc=40.5 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: DA-3 Runoff Area=29.300 ac 3.96% Impervious Runoff Depth=0.02"
Flow Length=1,550' Tc=79.3 min CN=57 Runoff=0.07 cfs 0.057 af

Link DP-1: Design Point #1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-2: Design Point #2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-3: Design Point #3 Inflow=0.07 cfs 0.057 af
Primary=0.07 cfs 0.057 af

Link T: Design Point Total Inflow=0.07 cfs 0.057 af
Primary=0.07 cfs 0.057 af

Total Runoff Area = 52.960 ac Runoff Volume = 0.057 af Average Runoff Depth = 0.01"
97.77% Pervious = 51.780 ac 2.23% Impervious = 1.180 ac

Summary for Subcatchment DA-1: DA-1

[45] Hint: Runoff=Zero

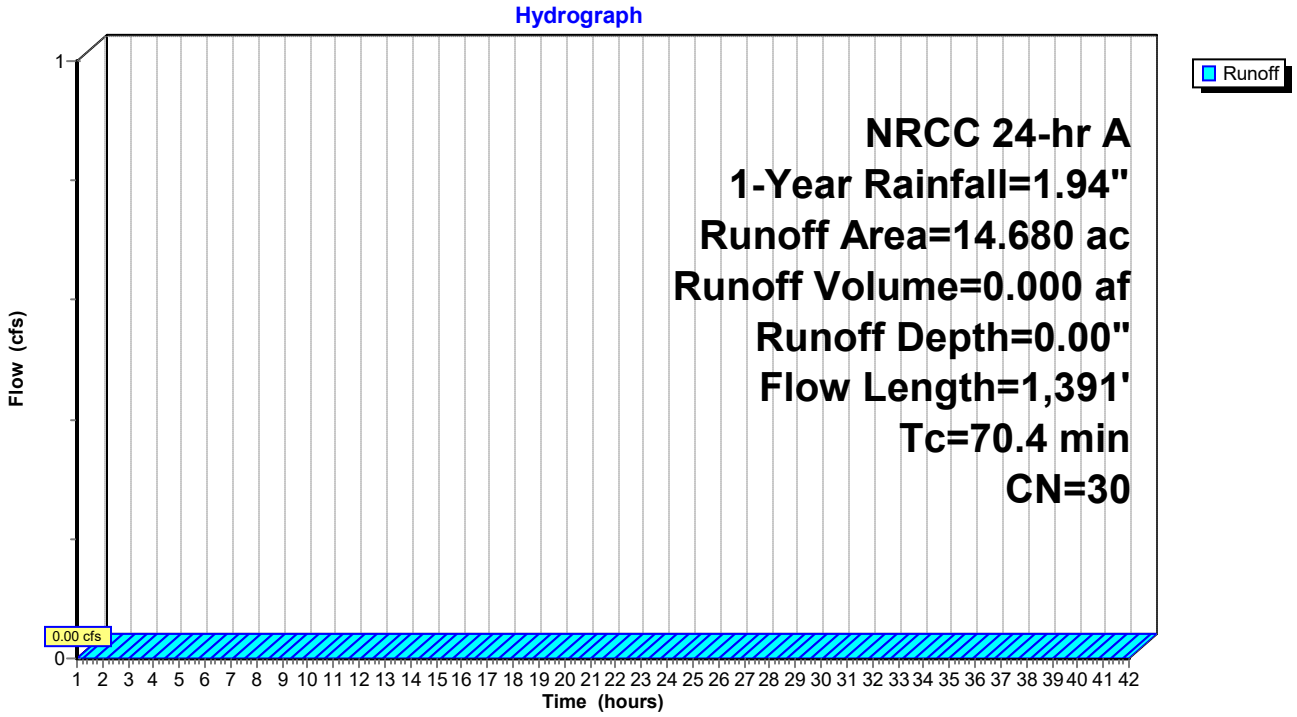
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-1 : Design Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.94"

Area (ac)	CN	Description
2.100	30	Meadow, non-grazed, HSG A
12.560	30	Woods, Good, HSG A
0.020	98	Paved parking, HSG C
14.680	30	Weighted Average
14.660		99.86% Pervious Area
0.020		0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.0	100	0.0210	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.5	177	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	122	0.0310	0.88		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	128	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.3	338	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.8	148	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	43	0.0510	1.58		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	78	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	58	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	0.1520	1.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	91	0.0125	0.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
70.4	1,391	Total			

Subcatchment DA-1: DA-1



Hydrograph for Subcatchment DA-1: DA-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.02	**0.00**	**0.00**
1.50	0.03	0.00	0.00
2.00	0.03	0.00	0.00
2.50	0.04	0.00	0.00
3.00	0.05	0.00	0.00
3.50	0.06	0.00	0.00
4.00	0.08	0.00	0.00
4.50	0.09	0.00	0.00
5.00	0.10	0.00	0.00
5.50	0.11	0.00	0.00
6.00	0.12	0.00	0.00
6.50	0.14	0.00	0.00
7.00	0.15	0.00	0.00
7.50	0.17	0.00	0.00
8.00	0.19	0.00	0.00
8.50	0.21	0.00	0.00
9.00	0.24	0.00	0.00
9.50	0.27	0.00	0.00
10.00	0.30	0.00	0.00
10.50	0.35	0.00	0.00
11.00	0.41	0.00	0.00
11.50	0.52	0.00	0.00
12.00	0.91	0.00	0.00
12.50	1.42	0.00	0.00
13.00	1.53	0.00	0.00
13.50	1.59	0.00	0.00
14.00	1.64	0.00	0.00
14.50	1.67	0.00	0.00
15.00	1.70	0.00	0.00
15.50	1.73	0.00	0.00
16.00	1.75	0.00	0.00
16.50	1.77	0.00	0.00
17.00	1.79	0.00	0.00
17.50	1.80	0.00	0.00
18.00	1.82	0.00	0.00
18.50	1.83	0.00	0.00
19.00	1.84	0.00	0.00
19.50	1.85	0.00	0.00
20.00	1.86	0.00	0.00
20.50	1.88	0.00	0.00
21.00	1.89	0.00	0.00
21.50	1.90	0.00	0.00
22.00	1.91	0.00	0.00
22.50	1.91	0.00	0.00
23.00	1.92	0.00	0.00
23.50	1.93	0.00	0.00
24.00	**1.94**	0.00	0.00
24.50	1.94	0.00	0.00
25.00	1.94	0.00	0.00
25.50	1.94	0.00	0.00
26.00	1.94	0.00	0.00
26.50	1.94	0.00	0.00
27.00	1.94	0.00	0.00
27.50	1.94	0.00	0.00
28.00	1.94	0.00	0.00
28.50	1.94	0.00	0.00
29.00	1.94	0.00	0.00
29.50	1.94	0.00	0.00
30.00	1.94	0.00	0.00
30.50	1.94	0.00	0.00
31.00	1.94	0.00	0.00
31.50	1.94	0.00	0.00
32.00	1.94	0.00	0.00
32.50	1.94	0.00	0.00
33.00	1.94	0.00	0.00
33.50	1.94	0.00	0.00
34.00	1.94	0.00	0.00
34.50	1.94	0.00	0.00
35.00	1.94	0.00	0.00
35.50	1.94	0.00	0.00
36.00	1.94	0.00	0.00
36.50	1.94	0.00	0.00
37.00	1.94	0.00	0.00
37.50	1.94	0.00	0.00
38.00	1.94	0.00	0.00
38.50	1.94	0.00	0.00
39.00	1.94	0.00	0.00
39.50	1.94	0.00	0.00
40.00	1.94	0.00	0.00
40.50	1.94	0.00	0.00
41.00	1.94	0.00	0.00
41.50	1.94	0.00	0.00
42.00	1.94	0.00	0.00

Summary for Subcatchment DA-2: DA-2

[45] Hint: Runoff=Zero

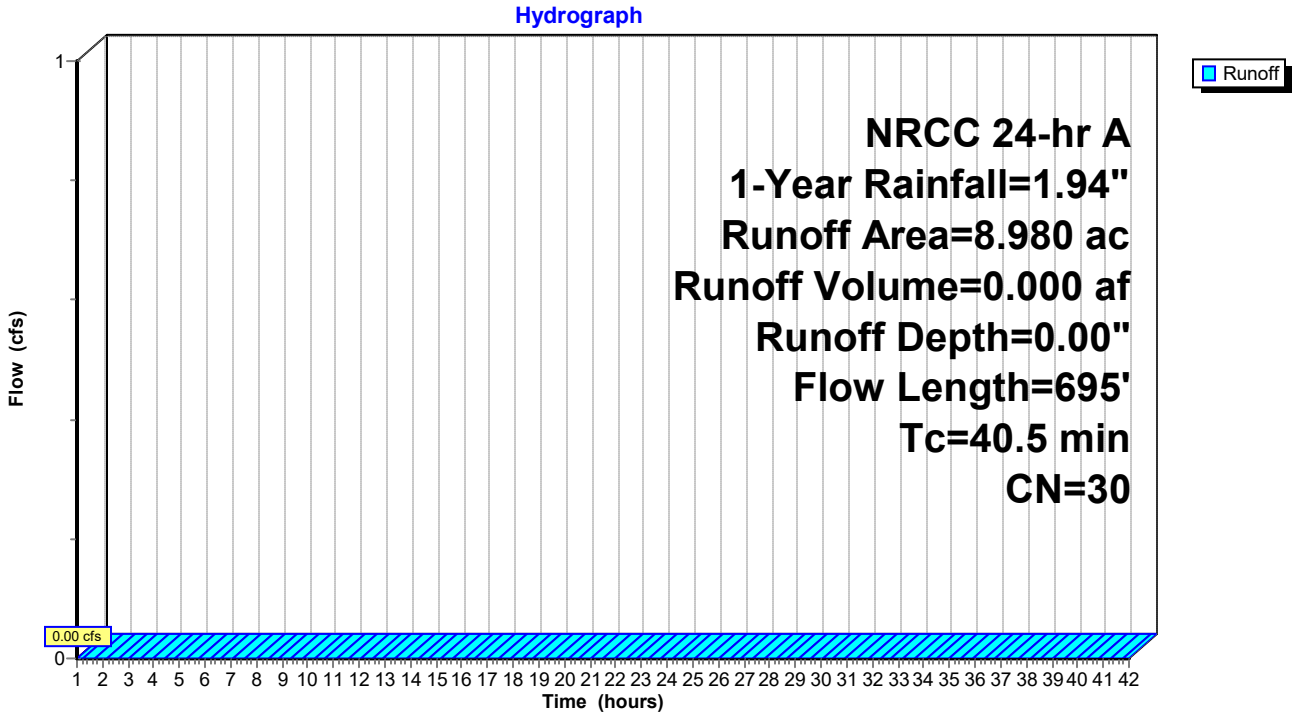
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-2 : Design Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.94"

Area (ac)	CN	Description
0.390	30	Meadow, non-grazed, HSG A
8.590	30	Woods, Good, HSG A
8.980	30	Weighted Average
8.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.5	100	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
1.1	62	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	176	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	164	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	174	0.0680	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	19	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
40.5	695	Total			

Subcatchment DA-2: DA-2



Hydrograph for Subcatchment DA-2: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.02	**0.00**	**0.00**
1.50	0.03	0.00	0.00
2.00	0.03	0.00	0.00
2.50	0.04	0.00	0.00
3.00	0.05	0.00	0.00
3.50	0.06	0.00	0.00
4.00	0.08	0.00	0.00
4.50	0.09	0.00	0.00
5.00	0.10	0.00	0.00
5.50	0.11	0.00	0.00
6.00	0.12	0.00	0.00
6.50	0.14	0.00	0.00
7.00	0.15	0.00	0.00
7.50	0.17	0.00	0.00
8.00	0.19	0.00	0.00
8.50	0.21	0.00	0.00
9.00	0.24	0.00	0.00
9.50	0.27	0.00	0.00
10.00	0.30	0.00	0.00
10.50	0.35	0.00	0.00
11.00	0.41	0.00	0.00
11.50	0.52	0.00	0.00
12.00	0.91	0.00	0.00
12.50	1.42	0.00	0.00
13.00	1.53	0.00	0.00
13.50	1.59	0.00	0.00
14.00	1.64	0.00	0.00
14.50	1.67	0.00	0.00
15.00	1.70	0.00	0.00
15.50	1.73	0.00	0.00
16.00	1.75	0.00	0.00
16.50	1.77	0.00	0.00
17.00	1.79	0.00	0.00
17.50	1.80	0.00	0.00
18.00	1.82	0.00	0.00
18.50	1.83	0.00	0.00
19.00	1.84	0.00	0.00
19.50	1.85	0.00	0.00
20.00	1.86	0.00	0.00
20.50	1.88	0.00	0.00
21.00	1.89	0.00	0.00
21.50	1.90	0.00	0.00
22.00	1.91	0.00	0.00
22.50	1.91	0.00	0.00
23.00	1.92	0.00	0.00
23.50	1.93	0.00	0.00
24.00	**1.94**	0.00	0.00
24.50	1.94	0.00	0.00
25.00	1.94	0.00	0.00
25.50	1.94	0.00	0.00
26.00	1.94	0.00	0.00
26.50	1.94	0.00	0.00
27.00	1.94	0.00	0.00
27.50	1.94	0.00	0.00
28.00	1.94	0.00	0.00
28.50	1.94	0.00	0.00
29.00	1.94	0.00	0.00
29.50	1.94	0.00	0.00
30.00	1.94	0.00	0.00
30.50	1.94	0.00	0.00
31.00	1.94	0.00	0.00
31.50	1.94	0.00	0.00
32.00	1.94	0.00	0.00
32.50	1.94	0.00	0.00
33.00	1.94	0.00	0.00
33.50	1.94	0.00	0.00
34.00	1.94	0.00	0.00
34.50	1.94	0.00	0.00
35.00	1.94	0.00	0.00
35.50	1.94	0.00	0.00
36.00	1.94	0.00	0.00
36.50	1.94	0.00	0.00
37.00	1.94	0.00	0.00
37.50	1.94	0.00	0.00
38.00	1.94	0.00	0.00
38.50	1.94	0.00	0.00
39.00	1.94	0.00	0.00
39.50	1.94	0.00	0.00
40.00	1.94	0.00	0.00
40.50	1.94	0.00	0.00
41.00	1.94	0.00	0.00
41.50	1.94	0.00	0.00
42.00	1.94	0.00	0.00

Summary for Subcatchment DA-3: DA-3

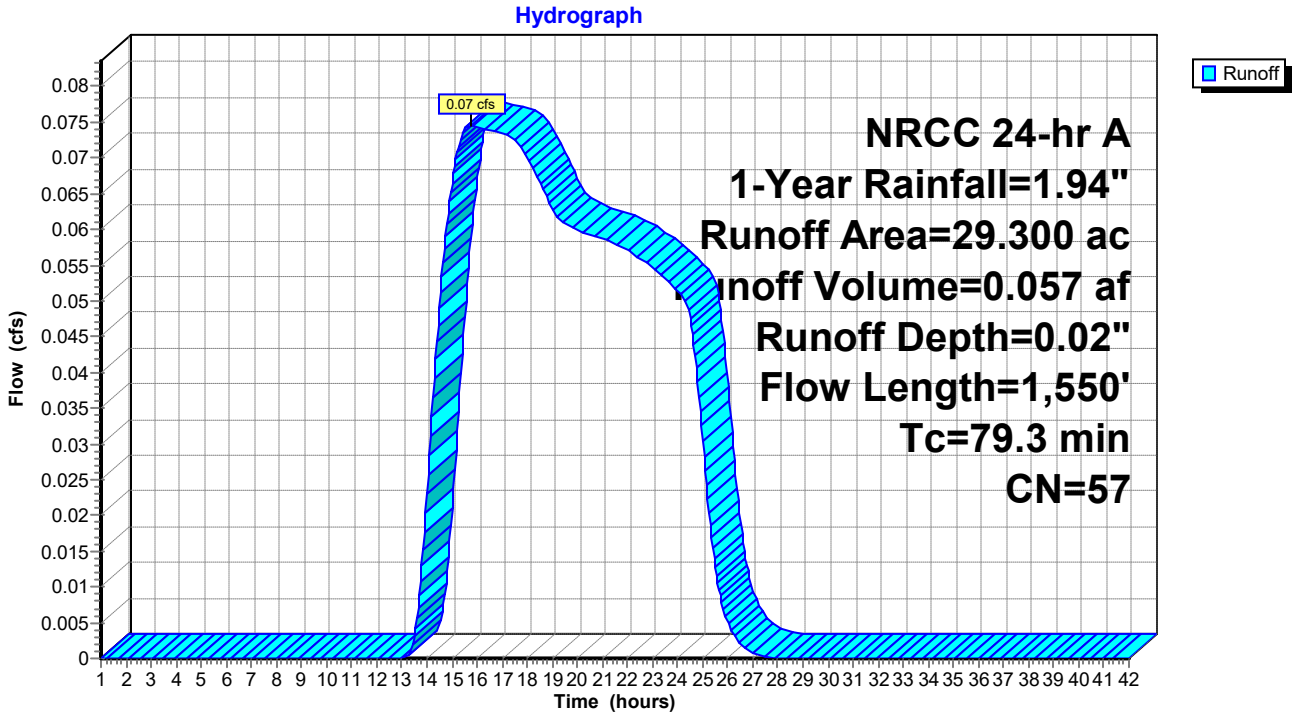
Runoff = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af, Depth= 0.02"
Routed to Link DP-3 : Design Point #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.94"

Area (ac)	CN	Description
10.820	30	Woods, Good, HSG A
0.440	55	Woods, Good, HSG B
13.280	70	Woods, Good, HSG C
3.600	77	Woods, Good, HSG D
1.150	98	Water Surface, HSG C
0.010	98	Paved parking, HSG C
29.300	57	Weighted Average
28.140		96.04% Pervious Area
1.160		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.8	100	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.7	208	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	490	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.3	470	0.2220	2.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	91	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	191	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
79.3	1,550	Total			

Subcatchment DA-3: DA-3



Hydrograph for Subcatchment DA-3: DA-3

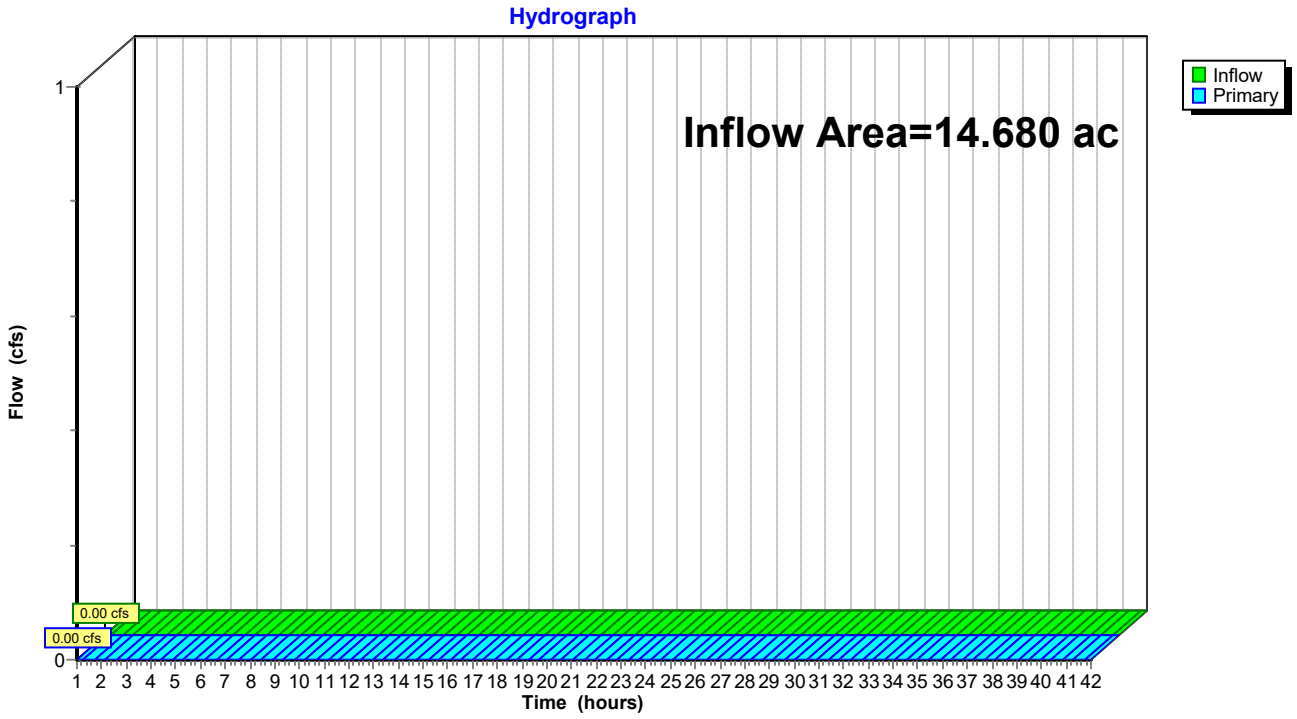
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.02	0.00	0.00
1.50	0.03	0.00	0.00
2.00	0.03	0.00	0.00
2.50	0.04	0.00	0.00
3.00	0.05	0.00	0.00
3.50	0.06	0.00	0.00
4.00	0.08	0.00	0.00
4.50	0.09	0.00	0.00
5.00	0.10	0.00	0.00
5.50	0.11	0.00	0.00
6.00	0.12	0.00	0.00
6.50	0.14	0.00	0.00
7.00	0.15	0.00	0.00
7.50	0.17	0.00	0.00
8.00	0.19	0.00	0.00
8.50	0.21	0.00	0.00
9.00	0.24	0.00	0.00
9.50	0.27	0.00	0.00
10.00	0.30	0.00	0.00
10.50	0.35	0.00	0.00
11.00	0.41	0.00	0.00
11.50	0.52	0.00	0.00
12.00	0.91	0.00	0.00
12.50	1.42	0.00	0.00
13.00	1.53	0.00	0.00
13.50	1.59	0.00	0.00
14.00	1.64	0.00	0.02
14.50	1.67	0.00	0.05
15.00	1.70	0.00	0.07
15.50	1.73	0.01	**0.07**
16.00	1.75	0.01	**0.07**
16.50	1.77	0.01	0.07
17.00	1.79	0.01	0.07
17.50	1.80	0.01	0.07
18.00	1.82	0.01	0.07
18.50	1.83	0.01	0.07
19.00	1.84	0.01	0.06
19.50	1.85	0.02	0.06
20.00	1.86	0.02	0.06
20.50	1.88	0.02	0.06
21.00	1.89	0.02	0.06
21.50	1.90	0.02	0.06
22.00	1.91	0.02	0.06
22.50	1.91	0.02	0.06
23.00	1.92	0.02	0.05
23.50	1.93	0.02	0.05
24.00	**1.94**	**0.02**	0.05
24.50	1.94	0.02	0.05
25.00	1.94	0.02	0.03
25.50	1.94	0.02	0.01
26.00	1.94	0.02	0.01
26.50	1.94	0.02	0.00
27.00	1.94	0.02	0.00
27.50	1.94	0.02	0.00
28.00	1.94	0.02	0.00
28.50	1.94	0.02	0.00
29.00	1.94	0.02	0.00
29.50	1.94	0.02	0.00
30.00	1.94	0.02	0.00
30.50	1.94	0.02	0.00
31.00	1.94	0.02	0.00
31.50	1.94	0.02	0.00
32.00	1.94	0.02	0.00
32.50	1.94	0.02	0.00
33.00	1.94	0.02	0.00
33.50	1.94	0.02	0.00
34.00	1.94	0.02	0.00
34.50	1.94	0.02	0.00
35.00	1.94	0.02	0.00
35.50	1.94	0.02	0.00
36.00	1.94	0.02	0.00
36.50	1.94	0.02	0.00
37.00	1.94	0.02	0.00
37.50	1.94	0.02	0.00
38.00	1.94	0.02	0.00
38.50	1.94	0.02	0.00
39.00	1.94	0.02	0.00
39.50	1.94	0.02	0.00
40.00	1.94	0.02	0.00
40.50	1.94	0.02	0.00
41.00	1.94	0.02	0.00
41.50	1.94	0.02	0.00
42.00	1.94	0.02	0.00

Summary for Link DP-1: Design Point #1

Inflow Area = 14.680 ac, 0.14% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Hydrograph for Link DP-1: Design Point #1

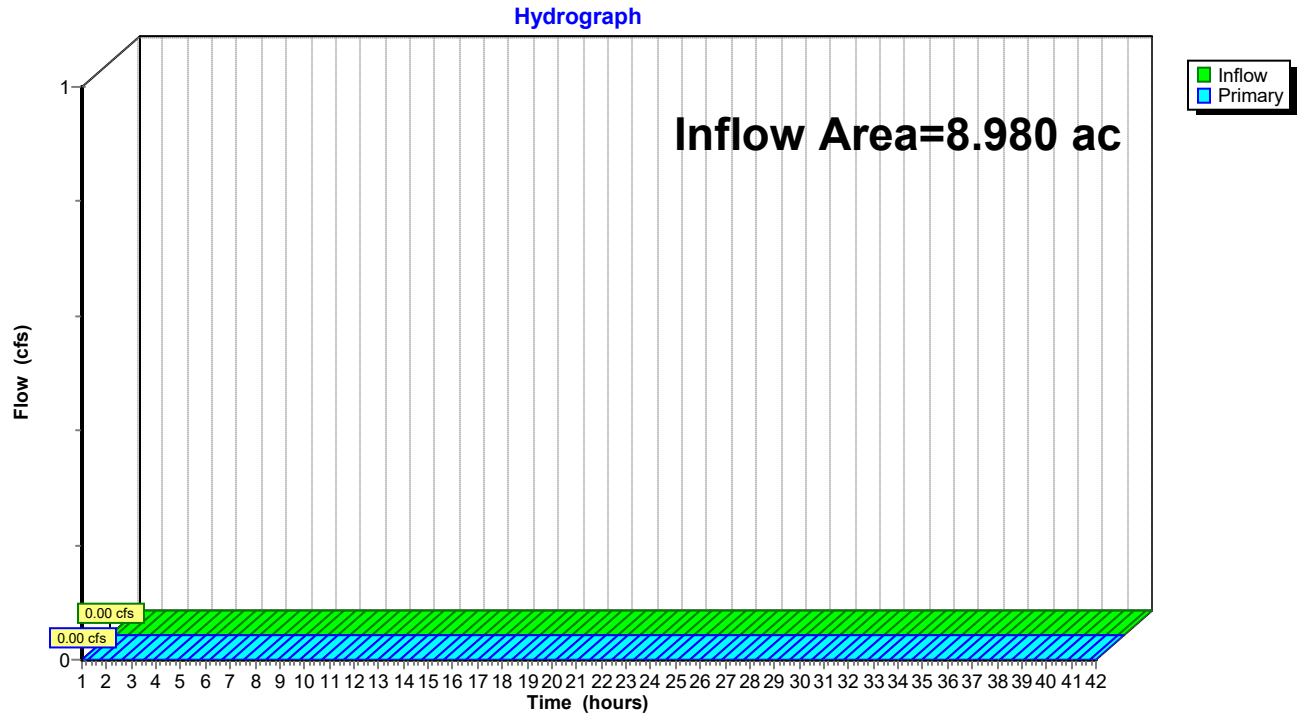
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00	40.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00	41.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00	41.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00	42.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
26.50	0.00	0.00	0.00				

Summary for Link DP-2: Design Point #2

Inflow Area = 8.980 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Hydrograph for Link DP-2: Design Point #2

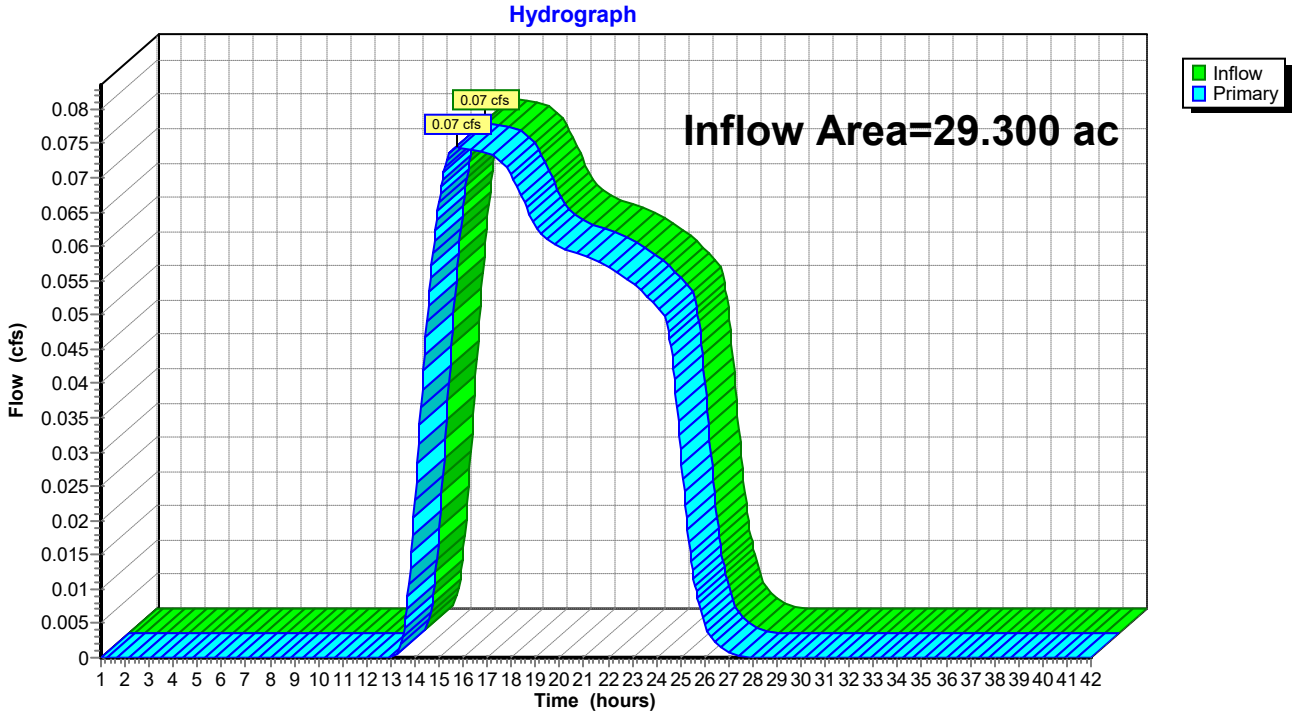
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00	40.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00	41.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00	41.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00	42.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
26.50	0.00	0.00	0.00				

Summary for Link DP-3: Design Point #3

Inflow Area = 29.300 ac, 3.96% Impervious, Inflow Depth = 0.02" for 1-Year event
Inflow = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af
Primary = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Hydrograph for Link DP-3: Design Point #3

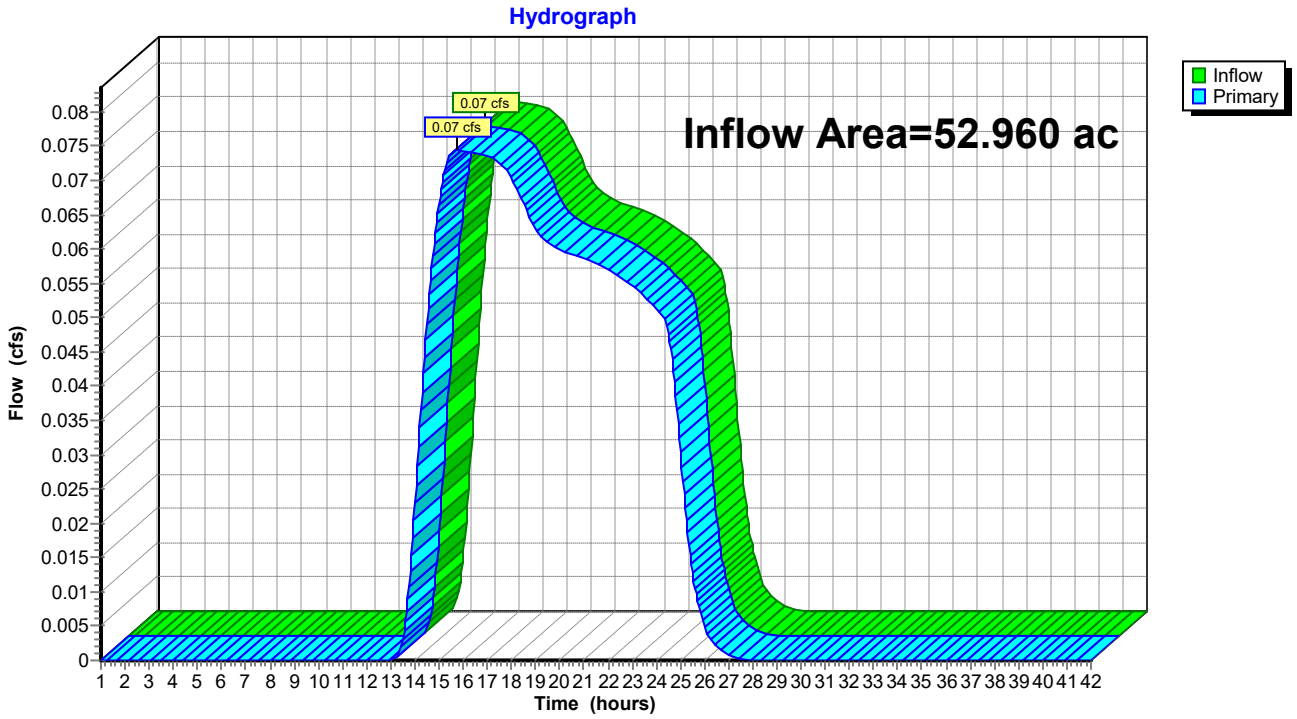
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.02	0.00	0.02
14.50	0.05	0.00	0.05
15.00	0.07	0.00	0.07
15.50	**0.07**	0.00	**0.07**
16.00	**0.07**	0.00	**0.07**
16.50	0.07	0.00	0.07
17.00	0.07	0.00	0.07
17.50	0.07	0.00	0.07
18.00	0.07	0.00	0.07
18.50	0.07	0.00	0.07
19.00	0.06	0.00	0.06
19.50	0.06	0.00	0.06
20.00	0.06	0.00	0.06
20.50	0.06	0.00	0.06
21.00	0.06	0.00	0.06
21.50	0.06	0.00	0.06
22.00	0.06	0.00	0.06
22.50	0.06	0.00	0.06
23.00	0.05	0.00	0.05
23.50	0.05	0.00	0.05
24.00	0.05	0.00	0.05
24.50	0.05	0.00	0.05
25.00	0.03	0.00	0.03
25.50	0.01	0.00	0.01
26.00	0.01	0.00	0.01
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link T: Design Point Total

Inflow Area = 52.960 ac, 2.23% Impervious, Inflow Depth = 0.01" for 1-Year event
Inflow = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af
Primary = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link T: Design Point Total



Hydrograph for Link T: Design Point Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.02	0.00	0.02	40.00	0.00	0.00	0.00
14.50	0.05	0.00	0.05	40.50	0.00	0.00	0.00
15.00	0.07	0.00	0.07	41.00	0.00	0.00	0.00
15.50	**0.07**	0.00	**0.07**	41.50	0.00	0.00	0.00
16.00	**0.07**	0.00	**0.07**	42.00	0.00	0.00	0.00
16.50	0.07	0.00	0.07				
17.00	0.07	0.00	0.07				
17.50	0.07	0.00	0.07				
18.00	0.07	0.00	0.07				
18.50	0.07	0.00	0.07				
19.00	0.06	0.00	0.06				
19.50	0.06	0.00	0.06				
20.00	0.06	0.00	0.06				
20.50	0.06	0.00	0.06				
21.00	0.06	0.00	0.06				
21.50	0.06	0.00	0.06				
22.00	0.06	0.00	0.06				
22.50	0.06	0.00	0.06				
23.00	0.05	0.00	0.05				
23.50	0.05	0.00	0.05				
24.00	0.05	0.00	0.05				
24.50	0.05	0.00	0.05				
25.00	0.03	0.00	0.03				
25.50	0.01	0.00	0.01				
26.00	0.01	0.00	0.01				
26.50	0.00	0.00	0.00				

Time span=1.00-42.00 hrs, dt=0.05 hrs, 821 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=14.680 ac 0.14% Impervious Runoff Depth=0.00"
Flow Length=1,391' Tc=70.4 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment DA-2: DA-2 Runoff Area=8.980 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=695' Tc=40.5 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: DA-3 Runoff Area=29.300 ac 3.96% Impervious Runoff Depth=0.31"
Flow Length=1,550' Tc=79.3 min CN=57 Runoff=2.58 cfs 0.764 af

Link DP-1: Design Point #1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-2: Design Point #2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-3: Design Point #3 Inflow=2.58 cfs 0.764 af
Primary=2.58 cfs 0.764 af

Link T: Design Point Total Inflow=2.58 cfs 0.764 af
Primary=2.58 cfs 0.764 af

Total Runoff Area = 52.960 ac Runoff Volume = 0.764 af Average Runoff Depth = 0.17"
97.77% Pervious = 51.780 ac 2.23% Impervious = 1.180 ac

Summary for Subcatchment DA-1: DA-1

[45] Hint: Runoff=Zero

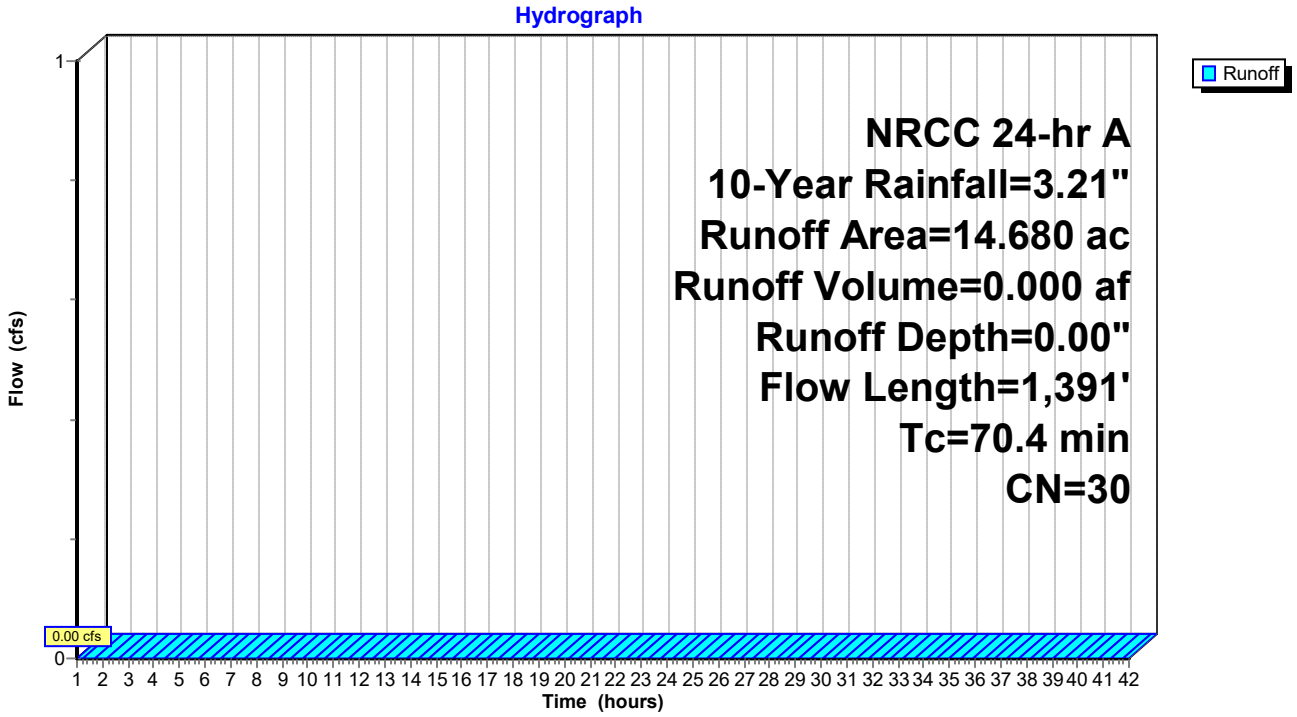
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-1 : Design Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.21"

Area (ac)	CN	Description
2.100	30	Meadow, non-grazed, HSG A
12.560	30	Woods, Good, HSG A
0.020	98	Paved parking, HSG C
14.680	30	Weighted Average
14.660		99.86% Pervious Area
0.020		0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.0	100	0.0210	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.5	177	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	122	0.0310	0.88		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	128	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.3	338	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.8	148	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	43	0.0510	1.58		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	78	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	58	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	0.1520	1.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	91	0.0125	0.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
70.4	1,391	Total			

Subcatchment DA-1: DA-1



Hydrograph for Subcatchment DA-1: DA-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	**0.00**	**0.00**
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	0.00	0.00
5.50	0.18	0.00	0.00
6.00	0.21	0.00	0.00
6.50	0.23	0.00	0.00
7.00	0.26	0.00	0.00
7.50	0.29	0.00	0.00
8.00	0.32	0.00	0.00
8.50	0.35	0.00	0.00
9.00	0.39	0.00	0.00
9.50	0.44	0.00	0.00
10.00	0.50	0.00	0.00
10.50	0.57	0.00	0.00
11.00	0.68	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.51	0.00	0.00
12.50	2.35	0.00	0.00
13.00	2.53	0.00	0.00
13.50	2.64	0.00	0.00
14.00	2.71	0.00	0.00
14.50	2.77	0.00	0.00
15.00	2.82	0.00	0.00
15.50	2.86	0.00	0.00
16.00	2.89	0.00	0.00
16.50	2.92	0.00	0.00
17.00	2.95	0.00	0.00
17.50	2.98	0.00	0.00
18.00	3.00	0.00	0.00
18.50	3.03	0.00	0.00
19.00	3.05	0.00	0.00
19.50	3.07	0.00	0.00
20.00	3.09	0.00	0.00
20.50	3.10	0.00	0.00
21.00	3.12	0.00	0.00
21.50	3.14	0.00	0.00
22.00	3.15	0.00	0.00
22.50	3.17	0.00	0.00
23.00	3.18	0.00	0.00
23.50	3.20	0.00	0.00
24.00	**3.21**	0.00	0.00
24.50	3.21	0.00	0.00
25.00	3.21	0.00	0.00
25.50	3.21	0.00	0.00
26.00	3.21	0.00	0.00
26.50	3.21	0.00	0.00
27.00	3.21	0.00	0.00
27.50	3.21	0.00	0.00
28.00	3.21	0.00	0.00
28.50	3.21	0.00	0.00
29.00	3.21	0.00	0.00
29.50	3.21	0.00	0.00
30.00	3.21	0.00	0.00
30.50	3.21	0.00	0.00
31.00	3.21	0.00	0.00
31.50	3.21	0.00	0.00
32.00	3.21	0.00	0.00
32.50	3.21	0.00	0.00
33.00	3.21	0.00	0.00
33.50	3.21	0.00	0.00
34.00	3.21	0.00	0.00
34.50	3.21	0.00	0.00
35.00	3.21	0.00	0.00
35.50	3.21	0.00	0.00
36.00	3.21	0.00	0.00
36.50	3.21	0.00	0.00
37.00	3.21	0.00	0.00
37.50	3.21	0.00	0.00
38.00	3.21	0.00	0.00
38.50	3.21	0.00	0.00
39.00	3.21	0.00	0.00
39.50	3.21	0.00	0.00
40.00	3.21	0.00	0.00
40.50	3.21	0.00	0.00
41.00	3.21	0.00	0.00
41.50	3.21	0.00	0.00
42.00	3.21	0.00	0.00

Summary for Subcatchment DA-2: DA-2

[45] Hint: Runoff=Zero

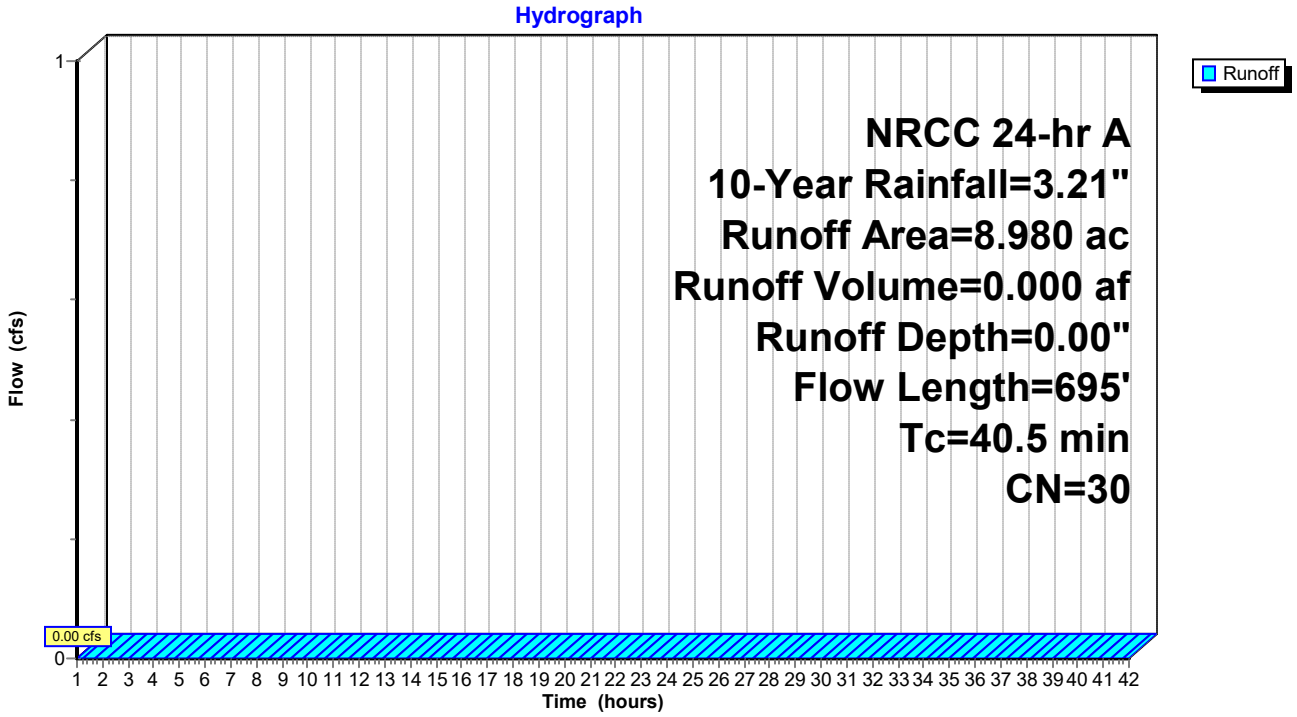
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-2 : Design Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.21"

Area (ac)	CN	Description
0.390	30	Meadow, non-grazed, HSG A
8.590	30	Woods, Good, HSG A
8.980	30	Weighted Average
8.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.5	100	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
1.1	62	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	176	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	164	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	174	0.0680	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	19	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
40.5	695	Total			

Subcatchment DA-2: DA-2



Hydrograph for Subcatchment DA-2: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	**0.00**	**0.00**
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	0.00	0.00
5.50	0.18	0.00	0.00
6.00	0.21	0.00	0.00
6.50	0.23	0.00	0.00
7.00	0.26	0.00	0.00
7.50	0.29	0.00	0.00
8.00	0.32	0.00	0.00
8.50	0.35	0.00	0.00
9.00	0.39	0.00	0.00
9.50	0.44	0.00	0.00
10.00	0.50	0.00	0.00
10.50	0.57	0.00	0.00
11.00	0.68	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.51	0.00	0.00
12.50	2.35	0.00	0.00
13.00	2.53	0.00	0.00
13.50	2.64	0.00	0.00
14.00	2.71	0.00	0.00
14.50	2.77	0.00	0.00
15.00	2.82	0.00	0.00
15.50	2.86	0.00	0.00
16.00	2.89	0.00	0.00
16.50	2.92	0.00	0.00
17.00	2.95	0.00	0.00
17.50	2.98	0.00	0.00
18.00	3.00	0.00	0.00
18.50	3.03	0.00	0.00
19.00	3.05	0.00	0.00
19.50	3.07	0.00	0.00
20.00	3.09	0.00	0.00
20.50	3.10	0.00	0.00
21.00	3.12	0.00	0.00
21.50	3.14	0.00	0.00
22.00	3.15	0.00	0.00
22.50	3.17	0.00	0.00
23.00	3.18	0.00	0.00
23.50	3.20	0.00	0.00
24.00	**3.21**	0.00	0.00
24.50	3.21	0.00	0.00
25.00	3.21	0.00	0.00
25.50	3.21	0.00	0.00
26.00	3.21	0.00	0.00
26.50	3.21	0.00	0.00
27.00	3.21	0.00	0.00
27.50	3.21	0.00	0.00
28.00	3.21	0.00	0.00
28.50	3.21	0.00	0.00
29.00	3.21	0.00	0.00
29.50	3.21	0.00	0.00
30.00	3.21	0.00	0.00
30.50	3.21	0.00	0.00
31.00	3.21	0.00	0.00
31.50	3.21	0.00	0.00
32.00	3.21	0.00	0.00
32.50	3.21	0.00	0.00
33.00	3.21	0.00	0.00
33.50	3.21	0.00	0.00
34.00	3.21	0.00	0.00
34.50	3.21	0.00	0.00
35.00	3.21	0.00	0.00
35.50	3.21	0.00	0.00
36.00	3.21	0.00	0.00
36.50	3.21	0.00	0.00
37.00	3.21	0.00	0.00
37.50	3.21	0.00	0.00
38.00	3.21	0.00	0.00
38.50	3.21	0.00	0.00
39.00	3.21	0.00	0.00
39.50	3.21	0.00	0.00
40.00	3.21	0.00	0.00
40.50	3.21	0.00	0.00
41.00	3.21	0.00	0.00
41.50	3.21	0.00	0.00
42.00	3.21	0.00	0.00

Summary for Subcatchment DA-3: DA-3

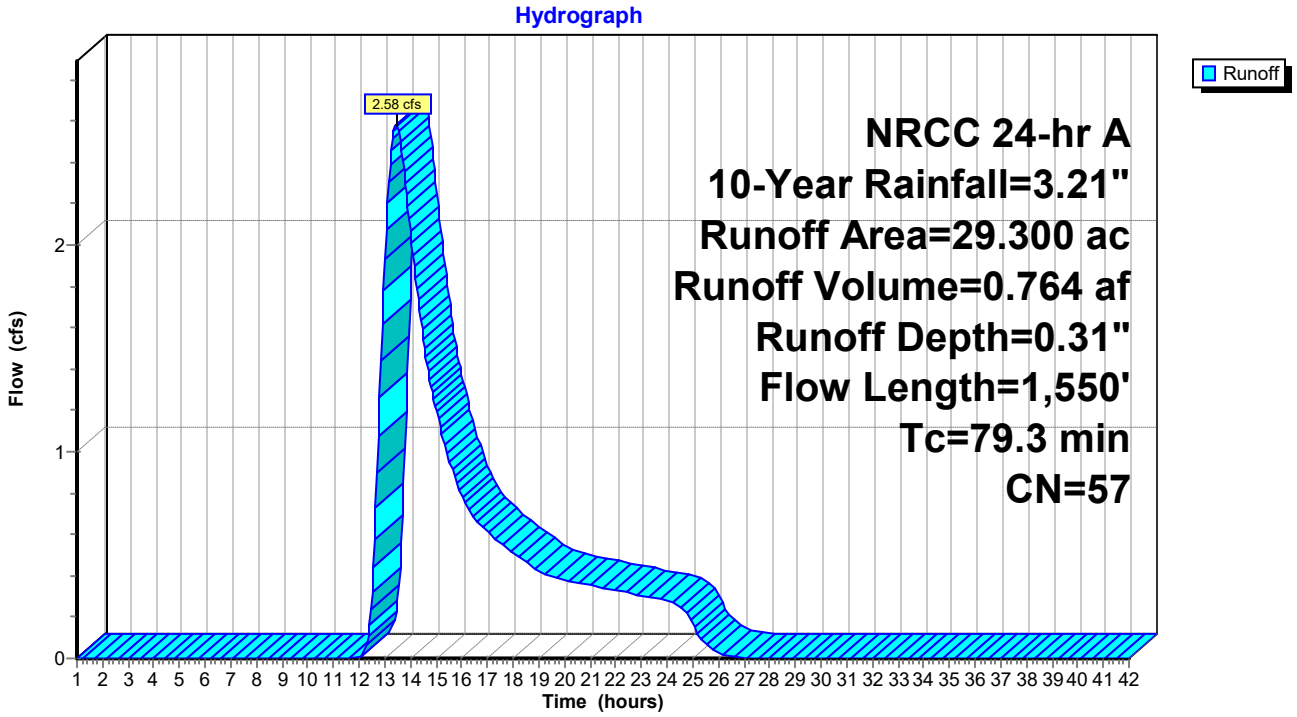
Runoff = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af, Depth= 0.31"
Routed to Link DP-3 : Design Point #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.21"

Area (ac)	CN	Description
10.820	30	Woods, Good, HSG A
0.440	55	Woods, Good, HSG B
13.280	70	Woods, Good, HSG C
3.600	77	Woods, Good, HSG D
1.150	98	Water Surface, HSG C
0.010	98	Paved parking, HSG C
29.300	57	Weighted Average
28.140		96.04% Pervious Area
1.160		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.8	100	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.7	208	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	490	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.3	470	0.2220	2.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	91	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	191	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
79.3	1,550	Total			

Subcatchment DA-3: DA-3



Hydrograph for Subcatchment DA-3: DA-3

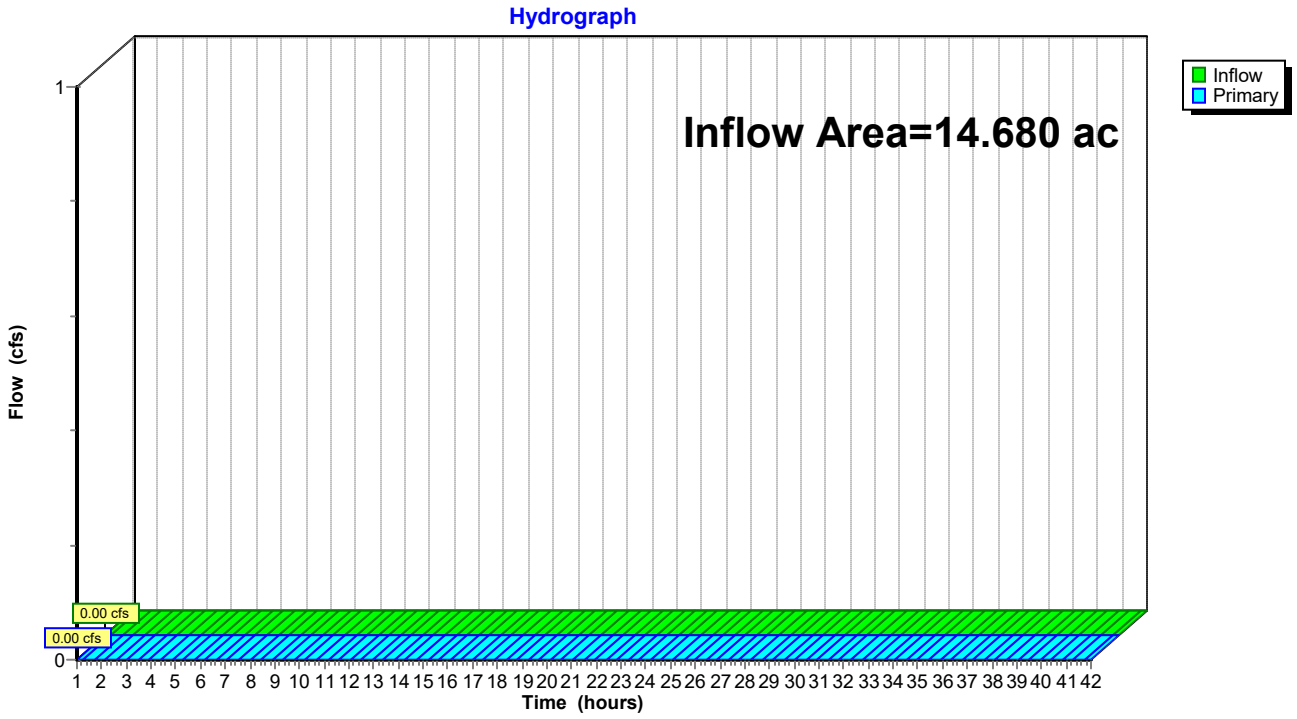
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	0.00	0.00
5.50	0.18	0.00	0.00
6.00	0.21	0.00	0.00
6.50	0.23	0.00	0.00
7.00	0.26	0.00	0.00
7.50	0.29	0.00	0.00
8.00	0.32	0.00	0.00
8.50	0.35	0.00	0.00
9.00	0.39	0.00	0.00
9.50	0.44	0.00	0.00
10.00	0.50	0.00	0.00
10.50	0.57	0.00	0.00
11.00	0.68	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.51	0.00	0.00
12.50	2.35	0.08	0.33
13.00	2.53	0.12	**1.93**
13.50	2.64	0.15	**2.57**
14.00	2.71	0.17	2.07
14.50	2.77	0.18	1.54
15.00	2.82	0.19	1.19
15.50	2.86	0.20	0.96
16.00	2.89	0.21	0.79
16.50	2.92	0.22	0.68
17.00	2.95	0.23	0.61
17.50	2.98	0.24	0.56
18.00	3.00	0.25	0.51
18.50	3.03	0.25	0.46
19.00	3.05	0.26	0.42
19.50	3.07	0.27	0.39
20.00	3.09	0.27	0.38
20.50	3.10	0.28	0.36
21.00	3.12	0.28	0.35
21.50	3.14	0.29	0.34
22.00	3.15	0.29	0.33
22.50	3.17	0.30	0.32
23.00	3.18	0.30	0.30
23.50	3.20	0.31	0.29
24.00	**3.21**	**0.31**	0.28
24.50	3.21	0.31	0.26
25.00	3.21	0.31	0.16
25.50	3.21	0.31	0.07
26.00	3.21	0.31	0.03
26.50	3.21	0.31	0.01
27.00	3.21	0.31	0.00
27.50	3.21	0.31	0.00
28.00	3.21	0.31	0.00
28.50	3.21	0.31	0.00
29.00	3.21	0.31	0.00
29.50	3.21	0.31	0.00
30.00	3.21	0.31	0.00
30.50	3.21	0.31	0.00
31.00	3.21	0.31	0.00
31.50	3.21	0.31	0.00
32.00	3.21	0.31	0.00
32.50	3.21	0.31	0.00
33.00	3.21	0.31	0.00
33.50	3.21	0.31	0.00
34.00	3.21	0.31	0.00
34.50	3.21	0.31	0.00
35.00	3.21	0.31	0.00
35.50	3.21	0.31	0.00
36.00	3.21	0.31	0.00
36.50	3.21	0.31	0.00
37.00	3.21	0.31	0.00
37.50	3.21	0.31	0.00
38.00	3.21	0.31	0.00
38.50	3.21	0.31	0.00
39.00	3.21	0.31	0.00
39.50	3.21	0.31	0.00
40.00	3.21	0.31	0.00
40.50	3.21	0.31	0.00
41.00	3.21	0.31	0.00
41.50	3.21	0.31	0.00
42.00	3.21	0.31	0.00

Summary for Link DP-1: Design Point #1

Inflow Area = 14.680 ac, 0.14% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Hydrograph for Link DP-1: Design Point #1

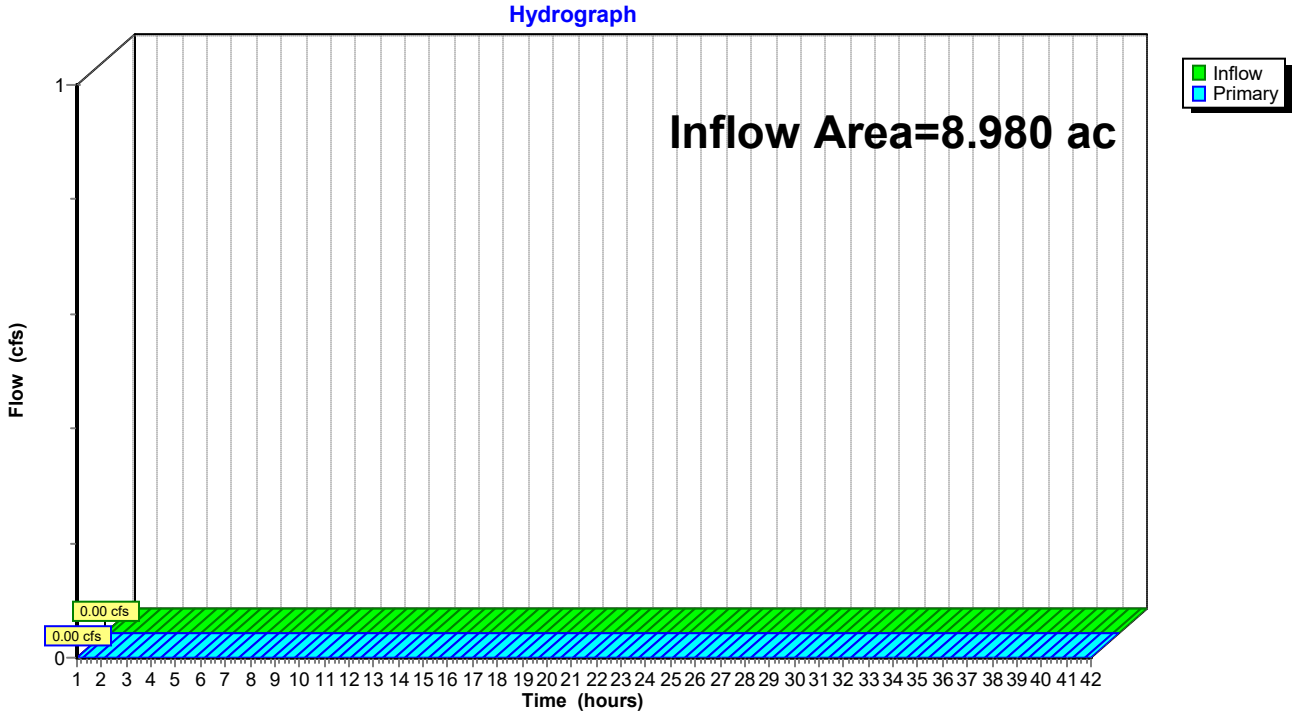
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00	40.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00	41.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00	41.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00	42.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
26.50	0.00	0.00	0.00				

Summary for Link DP-2: Design Point #2

Inflow Area = 8.980 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Hydrograph for Link DP-2: Design Point #2

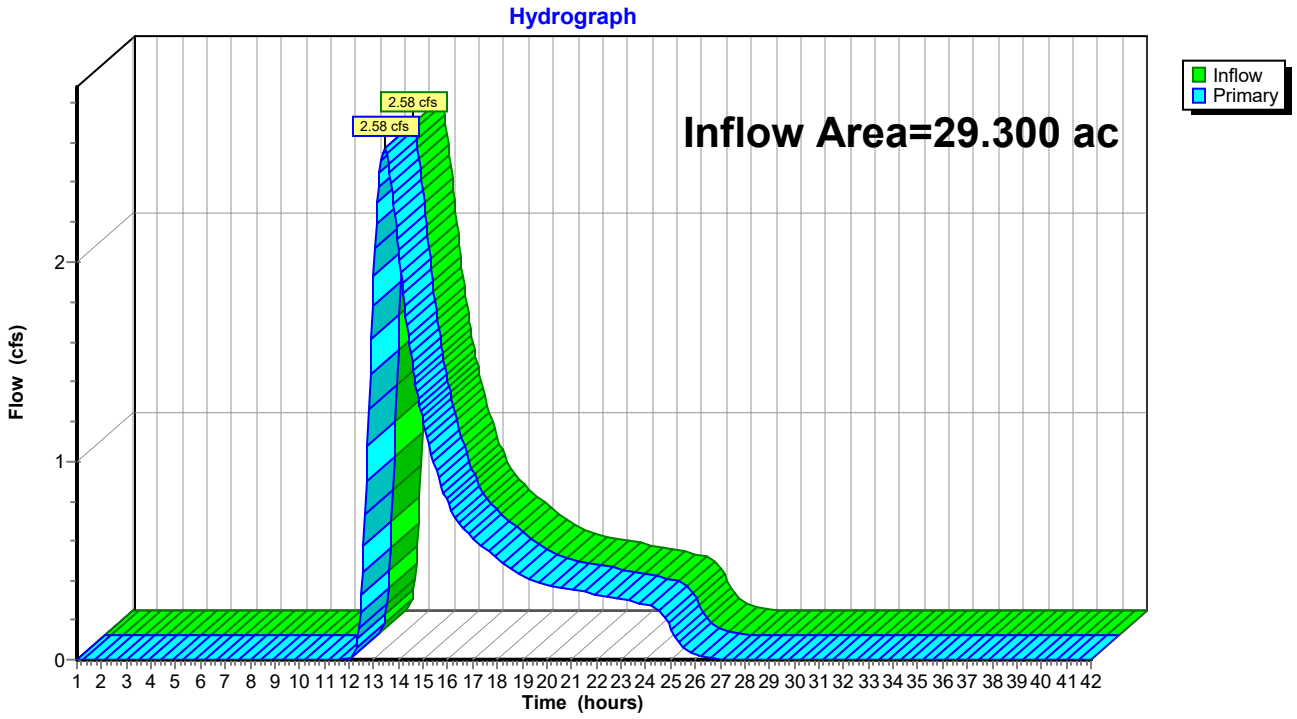
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00	40.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00	41.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00	41.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00	42.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
26.50	0.00	0.00	0.00				

Summary for Link DP-3: Design Point #3

Inflow Area = 29.300 ac, 3.96% Impervious, Inflow Depth = 0.31" for 10-Year event
Inflow = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af
Primary = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Hydrograph for Link DP-3: Design Point #3

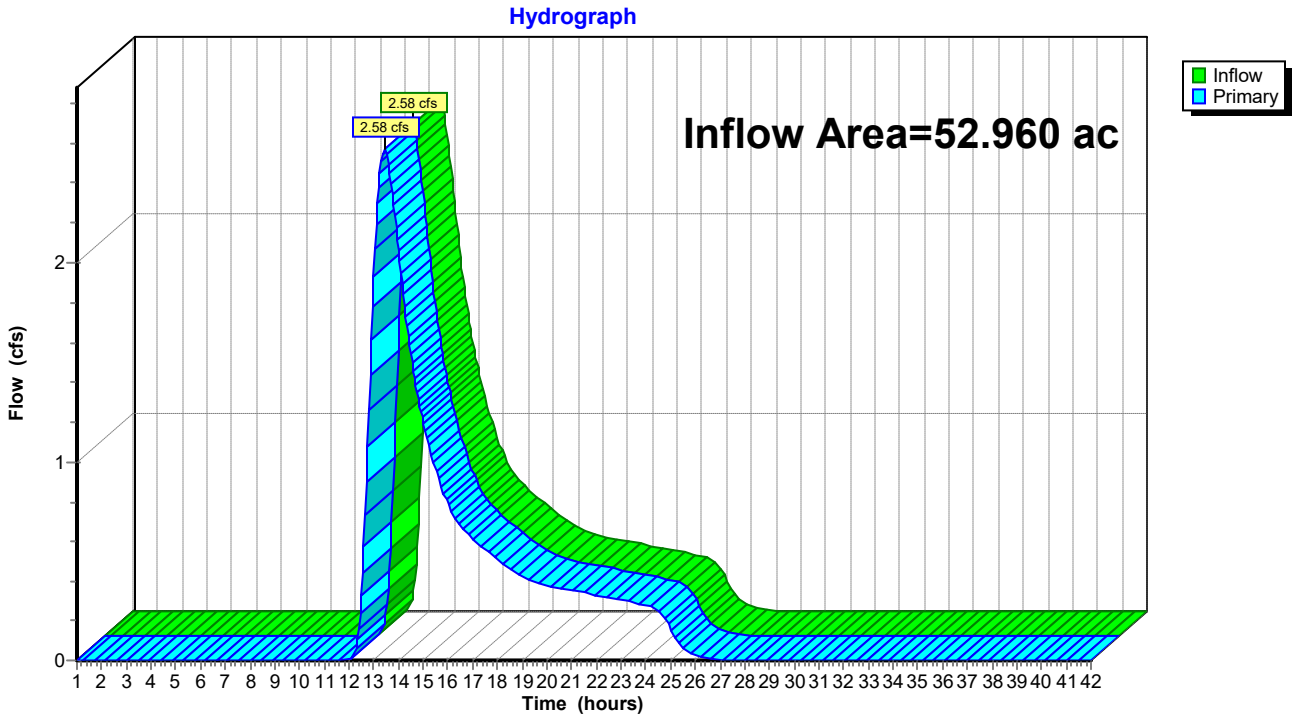
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.33	0.00	0.33
13.00	**1.93**	0.00	**1.93**
13.50	**2.57**	0.00	**2.57**
14.00	2.07	0.00	2.07
14.50	1.54	0.00	1.54
15.00	1.19	0.00	1.19
15.50	0.96	0.00	0.96
16.00	0.79	0.00	0.79
16.50	0.68	0.00	0.68
17.00	0.61	0.00	0.61
17.50	0.56	0.00	0.56
18.00	0.51	0.00	0.51
18.50	0.46	0.00	0.46
19.00	0.42	0.00	0.42
19.50	0.39	0.00	0.39
20.00	0.38	0.00	0.38
20.50	0.36	0.00	0.36
21.00	0.35	0.00	0.35
21.50	0.34	0.00	0.34
22.00	0.33	0.00	0.33
22.50	0.32	0.00	0.32
23.00	0.30	0.00	0.30
23.50	0.29	0.00	0.29
24.00	0.28	0.00	0.28
24.50	0.26	0.00	0.26
25.00	0.16	0.00	0.16
25.50	0.07	0.00	0.07
26.00	0.03	0.00	0.03
26.50	0.01	0.00	0.01
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link T: Design Point Total

Inflow Area = 52.960 ac, 2.23% Impervious, Inflow Depth = 0.17" for 10-Year event
Inflow = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af
Primary = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link T: Design Point Total



Hydrograph for Link T: Design Point Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.33	0.00	0.33
13.00	**1.93**	0.00	**1.93**
13.50	**2.57**	0.00	**2.57**
14.00	2.07	0.00	2.07
14.50	1.54	0.00	1.54
15.00	1.19	0.00	1.19
15.50	0.96	0.00	0.96
16.00	0.79	0.00	0.79
16.50	0.68	0.00	0.68
17.00	0.61	0.00	0.61
17.50	0.56	0.00	0.56
18.00	0.51	0.00	0.51
18.50	0.46	0.00	0.46
19.00	0.42	0.00	0.42
19.50	0.39	0.00	0.39
20.00	0.38	0.00	0.38
20.50	0.36	0.00	0.36
21.00	0.35	0.00	0.35
21.50	0.34	0.00	0.34
22.00	0.33	0.00	0.33
22.50	0.32	0.00	0.32
23.00	0.30	0.00	0.30
23.50	0.29	0.00	0.29
24.00	0.28	0.00	0.28
24.50	0.26	0.00	0.26
25.00	0.16	0.00	0.16
25.50	0.07	0.00	0.07
26.00	0.03	0.00	0.03
26.50	0.01	0.00	0.01
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Time span=1.00-42.00 hrs, dt=0.05 hrs, 821 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=14.680 ac 0.14% Impervious Runoff Depth=0.03"
Flow Length=1,391' Tc=70.4 min CN=30 Runoff=0.05 cfs 0.034 af

Subcatchment DA-2: DA-2 Runoff Area=8.980 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=695' Tc=40.5 min CN=30 Runoff=0.03 cfs 0.021 af

Subcatchment DA-3: DA-3 Runoff Area=29.300 ac 3.96% Impervious Runoff Depth=1.38"
Flow Length=1,550' Tc=79.3 min CN=57 Runoff=15.77 cfs 3.358 af

Link DP-1: Design Point #1 Inflow=0.05 cfs 0.034 af
Primary=0.05 cfs 0.034 af

Link DP-2: Design Point #2 Inflow=0.03 cfs 0.021 af
Primary=0.03 cfs 0.021 af

Link DP-3: Design Point #3 Inflow=15.77 cfs 3.358 af
Primary=15.77 cfs 3.358 af

Link T: Design Point Total Inflow=15.77 cfs 3.413 af
Primary=15.77 cfs 3.413 af

Total Runoff Area = 52.960 ac Runoff Volume = 3.413 af Average Runoff Depth = 0.77"
97.77% Pervious = 51.780 ac 2.23% Impervious = 1.180 ac

Summary for Subcatchment DA-1: DA-1

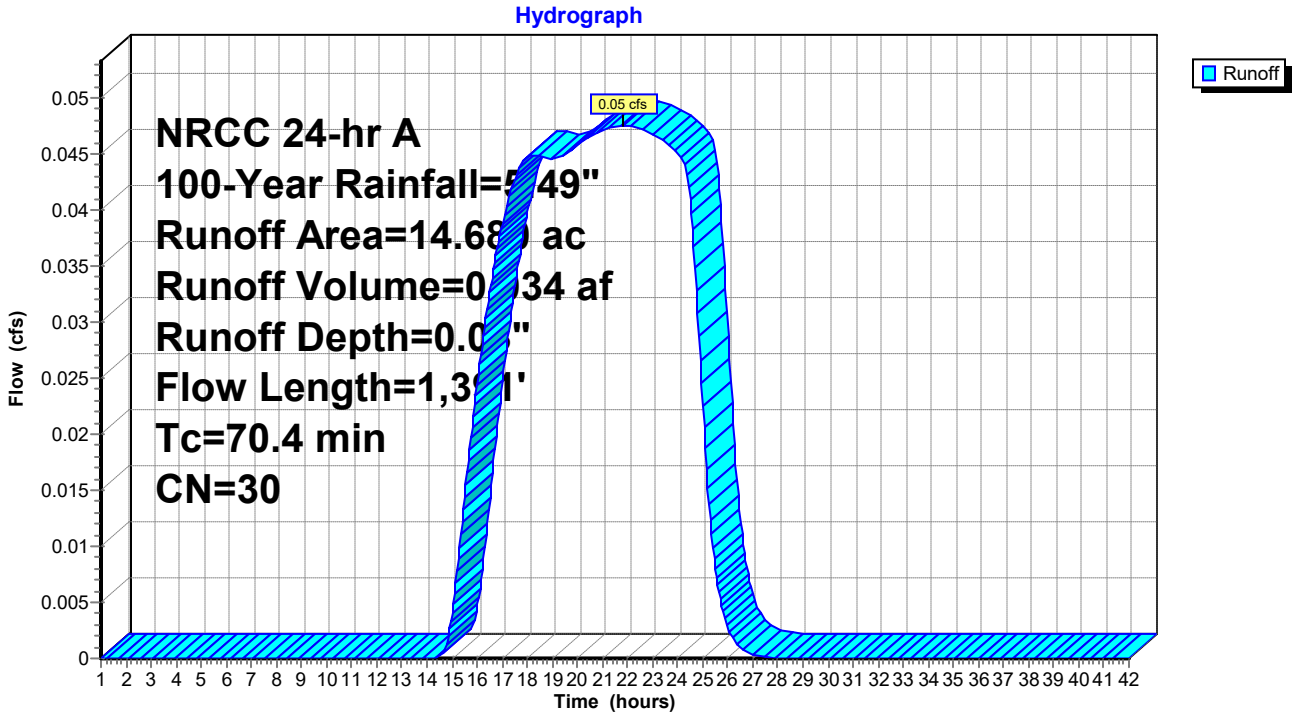
Runoff = 0.05 cfs @ 21.82 hrs, Volume= 0.034 af, Depth= 0.03"
Routed to Link DP-1 : Design Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.49"

Area (ac)	CN	Description
2.100	30	Meadow, non-grazed, HSG A
12.560	30	Woods, Good, HSG A
0.020	98	Paved parking, HSG C
14.680	30	Weighted Average
14.660		99.86% Pervious Area
0.020		0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
40.0	100	0.0210	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.5	177	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.3	122	0.0310	0.88		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.7	128	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.3	338	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.8	148	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	43	0.0510	1.58		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	78	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	58	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	0.1520	1.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	91	0.0125	0.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
70.4	1,391	Total			

Subcatchment DA-1: DA-1



Hydrograph for Subcatchment DA-1: DA-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.05	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.12	0.00	0.00
3.00	0.15	0.00	0.00
3.50	0.18	0.00	0.00
4.00	0.21	0.00	0.00
4.50	0.25	0.00	0.00
5.00	0.28	0.00	0.00
5.50	0.32	0.00	0.00
6.00	0.35	0.00	0.00
6.50	0.39	0.00	0.00
7.00	0.44	0.00	0.00
7.50	0.49	0.00	0.00
8.00	0.54	0.00	0.00
8.50	0.60	0.00	0.00
9.00	0.67	0.00	0.00
9.50	0.75	0.00	0.00
10.00	0.85	0.00	0.00
10.50	0.98	0.00	0.00
11.00	1.16	0.00	0.00
11.50	1.47	0.00	0.00
12.00	2.59	0.00	0.00
12.50	4.02	0.00	0.00
13.00	4.33	0.00	0.00
13.50	4.51	0.00	0.00
14.00	4.64	0.00	0.00
14.50	4.74	0.00	0.00
15.00	4.82	0.00	0.00
15.50	4.89	0.00	0.01
16.00	4.95	0.00	0.02
16.50	5.00	0.00	0.03
17.00	5.05	0.01	0.04
17.50	5.10	0.01	0.04
18.00	5.14	0.01	0.04
18.50	5.17	0.01	0.04
19.00	5.21	0.01	0.04
19.50	5.24	0.01	0.04
20.00	5.28	0.02	0.05
20.50	5.31	0.02	0.05
21.00	5.34	0.02	0.05
21.50	5.37	0.02	**0.05**
22.00	5.39	0.02	**0.05**
22.50	5.42	0.02	0.05
23.00	5.44	0.03	0.05
23.50	5.47	0.03	0.05
24.00	**5.49**	**0.03**	0.05
24.50	5.49	0.03	0.04
25.00	5.49	0.03	0.02
25.50	5.49	0.03	0.01
26.00	5.49	0.03	0.00
26.50	5.49	0.03	0.00
27.00	5.49	0.03	0.00
27.50	5.49	0.03	0.00
28.00	5.49	0.03	0.00
28.50	5.49	0.03	0.00
29.00	5.49	0.03	0.00
29.50	5.49	0.03	0.00
30.00	5.49	0.03	0.00
30.50	5.49	0.03	0.00
31.00	5.49	0.03	0.00
31.50	5.49	0.03	0.00
32.00	5.49	0.03	0.00
32.50	5.49	0.03	0.00
33.00	5.49	0.03	0.00
33.50	5.49	0.03	0.00
34.00	5.49	0.03	0.00
34.50	5.49	0.03	0.00
35.00	5.49	0.03	0.00
35.50	5.49	0.03	0.00
36.00	5.49	0.03	0.00
36.50	5.49	0.03	0.00
37.00	5.49	0.03	0.00
37.50	5.49	0.03	0.00
38.00	5.49	0.03	0.00
38.50	5.49	0.03	0.00
39.00	5.49	0.03	0.00
39.50	5.49	0.03	0.00
40.00	5.49	0.03	0.00
40.50	5.49	0.03	0.00
41.00	5.49	0.03	0.00
41.50	5.49	0.03	0.00
42.00	5.49	0.03	0.00

Summary for Subcatchment DA-2: DA-2

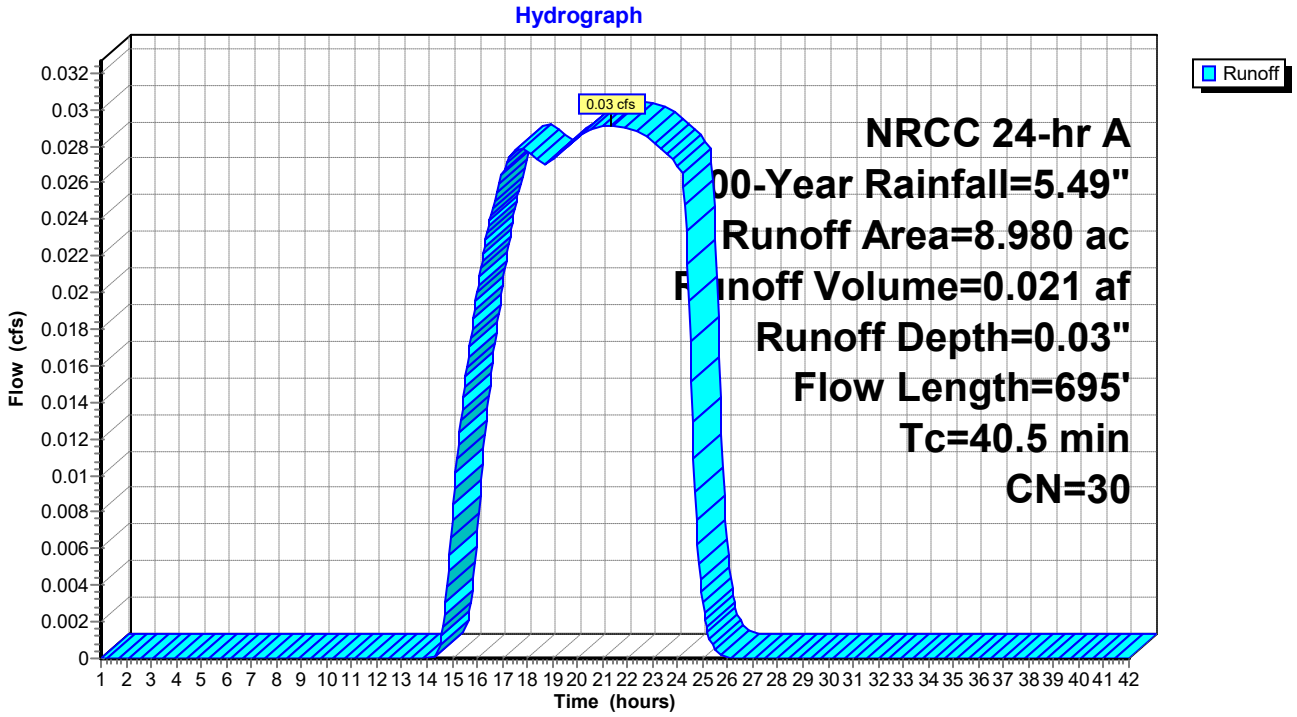
Runoff = 0.03 cfs @ 21.31 hrs, Volume= 0.021 af, Depth= 0.03"
Routed to Link DP-2 : Design Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.49"

Area (ac)	CN	Description
0.390	30	Meadow, non-grazed, HSG A
8.590	30	Woods, Good, HSG A
8.980	30	Weighted Average
8.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
31.5	100	0.0380	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
1.1	62	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	176	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	164	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	174	0.0680	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	19	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
40.5	695	Total			

Subcatchment DA-2: DA-2



Hydrograph for Subcatchment DA-2: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.05	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.12	0.00	0.00
3.00	0.15	0.00	0.00
3.50	0.18	0.00	0.00
4.00	0.21	0.00	0.00
4.50	0.25	0.00	0.00
5.00	0.28	0.00	0.00
5.50	0.32	0.00	0.00
6.00	0.35	0.00	0.00
6.50	0.39	0.00	0.00
7.00	0.44	0.00	0.00
7.50	0.49	0.00	0.00
8.00	0.54	0.00	0.00
8.50	0.60	0.00	0.00
9.00	0.67	0.00	0.00
9.50	0.75	0.00	0.00
10.00	0.85	0.00	0.00
10.50	0.98	0.00	0.00
11.00	1.16	0.00	0.00
11.50	1.47	0.00	0.00
12.00	2.59	0.00	0.00
12.50	4.02	0.00	0.00
13.00	4.33	0.00	0.00
13.50	4.51	0.00	0.00
14.00	4.64	0.00	0.00
14.50	4.74	0.00	0.00
15.00	4.82	0.00	0.01
15.50	4.89	0.00	0.01
16.00	4.95	0.00	0.02
16.50	5.00	0.00	0.02
17.00	5.05	0.01	0.03
17.50	5.10	0.01	0.03
18.00	5.14	0.01	0.03
18.50	5.17	0.01	0.03
19.00	5.21	0.01	0.03
19.50	5.24	0.01	0.03
20.00	5.28	0.02	0.03
20.50	5.31	0.02	0.03
21.00	5.34	0.02	**0.03**
21.50	5.37	0.02	**0.03**
22.00	5.39	0.02	0.03
22.50	5.42	0.02	0.03
23.00	5.44	0.03	0.03
23.50	5.47	0.03	0.03
24.00	**5.49**	**0.03**	0.03
24.50	5.49	0.03	0.02
25.00	5.49	0.03	0.00
25.50	5.49	0.03	0.00
26.00	5.49	0.03	0.00
26.50	5.49	0.03	0.00
27.00	5.49	0.03	0.00
27.50	5.49	0.03	0.00
28.00	5.49	0.03	0.00
28.50	5.49	0.03	0.00
29.00	5.49	0.03	0.00
29.50	5.49	0.03	0.00
30.00	5.49	0.03	0.00
30.50	5.49	0.03	0.00
31.00	5.49	0.03	0.00
31.50	5.49	0.03	0.00
32.00	5.49	0.03	0.00
32.50	5.49	0.03	0.00
33.00	5.49	0.03	0.00
33.50	5.49	0.03	0.00
34.00	5.49	0.03	0.00
34.50	5.49	0.03	0.00
35.00	5.49	0.03	0.00
35.50	5.49	0.03	0.00
36.00	5.49	0.03	0.00
36.50	5.49	0.03	0.00
37.00	5.49	0.03	0.00
37.50	5.49	0.03	0.00
38.00	5.49	0.03	0.00
38.50	5.49	0.03	0.00
39.00	5.49	0.03	0.00
39.50	5.49	0.03	0.00
40.00	5.49	0.03	0.00
40.50	5.49	0.03	0.00
41.00	5.49	0.03	0.00
41.50	5.49	0.03	0.00
42.00	5.49	0.03	0.00

Summary for Subcatchment DA-3: DA-3

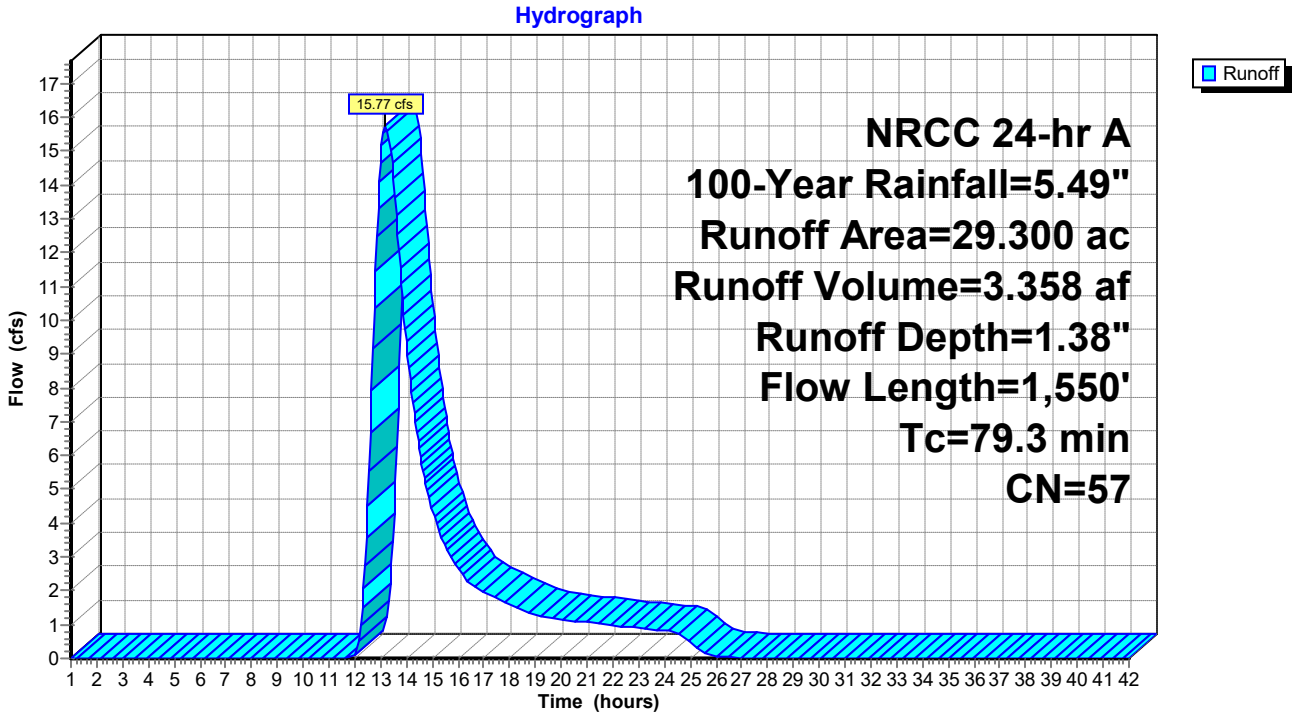
Runoff = 15.77 cfs @ 13.20 hrs, Volume= 3.358 af, Depth= 1.38"
Routed to Link DP-3 : Design Point #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.49"

Area (ac)	CN	Description
10.820	30	Woods, Good, HSG A
0.440	55	Woods, Good, HSG B
13.280	70	Woods, Good, HSG C
3.600	77	Woods, Good, HSG D
1.150	98	Water Surface, HSG C
0.010	98	Paved parking, HSG C
29.300	57	Weighted Average
28.140		96.04% Pervious Area
1.160		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.8	100	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.7	208	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	490	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.3	470	0.2220	2.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	91	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	191	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
79.3	1,550	Total			

Subcatchment DA-3: DA-3



Hydrograph for Subcatchment DA-3: DA-3

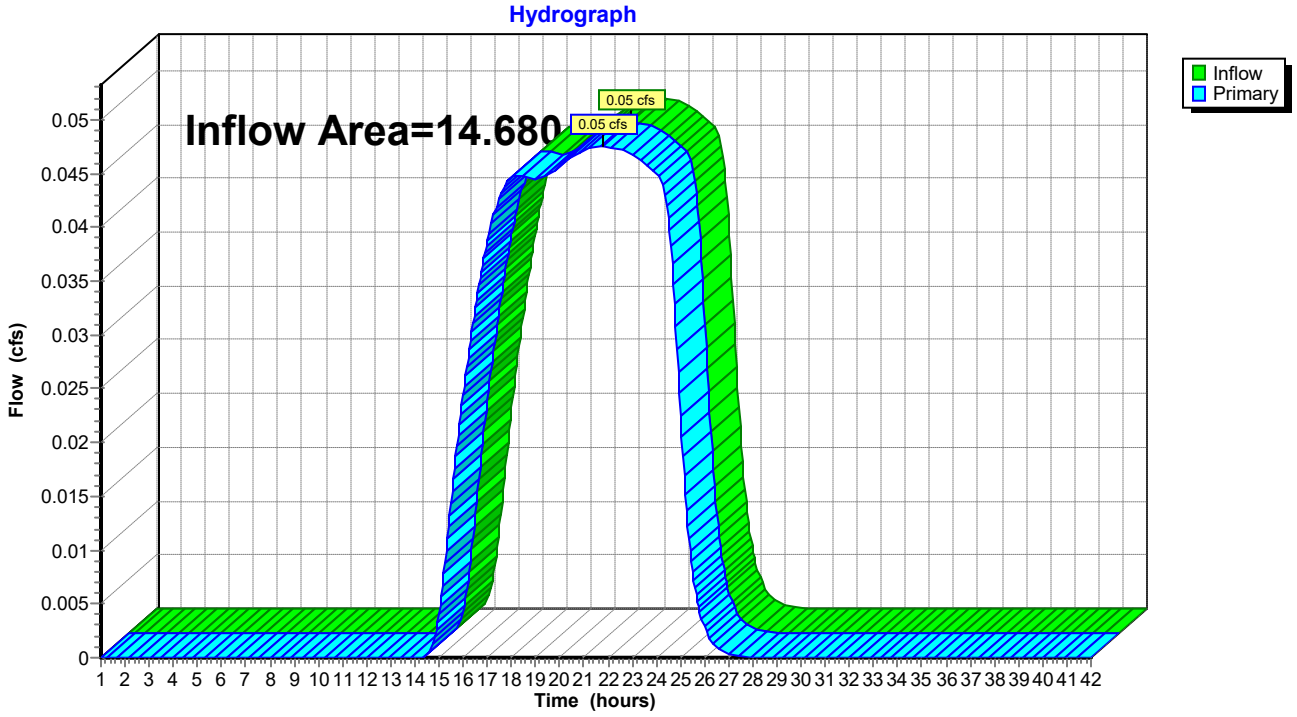
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.05	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.12	0.00	0.00
3.00	0.15	0.00	0.00
3.50	0.18	0.00	0.00
4.00	0.21	0.00	0.00
4.50	0.25	0.00	0.00
5.00	0.28	0.00	0.00
5.50	0.32	0.00	0.00
6.00	0.35	0.00	0.00
6.50	0.39	0.00	0.00
7.00	0.44	0.00	0.00
7.50	0.49	0.00	0.00
8.00	0.54	0.00	0.00
8.50	0.60	0.00	0.00
9.00	0.67	0.00	0.00
9.50	0.75	0.00	0.00
10.00	0.85	0.00	0.00
10.50	0.98	0.00	0.00
11.00	1.16	0.00	0.00
11.50	1.47	0.00	0.00
12.00	2.59	0.13	0.09
12.50	4.02	0.63	4.50
13.00	4.33	0.77	**14.68**
13.50	4.51	0.86	**14.18**
14.00	4.64	0.92	9.35
14.50	4.74	0.97	6.20
15.00	4.82	1.01	4.40
15.50	4.89	1.04	3.34
16.00	4.95	1.08	2.64
16.50	5.00	1.11	2.20
17.00	5.05	1.13	1.95
17.50	5.10	1.16	1.76
18.00	5.14	1.18	1.60
18.50	5.17	1.20	1.44
19.00	5.21	1.22	1.30
19.50	5.24	1.24	1.21
20.00	5.28	1.25	1.15
20.50	5.31	1.27	1.10
21.00	5.34	1.29	1.06
21.50	5.37	1.30	1.02
22.00	5.39	1.32	0.98
22.50	5.42	1.33	0.94
23.00	5.44	1.35	0.90
23.50	5.47	1.36	0.86
24.00	**5.49**	**1.38**	0.82
24.50	5.49	1.38	0.75
25.00	5.49	1.38	0.47
25.50	5.49	1.38	0.20
26.00	5.49	1.38	0.08
26.50	5.49	1.38	0.03
27.00	5.49	1.38	0.01
27.50	5.49	1.38	0.00
28.00	5.49	1.38	0.00
28.50	5.49	1.38	0.00
29.00	5.49	1.38	0.00
29.50	5.49	1.38	0.00
30.00	5.49	1.38	0.00
30.50	5.49	1.38	0.00
31.00	5.49	1.38	0.00
31.50	5.49	1.38	0.00
32.00	5.49	1.38	0.00
32.50	5.49	1.38	0.00
33.00	5.49	1.38	0.00
33.50	5.49	1.38	0.00
34.00	5.49	1.38	0.00
34.50	5.49	1.38	0.00
35.00	5.49	1.38	0.00
35.50	5.49	1.38	0.00
36.00	5.49	1.38	0.00
36.50	5.49	1.38	0.00
37.00	5.49	1.38	0.00
37.50	5.49	1.38	0.00
38.00	5.49	1.38	0.00
38.50	5.49	1.38	0.00
39.00	5.49	1.38	0.00
39.50	5.49	1.38	0.00
40.00	5.49	1.38	0.00
40.50	5.49	1.38	0.00
41.00	5.49	1.38	0.00
41.50	5.49	1.38	0.00
42.00	5.49	1.38	0.00

Summary for Link DP-1: Design Point #1

Inflow Area = 14.680 ac, 0.14% Impervious, Inflow Depth = 0.03" for 100-Year event
Inflow = 0.05 cfs @ 21.82 hrs, Volume= 0.034 af
Primary = 0.05 cfs @ 21.82 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Hydrograph for Link DP-1: Design Point #1

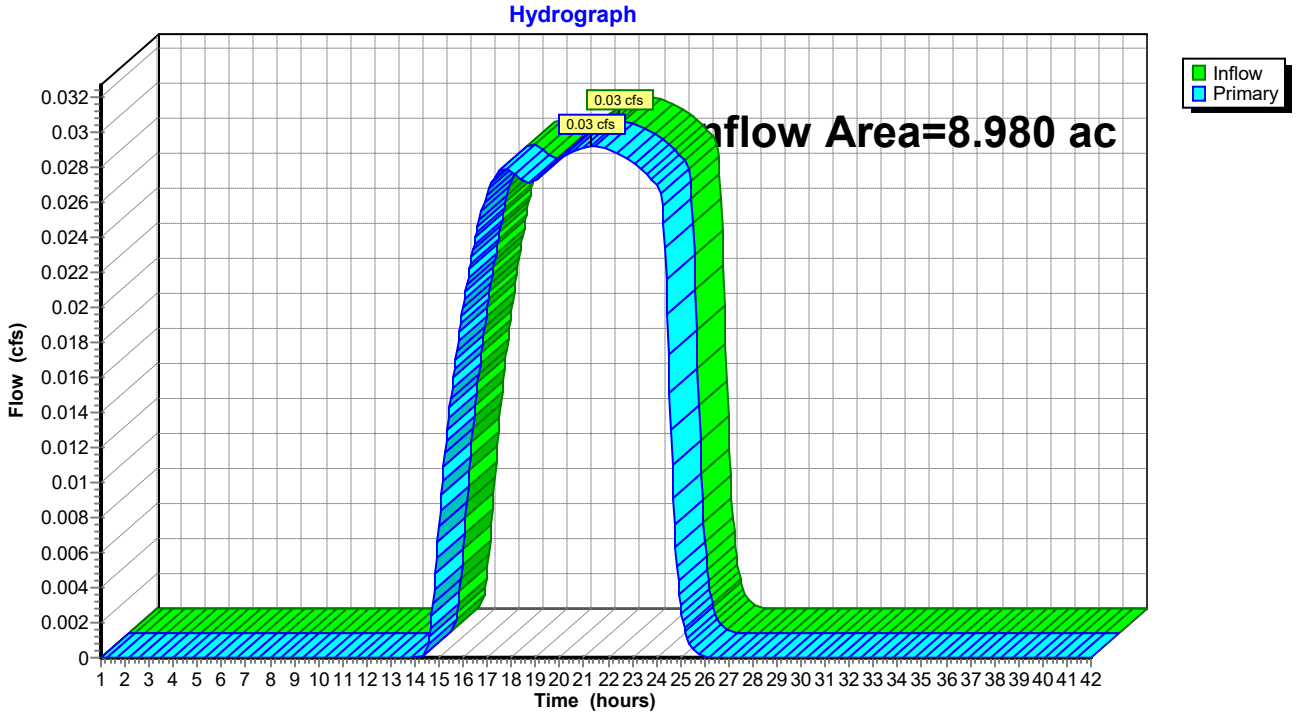
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00
15.50	0.01	0.00	0.01
16.00	0.02	0.00	0.02
16.50	0.03	0.00	0.03
17.00	0.04	0.00	0.04
17.50	0.04	0.00	0.04
18.00	0.04	0.00	0.04
18.50	0.04	0.00	0.04
19.00	0.04	0.00	0.04
19.50	0.04	0.00	0.04
20.00	0.05	0.00	0.05
20.50	0.05	0.00	0.05
21.00	0.05	0.00	0.05
21.50	**0.05**	0.00	**0.05**
22.00	**0.05**	0.00	**0.05**
22.50	0.05	0.00	0.05
23.00	0.05	0.00	0.05
23.50	0.05	0.00	0.05
24.00	0.05	0.00	0.05
24.50	0.04	0.00	0.04
25.00	0.02	0.00	0.02
25.50	0.01	0.00	0.01
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link DP-2: Design Point #2

Inflow Area = 8.980 ac, 0.00% Impervious, Inflow Depth = 0.03" for 100-Year event
Inflow = 0.03 cfs @ 21.31 hrs, Volume= 0.021 af
Primary = 0.03 cfs @ 21.31 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Hydrograph for Link DP-2: Design Point #2

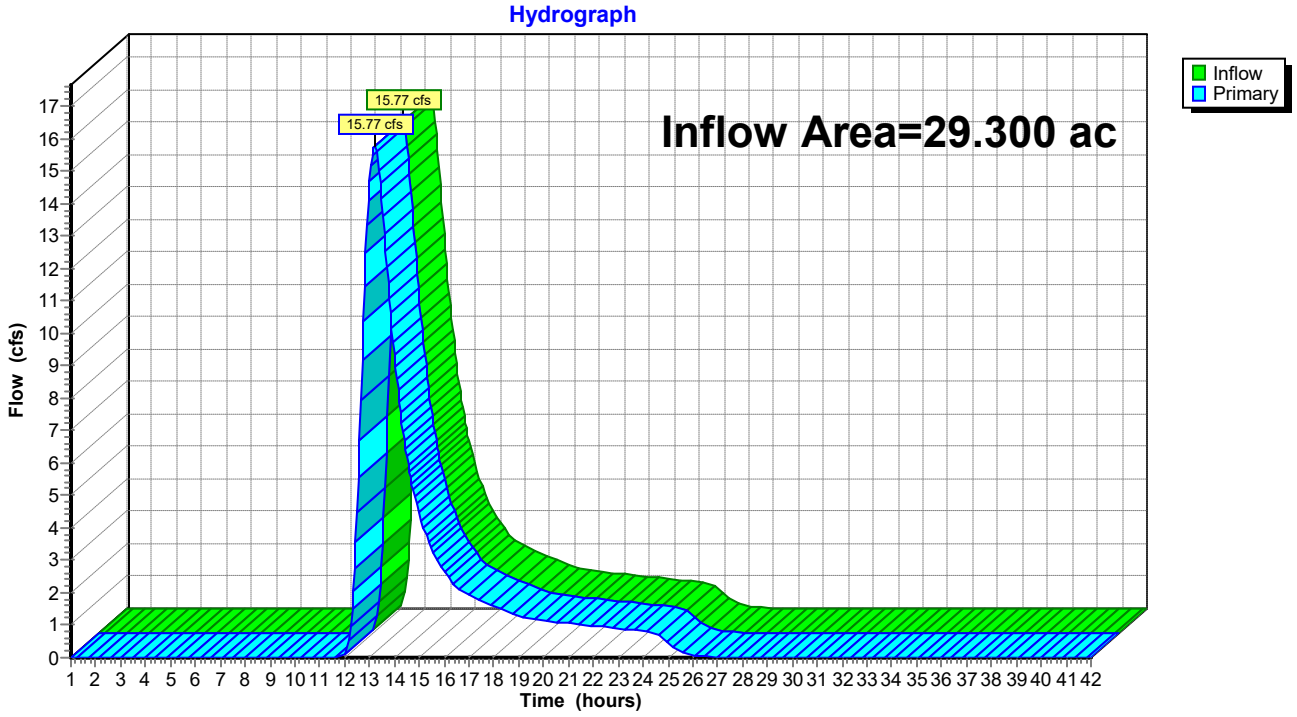
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00
15.00	0.01	0.00	0.01
15.50	0.01	0.00	0.01
16.00	0.02	0.00	0.02
16.50	0.02	0.00	0.02
17.00	0.03	0.00	0.03
17.50	0.03	0.00	0.03
18.00	0.03	0.00	0.03
18.50	0.03	0.00	0.03
19.00	0.03	0.00	0.03
19.50	0.03	0.00	0.03
20.00	0.03	0.00	0.03
20.50	0.03	0.00	0.03
21.00	**0.03**	0.00	**0.03**
21.50	**0.03**	0.00	**0.03**
22.00	0.03	0.00	0.03
22.50	0.03	0.00	0.03
23.00	0.03	0.00	0.03
23.50	0.03	0.00	0.03
24.00	0.03	0.00	0.03
24.50	0.02	0.00	0.02
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link DP-3: Design Point #3

Inflow Area = 29.300 ac, 3.96% Impervious, Inflow Depth = 1.38" for 100-Year event
Inflow = 15.77 cfs @ 13.20 hrs, Volume= 3.358 af
Primary = 15.77 cfs @ 13.20 hrs, Volume= 3.358 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Hydrograph for Link DP-3: Design Point #3

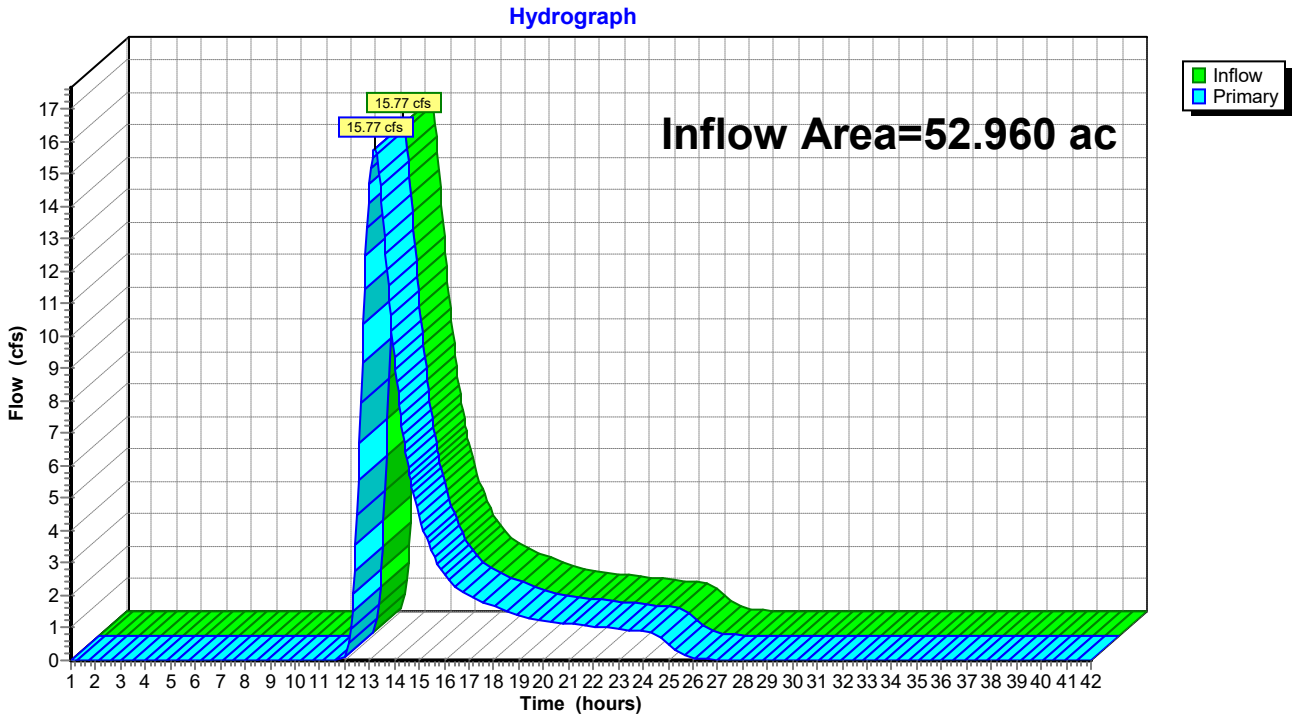
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.09	0.00	0.09
12.50	4.50	0.00	4.50
13.00	**14.68**	0.00	**14.68**
13.50	**14.18**	0.00	**14.18**
14.00	9.35	0.00	9.35
14.50	6.20	0.00	6.20
15.00	4.40	0.00	4.40
15.50	3.34	0.00	3.34
16.00	2.64	0.00	2.64
16.50	2.20	0.00	2.20
17.00	1.95	0.00	1.95
17.50	1.76	0.00	1.76
18.00	1.60	0.00	1.60
18.50	1.44	0.00	1.44
19.00	1.30	0.00	1.30
19.50	1.21	0.00	1.21
20.00	1.15	0.00	1.15
20.50	1.10	0.00	1.10
21.00	1.06	0.00	1.06
21.50	1.02	0.00	1.02
22.00	0.98	0.00	0.98
22.50	0.94	0.00	0.94
23.00	0.90	0.00	0.90
23.50	0.86	0.00	0.86
24.00	0.82	0.00	0.82
24.50	0.75	0.00	0.75
25.00	0.47	0.00	0.47
25.50	0.20	0.00	0.20
26.00	0.08	0.00	0.08
26.50	0.03	0.00	0.03
27.00	0.01	0.00	0.01
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link T: Design Point Total

Inflow Area = 52.960 ac, 2.23% Impervious, Inflow Depth = 0.77" for 100-Year event
Inflow = 15.77 cfs @ 13.20 hrs, Volume= 3.413 af
Primary = 15.77 cfs @ 13.20 hrs, Volume= 3.413 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link T: Design Point Total



Hydrograph for Link T: Design Point Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.09	0.00	0.09
12.50	4.50	0.00	4.50
13.00	**14.68**	0.00	**14.68**
13.50	**14.18**	0.00	**14.18**
14.00	9.35	0.00	9.35
14.50	6.20	0.00	6.20
15.00	4.41	0.00	4.41
15.50	3.37	0.00	3.37
16.00	2.69	0.00	2.69
16.50	2.26	0.00	2.26
17.00	2.01	0.00	2.01
17.50	1.83	0.00	1.83
18.00	1.67	0.00	1.67
18.50	1.51	0.00	1.51
19.00	1.37	0.00	1.37
19.50	1.28	0.00	1.28
20.00	1.22	0.00	1.22
20.50	1.18	0.00	1.18
21.00	1.14	0.00	1.14
21.50	1.10	0.00	1.10
22.00	1.06	0.00	1.06
22.50	1.02	0.00	1.02
23.00	0.98	0.00	0.98
23.50	0.94	0.00	0.94
24.00	0.89	0.00	0.89
24.50	0.81	0.00	0.81
25.00	0.50	0.00	0.50
25.50	0.21	0.00	0.21
26.00	0.08	0.00	0.08
26.50	0.03	0.00	0.03
27.00	0.01	0.00	0.01
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

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Appendix R-2

Proposed Conditions Drainage Map

And HydroCAD Report

ARCH D 24x36

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BERGMANN
ARCHITECTS ENGINEERS PLANNERS

18 Corporate Woods Blvd Circle, Suite 400
Albany, NY 12211
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office: 518.862.0325

CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION
4/06/2022	DRAWING UPDATES
7/03/2024	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

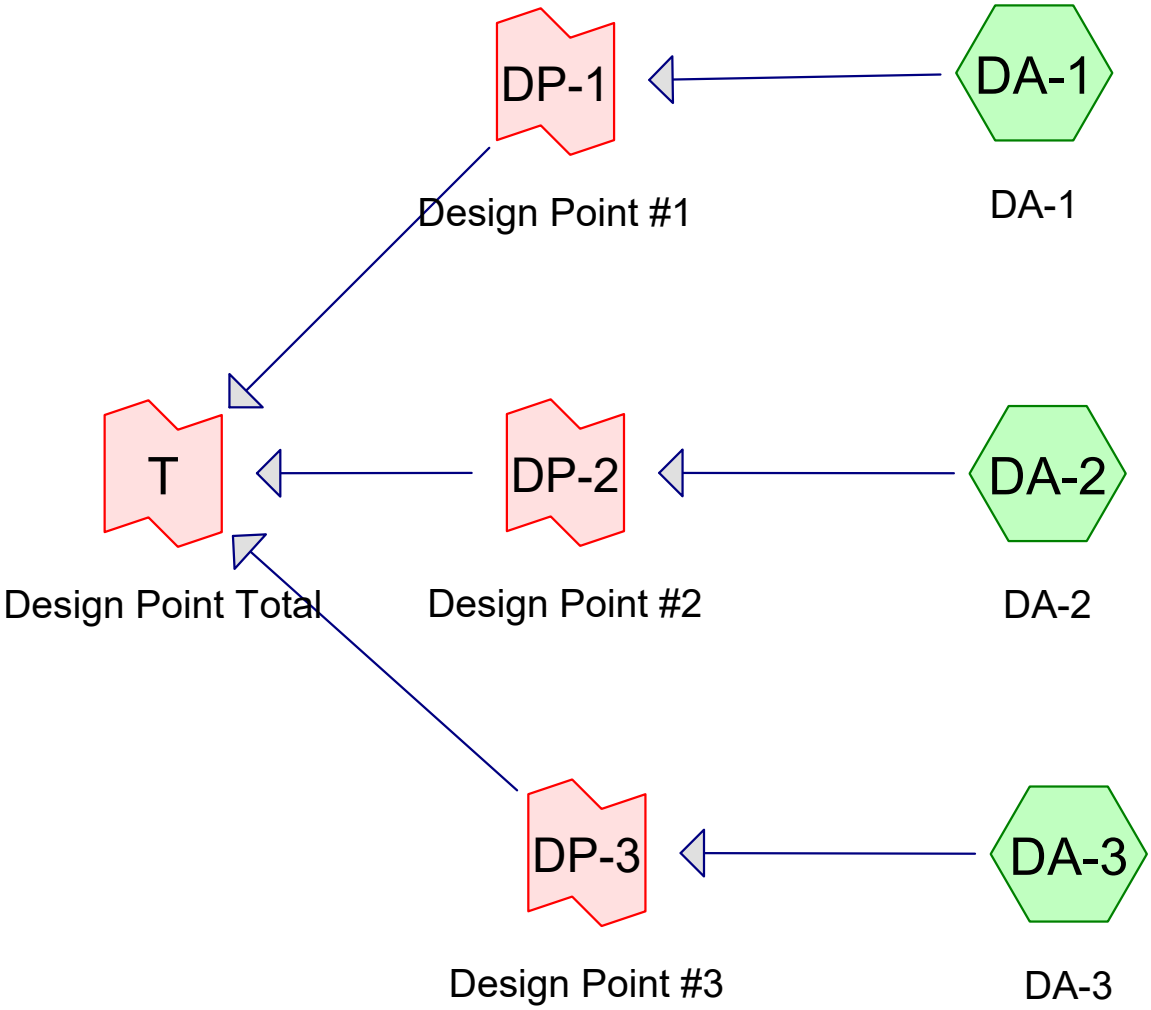
Project Manager	Discipline Lead
EDC	EDC
Designer	Reviewer
AWG	EDC
Date Issued	Project Number
08/04/2022	14859.09

Sheet Name

PROPOSED CONDITIONS DRAINAGE MAP

Drawing Number

DR-PR



Subcat Reach Pond Link

Routing Diagram for DR-PR
Prepared by VRTHOR2012, Printed 9/13/2022

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NRCC 24-hr	A	Default	24.00	1	1.94	2
2	10-Year	NRCC 24-hr	A	Default	24.00	1	3.21	2
3	100-Year	NRCC 24-hr	A	Default	24.00	1	5.49	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
10.040	30	Meadow, non-grazed, HSG A (DA-1, DA-2, DA-3)
0.920	71	Meadow, non-grazed, HSG C (DA-3)
0.040	78	Meadow, non-grazed, HSG D (DA-3)
0.270	98	Paved parking, HSG C (DA-1, DA-3)
1.150	98	Water Surface, HSG C (DA-3)
24.180	30	Woods, Good, HSG A (DA-1, DA-2, DA-3)
0.440	55	Woods, Good, HSG B (DA-3)
12.370	70	Woods, Good, HSG C (DA-3)
3.550	77	Woods, Good, HSG D (DA-3)
52.960	**45**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
34.220	HSG A	DA-1, DA-2, DA-3
0.440	HSG B	DA-3
14.710	HSG C	DA-1, DA-3
3.590	HSG D	DA-3
0.000	Other	
52.960		**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
10.040	0.000	0.920	0.040	0.000	11.000	Meadow, non-grazed	DA-1, DA-2, DA-3
0.000	0.000	0.270	0.000	0.000	0.270	Paved parking	DA-1, DA-3
0.000	0.000	1.150	0.000	0.000	1.150	Water Surface	DA-3
24.180	0.440	12.370	3.550	0.000	40.540	Woods, Good	DA-1, DA-2, DA-3
34.220	**0.440**	**14.710**	**3.590**	**0.000**	**52.960**	**TOTAL AREA**	

Time span=1.00-42.00 hrs, dt=0.05 hrs, 821 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=14.680 ac 1.77% Impervious Runoff Depth=0.00"
Flow Length=1,348' Tc=36.3 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment DA-2: DA-2 Runoff Area=8.980 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=695' Tc=22.5 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: DA-3 Runoff Area=29.300 ac 3.96% Impervious Runoff Depth=0.02"
Flow Length=1,550' Tc=79.3 min CN=57 Runoff=0.07 cfs 0.057 af

Link DP-1: Design Point #1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-2: Design Point #2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-3: Design Point #3 Inflow=0.07 cfs 0.057 af
Primary=0.07 cfs 0.057 af

Link T: Design Point Total Inflow=0.07 cfs 0.057 af
Primary=0.07 cfs 0.057 af

Total Runoff Area = 52.960 ac Runoff Volume = 0.057 af Average Runoff Depth = 0.01"
97.32% Pervious = 51.540 ac 2.68% Impervious = 1.420 ac

Summary for Subcatchment DA-1: DA-1

[45] Hint: Runoff=Zero

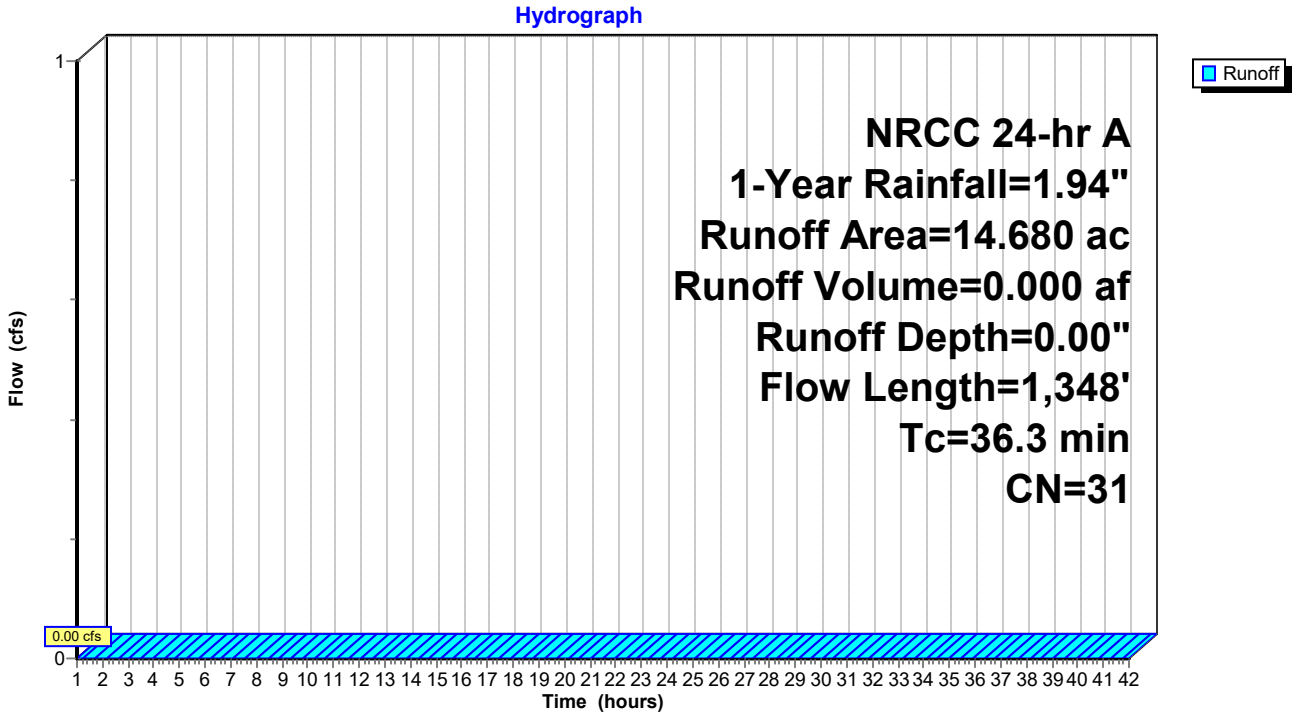
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-1 : Design Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.94"

Area (ac)	CN	Description
6.730	30	Meadow, non-grazed, HSG A
7.690	30	Woods, Good, HSG A
0.260	98	Paved parking, HSG C
14.680	31	Weighted Average
14.420		98.23% Pervious Area
0.260		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0210	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.69"
2.5	177	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	122	0.0310	1.23		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	128	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	258	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	80	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	43	0.0510	1.58		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	78	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	58	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	0.1520	1.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	91	0.0125	0.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
36.3	1,348	Total			

Subcatchment DA-1: DA-1



Hydrograph for Subcatchment DA-1: DA-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.02	**0.00**	**0.00**
1.50	0.03	0.00	0.00
2.00	0.03	0.00	0.00
2.50	0.04	0.00	0.00
3.00	0.05	0.00	0.00
3.50	0.06	0.00	0.00
4.00	0.08	0.00	0.00
4.50	0.09	0.00	0.00
5.00	0.10	0.00	0.00
5.50	0.11	0.00	0.00
6.00	0.12	0.00	0.00
6.50	0.14	0.00	0.00
7.00	0.15	0.00	0.00
7.50	0.17	0.00	0.00
8.00	0.19	0.00	0.00
8.50	0.21	0.00	0.00
9.00	0.24	0.00	0.00
9.50	0.27	0.00	0.00
10.00	0.30	0.00	0.00
10.50	0.35	0.00	0.00
11.00	0.41	0.00	0.00
11.50	0.52	0.00	0.00
12.00	0.91	0.00	0.00
12.50	1.42	0.00	0.00
13.00	1.53	0.00	0.00
13.50	1.59	0.00	0.00
14.00	1.64	0.00	0.00
14.50	1.67	0.00	0.00
15.00	1.70	0.00	0.00
15.50	1.73	0.00	0.00
16.00	1.75	0.00	0.00
16.50	1.77	0.00	0.00
17.00	1.79	0.00	0.00
17.50	1.80	0.00	0.00
18.00	1.82	0.00	0.00
18.50	1.83	0.00	0.00
19.00	1.84	0.00	0.00
19.50	1.85	0.00	0.00
20.00	1.86	0.00	0.00
20.50	1.88	0.00	0.00
21.00	1.89	0.00	0.00
21.50	1.90	0.00	0.00
22.00	1.91	0.00	0.00
22.50	1.91	0.00	0.00
23.00	1.92	0.00	0.00
23.50	1.93	0.00	0.00
24.00	**1.94**	0.00	0.00
24.50	1.94	0.00	0.00
25.00	1.94	0.00	0.00
25.50	1.94	0.00	0.00
26.00	1.94	0.00	0.00
26.50	1.94	0.00	0.00
27.00	1.94	0.00	0.00
27.50	1.94	0.00	0.00
28.00	1.94	0.00	0.00
28.50	1.94	0.00	0.00
29.00	1.94	0.00	0.00
29.50	1.94	0.00	0.00
30.00	1.94	0.00	0.00
30.50	1.94	0.00	0.00
31.00	1.94	0.00	0.00
31.50	1.94	0.00	0.00
32.00	1.94	0.00	0.00
32.50	1.94	0.00	0.00
33.00	1.94	0.00	0.00
33.50	1.94	0.00	0.00
34.00	1.94	0.00	0.00
34.50	1.94	0.00	0.00
35.00	1.94	0.00	0.00
35.50	1.94	0.00	0.00
36.00	1.94	0.00	0.00
36.50	1.94	0.00	0.00
37.00	1.94	0.00	0.00
37.50	1.94	0.00	0.00
38.00	1.94	0.00	0.00
38.50	1.94	0.00	0.00
39.00	1.94	0.00	0.00
39.50	1.94	0.00	0.00
40.00	1.94	0.00	0.00
40.50	1.94	0.00	0.00
41.00	1.94	0.00	0.00
41.50	1.94	0.00	0.00
42.00	1.94	0.00	0.00

Summary for Subcatchment DA-2: DA-2

[45] Hint: Runoff=Zero

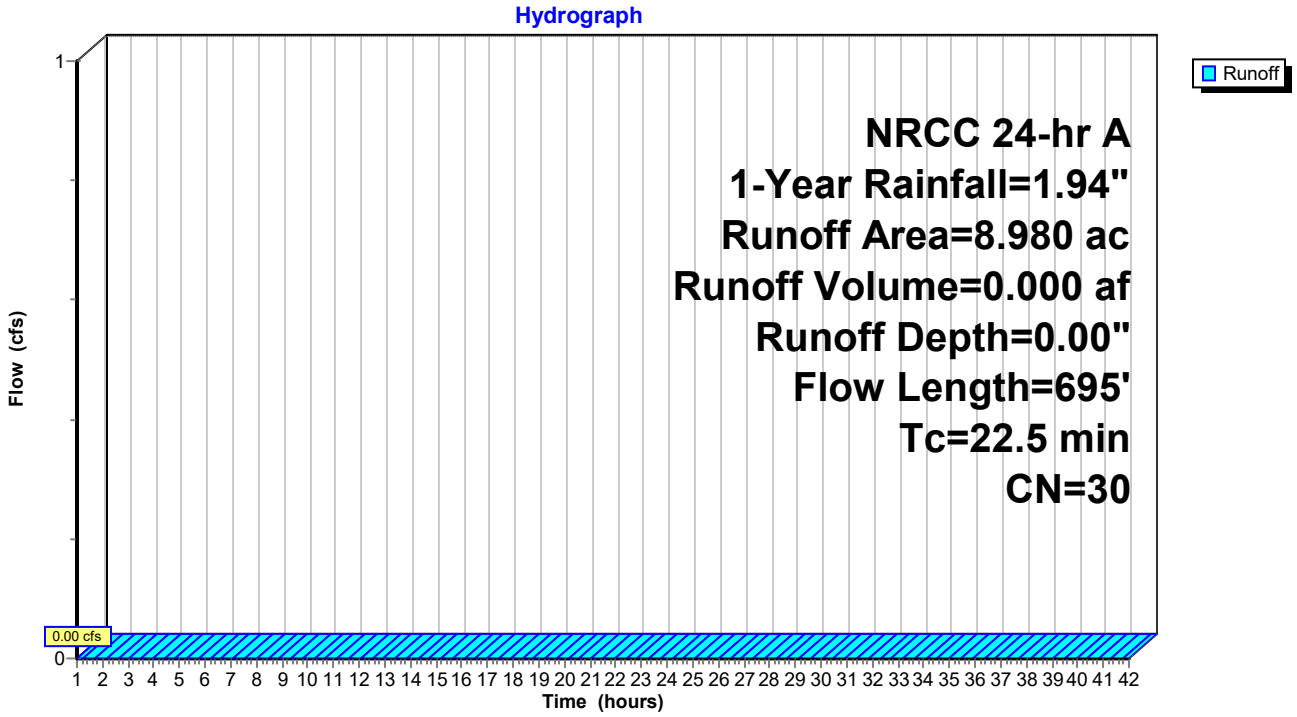
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-2 : Design Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.94"

Area (ac)	CN	Description
2.020	30	Meadow, non-grazed, HSG A
6.960	30	Woods, Good, HSG A
8.980	30	Weighted Average
8.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0380	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.69"
0.8	62	0.0360	1.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	128	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	48	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	164	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	174	0.0680	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	19	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.5	695	Total			

Subcatchment DA-2: DA-2



Hydrograph for Subcatchment DA-2: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.02	**0.00**	**0.00**
1.50	0.03	0.00	0.00
2.00	0.03	0.00	0.00
2.50	0.04	0.00	0.00
3.00	0.05	0.00	0.00
3.50	0.06	0.00	0.00
4.00	0.08	0.00	0.00
4.50	0.09	0.00	0.00
5.00	0.10	0.00	0.00
5.50	0.11	0.00	0.00
6.00	0.12	0.00	0.00
6.50	0.14	0.00	0.00
7.00	0.15	0.00	0.00
7.50	0.17	0.00	0.00
8.00	0.19	0.00	0.00
8.50	0.21	0.00	0.00
9.00	0.24	0.00	0.00
9.50	0.27	0.00	0.00
10.00	0.30	0.00	0.00
10.50	0.35	0.00	0.00
11.00	0.41	0.00	0.00
11.50	0.52	0.00	0.00
12.00	0.91	0.00	0.00
12.50	1.42	0.00	0.00
13.00	1.53	0.00	0.00
13.50	1.59	0.00	0.00
14.00	1.64	0.00	0.00
14.50	1.67	0.00	0.00
15.00	1.70	0.00	0.00
15.50	1.73	0.00	0.00
16.00	1.75	0.00	0.00
16.50	1.77	0.00	0.00
17.00	1.79	0.00	0.00
17.50	1.80	0.00	0.00
18.00	1.82	0.00	0.00
18.50	1.83	0.00	0.00
19.00	1.84	0.00	0.00
19.50	1.85	0.00	0.00
20.00	1.86	0.00	0.00
20.50	1.88	0.00	0.00
21.00	1.89	0.00	0.00
21.50	1.90	0.00	0.00
22.00	1.91	0.00	0.00
22.50	1.91	0.00	0.00
23.00	1.92	0.00	0.00
23.50	1.93	0.00	0.00
24.00	**1.94**	0.00	0.00
24.50	1.94	0.00	0.00
25.00	1.94	0.00	0.00
25.50	1.94	0.00	0.00
26.00	1.94	0.00	0.00
26.50	1.94	0.00	0.00
27.00	1.94	0.00	0.00
27.50	1.94	0.00	0.00
28.00	1.94	0.00	0.00
28.50	1.94	0.00	0.00
29.00	1.94	0.00	0.00
29.50	1.94	0.00	0.00
30.00	1.94	0.00	0.00
30.50	1.94	0.00	0.00
31.00	1.94	0.00	0.00
31.50	1.94	0.00	0.00
32.00	1.94	0.00	0.00
32.50	1.94	0.00	0.00
33.00	1.94	0.00	0.00
33.50	1.94	0.00	0.00
34.00	1.94	0.00	0.00
34.50	1.94	0.00	0.00
35.00	1.94	0.00	0.00
35.50	1.94	0.00	0.00
36.00	1.94	0.00	0.00
36.50	1.94	0.00	0.00
37.00	1.94	0.00	0.00
37.50	1.94	0.00	0.00
38.00	1.94	0.00	0.00
38.50	1.94	0.00	0.00
39.00	1.94	0.00	0.00
39.50	1.94	0.00	0.00
40.00	1.94	0.00	0.00
40.50	1.94	0.00	0.00
41.00	1.94	0.00	0.00
41.50	1.94	0.00	0.00
42.00	1.94	0.00	0.00

Summary for Subcatchment DA-3: DA-3

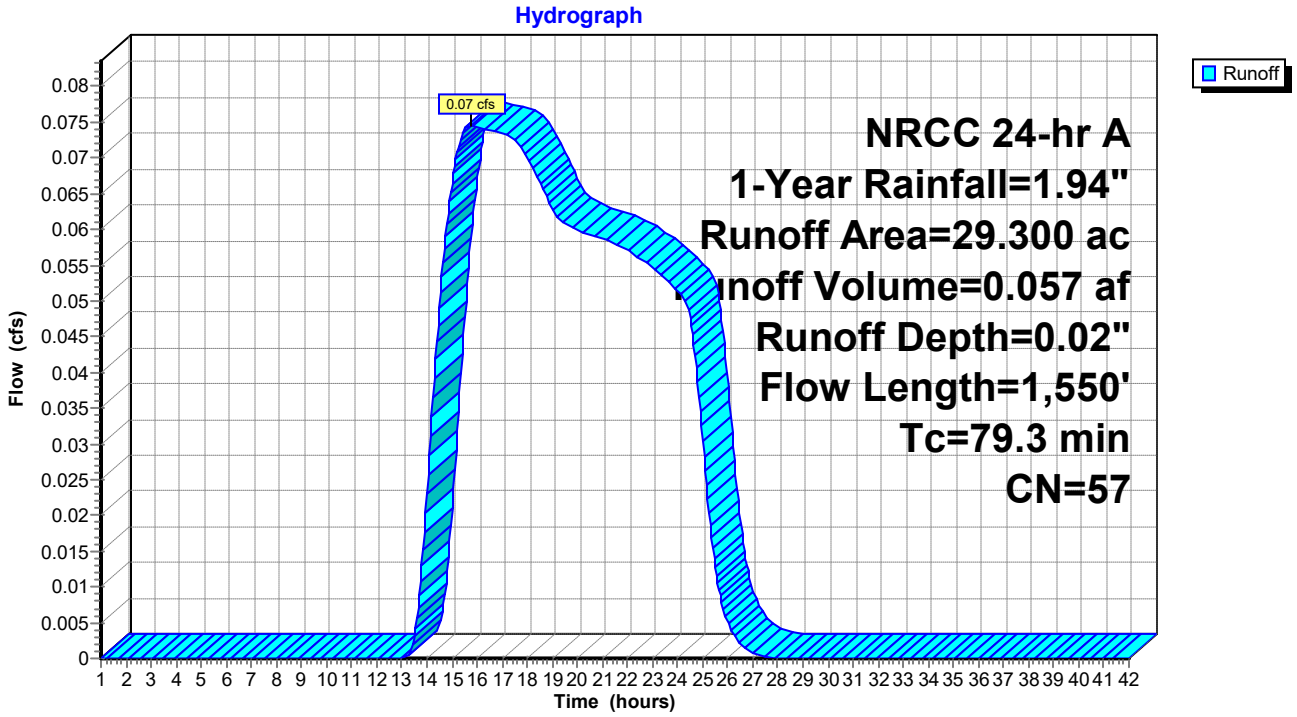
Runoff = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af, Depth= 0.02"
Routed to Link DP-3 : Design Point #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.94"

Area (ac)	CN	Description
9.530	30	Woods, Good, HSG A
1.290	30	Meadow, non-grazed, HSG A
0.440	55	Woods, Good, HSG B
12.370	70	Woods, Good, HSG C
0.920	71	Meadow, non-grazed, HSG C
3.550	77	Woods, Good, HSG D
0.040	78	Meadow, non-grazed, HSG D
1.150	98	Water Surface, HSG C
0.010	98	Paved parking, HSG C
29.300	57	Weighted Average
28.140		96.04% Pervious Area
1.160		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.8	100	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.7	208	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	490	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.3	470	0.2220	2.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	91	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	191	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
79.3	1,550	Total			

Subcatchment DA-3: DA-3



Hydrograph for Subcatchment DA-3: DA-3

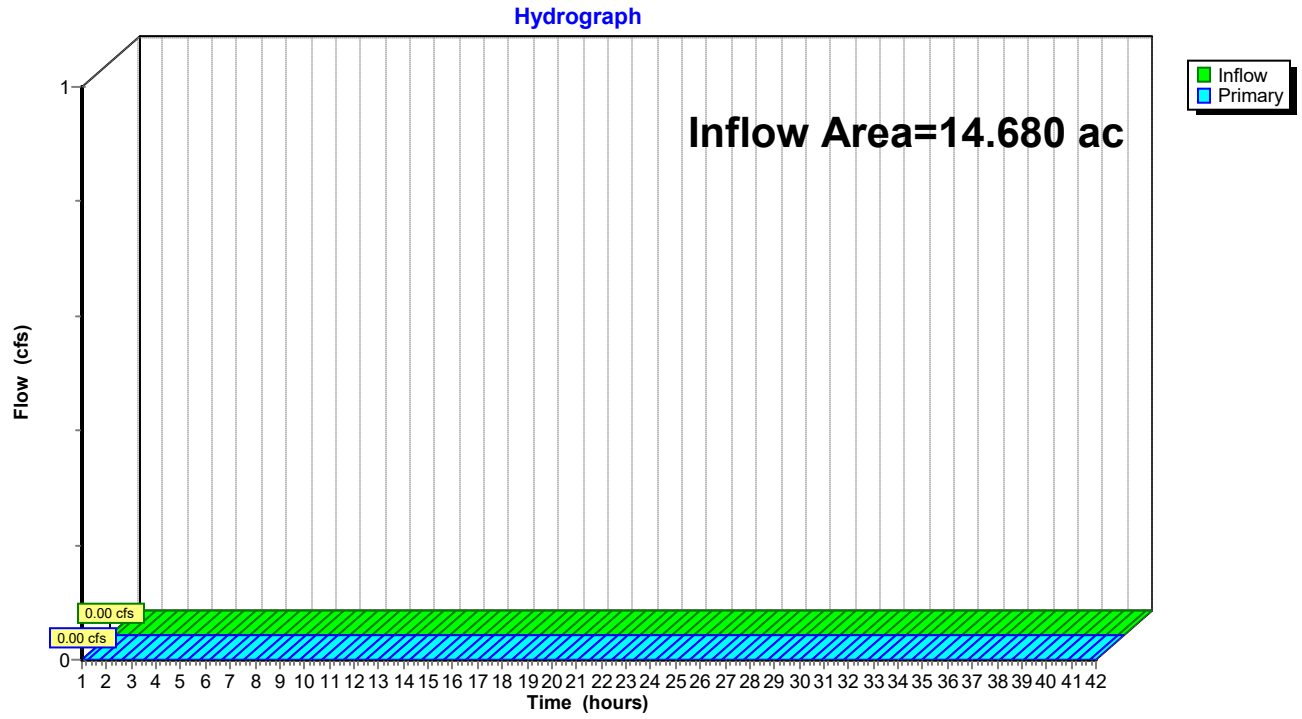
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.02	0.00	0.00
1.50	0.03	0.00	0.00
2.00	0.03	0.00	0.00
2.50	0.04	0.00	0.00
3.00	0.05	0.00	0.00
3.50	0.06	0.00	0.00
4.00	0.08	0.00	0.00
4.50	0.09	0.00	0.00
5.00	0.10	0.00	0.00
5.50	0.11	0.00	0.00
6.00	0.12	0.00	0.00
6.50	0.14	0.00	0.00
7.00	0.15	0.00	0.00
7.50	0.17	0.00	0.00
8.00	0.19	0.00	0.00
8.50	0.21	0.00	0.00
9.00	0.24	0.00	0.00
9.50	0.27	0.00	0.00
10.00	0.30	0.00	0.00
10.50	0.35	0.00	0.00
11.00	0.41	0.00	0.00
11.50	0.52	0.00	0.00
12.00	0.91	0.00	0.00
12.50	1.42	0.00	0.00
13.00	1.53	0.00	0.00
13.50	1.59	0.00	0.00
14.00	1.64	0.00	0.02
14.50	1.67	0.00	0.05
15.00	1.70	0.00	0.07
15.50	1.73	0.01	**0.07**
16.00	1.75	0.01	**0.07**
16.50	1.77	0.01	0.07
17.00	1.79	0.01	0.07
17.50	1.80	0.01	0.07
18.00	1.82	0.01	0.07
18.50	1.83	0.01	0.07
19.00	1.84	0.01	0.06
19.50	1.85	0.02	0.06
20.00	1.86	0.02	0.06
20.50	1.88	0.02	0.06
21.00	1.89	0.02	0.06
21.50	1.90	0.02	0.06
22.00	1.91	0.02	0.06
22.50	1.91	0.02	0.06
23.00	1.92	0.02	0.05
23.50	1.93	0.02	0.05
24.00	**1.94**	**0.02**	0.05
24.50	1.94	0.02	0.05
25.00	1.94	0.02	0.03
25.50	1.94	0.02	0.01
26.00	1.94	0.02	0.01
26.50	1.94	0.02	0.00
27.00	1.94	0.02	0.00
27.50	1.94	0.02	0.00
28.00	1.94	0.02	0.00
28.50	1.94	0.02	0.00
29.00	1.94	0.02	0.00
29.50	1.94	0.02	0.00
30.00	1.94	0.02	0.00
30.50	1.94	0.02	0.00
31.00	1.94	0.02	0.00
31.50	1.94	0.02	0.00
32.00	1.94	0.02	0.00
32.50	1.94	0.02	0.00
33.00	1.94	0.02	0.00
33.50	1.94	0.02	0.00
34.00	1.94	0.02	0.00
34.50	1.94	0.02	0.00
35.00	1.94	0.02	0.00
35.50	1.94	0.02	0.00
36.00	1.94	0.02	0.00
36.50	1.94	0.02	0.00
37.00	1.94	0.02	0.00
37.50	1.94	0.02	0.00
38.00	1.94	0.02	0.00
38.50	1.94	0.02	0.00
39.00	1.94	0.02	0.00
39.50	1.94	0.02	0.00
40.00	1.94	0.02	0.00
40.50	1.94	0.02	0.00
41.00	1.94	0.02	0.00
41.50	1.94	0.02	0.00
42.00	1.94	0.02	0.00

Summary for Link DP-1: Design Point #1

Inflow Area = 14.680 ac, 1.77% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Hydrograph for Link DP-1: Design Point #1

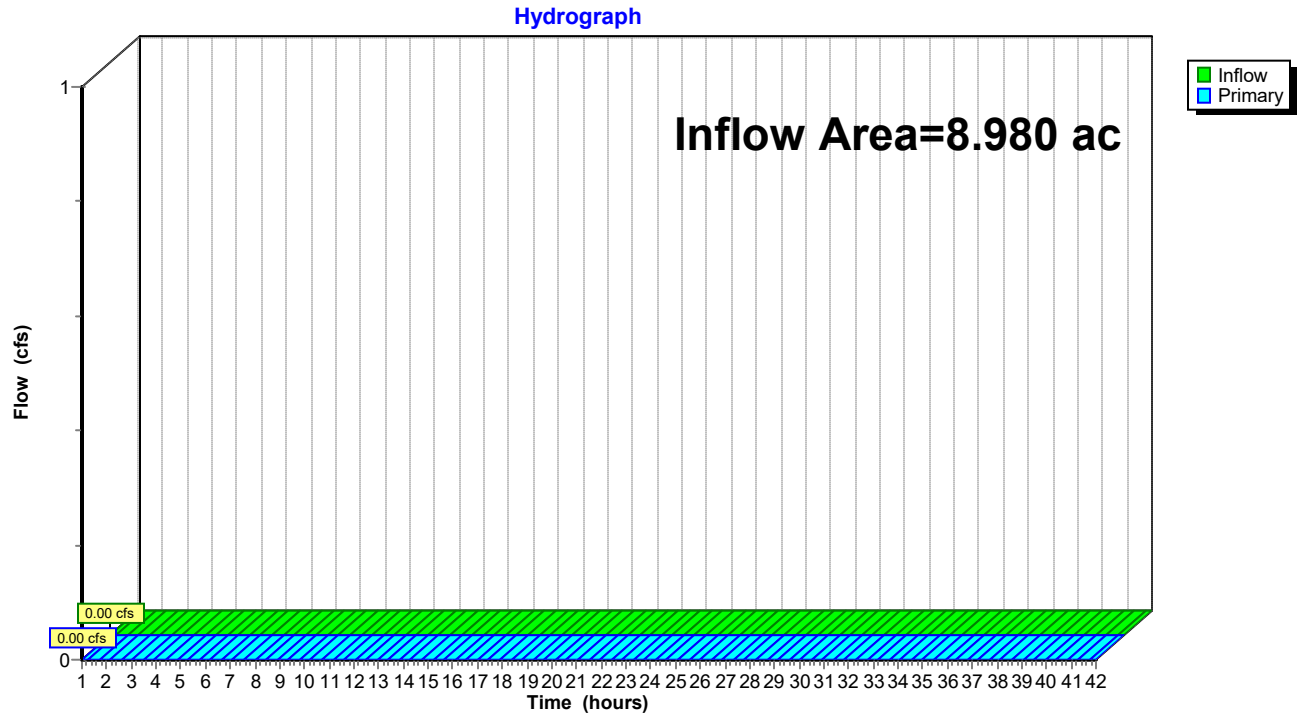
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00	40.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00	41.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00	41.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00	42.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
26.50	0.00	0.00	0.00				

Summary for Link DP-2: Design Point #2

Inflow Area = 8.980 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Hydrograph for Link DP-2: Design Point #2

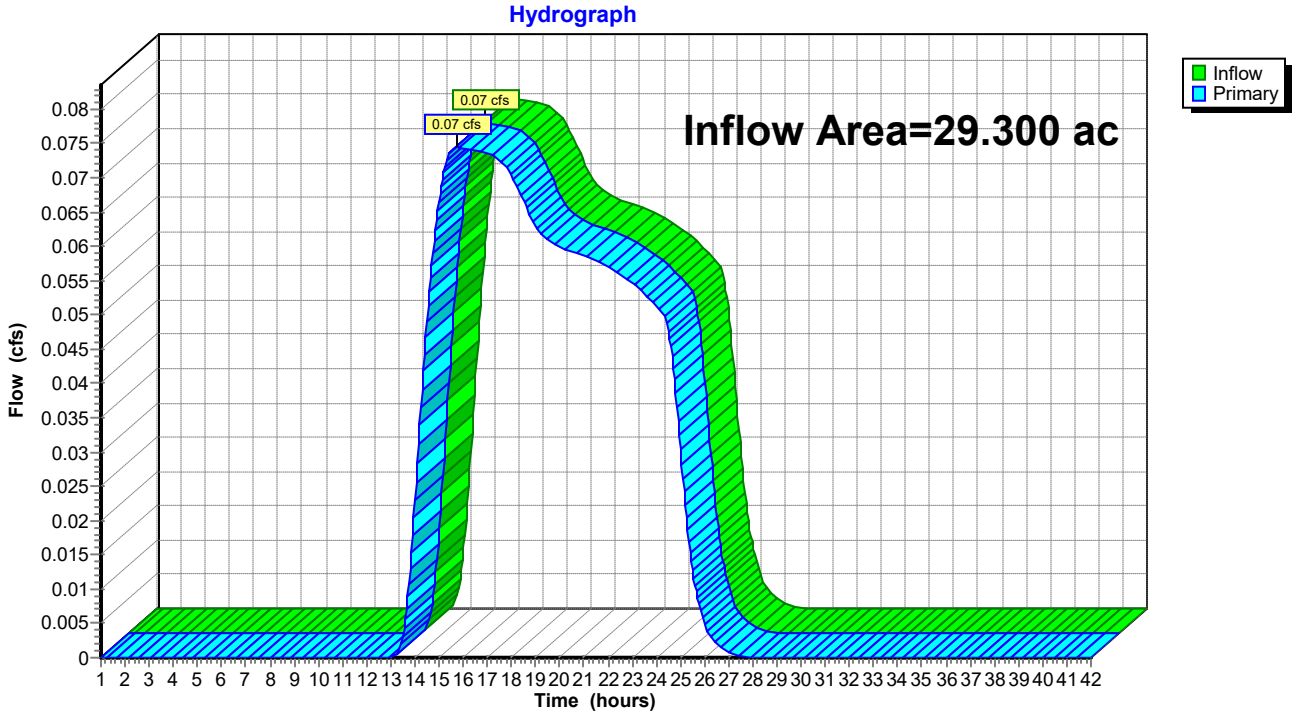
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00	40.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00	40.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00	41.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00	41.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00	42.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00				
17.00	0.00	0.00	0.00				
17.50	0.00	0.00	0.00				
18.00	0.00	0.00	0.00				
18.50	0.00	0.00	0.00				
19.00	0.00	0.00	0.00				
19.50	0.00	0.00	0.00				
20.00	0.00	0.00	0.00				
20.50	0.00	0.00	0.00				
21.00	0.00	0.00	0.00				
21.50	0.00	0.00	0.00				
22.00	0.00	0.00	0.00				
22.50	0.00	0.00	0.00				
23.00	0.00	0.00	0.00				
23.50	0.00	0.00	0.00				
24.00	0.00	0.00	0.00				
24.50	0.00	0.00	0.00				
25.00	0.00	0.00	0.00				
25.50	0.00	0.00	0.00				
26.00	0.00	0.00	0.00				
26.50	0.00	0.00	0.00				

Summary for Link DP-3: Design Point #3

Inflow Area = 29.300 ac, 3.96% Impervious, Inflow Depth = 0.02" for 1-Year event
Inflow = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af
Primary = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Hydrograph for Link DP-3: Design Point #3

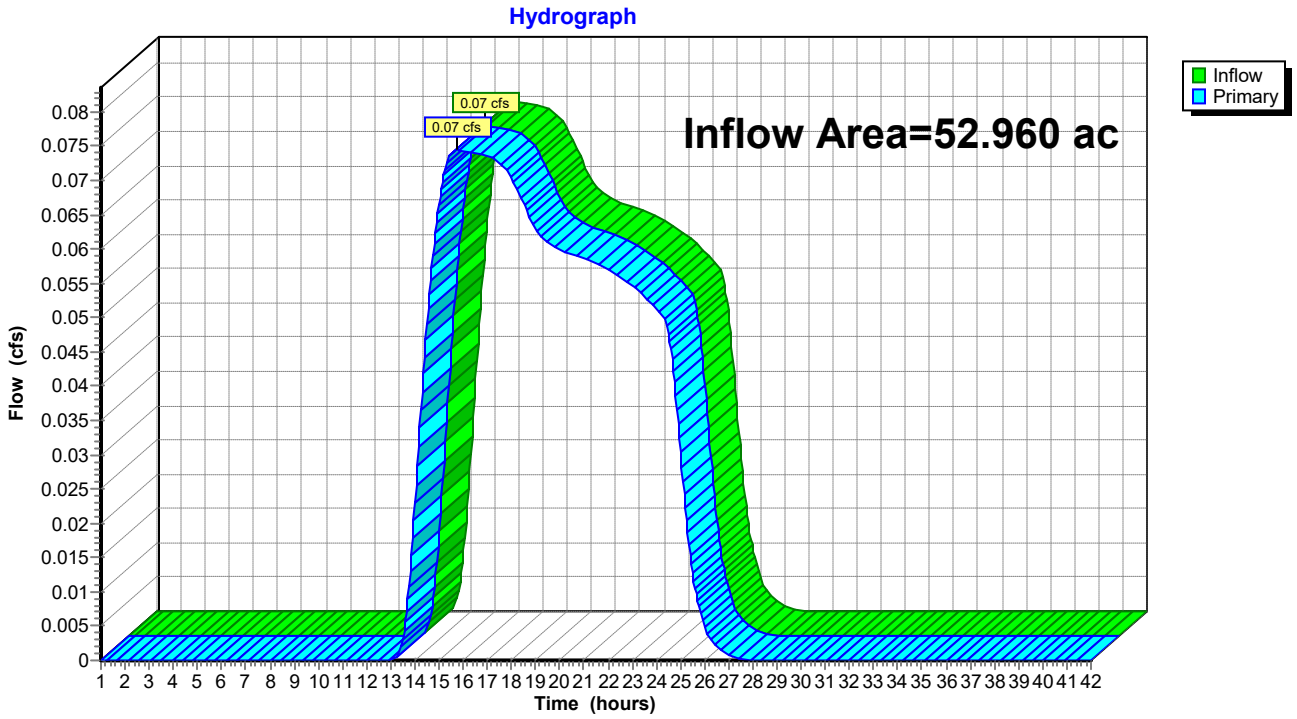
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.02	0.00	0.02
14.50	0.05	0.00	0.05
15.00	0.07	0.00	0.07
15.50	**0.07**	0.00	**0.07**
16.00	**0.07**	0.00	**0.07**
16.50	0.07	0.00	0.07
17.00	0.07	0.00	0.07
17.50	0.07	0.00	0.07
18.00	0.07	0.00	0.07
18.50	0.07	0.00	0.07
19.00	0.06	0.00	0.06
19.50	0.06	0.00	0.06
20.00	0.06	0.00	0.06
20.50	0.06	0.00	0.06
21.00	0.06	0.00	0.06
21.50	0.06	0.00	0.06
22.00	0.06	0.00	0.06
22.50	0.06	0.00	0.06
23.00	0.05	0.00	0.05
23.50	0.05	0.00	0.05
24.00	0.05	0.00	0.05
24.50	0.05	0.00	0.05
25.00	0.03	0.00	0.03
25.50	0.01	0.00	0.01
26.00	0.01	0.00	0.01
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link T: Design Point Total

Inflow Area = 52.960 ac, 2.68% Impervious, Inflow Depth = 0.01" for 1-Year event
Inflow = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af
Primary = 0.07 cfs @ 15.76 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link T: Design Point Total



Hydrograph for Link T: Design Point Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00	38.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00	39.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00	39.50	0.00	0.00	0.00
14.00	0.02	0.00	0.02	40.00	0.00	0.00	0.00
14.50	0.05	0.00	0.05	40.50	0.00	0.00	0.00
15.00	0.07	0.00	0.07	41.00	0.00	0.00	0.00
15.50	**0.07**	0.00	**0.07**	41.50	0.00	0.00	0.00
16.00	**0.07**	0.00	**0.07**	42.00	0.00	0.00	0.00
16.50	0.07	0.00	0.07				
17.00	0.07	0.00	0.07				
17.50	0.07	0.00	0.07				
18.00	0.07	0.00	0.07				
18.50	0.07	0.00	0.07				
19.00	0.06	0.00	0.06				
19.50	0.06	0.00	0.06				
20.00	0.06	0.00	0.06				
20.50	0.06	0.00	0.06				
21.00	0.06	0.00	0.06				
21.50	0.06	0.00	0.06				
22.00	0.06	0.00	0.06				
22.50	0.06	0.00	0.06				
23.00	0.05	0.00	0.05				
23.50	0.05	0.00	0.05				
24.00	0.05	0.00	0.05				
24.50	0.05	0.00	0.05				
25.00	0.03	0.00	0.03				
25.50	0.01	0.00	0.01				
26.00	0.01	0.00	0.01				
26.50	0.00	0.00	0.00				

Time span=1.00-42.00 hrs, dt=0.05 hrs, 821 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=14.680 ac 1.77% Impervious Runoff Depth=0.00"
Flow Length=1,348' Tc=36.3 min CN=31 Runoff=0.00 cfs 0.000 af

Subcatchment DA-2: DA-2 Runoff Area=8.980 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=695' Tc=22.5 min CN=30 Runoff=0.00 cfs 0.000 af

Subcatchment DA-3: DA-3 Runoff Area=29.300 ac 3.96% Impervious Runoff Depth=0.31"
Flow Length=1,550' Tc=79.3 min CN=57 Runoff=2.58 cfs 0.764 af

Link DP-1: Design Point #1 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-2: Design Point #2 Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link DP-3: Design Point #3 Inflow=2.58 cfs 0.764 af
Primary=2.58 cfs 0.764 af

Link T: Design Point Total Inflow=2.58 cfs 0.764 af
Primary=2.58 cfs 0.764 af

Total Runoff Area = 52.960 ac Runoff Volume = 0.764 af Average Runoff Depth = 0.17"
97.32% Pervious = 51.540 ac 2.68% Impervious = 1.420 ac

Summary for Subcatchment DA-1: DA-1

[45] Hint: Runoff=Zero

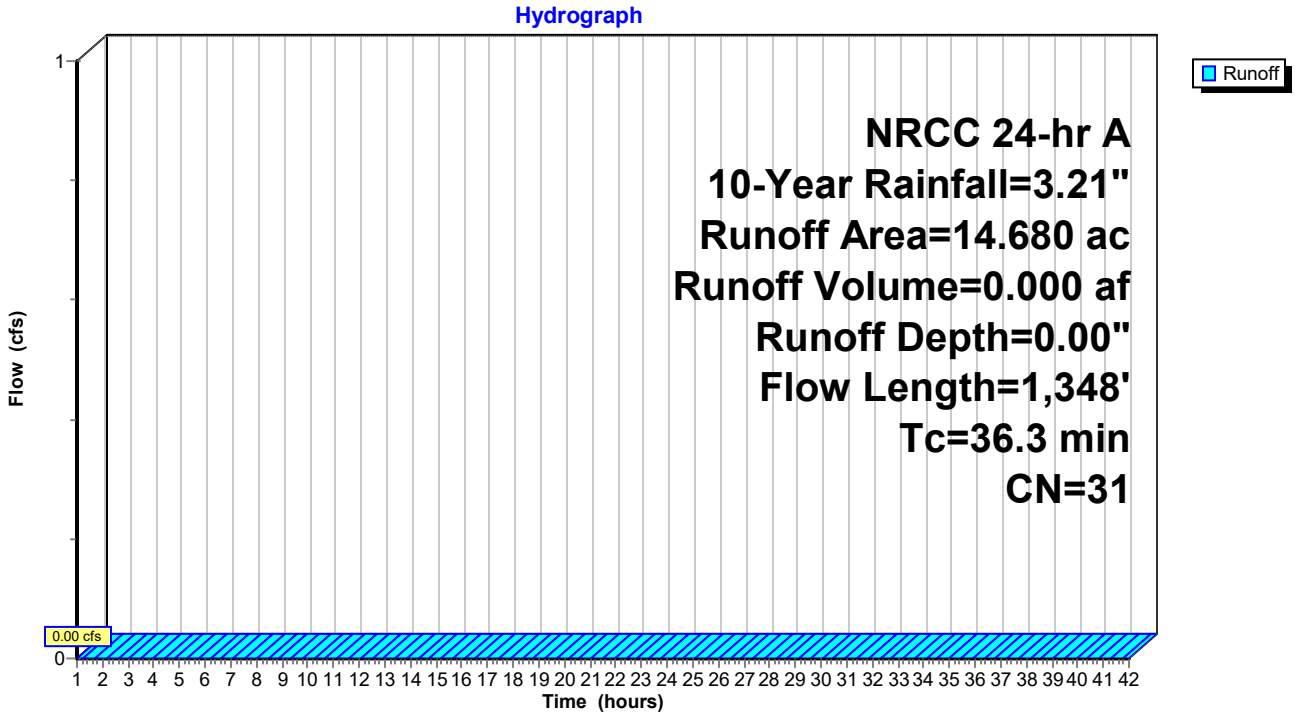
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-1 : Design Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.21"

Area (ac)	CN	Description
6.730	30	Meadow, non-grazed, HSG A
7.690	30	Woods, Good, HSG A
0.260	98	Paved parking, HSG C
14.680	31	Weighted Average
14.420		98.23% Pervious Area
0.260		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0210	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.69"
2.5	177	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	122	0.0310	1.23		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	128	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	258	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	80	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	43	0.0510	1.58		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	78	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	58	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	0.1520	1.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	91	0.0125	0.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
36.3	1,348	Total			

Subcatchment DA-1: DA-1



Hydrograph for Subcatchment DA-1: DA-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	**0.00**	**0.00**
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	0.00	0.00
5.50	0.18	0.00	0.00
6.00	0.21	0.00	0.00
6.50	0.23	0.00	0.00
7.00	0.26	0.00	0.00
7.50	0.29	0.00	0.00
8.00	0.32	0.00	0.00
8.50	0.35	0.00	0.00
9.00	0.39	0.00	0.00
9.50	0.44	0.00	0.00
10.00	0.50	0.00	0.00
10.50	0.57	0.00	0.00
11.00	0.68	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.51	0.00	0.00
12.50	2.35	0.00	0.00
13.00	2.53	0.00	0.00
13.50	2.64	0.00	0.00
14.00	2.71	0.00	0.00
14.50	2.77	0.00	0.00
15.00	2.82	0.00	0.00
15.50	2.86	0.00	0.00
16.00	2.89	0.00	0.00
16.50	2.92	0.00	0.00
17.00	2.95	0.00	0.00
17.50	2.98	0.00	0.00
18.00	3.00	0.00	0.00
18.50	3.03	0.00	0.00
19.00	3.05	0.00	0.00
19.50	3.07	0.00	0.00
20.00	3.09	0.00	0.00
20.50	3.10	0.00	0.00
21.00	3.12	0.00	0.00
21.50	3.14	0.00	0.00
22.00	3.15	0.00	0.00
22.50	3.17	0.00	0.00
23.00	3.18	0.00	0.00
23.50	3.20	0.00	0.00
24.00	**3.21**	0.00	0.00
24.50	3.21	0.00	0.00
25.00	3.21	0.00	0.00
25.50	3.21	0.00	0.00
26.00	3.21	0.00	0.00
26.50	3.21	0.00	0.00
27.00	3.21	0.00	0.00
27.50	3.21	0.00	0.00
28.00	3.21	0.00	0.00
28.50	3.21	0.00	0.00
29.00	3.21	0.00	0.00
29.50	3.21	0.00	0.00
30.00	3.21	0.00	0.00
30.50	3.21	0.00	0.00
31.00	3.21	0.00	0.00
31.50	3.21	0.00	0.00
32.00	3.21	0.00	0.00
32.50	3.21	0.00	0.00
33.00	3.21	0.00	0.00
33.50	3.21	0.00	0.00
34.00	3.21	0.00	0.00
34.50	3.21	0.00	0.00
35.00	3.21	0.00	0.00
35.50	3.21	0.00	0.00
36.00	3.21	0.00	0.00
36.50	3.21	0.00	0.00
37.00	3.21	0.00	0.00
37.50	3.21	0.00	0.00
38.00	3.21	0.00	0.00
38.50	3.21	0.00	0.00
39.00	3.21	0.00	0.00
39.50	3.21	0.00	0.00
40.00	3.21	0.00	0.00
40.50	3.21	0.00	0.00
41.00	3.21	0.00	0.00
41.50	3.21	0.00	0.00
42.00	3.21	0.00	0.00

Summary for Subcatchment DA-2: DA-2

[45] Hint: Runoff=Zero

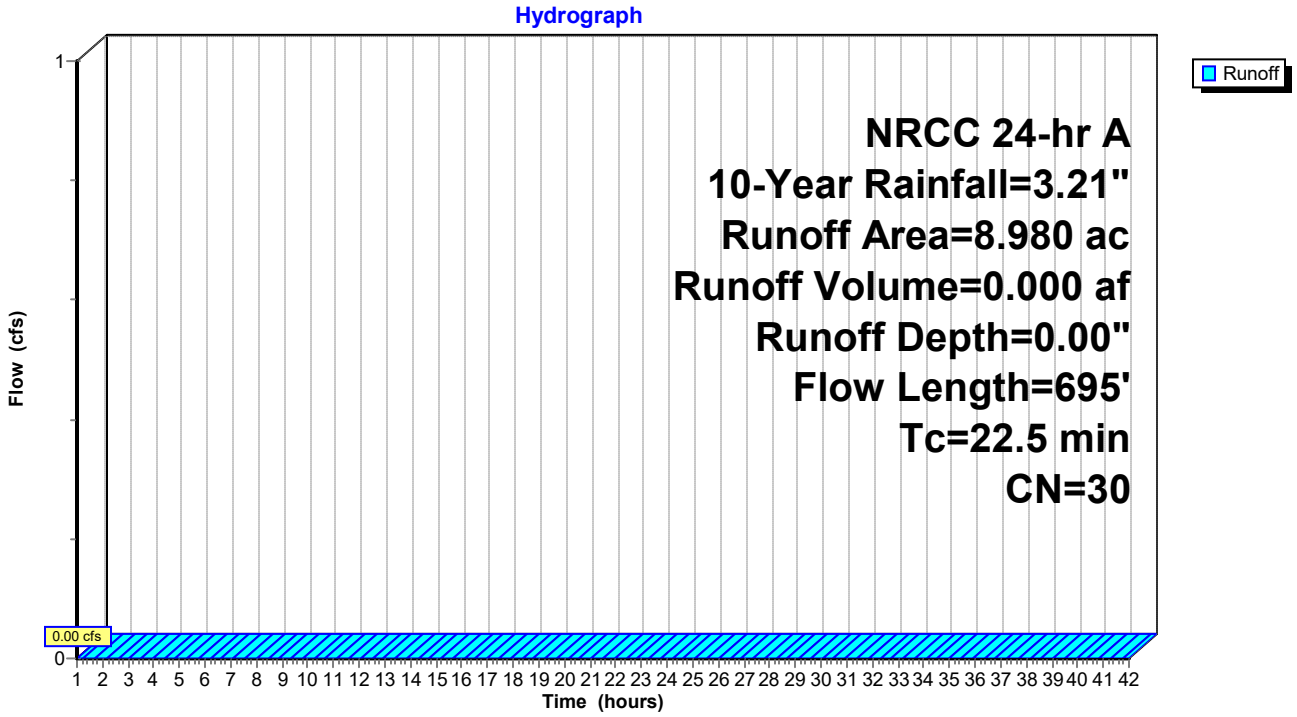
Runoff = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link DP-2 : Design Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.21"

Area (ac)	CN	Description
2.020	30	Meadow, non-grazed, HSG A
6.960	30	Woods, Good, HSG A
8.980	30	Weighted Average
8.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0380	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.69"
0.8	62	0.0360	1.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	128	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	48	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	164	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	174	0.0680	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	19	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.5	695	Total			

Subcatchment DA-2: DA-2



Hydrograph for Subcatchment DA-2: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	**0.00**	**0.00**
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	0.00	0.00
5.50	0.18	0.00	0.00
6.00	0.21	0.00	0.00
6.50	0.23	0.00	0.00
7.00	0.26	0.00	0.00
7.50	0.29	0.00	0.00
8.00	0.32	0.00	0.00
8.50	0.35	0.00	0.00
9.00	0.39	0.00	0.00
9.50	0.44	0.00	0.00
10.00	0.50	0.00	0.00
10.50	0.57	0.00	0.00
11.00	0.68	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.51	0.00	0.00
12.50	2.35	0.00	0.00
13.00	2.53	0.00	0.00
13.50	2.64	0.00	0.00
14.00	2.71	0.00	0.00
14.50	2.77	0.00	0.00
15.00	2.82	0.00	0.00
15.50	2.86	0.00	0.00
16.00	2.89	0.00	0.00
16.50	2.92	0.00	0.00
17.00	2.95	0.00	0.00
17.50	2.98	0.00	0.00
18.00	3.00	0.00	0.00
18.50	3.03	0.00	0.00
19.00	3.05	0.00	0.00
19.50	3.07	0.00	0.00
20.00	3.09	0.00	0.00
20.50	3.10	0.00	0.00
21.00	3.12	0.00	0.00
21.50	3.14	0.00	0.00
22.00	3.15	0.00	0.00
22.50	3.17	0.00	0.00
23.00	3.18	0.00	0.00
23.50	3.20	0.00	0.00
24.00	**3.21**	0.00	0.00
24.50	3.21	0.00	0.00
25.00	3.21	0.00	0.00
25.50	3.21	0.00	0.00
26.00	3.21	0.00	0.00
26.50	3.21	0.00	0.00
27.00	3.21	0.00	0.00
27.50	3.21	0.00	0.00
28.00	3.21	0.00	0.00
28.50	3.21	0.00	0.00
29.00	3.21	0.00	0.00
29.50	3.21	0.00	0.00
30.00	3.21	0.00	0.00
30.50	3.21	0.00	0.00
31.00	3.21	0.00	0.00
31.50	3.21	0.00	0.00
32.00	3.21	0.00	0.00
32.50	3.21	0.00	0.00
33.00	3.21	0.00	0.00
33.50	3.21	0.00	0.00
34.00	3.21	0.00	0.00
34.50	3.21	0.00	0.00
35.00	3.21	0.00	0.00
35.50	3.21	0.00	0.00
36.00	3.21	0.00	0.00
36.50	3.21	0.00	0.00
37.00	3.21	0.00	0.00
37.50	3.21	0.00	0.00
38.00	3.21	0.00	0.00
38.50	3.21	0.00	0.00
39.00	3.21	0.00	0.00
39.50	3.21	0.00	0.00
40.00	3.21	0.00	0.00
40.50	3.21	0.00	0.00
41.00	3.21	0.00	0.00
41.50	3.21	0.00	0.00
42.00	3.21	0.00	0.00

Summary for Subcatchment DA-3: DA-3

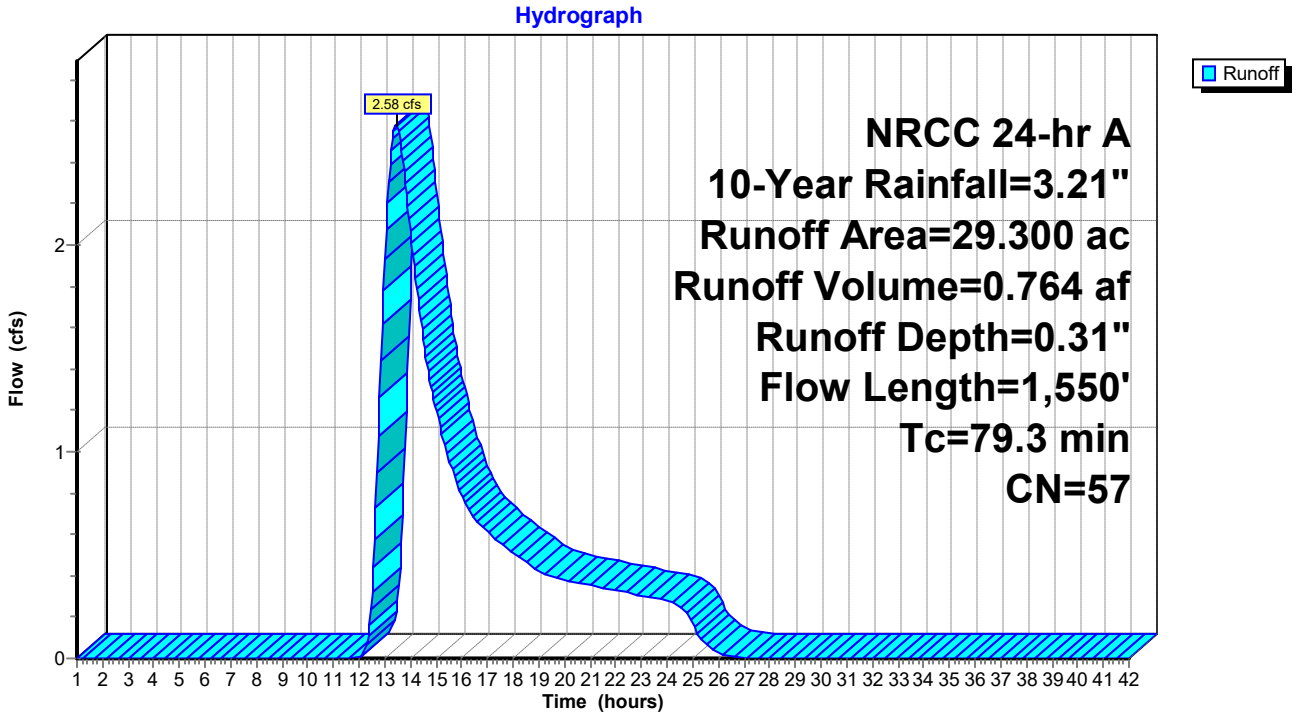
Runoff = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af, Depth= 0.31"
Routed to Link DP-3 : Design Point #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.21"

Area (ac)	CN	Description
9.530	30	Woods, Good, HSG A
1.290	30	Meadow, non-grazed, HSG A
0.440	55	Woods, Good, HSG B
12.370	70	Woods, Good, HSG C
0.920	71	Meadow, non-grazed, HSG C
3.550	77	Woods, Good, HSG D
0.040	78	Meadow, non-grazed, HSG D
1.150	98	Water Surface, HSG C
0.010	98	Paved parking, HSG C
29.300	57	Weighted Average
28.140		96.04% Pervious Area
1.160		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.8	100	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.7	208	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	490	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.3	470	0.2220	2.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	91	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	191	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
79.3	1,550	Total			

Subcatchment DA-3: DA-3



Hydrograph for Subcatchment DA-3: DA-3

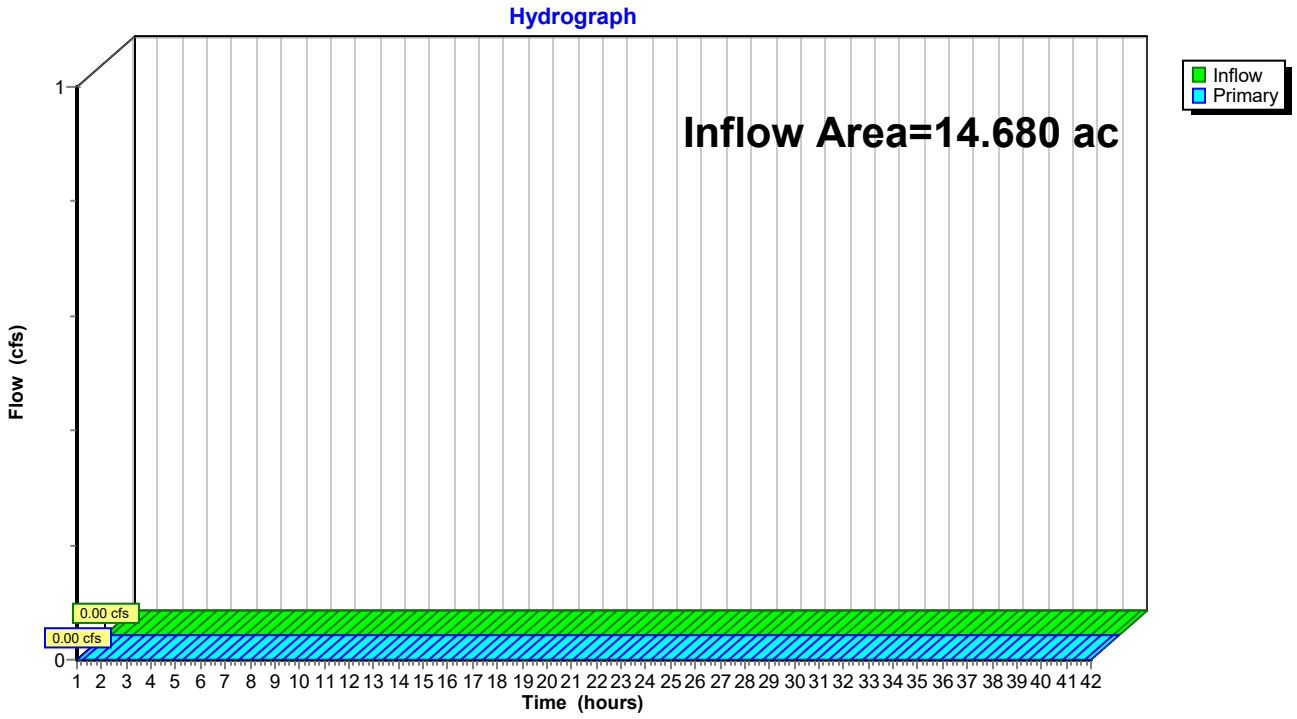
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.03	0.00	0.00
1.50	0.04	0.00	0.00
2.00	0.06	0.00	0.00
2.50	0.07	0.00	0.00
3.00	0.09	0.00	0.00
3.50	0.11	0.00	0.00
4.00	0.12	0.00	0.00
4.50	0.14	0.00	0.00
5.00	0.16	0.00	0.00
5.50	0.18	0.00	0.00
6.00	0.21	0.00	0.00
6.50	0.23	0.00	0.00
7.00	0.26	0.00	0.00
7.50	0.29	0.00	0.00
8.00	0.32	0.00	0.00
8.50	0.35	0.00	0.00
9.00	0.39	0.00	0.00
9.50	0.44	0.00	0.00
10.00	0.50	0.00	0.00
10.50	0.57	0.00	0.00
11.00	0.68	0.00	0.00
11.50	0.86	0.00	0.00
12.00	1.51	0.00	0.00
12.50	2.35	0.08	0.33
13.00	2.53	0.12	**1.93**
13.50	2.64	0.15	**2.57**
14.00	2.71	0.17	2.07
14.50	2.77	0.18	1.54
15.00	2.82	0.19	1.19
15.50	2.86	0.20	0.96
16.00	2.89	0.21	0.79
16.50	2.92	0.22	0.68
17.00	2.95	0.23	0.61
17.50	2.98	0.24	0.56
18.00	3.00	0.25	0.51
18.50	3.03	0.25	0.46
19.00	3.05	0.26	0.42
19.50	3.07	0.27	0.39
20.00	3.09	0.27	0.38
20.50	3.10	0.28	0.36
21.00	3.12	0.28	0.35
21.50	3.14	0.29	0.34
22.00	3.15	0.29	0.33
22.50	3.17	0.30	0.32
23.00	3.18	0.30	0.30
23.50	3.20	0.31	0.29
24.00	**3.21**	**0.31**	0.28
24.50	3.21	0.31	0.26
25.00	3.21	0.31	0.16
25.50	3.21	0.31	0.07
26.00	3.21	0.31	0.03
26.50	3.21	0.31	0.01
27.00	3.21	0.31	0.00
27.50	3.21	0.31	0.00
28.00	3.21	0.31	0.00
28.50	3.21	0.31	0.00
29.00	3.21	0.31	0.00
29.50	3.21	0.31	0.00
30.00	3.21	0.31	0.00
30.50	3.21	0.31	0.00
31.00	3.21	0.31	0.00
31.50	3.21	0.31	0.00
32.00	3.21	0.31	0.00
32.50	3.21	0.31	0.00
33.00	3.21	0.31	0.00
33.50	3.21	0.31	0.00
34.00	3.21	0.31	0.00
34.50	3.21	0.31	0.00
35.00	3.21	0.31	0.00
35.50	3.21	0.31	0.00
36.00	3.21	0.31	0.00
36.50	3.21	0.31	0.00
37.00	3.21	0.31	0.00
37.50	3.21	0.31	0.00
38.00	3.21	0.31	0.00
38.50	3.21	0.31	0.00
39.00	3.21	0.31	0.00
39.50	3.21	0.31	0.00
40.00	3.21	0.31	0.00
40.50	3.21	0.31	0.00
41.00	3.21	0.31	0.00
41.50	3.21	0.31	0.00
42.00	3.21	0.31	0.00

Summary for Link DP-1: Design Point #1

Inflow Area = 14.680 ac, 1.77% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Hydrograph for Link DP-1: Design Point #1

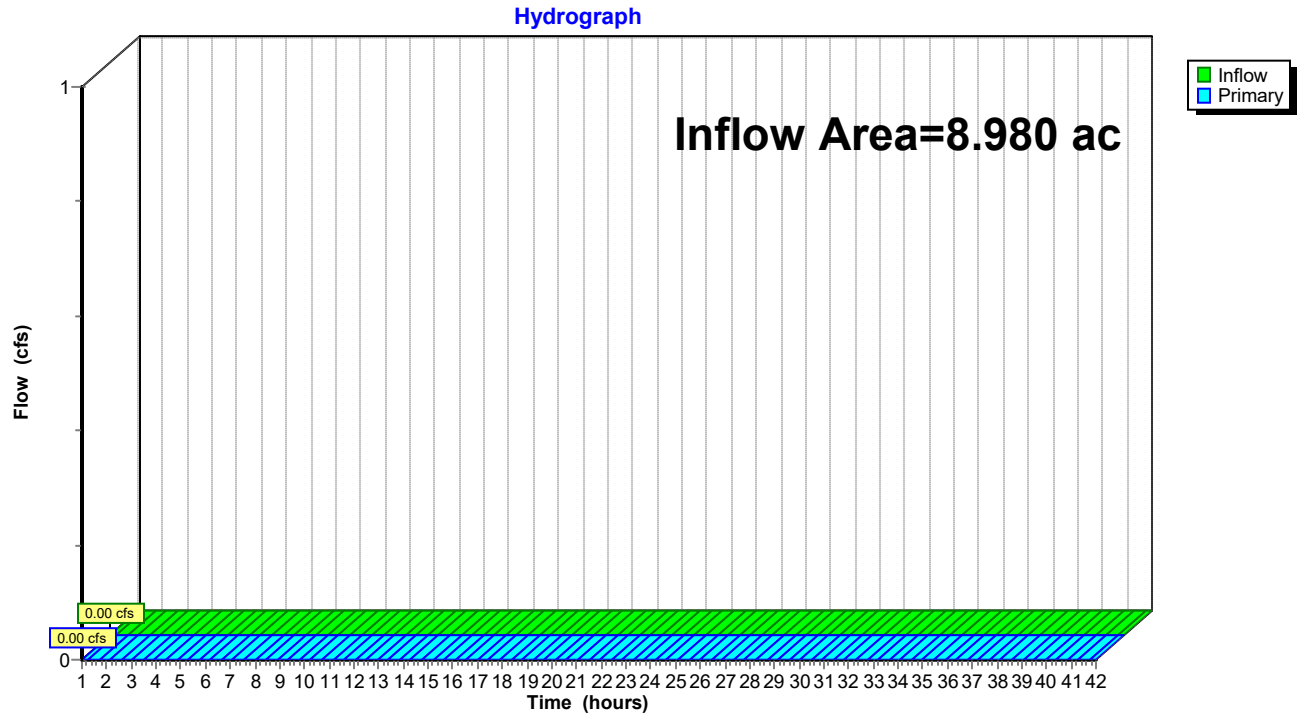
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00
17.00	0.00	0.00	0.00
17.50	0.00	0.00	0.00
18.00	0.00	0.00	0.00
18.50	0.00	0.00	0.00
19.00	0.00	0.00	0.00
19.50	0.00	0.00	0.00
20.00	0.00	0.00	0.00
20.50	0.00	0.00	0.00
21.00	0.00	0.00	0.00
21.50	0.00	0.00	0.00
22.00	0.00	0.00	0.00
22.50	0.00	0.00	0.00
23.00	0.00	0.00	0.00
23.50	0.00	0.00	0.00
24.00	0.00	0.00	0.00
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link DP-2: Design Point #2

Inflow Area = 8.980 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 1.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Hydrograph for Link DP-2: Design Point #2

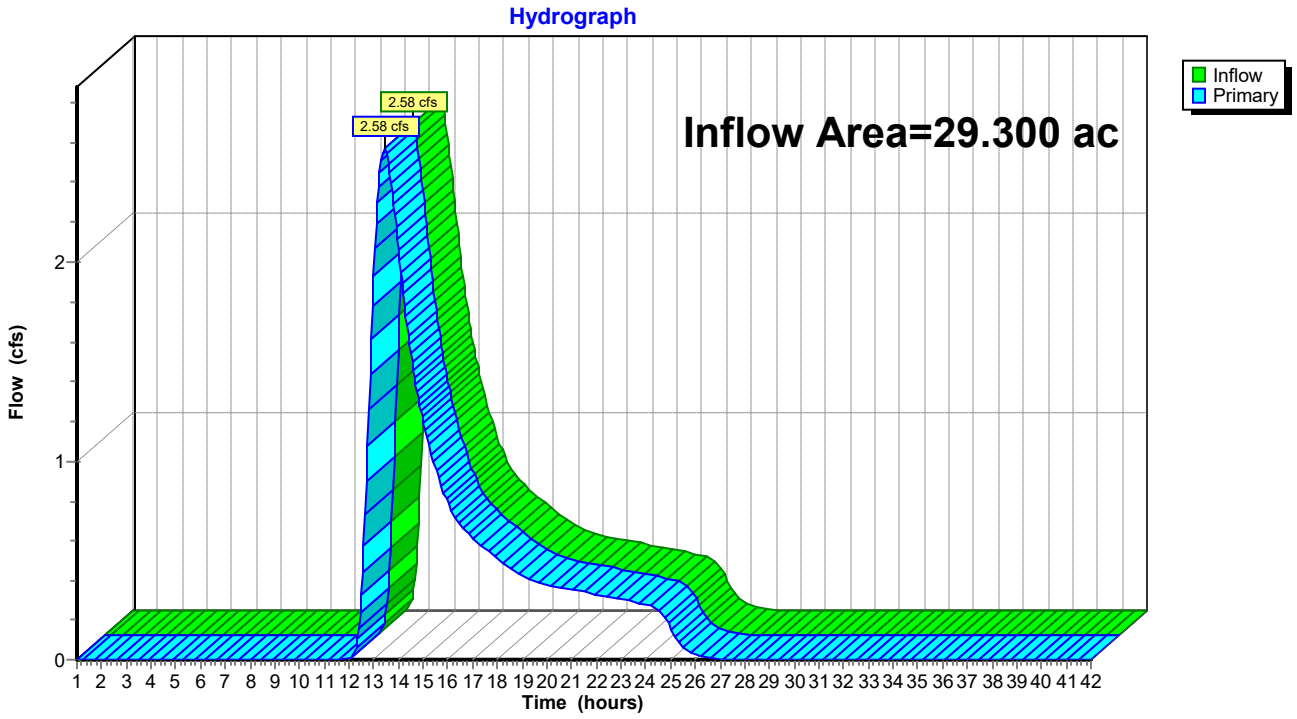
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	**0.00**	**0.00**	**0.00**
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00
17.00	0.00	0.00	0.00
17.50	0.00	0.00	0.00
18.00	0.00	0.00	0.00
18.50	0.00	0.00	0.00
19.00	0.00	0.00	0.00
19.50	0.00	0.00	0.00
20.00	0.00	0.00	0.00
20.50	0.00	0.00	0.00
21.00	0.00	0.00	0.00
21.50	0.00	0.00	0.00
22.00	0.00	0.00	0.00
22.50	0.00	0.00	0.00
23.00	0.00	0.00	0.00
23.50	0.00	0.00	0.00
24.00	0.00	0.00	0.00
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link DP-3: Design Point #3

Inflow Area = 29.300 ac, 3.96% Impervious, Inflow Depth = 0.31" for 10-Year event
Inflow = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af
Primary = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Hydrograph for Link DP-3: Design Point #3

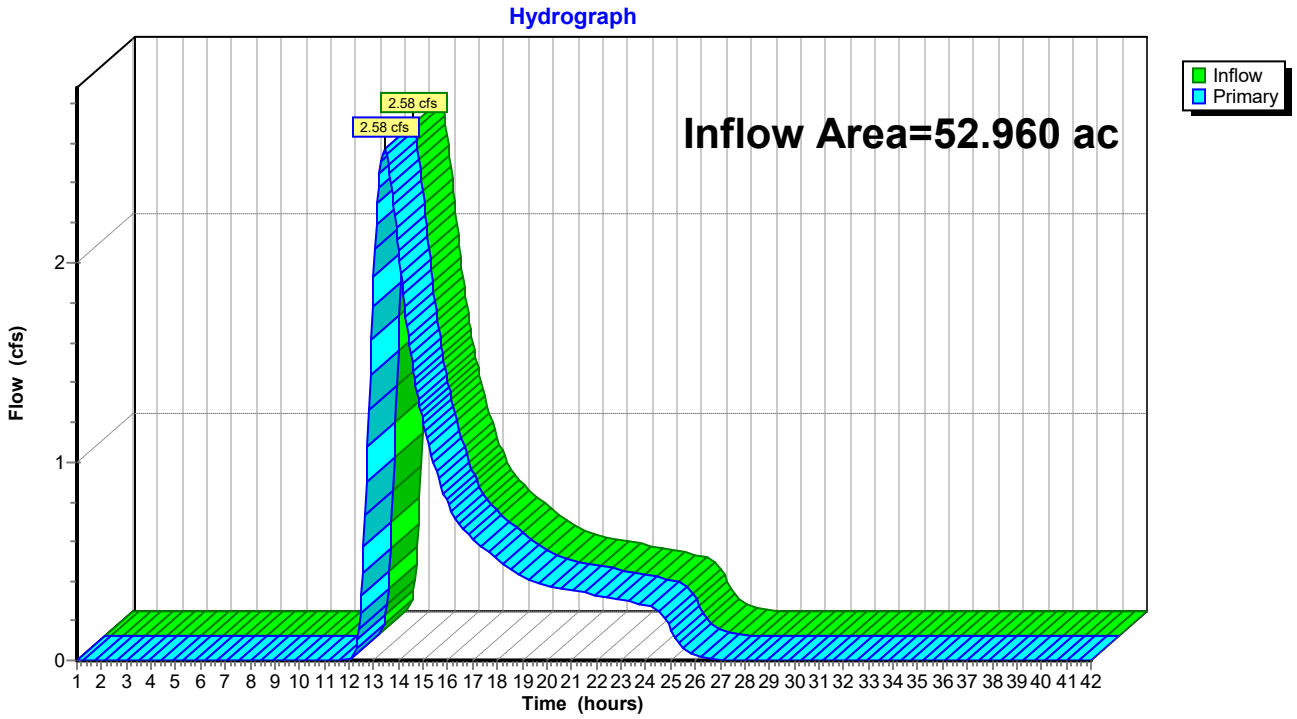
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.33	0.00	0.33
13.00	**1.93**	0.00	**1.93**
13.50	**2.57**	0.00	**2.57**
14.00	2.07	0.00	2.07
14.50	1.54	0.00	1.54
15.00	1.19	0.00	1.19
15.50	0.96	0.00	0.96
16.00	0.79	0.00	0.79
16.50	0.68	0.00	0.68
17.00	0.61	0.00	0.61
17.50	0.56	0.00	0.56
18.00	0.51	0.00	0.51
18.50	0.46	0.00	0.46
19.00	0.42	0.00	0.42
19.50	0.39	0.00	0.39
20.00	0.38	0.00	0.38
20.50	0.36	0.00	0.36
21.00	0.35	0.00	0.35
21.50	0.34	0.00	0.34
22.00	0.33	0.00	0.33
22.50	0.32	0.00	0.32
23.00	0.30	0.00	0.30
23.50	0.29	0.00	0.29
24.00	0.28	0.00	0.28
24.50	0.26	0.00	0.26
25.00	0.16	0.00	0.16
25.50	0.07	0.00	0.07
26.00	0.03	0.00	0.03
26.50	0.01	0.00	0.01
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link T: Design Point Total

Inflow Area = 52.960 ac, 2.68% Impervious, Inflow Depth = 0.17" for 10-Year event
Inflow = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af
Primary = 2.58 cfs @ 13.44 hrs, Volume= 0.764 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link T: Design Point Total



Hydrograph for Link T: Design Point Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00	27.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00	38.00	0.00	0.00	0.00
12.50	0.33	0.00	0.33	38.50	0.00	0.00	0.00
13.00	**1.93**	0.00	**1.93**	39.00	0.00	0.00	0.00
13.50	**2.57**	0.00	**2.57**	39.50	0.00	0.00	0.00
14.00	2.07	0.00	2.07	40.00	0.00	0.00	0.00
14.50	1.54	0.00	1.54	40.50	0.00	0.00	0.00
15.00	1.19	0.00	1.19	41.00	0.00	0.00	0.00
15.50	0.96	0.00	0.96	41.50	0.00	0.00	0.00
16.00	0.79	0.00	0.79	42.00	0.00	0.00	0.00
16.50	0.68	0.00	0.68				
17.00	0.61	0.00	0.61				
17.50	0.56	0.00	0.56				
18.00	0.51	0.00	0.51				
18.50	0.46	0.00	0.46				
19.00	0.42	0.00	0.42				
19.50	0.39	0.00	0.39				
20.00	0.38	0.00	0.38				
20.50	0.36	0.00	0.36				
21.00	0.35	0.00	0.35				
21.50	0.34	0.00	0.34				
22.00	0.33	0.00	0.33				
22.50	0.32	0.00	0.32				
23.00	0.30	0.00	0.30				
23.50	0.29	0.00	0.29				
24.00	0.28	0.00	0.28				
24.50	0.26	0.00	0.26				
25.00	0.16	0.00	0.16				
25.50	0.07	0.00	0.07				
26.00	0.03	0.00	0.03				
26.50	0.01	0.00	0.01				

Time span=1.00-42.00 hrs, dt=0.05 hrs, 821 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment DA-1: DA-1 Runoff Area=14.680 ac 1.77% Impervious Runoff Depth=0.05"
Flow Length=1,348' Tc=36.3 min CN=31 Runoff=0.07 cfs 0.057 af

Subcatchment DA-2: DA-2 Runoff Area=8.980 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=695' Tc=22.5 min CN=30 Runoff=0.03 cfs 0.021 af

Subcatchment DA-3: DA-3 Runoff Area=29.300 ac 3.96% Impervious Runoff Depth=1.38"
Flow Length=1,550' Tc=79.3 min CN=57 Runoff=15.77 cfs 3.358 af

Link DP-1: Design Point #1 Inflow=0.07 cfs 0.057 af
Primary=0.07 cfs 0.057 af

Link DP-2: Design Point #2 Inflow=0.03 cfs 0.021 af
Primary=0.03 cfs 0.021 af

Link DP-3: Design Point #3 Inflow=15.77 cfs 3.358 af
Primary=15.77 cfs 3.358 af

Link T: Design Point Total Inflow=15.77 cfs 3.436 af
Primary=15.77 cfs 3.436 af

Total Runoff Area = 52.960 ac Runoff Volume = 3.436 af Average Runoff Depth = 0.78"
97.32% Pervious = 51.540 ac 2.68% Impervious = 1.420 ac

Summary for Subcatchment DA-1: DA-1

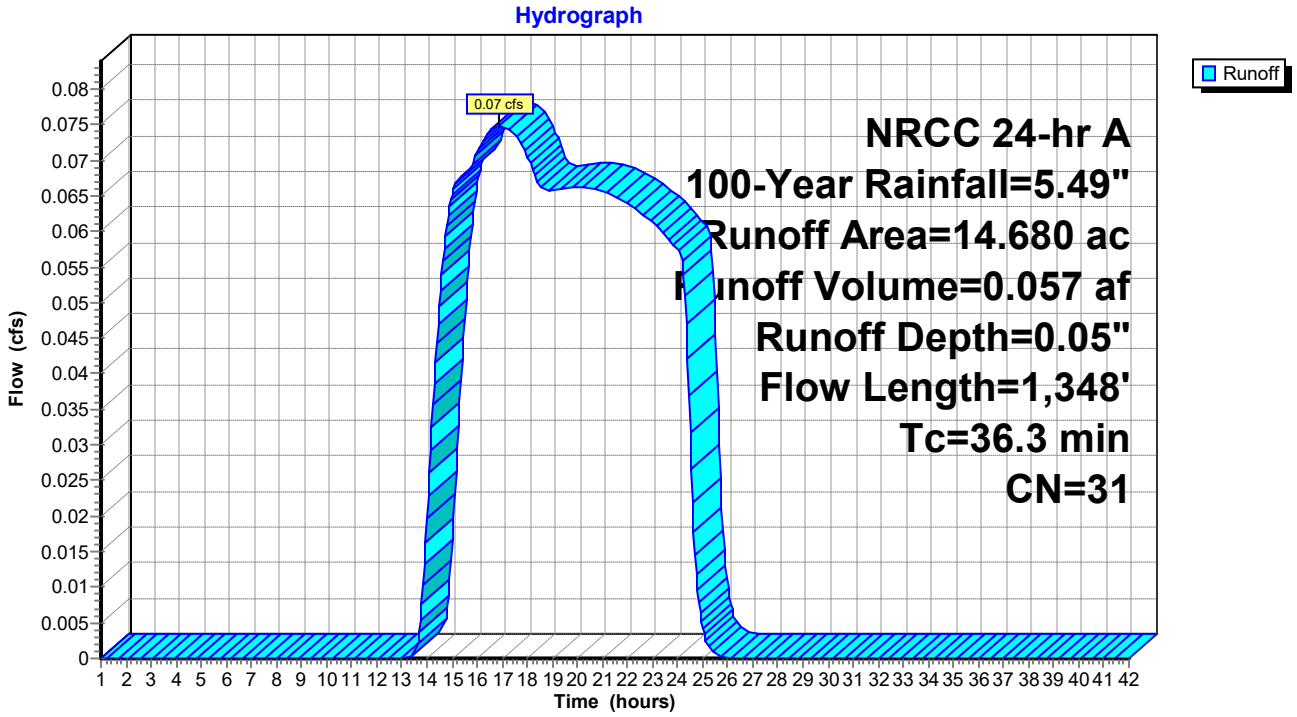
Runoff = 0.07 cfs @ 16.91 hrs, Volume= 0.057 af, Depth= 0.05"
Routed to Link DP-1 : Design Point #1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.49"

Area (ac)	CN	Description
6.730	30	Meadow, non-grazed, HSG A
7.690	30	Woods, Good, HSG A
0.260	98	Paved parking, HSG C
14.680	31	Weighted Average
14.420		98.23% Pervious Area
0.260		1.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	100	0.0210	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.69"
2.5	177	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.6	122	0.0310	1.23		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	128	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.2	258	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.7	80	0.0250	0.79		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	105	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.5	43	0.0510	1.58		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	78	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	58	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	108	0.1520	1.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	91	0.0125	0.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
36.3	1,348	Total			

Subcatchment DA-1: DA-1



Hydrograph for Subcatchment DA-1: DA-1

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.05	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.12	0.00	0.00
3.00	0.15	0.00	0.00
3.50	0.18	0.00	0.00
4.00	0.21	0.00	0.00
4.50	0.25	0.00	0.00
5.00	0.28	0.00	0.00
5.50	0.32	0.00	0.00
6.00	0.35	0.00	0.00
6.50	0.39	0.00	0.00
7.00	0.44	0.00	0.00
7.50	0.49	0.00	0.00
8.00	0.54	0.00	0.00
8.50	0.60	0.00	0.00
9.00	0.67	0.00	0.00
9.50	0.75	0.00	0.00
10.00	0.85	0.00	0.00
10.50	0.98	0.00	0.00
11.00	1.16	0.00	0.00
11.50	1.47	0.00	0.00
12.00	2.59	0.00	0.00
12.50	4.02	0.00	0.00
13.00	4.33	0.00	0.00
13.50	4.51	0.00	0.00
14.00	4.64	0.00	0.02
14.50	4.74	0.00	0.05
15.00	4.82	0.01	0.07
15.50	4.89	0.01	0.07
16.00	4.95	0.01	0.07
16.50	5.00	0.01	**0.07**
17.00	5.05	0.02	**0.07**
17.50	5.10	0.02	0.07
18.00	5.14	0.02	0.07
18.50	5.17	0.02	0.07
19.00	5.21	0.02	0.07
19.50	5.24	0.03	0.07
20.00	5.28	0.03	0.07
20.50	5.31	0.03	0.07
21.00	5.34	0.03	0.07
21.50	5.37	0.04	0.06
22.00	5.39	0.04	0.06
22.50	5.42	0.04	0.06
23.00	5.44	0.04	0.06
23.50	5.47	0.04	0.06
24.00	**5.49**	**0.05**	0.06
24.50	5.49	0.05	0.03
25.00	5.49	0.05	0.00
25.50	5.49	0.05	0.00
26.00	5.49	0.05	0.00
26.50	5.49	0.05	0.00
27.00	5.49	0.05	0.00
27.50	5.49	0.05	0.00
28.00	5.49	0.05	0.00
28.50	5.49	0.05	0.00
29.00	5.49	0.05	0.00
29.50	5.49	0.05	0.00
30.00	5.49	0.05	0.00
30.50	5.49	0.05	0.00
31.00	5.49	0.05	0.00
31.50	5.49	0.05	0.00
32.00	5.49	0.05	0.00
32.50	5.49	0.05	0.00
33.00	5.49	0.05	0.00
33.50	5.49	0.05	0.00
34.00	5.49	0.05	0.00
34.50	5.49	0.05	0.00
35.00	5.49	0.05	0.00
35.50	5.49	0.05	0.00
36.00	5.49	0.05	0.00
36.50	5.49	0.05	0.00
37.00	5.49	0.05	0.00
37.50	5.49	0.05	0.00
38.00	5.49	0.05	0.00
38.50	5.49	0.05	0.00
39.00	5.49	0.05	0.00
39.50	5.49	0.05	0.00
40.00	5.49	0.05	0.00
40.50	5.49	0.05	0.00
41.00	5.49	0.05	0.00
41.50	5.49	0.05	0.00
42.00	5.49	0.05	0.00

Summary for Subcatchment DA-2: DA-2

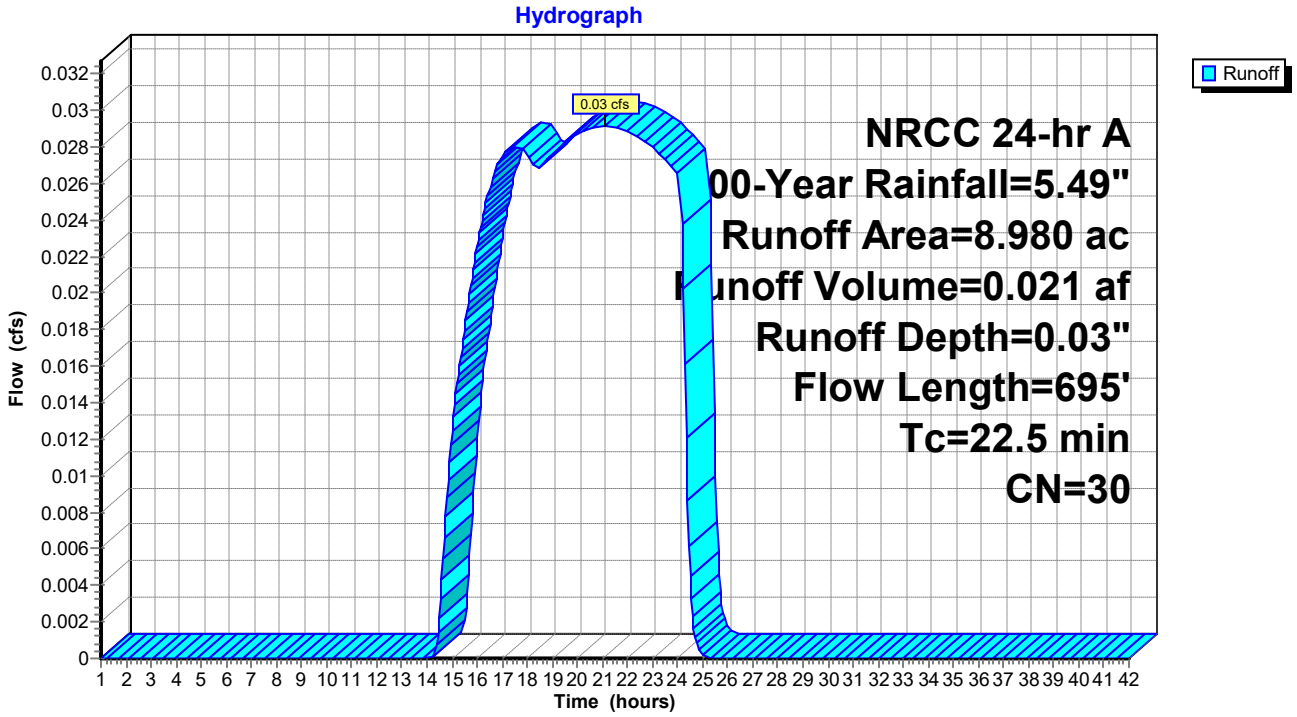
Runoff = 0.03 cfs @ 21.11 hrs, Volume= 0.021 af, Depth= 0.03"
Routed to Link DP-2 : Design Point #2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.49"

Area (ac)	CN	Description
2.020	30	Meadow, non-grazed, HSG A
6.960	30	Woods, Good, HSG A
8.980	30	Weighted Average
8.980		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0380	0.14		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.69"
0.8	62	0.0360	1.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	128	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.0	48	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.2	164	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.2	174	0.0680	1.30		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	19	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.5	695	Total			

Subcatchment DA-2: DA-2



Hydrograph for Subcatchment DA-2: DA-2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.05	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.12	0.00	0.00
3.00	0.15	0.00	0.00
3.50	0.18	0.00	0.00
4.00	0.21	0.00	0.00
4.50	0.25	0.00	0.00
5.00	0.28	0.00	0.00
5.50	0.32	0.00	0.00
6.00	0.35	0.00	0.00
6.50	0.39	0.00	0.00
7.00	0.44	0.00	0.00
7.50	0.49	0.00	0.00
8.00	0.54	0.00	0.00
8.50	0.60	0.00	0.00
9.00	0.67	0.00	0.00
9.50	0.75	0.00	0.00
10.00	0.85	0.00	0.00
10.50	0.98	0.00	0.00
11.00	1.16	0.00	0.00
11.50	1.47	0.00	0.00
12.00	2.59	0.00	0.00
12.50	4.02	0.00	0.00
13.00	4.33	0.00	0.00
13.50	4.51	0.00	0.00
14.00	4.64	0.00	0.00
14.50	4.74	0.00	0.00
15.00	4.82	0.00	0.01
15.50	4.89	0.00	0.02
16.00	4.95	0.00	0.02
16.50	5.00	0.00	0.03
17.00	5.05	0.01	0.03
17.50	5.10	0.01	0.03
18.00	5.14	0.01	0.03
18.50	5.17	0.01	0.03
19.00	5.21	0.01	0.03
19.50	5.24	0.01	0.03
20.00	5.28	0.02	0.03
20.50	5.31	0.02	0.03
21.00	5.34	0.02	**0.03**
21.50	5.37	0.02	**0.03**
22.00	5.39	0.02	0.03
22.50	5.42	0.02	0.03
23.00	5.44	0.03	0.03
23.50	5.47	0.03	0.03
24.00	**5.49**	**0.03**	0.03
24.50	5.49	0.03	0.00
25.00	5.49	0.03	0.00
25.50	5.49	0.03	0.00
26.00	5.49	0.03	0.00
26.50	5.49	0.03	0.00
27.00	5.49	0.03	0.00
27.50	5.49	0.03	0.00
28.00	5.49	0.03	0.00
28.50	5.49	0.03	0.00
29.00	5.49	0.03	0.00
29.50	5.49	0.03	0.00
30.00	5.49	0.03	0.00
30.50	5.49	0.03	0.00
31.00	5.49	0.03	0.00
31.50	5.49	0.03	0.00
32.00	5.49	0.03	0.00
32.50	5.49	0.03	0.00
33.00	5.49	0.03	0.00
33.50	5.49	0.03	0.00
34.00	5.49	0.03	0.00
34.50	5.49	0.03	0.00
35.00	5.49	0.03	0.00
35.50	5.49	0.03	0.00
36.00	5.49	0.03	0.00
36.50	5.49	0.03	0.00
37.00	5.49	0.03	0.00
37.50	5.49	0.03	0.00
38.00	5.49	0.03	0.00
38.50	5.49	0.03	0.00
39.00	5.49	0.03	0.00
39.50	5.49	0.03	0.00
40.00	5.49	0.03	0.00
40.50	5.49	0.03	0.00
41.00	5.49	0.03	0.00
41.50	5.49	0.03	0.00
42.00	5.49	0.03	0.00

Summary for Subcatchment DA-3: DA-3

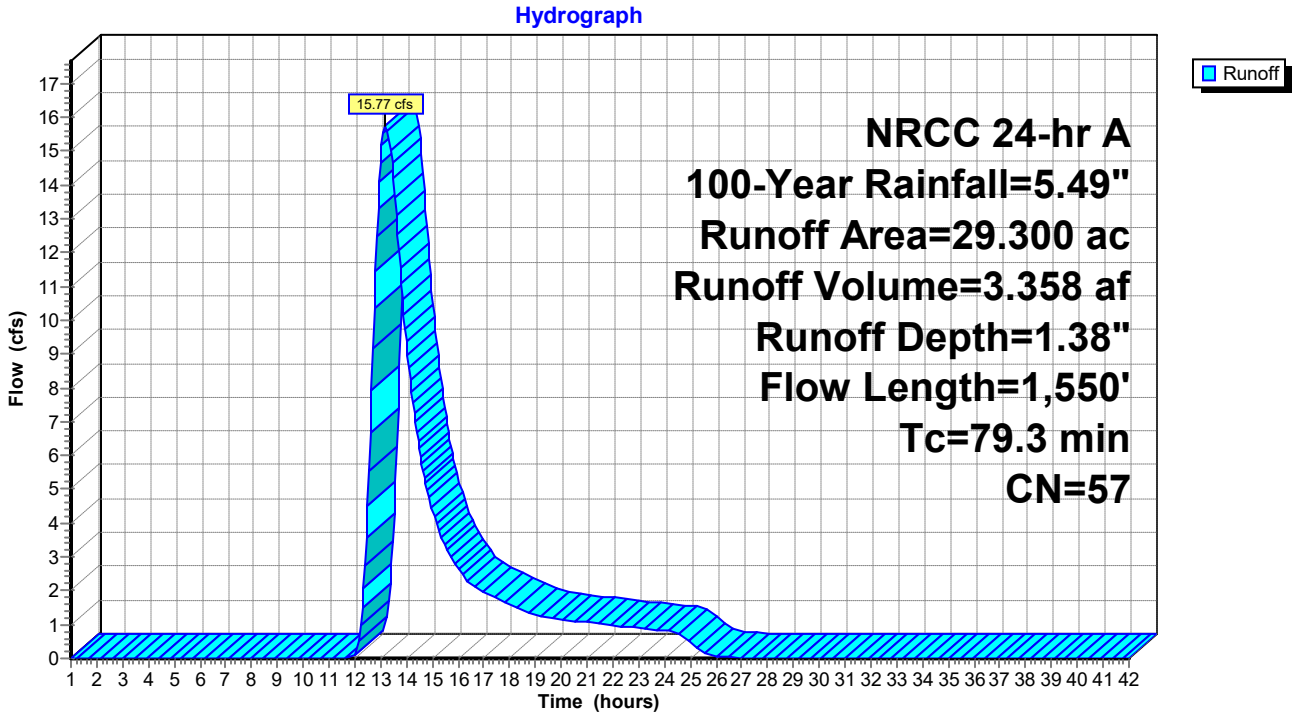
Runoff = 15.77 cfs @ 13.20 hrs, Volume= 3.358 af, Depth= 1.38"
Routed to Link DP-3 : Design Point #3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.49"

Area (ac)	CN	Description
9.530	30	Woods, Good, HSG A
1.290	30	Meadow, non-grazed, HSG A
0.440	55	Woods, Good, HSG B
12.370	70	Woods, Good, HSG C
0.920	71	Meadow, non-grazed, HSG C
3.550	77	Woods, Good, HSG D
0.040	78	Meadow, non-grazed, HSG D
1.150	98	Water Surface, HSG C
0.010	98	Paved parking, HSG C
29.300	57	Weighted Average
28.140		96.04% Pervious Area
1.160		3.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
53.8	100	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 2.69"
3.7	208	0.0360	0.95		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.3	490	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.3	470	0.2220	2.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	91	0.2750	2.62		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.6	191	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
79.3	1,550	Total			

Subcatchment DA-3: DA-3



Hydrograph for Subcatchment DA-3: DA-3

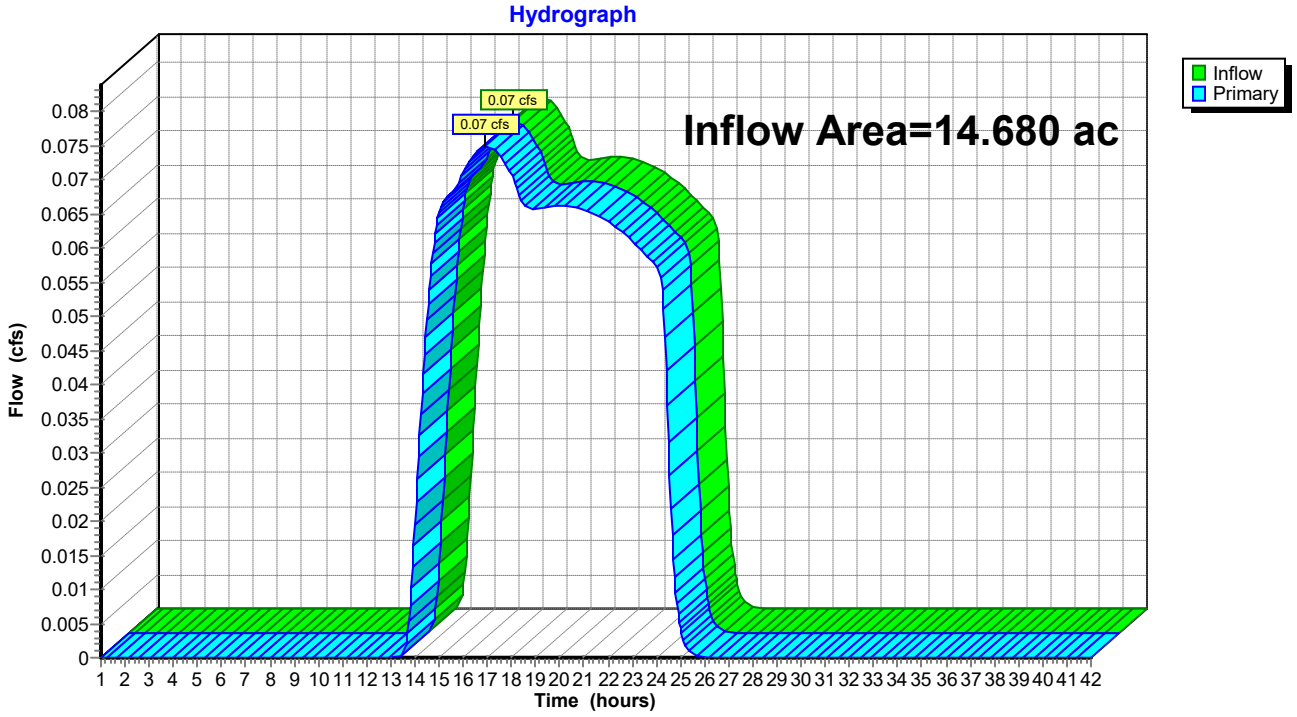
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
1.00	0.05	0.00	0.00
1.50	0.07	0.00	0.00
2.00	0.10	0.00	0.00
2.50	0.12	0.00	0.00
3.00	0.15	0.00	0.00
3.50	0.18	0.00	0.00
4.00	0.21	0.00	0.00
4.50	0.25	0.00	0.00
5.00	0.28	0.00	0.00
5.50	0.32	0.00	0.00
6.00	0.35	0.00	0.00
6.50	0.39	0.00	0.00
7.00	0.44	0.00	0.00
7.50	0.49	0.00	0.00
8.00	0.54	0.00	0.00
8.50	0.60	0.00	0.00
9.00	0.67	0.00	0.00
9.50	0.75	0.00	0.00
10.00	0.85	0.00	0.00
10.50	0.98	0.00	0.00
11.00	1.16	0.00	0.00
11.50	1.47	0.00	0.00
12.00	2.59	0.13	0.09
12.50	4.02	0.63	4.50
13.00	4.33	0.77	**14.68**
13.50	4.51	0.86	**14.18**
14.00	4.64	0.92	9.35
14.50	4.74	0.97	6.20
15.00	4.82	1.01	4.40
15.50	4.89	1.04	3.34
16.00	4.95	1.08	2.64
16.50	5.00	1.11	2.20
17.00	5.05	1.13	1.95
17.50	5.10	1.16	1.76
18.00	5.14	1.18	1.60
18.50	5.17	1.20	1.44
19.00	5.21	1.22	1.30
19.50	5.24	1.24	1.21
20.00	5.28	1.25	1.15
20.50	5.31	1.27	1.10
21.00	5.34	1.29	1.06
21.50	5.37	1.30	1.02
22.00	5.39	1.32	0.98
22.50	5.42	1.33	0.94
23.00	5.44	1.35	0.90
23.50	5.47	1.36	0.86
24.00	**5.49**	**1.38**	0.82
24.50	5.49	1.38	0.75
25.00	5.49	1.38	0.47
25.50	5.49	1.38	0.20
26.00	5.49	1.38	0.08
26.50	5.49	1.38	0.03
27.00	5.49	1.38	0.01
27.50	5.49	1.38	0.00
28.00	5.49	1.38	0.00
28.50	5.49	1.38	0.00
29.00	5.49	1.38	0.00
29.50	5.49	1.38	0.00
30.00	5.49	1.38	0.00
30.50	5.49	1.38	0.00
31.00	5.49	1.38	0.00
31.50	5.49	1.38	0.00
32.00	5.49	1.38	0.00
32.50	5.49	1.38	0.00
33.00	5.49	1.38	0.00
33.50	5.49	1.38	0.00
34.00	5.49	1.38	0.00
34.50	5.49	1.38	0.00
35.00	5.49	1.38	0.00
35.50	5.49	1.38	0.00
36.00	5.49	1.38	0.00
36.50	5.49	1.38	0.00
37.00	5.49	1.38	0.00
37.50	5.49	1.38	0.00
38.00	5.49	1.38	0.00
38.50	5.49	1.38	0.00
39.00	5.49	1.38	0.00
39.50	5.49	1.38	0.00
40.00	5.49	1.38	0.00
40.50	5.49	1.38	0.00
41.00	5.49	1.38	0.00
41.50	5.49	1.38	0.00
42.00	5.49	1.38	0.00

Summary for Link DP-1: Design Point #1

Inflow Area = 14.680 ac, 1.77% Impervious, Inflow Depth = 0.05" for 100-Year event
Inflow = 0.07 cfs @ 16.91 hrs, Volume= 0.057 af
Primary = 0.07 cfs @ 16.91 hrs, Volume= 0.057 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-1: Design Point #1



Hydrograph for Link DP-1: Design Point #1

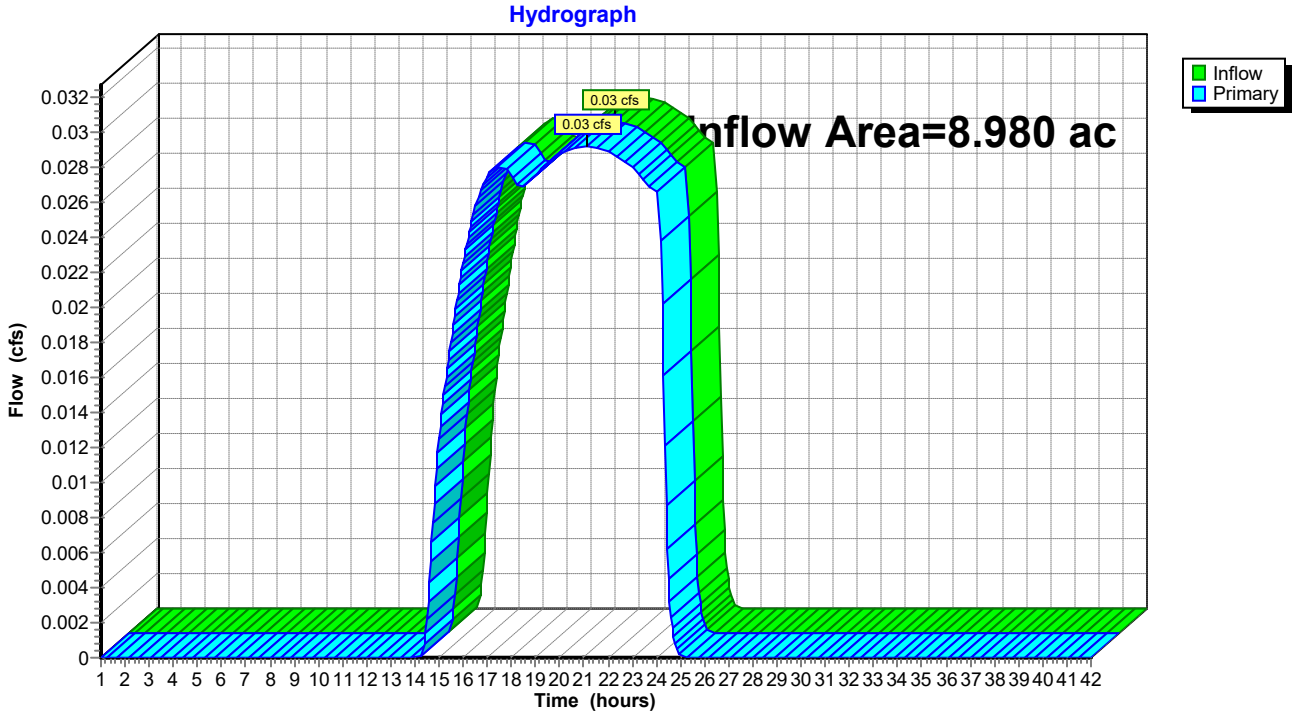
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.02	0.00	0.02
14.50	0.05	0.00	0.05
15.00	0.07	0.00	0.07
15.50	0.07	0.00	0.07
16.00	0.07	0.00	0.07
16.50	**0.07**	0.00	**0.07**
17.00	**0.07**	0.00	**0.07**
17.50	0.07	0.00	0.07
18.00	0.07	0.00	0.07
18.50	0.07	0.00	0.07
19.00	0.07	0.00	0.07
19.50	0.07	0.00	0.07
20.00	0.07	0.00	0.07
20.50	0.07	0.00	0.07
21.00	0.07	0.00	0.07
21.50	0.06	0.00	0.06
22.00	0.06	0.00	0.06
22.50	0.06	0.00	0.06
23.00	0.06	0.00	0.06
23.50	0.06	0.00	0.06
24.00	0.06	0.00	0.06
24.50	0.03	0.00	0.03
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link DP-2: Design Point #2

Inflow Area = 8.980 ac, 0.00% Impervious, Inflow Depth = 0.03" for 100-Year event
Inflow = 0.03 cfs @ 21.11 hrs, Volume= 0.021 af
Primary = 0.03 cfs @ 21.11 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-2: Design Point #2



Hydrograph for Link DP-2: Design Point #2

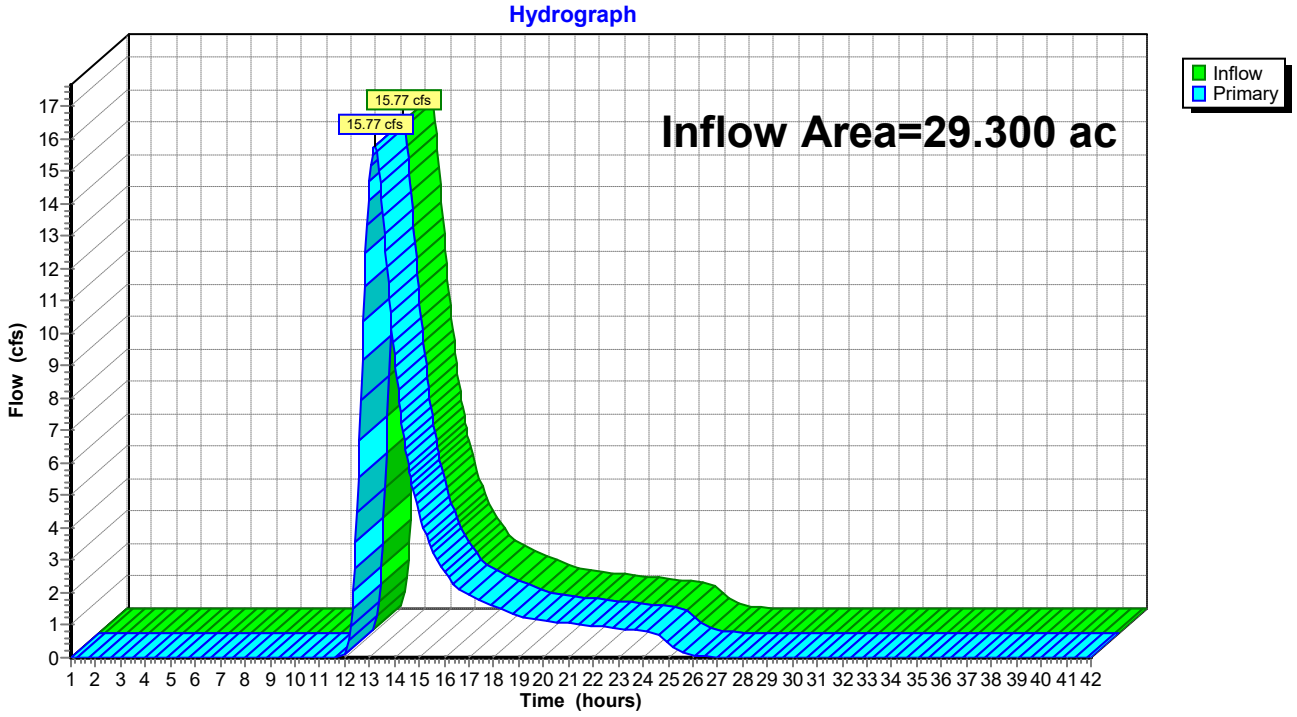
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00
15.00	0.01	0.00	0.01
15.50	0.02	0.00	0.02
16.00	0.02	0.00	0.02
16.50	0.03	0.00	0.03
17.00	0.03	0.00	0.03
17.50	0.03	0.00	0.03
18.00	0.03	0.00	0.03
18.50	0.03	0.00	0.03
19.00	0.03	0.00	0.03
19.50	0.03	0.00	0.03
20.00	0.03	0.00	0.03
20.50	0.03	0.00	0.03
21.00	**0.03**	0.00	**0.03**
21.50	**0.03**	0.00	**0.03**
22.00	0.03	0.00	0.03
22.50	0.03	0.00	0.03
23.00	0.03	0.00	0.03
23.50	0.03	0.00	0.03
24.00	0.03	0.00	0.03
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00
36.50	0.00	0.00	0.00
37.00	0.00	0.00	0.00
37.50	0.00	0.00	0.00
38.00	0.00	0.00	0.00
38.50	0.00	0.00	0.00
39.00	0.00	0.00	0.00
39.50	0.00	0.00	0.00
40.00	0.00	0.00	0.00
40.50	0.00	0.00	0.00
41.00	0.00	0.00	0.00
41.50	0.00	0.00	0.00
42.00	0.00	0.00	0.00

Summary for Link DP-3: Design Point #3

Inflow Area = 29.300 ac, 3.96% Impervious, Inflow Depth = 1.38" for 100-Year event
Inflow = 15.77 cfs @ 13.20 hrs, Volume= 3.358 af
Primary = 15.77 cfs @ 13.20 hrs, Volume= 3.358 af, Atten= 0%, Lag= 0.0 min
Routed to Link T : Design Point Total

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link DP-3: Design Point #3



Hydrograph for Link DP-3: Design Point #3

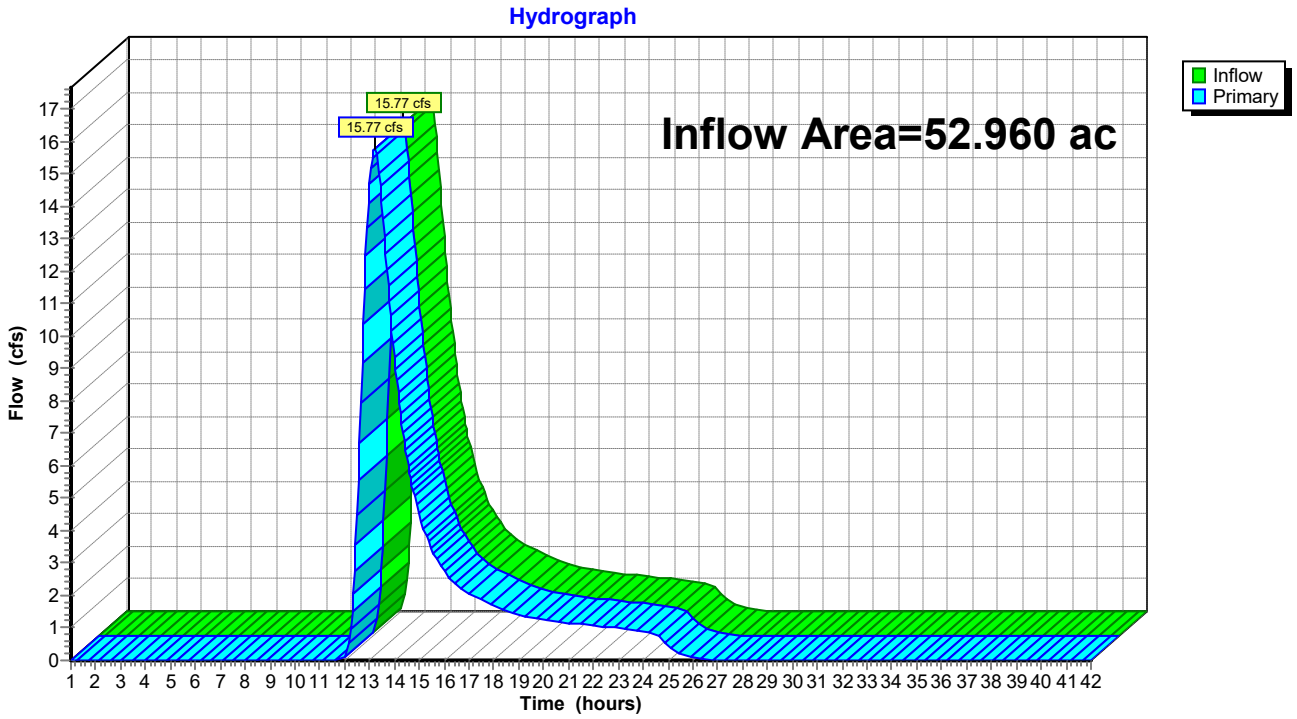
Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00	27.00	0.01	0.00	0.01
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.09	0.00	0.09	38.00	0.00	0.00	0.00
12.50	4.50	0.00	4.50	38.50	0.00	0.00	0.00
13.00	**14.68**	0.00	**14.68**	39.00	0.00	0.00	0.00
13.50	**14.18**	0.00	**14.18**	39.50	0.00	0.00	0.00
14.00	9.35	0.00	9.35	40.00	0.00	0.00	0.00
14.50	6.20	0.00	6.20	40.50	0.00	0.00	0.00
15.00	4.40	0.00	4.40	41.00	0.00	0.00	0.00
15.50	3.34	0.00	3.34	41.50	0.00	0.00	0.00
16.00	2.64	0.00	2.64	42.00	0.00	0.00	0.00
16.50	2.20	0.00	2.20				
17.00	1.95	0.00	1.95				
17.50	1.76	0.00	1.76				
18.00	1.60	0.00	1.60				
18.50	1.44	0.00	1.44				
19.00	1.30	0.00	1.30				
19.50	1.21	0.00	1.21				
20.00	1.15	0.00	1.15				
20.50	1.10	0.00	1.10				
21.00	1.06	0.00	1.06				
21.50	1.02	0.00	1.02				
22.00	0.98	0.00	0.98				
22.50	0.94	0.00	0.94				
23.00	0.90	0.00	0.90				
23.50	0.86	0.00	0.86				
24.00	0.82	0.00	0.82				
24.50	0.75	0.00	0.75				
25.00	0.47	0.00	0.47				
25.50	0.20	0.00	0.20				
26.00	0.08	0.00	0.08				
26.50	0.03	0.00	0.03				

Summary for Link T: Design Point Total

Inflow Area = 52.960 ac, 2.68% Impervious, Inflow Depth = 0.78" for 100-Year event
Inflow = 15.77 cfs @ 13.20 hrs, Volume= 3.436 af
Primary = 15.77 cfs @ 13.20 hrs, Volume= 3.436 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 1.00-42.00 hrs, dt= 0.05 hrs

Link T: Design Point Total



Hydrograph for Link T: Design Point Total

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
1.00	0.00	**0.00**	0.00	27.00	0.01	0.00	0.01
1.50	0.00	0.00	0.00	27.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00	28.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00	28.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00	29.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00	29.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00	30.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00	30.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00	31.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00	31.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00	32.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	32.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00	33.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00	33.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00	34.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00	34.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00	35.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00	35.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00	36.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00	36.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00	37.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00	37.50	0.00	0.00	0.00
12.00	0.09	0.00	0.09	38.00	0.00	0.00	0.00
12.50	4.50	0.00	4.50	38.50	0.00	0.00	0.00
13.00	**14.68**	0.00	**14.68**	39.00	0.00	0.00	0.00
13.50	**14.18**	0.00	**14.18**	39.50	0.00	0.00	0.00
14.00	9.37	0.00	9.37	40.00	0.00	0.00	0.00
14.50	6.25	0.00	6.25	40.50	0.00	0.00	0.00
15.00	4.48	0.00	4.48	41.00	0.00	0.00	0.00
15.50	3.43	0.00	3.43	41.50	0.00	0.00	0.00
16.00	2.74	0.00	2.74	42.00	0.00	0.00	0.00
16.50	2.30	0.00	2.30				
17.00	2.05	0.00	2.05				
17.50	1.86	0.00	1.86				
18.00	1.69	0.00	1.69				
18.50	1.53	0.00	1.53				
19.00	1.39	0.00	1.39				
19.50	1.30	0.00	1.30				
20.00	1.25	0.00	1.25				
20.50	1.20	0.00	1.20				
21.00	1.16	0.00	1.16				
21.50	1.12	0.00	1.12				
22.00	1.08	0.00	1.08				
22.50	1.04	0.00	1.04				
23.00	0.99	0.00	0.99				
23.50	0.95	0.00	0.95				
24.00	0.91	0.00	0.91				
24.50	0.79	0.00	0.79				
25.00	0.48	0.00	0.48				
25.50	0.20	0.00	0.20				
26.00	0.08	0.00	0.08				
26.50	0.03	0.00	0.03				

TABLE OF CONTENTS

Appendix R-3
NRCS Soils Report

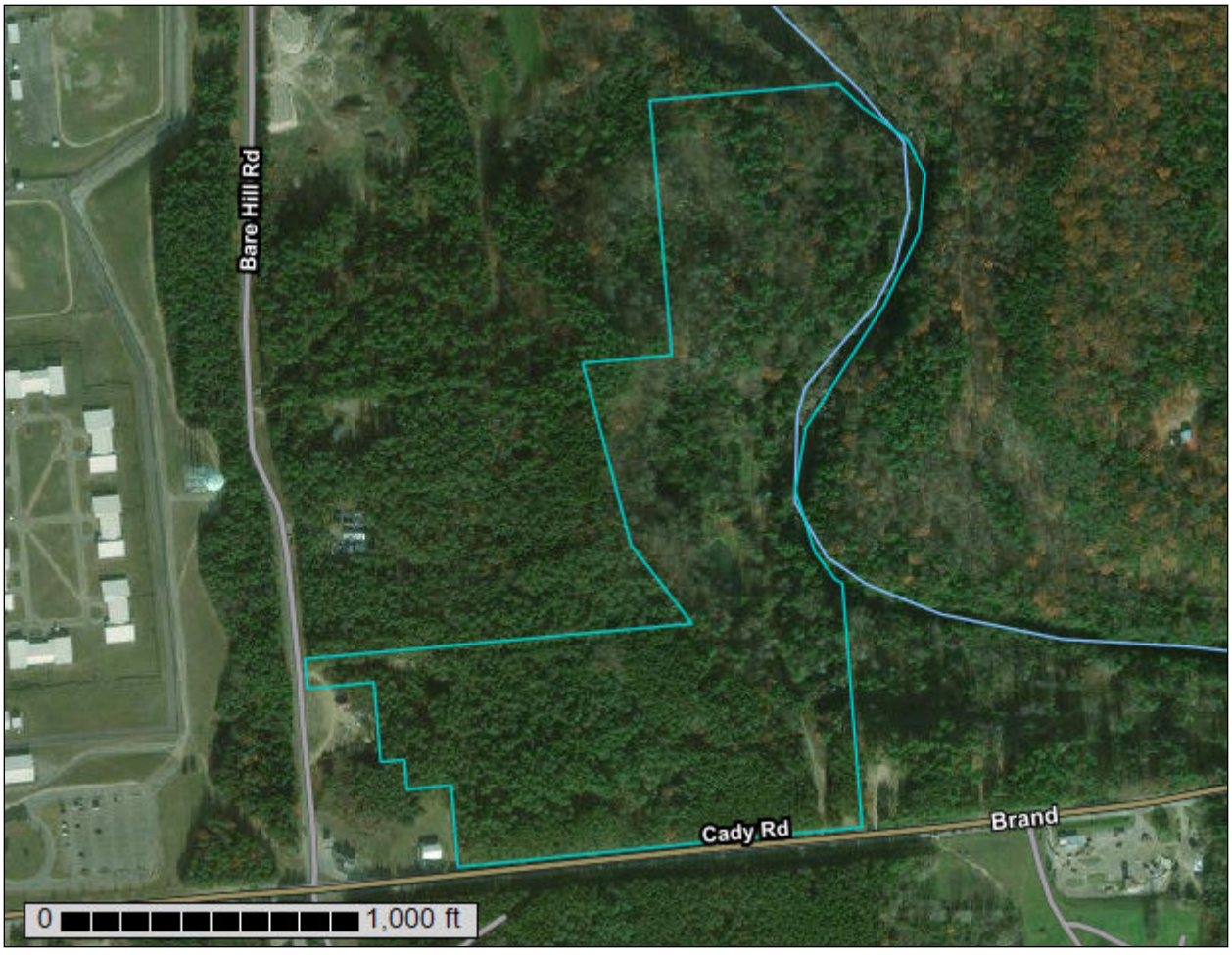
United States Department of Agriculture

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 Franklin County, New York



June 28, 2022

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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Contents

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.

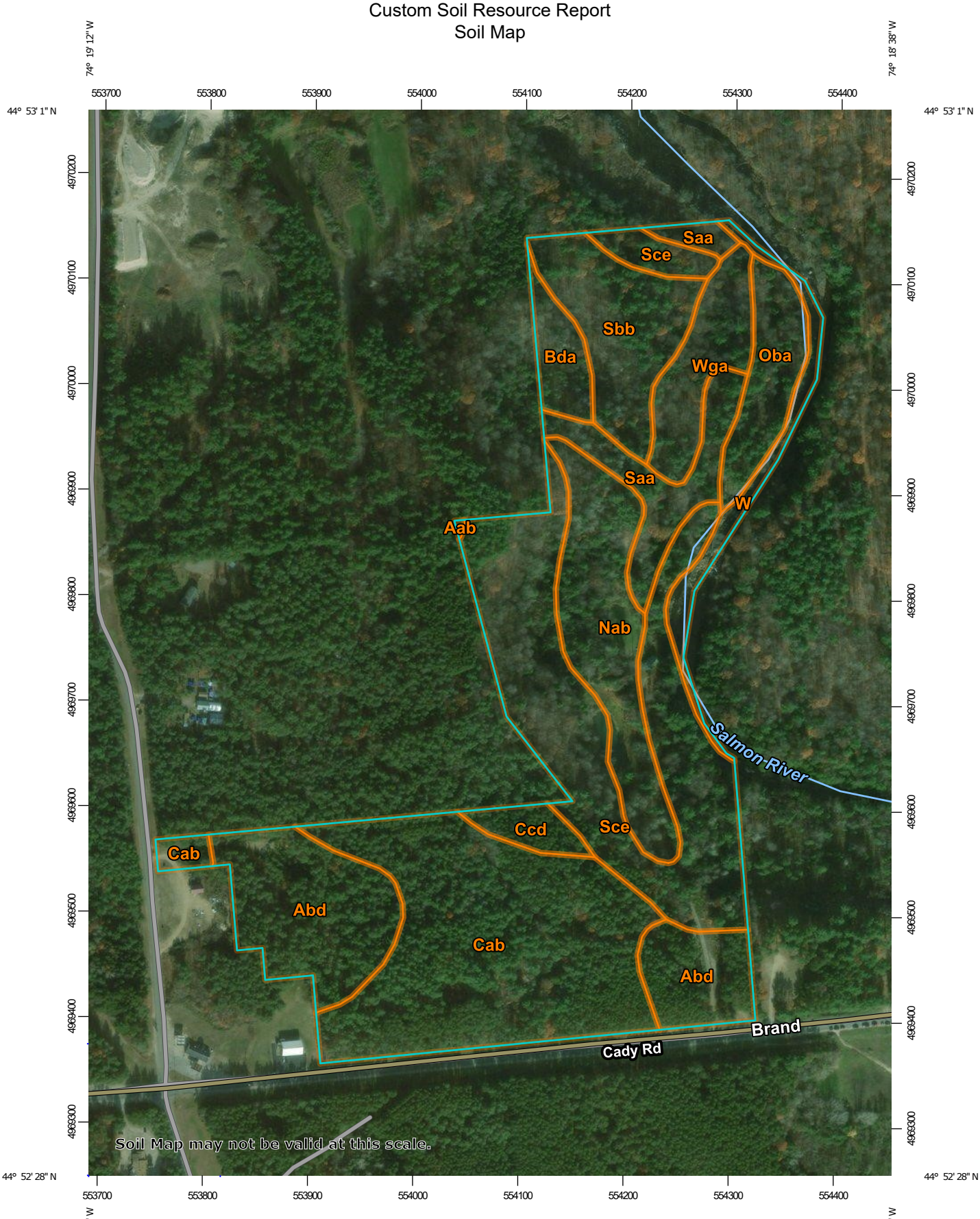
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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: 1:4,920 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 1:24,000.

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: Franklin County, New York
Survey Area Data: Version 5, Sep 1, 2021

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

Date(s) aerial images were photographed: Aug 10, 2014—Nov 11, 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
Aab	Adams and Wallace loamy sands 3 to 8 percent slopes	0.0	0.0%
Abd	Adams and Colton soils, 8 to 25 percent slopes, severely eroded	7.4	13.3%
Bda	Birdsall loam, 0 to 2 percent slopes	1.3	2.4%
Cab	Colton and Constable gravelly loamy sands, 3 to 8 percent slopes	13.6	24.5%
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	0.9	1.6%
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	5.4	9.7%
Oba	Ondawa and Genesee fine sandy loams, high bottoms, 0 to 2 percent slopes	2.5	4.5%
Saa	Saco and Sloan soils, 0 to 2 percent slopes	3.1	5.7%
Sbb	Salmon very fine sandy loam, 2 to 6 percent slopes	4.3	7.8%
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	12.5	22.6%
W	Water	1.6	2.9%
Wga	Walpole loamy sand, neutral variant, over clay, 0 to 3 percent slopes	2.7	4.9%
Totals for Area of Interest		**55.4**	**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.

Franklin County, New York

Aab—Adams and Wallace loamy sands 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bmbl
Elevation: 10 to 2,200 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Adams and similar soils: 40 percent
Wallace and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adams

Setting

Landform: Deltas, kame terraces, outwash plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciofluvial or deltaic deposits derived mainly from crystalline rock and/or sandstone

Typical profile

O - 0 to 2 inches: moderately decomposed plant material
H1 - 2 to 6 inches: sand
H2 - 6 to 28 inches: loamy sand
H3 - 28 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F142XA005NY - Acidic Sandy Outwash
Hydric soil rating: No

Description of Wallace

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: Sandy glaciofluvial or deltaic deposits

Typical profile

O - 0 to 2 inches: moderately decomposed plant material
H1 - 2 to 6 inches: sand
H2 - 6 to 28 inches: loamy sand
H3 - 28 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 5 to 20 inches to ortstein
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Constable

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

Au gres (naumburg)

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

Duane

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

Croghan

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

Colton

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

Abd—Adams and Colton soils, 8 to 25 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: bmbp
Elevation: 10 to 2,200 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Adams and similar soils: 45 percent
Colton and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adams

Setting

Landform: Deltas, kame terraces, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciofluvial or deltaic deposits derived mainly from crystalline rock and/or sandstone

Typical profile

H1 - 0 to 22 inches: loamy sand
H2 - 22 to 60 inches: sand

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F142XA005NY - Acidic Sandy Outwash
Hydric soil rating: No

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

H1 - 0 to 11 inches: gravelly loamy sand
H2 - 11 to 27 inches: gravelly loamy sand
H3 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Minor Components

Wallace

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

Croghan

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

Constable

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

Bda—Birdsall loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: bmby
Elevation: 380 to 1,310 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Birdsall

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Glaciolacustrine deposits comprised mainly of silt and very fine sand

Typical profile

O - 0 to 3 inches: muck
H1 - 3 to 10 inches: loam
H2 - 10 to 23 inches: silt loam
H3 - 23 to 60 inches: stratified very fine sand to silt

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
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: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 13.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F142XB004VT - Wet Outwash Depression
Hydric soil rating: Yes

Minor Components

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

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

Muck, shallow
Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

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

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

Cab—Colton and Constable gravelly loamy sands, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: bmc3
Elevation: 10 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Colton and similar soils: 40 percent
Constable and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting
Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: gravelly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Description of Constable

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: Sandy and gravelly glaciofluvial deposits derived mainly from acid sandstone or igneous rock

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 8 to 20 inches to ortstein
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: D
Ecological site: F142XA004NY - Acidic Shallow Sandy Outwash
Hydric soil rating: No

Minor Components

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

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

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

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

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

Ccd—Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes

Map Unit Setting
National map unit symbol: bmc6
Elevation: 10 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition
Colton and similar soils: 40 percent
Constable and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting
Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex

Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile
O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: cobbly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities
Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Description of Constable

Setting
Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits derived mainly from acid sandstone or igneous rock

Typical profile
O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: gravelly cobbly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities
Slope: 15 to 25 percent
Depth to restrictive feature: 8 to 20 inches to ortstein
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F142XA004NY - Acidic Shallow Sandy Outwash
Hydric soil rating: No

Minor Components

Adams

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

Croghan

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

Duane

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

Trout river

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

Wallace

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

Nab—Nicholville fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: bmdt
Elevation: 200 to 1,490 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Nicholville

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread

Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits having a high content of silt and very fine sand

Typical profile

O - 0 to 2 inches: moderately decomposed plant material
H1 - 2 to 5 inches: fine sandy loam
H2 - 5 to 17 inches: fine sandy loam
H3 - 17 to 26 inches: fine sandy loam
H4 - 26 to 60 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.3 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

Wallington

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

Croghan

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

Unnamed soils

Percent of map unit: 5 percent

Salmon

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

Worth

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

Oba—Ondawa and Genesee fine sandy loams, high bottoms, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: bmf0
Elevation: 10 to 1,750 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Ondawa and similar soils: 40 percent
Genesee and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ondawa

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy alluvium

Typical profile

H1 - 0 to 6 inches: fine sandy loam
H2 - 6 to 24 inches: fine sandy loam
H3 - 24 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Genesee

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 6 inches: very fine sandy loam
H2 - 6 to 15 inches: silt loam
H3 - 15 to 30 inches: loam
H4 - 30 to 60 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: A
Ecological site: F101XY001NY - High Floodplain
Hydric soil rating: No

Minor Components

Nicholville

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

Eel (teel)

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

Podunk

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

Unnamed soils

Percent of map unit: 5 percent

Rumney

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

Saa—Saco and Sloan soils, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: bmff
Elevation: 150 to 1,510 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Saco and similar soils: 40 percent
Sloan and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saco

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty alluvium derived mainly from crystalline rock, shale, and sandstone

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 20 inches: silt loam
H3 - 20 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly 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 0 to 6 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Description of Sloan

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy alluvium

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 20 inches: silty clay loam
H3 - 20 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
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 to 12 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Eel (teel)

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

Wayland

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

Rumney

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

Muck

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Podunk

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

Sbb—Salmon very fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: bmfh
Elevation: 210 to 1,380 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Salmon

Setting

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

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 5 inches: loamy very fine sand
H2 - 5 to 33 inches: very fine sandy loam
H3 - 33 to 60 inches: stratified very fine sand to silt

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

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

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

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

Unnamed soils
Percent of map unit: 5 percent

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

Sce—Salmon stony very fine sandy loam over till, 20 to 45 percent slopes

Map Unit Setting
National map unit symbol: bmfn
Elevation: 800 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition
Salmon, till substratum, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Salmon, Till Substratum

Setting
Landform: Lake plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits, dominated by silt and very fine sand

Typical profile
O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 5 inches: loamy very fine sand

H2 - 5 to 33 inches: very fine sandy loam
H3 - 33 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 20 to 45 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 19 to 40 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Worth

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

Wallington

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

Unnamed soils

Percent of map unit: 5 percent

Nicholville

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

Empeyville

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

W—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Wga—Walpole loamy sand, neutral variant, over clay, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bmgc
Elevation: 10 to 900 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Walpole, neutral variant, clay substratum, and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Walpole, Neutral Variant, Clay Substratum

Setting

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

Typical profile

H1 - 0 to 10 inches: loamy sand
H2 - 10 to 28 inches: loamy sand
H3 - 28 to 60 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 0 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 6.7 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

Covington

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

Scarboro

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

Swanton

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

Rhinebeck

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

Wallington

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

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Appendix R-4

Water Quality Volume Calculations

Table 1: Level Spreader 1				
Dimensions				
Length (ft)	Depth (ft)	Width (ft)	Total Volume (cu-ft)	Void Volume (cu-ft)
379.9	2	2.75	2089.45	835.78
Water Quality Volume Required				
Contributing Impervious Panel Area (ac)	Corresponding WQv (ac-ft)	Corresponding WQv (cu-ft)		
0.22	0.018	767.3		

Table 2: Level Spreader 2				
Dimensions				
Length (ft)	Depth (ft)	Width (ft)	Total Volume (cu-ft)	Void Volume (cu-ft)
340.3	2	1.75	1191.05	476.42
Water Quality Volume Required				
Contributing Impervious Panel Area (ac)	Corresponding WQv (ac-ft)	Corresponding WQv (cu-ft)		
0.13	0.010	432.4		

Appendix S
Cultural/Historic Resources Review

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

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

December 01, 2020

Stephanie Parsons
Natural Resource Scientist
Bergmann
280 East Broad Street
Suite 200
Rochester, NY 14604

Re: USACE
Yellow 5 LLC Malone Solar Farm Project/2 MW/3.25 of 49.6 Acres
Brand Rd and Bare Hill Rd, Town of Malone, Franklin County, NY
20PR07602

Dear Stephanie Parsons:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include 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 National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If 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 State Historic Preservation Officer
Division for Historic Preservation

Attachment H – May 2, 2023 Glint and Glare Analysis

TETRA TECH

MEMO

To:	Nautilus Solar
From:	Ali Flake, Tetra Tech, Inc.
Date:	May 2, 2023
Subject:	Glint and Glare Analysis of the Yellow 17 LLC, Bare Hill Road Solar Project in Malone, New York

At the request of Nautilus Solar (Nautilus), Tetra Tech, Inc. (Tetra Tech) conducted a glint and glare analysis of the proposed Yellow 17 LLC, Bare Hill Road Solar Project (Project) located at 176 Bare Hill Road in Malone, New York. The Project site occupies an approximately 8.6-acre portion of a larger approximately 50.42-acre parcel (the "Target Property"). The Project site consists of wooded land and is bounded by wooded land to the north; wooded land followed by Little Salmon River to the east; wooded land followed by Brand Road and G & E Extinguishers LLC to the south; and wooded land followed by New Energy and Bare Hill Road to the west.

Topography throughout the Project site varies, ranging from approximately 710 feet above mean sea level (amsl) in the southeastern portion of the Project site to approximately 660 feet amsl in the northwestern portion of the Project site. The Malone-Dufort Airport (MAL), located approximately 1.5 miles south-southwest of the Project, is the closest airport to the Project.

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 the Sandia glare analysis reports (Attachment A), and the Federal Aviation Administration (FAA) Notice Criteria Tool Report (Attachment B).

GLARE ANALYSIS METHOD

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint (a momentary flash of bright light) and glare (a continuous source of bright light) from solar photovoltaic modules has come under scrutiny by aviation authorities. The FAA issued an Interim Policy (78 FR 63276) on October 23, 2013, describing methods for obtaining FAA review and approval of proposed solar arrays on airport property. These methods involved the use of the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT), a modeling/compliance analysis tool now licensed for public use within the ForgeSolar GlareGauge cloud software application. The SGHAT is considered to be an industry best practice for analysis of glare related to solar energy generating facilities and is required by the FAA under 78 FR 63276 to measure ocular impacts for solar projects located on federally obligated airports and is recommended for projects located off federally obligated airports.

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).

Based on this background, Tetra Tech has utilized the SGHAT tool as licensed for use in ForgeSolar GlareGauge cloud software application for modeling and analysis. ForgeSolar GlareGauge with SGHAT modeling 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 National Laboratory. 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.

The SGHAT was utilized to evaluate the potential for glint and glare when driving along 1) proximal segments of Bare Hill Road, Brand Road, Shears Road, Route 37 and a road that runs through the Bare Hill Correctional Facility; 2) 17 nearby locations selected to represent observer views at neighboring properties; and 3) two flight paths at the nearby Malone-Dufort Airport.

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 Project would require formal filing to the FAA. Based on the results of the FAA Notice Criteria Tool, the Project does not exceed notice criteria; therefore, it is not required for the Project to be formally filed with the FAA Obstruction Evaluation Group. The FAA Notice Criteria Tool Report is included as Attachment B.

The panels to be used on the proposed Project are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. Three analyses were performed to simulate single-axis tracking panels with a 52˚ maximum tracking angle. The analyses were conducted for a panel height of 4.5 feet above ground surface (centroid height) with applicable panel specifications. The panel orientation, location, and some specifications used in the analysis were provided by Cipriani Energy Group in the Preliminary Development Plans issued on September 4th, 2021. The analysis includes calculations to predict potential glare minutes at the following specified receptors:

- Viewing height of observer in standard first floor building at six feet above ground surface and standard commuter vehicle at five feet above ground surface (Analysis 1),
- Viewing height of observer in standard second floor building at 16 feet above ground surface, a guard tower at 30 feet above ground surface, and typical semi-tractor-trailer truck at nine feet above ground surface (Analysis 2),
- Two-mile flight path for Runway 5/23 and 14/32 at the Malone-Dufort Airport: Labeled “MAL-5,” “MAL -23,” “MAL -14,” and “MAL -32” (Analysis 3).

The GlareGauge model does not consider obstacles (either man-made or natural) between the defined PV arrays and the receptors. ForgeSolar is updating their glare analysis tool and has provided a tool to model obstructions. The “Obstruction” component simulates obstacles and blocking geometries that may mitigate PV glare. These

obstructions are modeled as multi-line paths as parallelograms with vertical sides that extend upward from ground elevation. These obstructions are assumed to be opaque, with incoming sunlight and emanating glare reflections completely mitigated if they intersect with the obstruction face. All three analyses used this tool to model areas of dense forest and tree lines found along each side of the Project site. A total of two obstructions were used to simulate the natural vegetation buffer, using an average height of 20 feet.

GLARE ANALYSIS RESULTS

Analyses 1 – 1st Story Receptors

Analysis 1 analyzed PV Array 1 for eleven first-story receptors (OP-1 through OP-11) and five proximal route receptors along Bare Hill Road, Brand Road, Shears Road, Route 37 and a road that runs through the Bare Hill Correctional Facility from the height of a standard commuter vehicle. The SGHAT GlareGauge modeled the results for the Project. No glare was predicted.

Analyses 2 – 2nd Story Receptors

Analysis 2 analyzed PV Array 1 for 12 second-story receptors (OP-1 through OP-6 and OP-12 through OP-17) and five proximal route receptors along Bare Hill Road, Brand Road, Shears Road, Route 37 and a road that runs through the Bare Hill Correctional Facility from the height of a typical tractor trailer. OP-7 through OP-11 were not included in Analysis 2 because they are single story structures. Second-story structures in the area appear limited; therefore, OP-12 through OP-17 were included in the analysis and represent guard towers at the Bare Hill Correctional Facility. The guard towers were analyzed at 30 feet above ground surface. The SGHAT GlareGauge modeled the results for the Project. No glare was predicted.

Analysis 3 – FAA 2-Mile Flight Paths

The SGHAT GlareGauge modeled the flight path results for the Project. For the flight path analyses, a typical 30-degree maximum downward viewing angle and 50-degree maximum azimuthal viewing angle from the aircraft cockpit were included where exact values could not be confirmed based on public information. The simulation predicted 5,043 minutes of annual green glare and 184 minutes of annual yellow glare along flight path MAL-23. The green glare occurs from late-February through late-April and mid-August through mid-October for less than 70 minutes between the hours of approximately 3:45 PM and 6:15 PM. The yellow glare occurs from late-March through mid-April and late-August through mid-September for less than 70 minutes between the hours of 5:00 PM and 6:00 PM.

A summary of the inputs for the 2-mile flight paths is outlined in Table 3.

Table 3: Analysis 3 Federal Aviation Administration Input Features

Flight Path/ATCT Name	Associated Airport	True Direction (degrees)	Threshold Crossing Height (feet)	Glide Path[1] (degrees)	Height Above Ground (feet)
MAL-23	Malone-Dufort Airport	217	50	3.0	-

MAL-5	Malone-Dufort Airport	37	50	3.15	-
MAL-32	Malone-Dufort Airport	307	50	3.0	-
MAL-14	Malone-Dufort Airport	127	50	3.0	-

1. Angle of descent along final approach flight path.

SUMMARY

The Project Site layout was modeled on SGHAT GlareGauge in order to evaluate the potential extent of any glint and glare the proposed Project may have upon nearby points of observation, vehicle routes, and airports. Three analyses were performed: the analyses represented a single-axis tracking system with 52˚ tilt and panel specifications of smooth glass with ARC. No glare was predicted in Analysis 1 or Analysis 2. Green glare and minimal yellow glare was predicted in Analysis 3 along flight path MAL-23. No red glare was identified. The FAA released a Final Policy (86 FR 25801) on May 11, 2021, with regards to solar facilities and glare. With this policy the FAA changed the stance on glare thresholds, allowing glare for final approach paths but not allowing glare to impact the air traffic control tower (ATCT) for Federally Obligated Airports. A review of FAA provided information for the Malone-Dufort Airport indicates that there is no ATCT for the airport. Therefore, an ATCT was not included in the analysis. Based on these standards, the Project would pass FAA regulations.

The GlareGauge model does not account for varying ambient conditions (i.e., cloudy days, precipitation), atmospheric attenuation, screening due to existing topography not located within the defined array layouts, or existing vegetation or structures (including fences or walls), nor does the tool allow proposed landscaping to be included. However, through the use of the obstruction feature, sections of existing natural screening through the existing forested areas buffering between the Project and non-participating property lines was modeled. In addition, based on the results of the FAA Notice Criteria Tool, the Project does not exceed notice criteria; therefore, it is not required for the Project to be formally filed with the FAA Obstruction Evaluation Group.

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.

Attachment A

Glare Analysis Reports

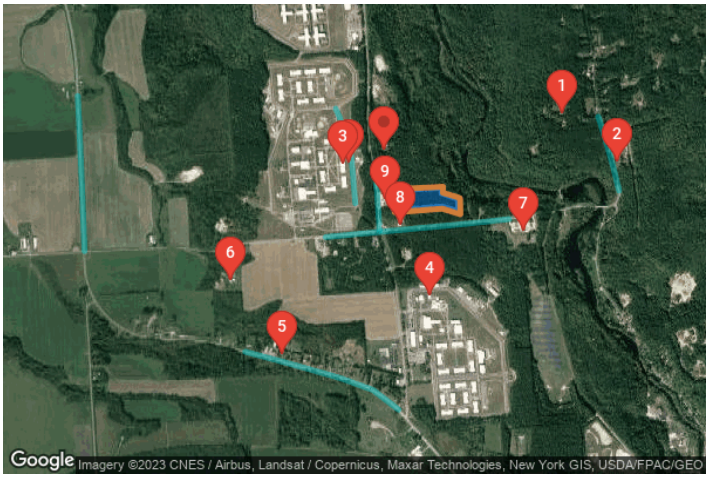
FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 1 - 1st Floor V4**

Client: Nautilus

Created 28 Apr, 2023
Updated 28 Apr, 2023
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 89398.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

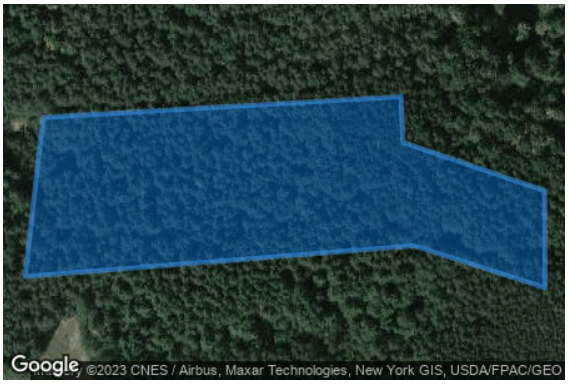
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
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	44.877556	-74.317932	663.10	4.50	667.60
2	44.877681	-74.314858	700.30	4.50	704.80
3	44.877404	-74.314842	709.70	4.50	714.20
4	44.877111	-74.313624	669.80	4.50	674.30
5	44.876522	-74.313619	706.70	4.50	711.20
6	44.876776	-74.314745	700.70	4.50	705.20
7	44.876590	-74.318087	699.00	4.50	703.50

Route Receptors

Name: Bare Hill Correctional Facility
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.881806	-74.322556	615.80	5.00	620.80
2	44.880209	-74.321531	645.10	5.00	650.10
3	44.878579	-74.321317	655.20	5.00	660.20
4	44.876912	-74.321121	638.70	5.00	643.70

Name: Bare Hill Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875472	-74.319340	648.30	5.00	653.30
2	44.876578	-74.319442	644.30	5.00	649.30
3	44.877521	-74.319538	650.60	5.00	655.60
4	44.878635	-74.319705	663.90	5.00	668.90

Name: Brand Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875161	-74.323286	664.50	5.00	669.50
2	44.875423	-74.319386	649.50	5.00	654.50
3	44.875663	-74.315782	639.90	5.00	644.90
4	44.875853	-74.312892	638.40	5.00	643.40
5	44.876091	-74.309858	633.90	5.00	638.90

Name: Route 37 - North
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.882467	-74.341449	514.40	5.00	519.40
2	44.880277	-74.341299	521.80	5.00	526.80
3	44.877449	-74.341128	551.10	5.00	556.10
4	44.874438	-74.340956	572.10	5.00	577.10

Name: Route 37 - South
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.869223	-74.329176	635.90	5.00	640.90
2	44.868569	-74.325742	666.80	5.00	671.80
3	44.867900	-74.322416	670.90	5.00	675.90
4	44.867246	-74.319820	667.80	5.00	672.80
5	44.866227	-74.317953	661.10	5.00	666.10

Name: Shears Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.877569	-74.301794	636.90	5.00	641.90
2	44.878907	-74.302270	669.70	5.00	674.70
3	44.880255	-74.302814	668.10	5.00	673.10
4	44.881389	-74.303316	652.00	5.00	657.00

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.881545	-74.305966	652.00	6.00
OP 2	2	44.879060	-74.301877	675.00	6.00
OP 3	3	44.878947	-74.322005	647.40	6.00
OP 4	4	44.872091	-74.315611	632.60	6.00
OP 5	5	44.869046	-74.326489	665.80	6.00
OP 6	6	44.872908	-74.330228	652.80	6.00
OP 7	7	44.875483	-74.308749	631.40	6.00
OP 8	8	44.875750	-74.317814	639.80	6.00
OP 9	9	44.877103	-74.318920	653.10	6.00
OP 10	10	44.879645	-74.319013	666.70	6.00
OP 11	11	44.879011	-74.321556	655.00	6.00

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.90
2	44.877646	-74.318053	670.20
3	44.877766	-74.314692	678.50
4	44.877451	-74.314705	705.20
5	44.877219	-74.313603	650.10

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

PV array 1 and Route: Bare Hill Correctional Facility

No glare found

PV array 1 and Route: Bare Hill Road

No glare found

PV array 1 and Route: Brand Road

No glare found

PV array 1 and Route: Route 37 - North

No glare found

PV array 1 and Route: Route 37 - South

No glare found

PV array 1 and Route: Shears Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

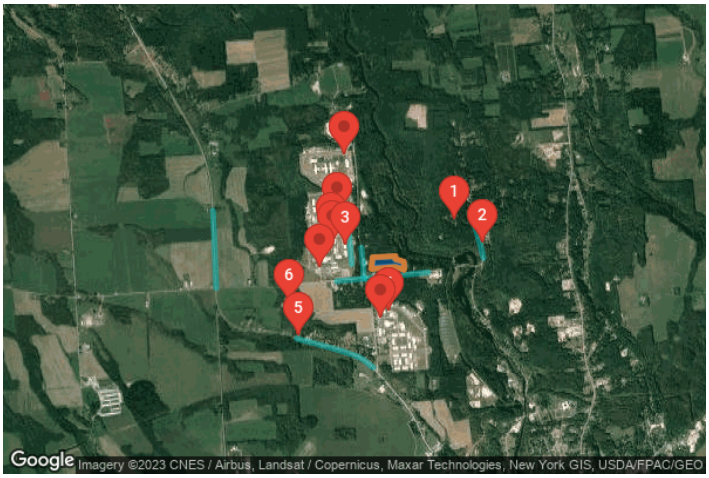
FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 2 - 2nd Floor V5**

Client: Nautilus

Created 28 Apr, 2023
Updated 28 Apr, 2023
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 89401.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
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	44.877549	-74.317926	662.20	4.50	666.70
2	44.877675	-74.314857	701.20	4.50	705.70
3	44.877397	-74.314841	709.70	4.50	714.20
4	44.877105	-74.313607	670.10	4.50	674.60
5	44.876527	-74.313618	706.30	4.50	710.80
6	44.876774	-74.314739	700.70	4.50	705.20
7	44.876626	-74.318076	698.20	4.50	702.70

Route Receptors

Name: Bare Hill Correctional Facility
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.881806	-74.322556	615.80	9.00	624.80
2	44.880209	-74.321531	645.10	9.00	654.10
3	44.878579	-74.321317	655.20	9.00	664.20
4	44.876912	-74.321121	638.70	9.00	647.70

Name: Bare Hill Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875472	-74.319340	648.30	9.00	657.30
2	44.876578	-74.319442	644.30	9.00	653.30
3	44.877521	-74.319538	650.60	9.00	659.60
4	44.878635	-74.319705	663.90	9.00	672.90

Name: Brand Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875161	-74.323286	664.50	9.00	673.50
2	44.875423	-74.319386	649.50	9.00	658.50
3	44.875663	-74.315782	639.90	9.00	648.90
4	44.875853	-74.312892	638.40	9.00	647.40
5	44.876091	-74.309858	633.90	9.00	642.90

Name: Route 37 - North
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.882467	-74.341449	514.40	9.00	523.40
2	44.880277	-74.341299	521.80	9.00	530.80
3	44.877449	-74.341128	551.10	9.00	560.10
4	44.874438	-74.340956	572.10	9.00	581.10

Name: Route 37 - South
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.869223	-74.329176	635.90	9.00	644.90
2	44.868569	-74.325742	666.80	9.00	675.80
3	44.867900	-74.322416	670.90	9.00	679.90
4	44.867246	-74.319820	667.80	9.00	676.80
5	44.866227	-74.317953	661.10	9.00	670.10

Name: Shears Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.877569	-74.301794	636.90	9.00	645.90
2	44.878907	-74.302270	669.70	9.00	678.70
3	44.880255	-74.302814	668.10	9.00	677.10
4	44.881389	-74.303316	652.00	9.00	661.00

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.881535	-74.305969	652.00	16.00
OP 2	2	44.879072	-74.301909	674.60	16.00
OP 3	3	44.878849	-74.321989	647.60	16.00
OP 4	4	44.872091	-74.315579	663.40	16.00
OP 5	5	44.869532	-74.328882	631.50	16.00
OP 6	6	44.872919	-74.330261	652.20	16.00
OP 12	12	44.881897	-74.323184	615.20	30.00
OP 13	13	44.876533	-74.325807	657.20	30.00
OP 14	14	44.871377	-74.316808	672.30	30.00
OP 15	15	44.888254	-74.322128	635.40	30.00
OP 16	16	44.878931	-74.323917	634.10	30.00
OP 17	17	44.879782	-74.324016	625.10	30.00

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.90
2	44.877646	-74.318053	670.20
3	44.877766	-74.314692	678.50
4	44.877451	-74.314705	705.20
5	44.877219	-74.313603	650.10

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

PV array 1 and Route: Bare Hill Correctional Facility

No glare found

PV array 1 and Route: Bare Hill Road

No glare found

PV array 1 and Route: Brand Road

No glare found

PV array 1 and Route: Route 37 - North

No glare found

PV array 1 and Route: Route 37 - South

No glare found

PV array 1 and Route: Shears Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 3 - FAA V4**

Client: Nautilus

Created 28 Apr, 2023
Updated 28 Apr, 2023
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 89399.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2

Summary of Results

Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	5,043	84.0	184	3.1	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-14	0	0.0	0	0.0
MAL-23	5,043	84.0	184	3.1
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
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	44.877549	-74.317926	662.20	4.50	666.70
2	44.877675	-74.314857	701.20	4.50	705.70
3	44.877397	-74.314841	709.70	4.50	714.20
4	44.877105	-74.313607	670.10	4.50	674.60
5	44.876527	-74.313618	706.30	4.50	710.80
6	44.876774	-74.314739	700.70	4.50	705.20
7	44.876626	-74.318076	698.20	4.50	702.70

Flight Path Receptors

Name: MAL-14
Description: None
Threshold height: 50 ft
Direction: 127.0°
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	44.855822	-74.330108	757.00	50.00	807.00
Two-mile	44.873222	-74.362719	496.50	864.00	1360.50

Name: MAL-23
Description: None
Threshold height: 50 ft
Direction: 217.0°
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	44.857883	-74.327465	753.80	50.00	803.80
Two-mile	44.880974	-74.302890	666.30	691.00	1357.30

Name: MAL-32
Description: None
Threshold height: 50 ft
Direction: 307.0°
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	44.851025	-74.321121	787.20	50.00	837.20
Two-mile	44.833625	-74.288513	800.20	590.40	1390.60

Name: MAL-5
Description: None
Threshold height: 50 ft
Direction: 37.0°
Glide slope: 3.15°
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	44.849861	-74.335929	767.80	50.00	817.80
Two-mile	44.826770	-74.360501	936.70	462.20	1398.90

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.90
2	44.877646	-74.318053	670.20
3	44.877766	-74.314692	678.50
4	44.877451	-74.314705	705.20
5	44.877219	-74.313603	650.10

Name: Obs 3
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	5,043	84.0	184	3.1	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-14	0	0.0	0	0.0
MAL-23	5,043	84.0	184	3.1
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

PV: PV array 1 potential temporary after-image

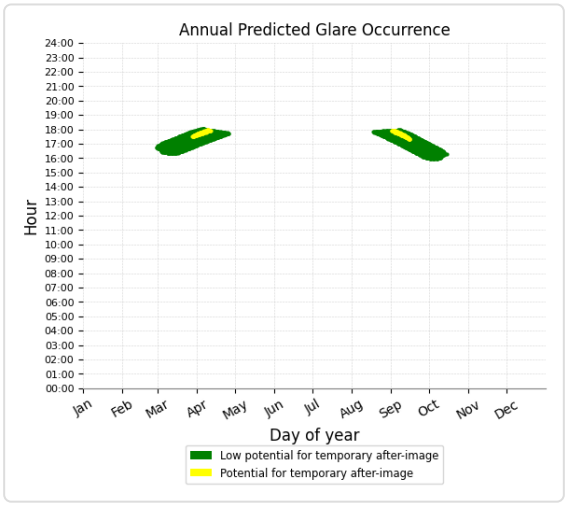
Receptor results ordered by category of glare

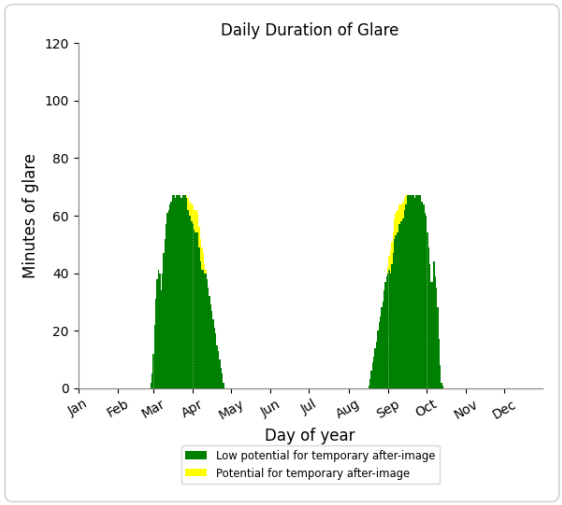
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-23	5,043	84.0	184	3.1
MAL-14	0	0.0	0	0.0
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

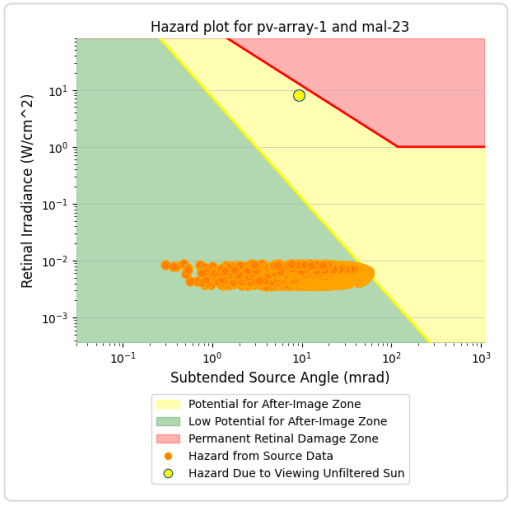
PV array 1 and FP: MAL-23

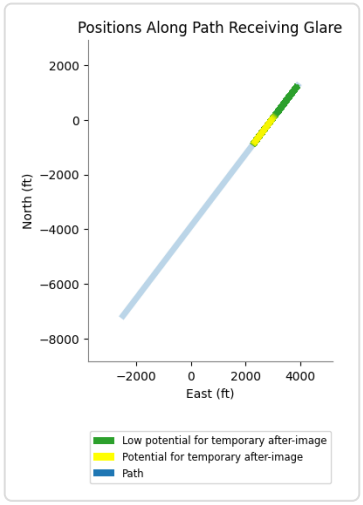
Yellow glare: 184 min.

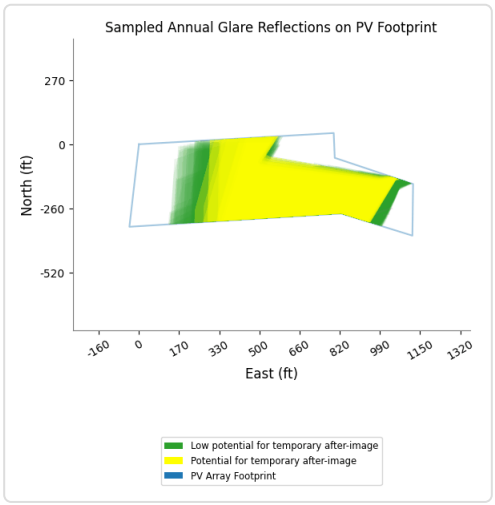
Green glare: 5,043 min.

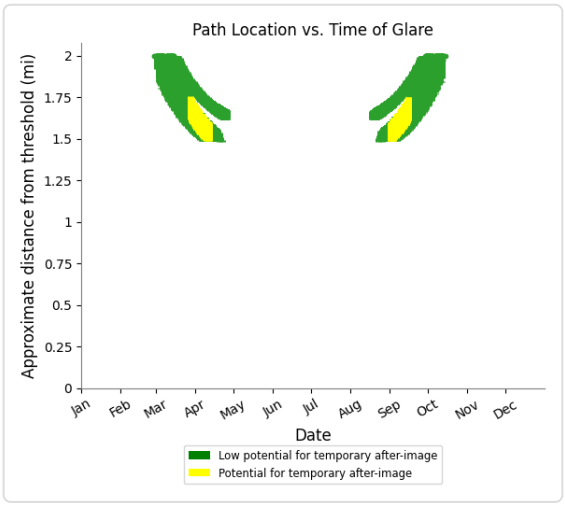












PV array 1 and FP: MAL-14

No glare found

PV array 1 and FP: MAL-32

No glare found

PV array 1 and FP: MAL-5

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

Attachment B

FAA Notice Criteria Tool

Federal Aviation Administration

« OE/AAA

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

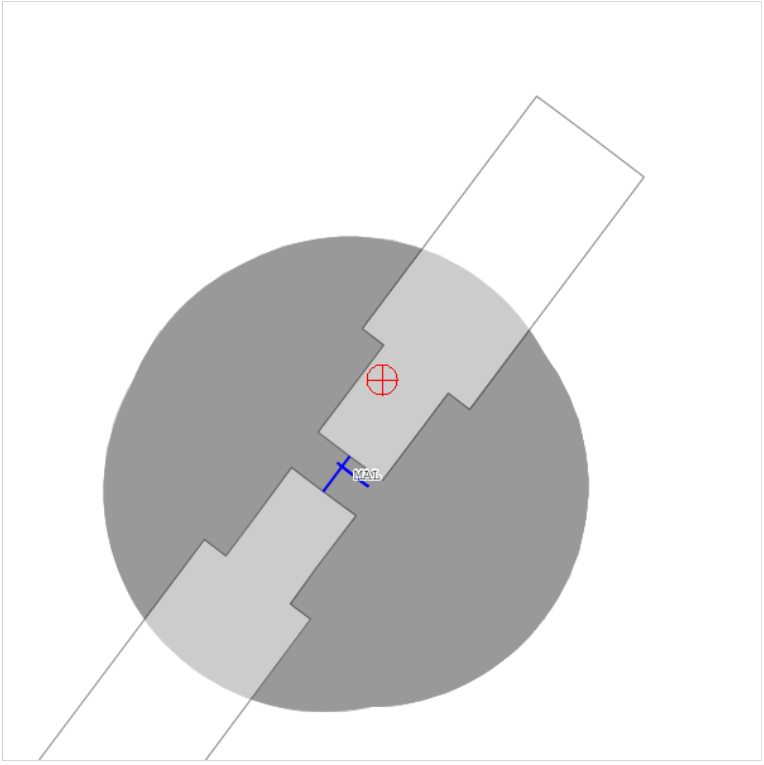
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	44 Deg 52 M 37.91 S N
Longitude:	74 Deg 18 M 56.96 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	700 (nearest foot)
Structure Height :	9 (nearest foot)
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



Attachment I – Updated Glint and Glare Analysis

TETRA TECH

MEMO

To:	Cipriani Energy Group
From:	Tetra Tech, Inc.
Date:	October 14, 2024
Subject:	Review of Updated Glare Analysis for Yellow 17, LLC Malone Solar Project

At the request of Cipriani Energy Group (Cipriani), Tetra Tech, Inc. (Tetra Tech) had conducted an updated glint and glare analysis of the proposed Yellow 17, LLC Malone Solar Project (Project). This memorandum is to review any potential glare due to changes in the proposed layout of the Project. The original glare analysis report is dated May 2023 and was based on plans and specifications provided by Cipriani in the Preliminary Development Plans issued on September 4th, 2021.

An updated analysis for the Project was performed due to updated design plans. The updated layout (dated April 25, 2024) as well as any changed specifications to the proposed solar panels was provided. Changes reviewed in the analyses in addition to the changed layout included the centroid panel height from 4.5 feet above ground surface to 5.1 feet, and the Ground Cover Ratio (GCR) of the panels from 0.5 to 0.49. The panel orientation, tracking angle, and panel material stayed the same. A resting angle of 10˚ was also used as a proposed mitigation measure. As done in previous studies, three analyses were conducted at the following specified receptors:

- Viewing height of observer in standard first floor building at six feet above ground surface and standard commuter vehicle at 3.5 feet above ground surface (Analysis 1),
- Viewing height of observer in standard second floor building at 16 feet above ground surface, a guard tower at 30 feet above ground surface, and typical semi-tractor-trailer truck at 7.6 feet above ground surface (Analysis 2),
- Two-mile flight path for Runway 5/23 and 14/32 at the Malone-Dufort Airport: Labeled “MAL-5,” “MAL -23,” “MAL -14,” and “MAL -32” (Analysis 3)

Summary

The updated Project layout was modeled on SGHAT GlareGauge in order to evaluate the potential extent of any glare the proposed Project may have upon nearby points of observation, vehicle routes, and airports. The three analyses performed found that there is no glare predicted for the modeled receptors. Based on the provided information for the updated Project layout and panel specifications, no glare is predicted.

Attachment A

Glare Analysis Reports

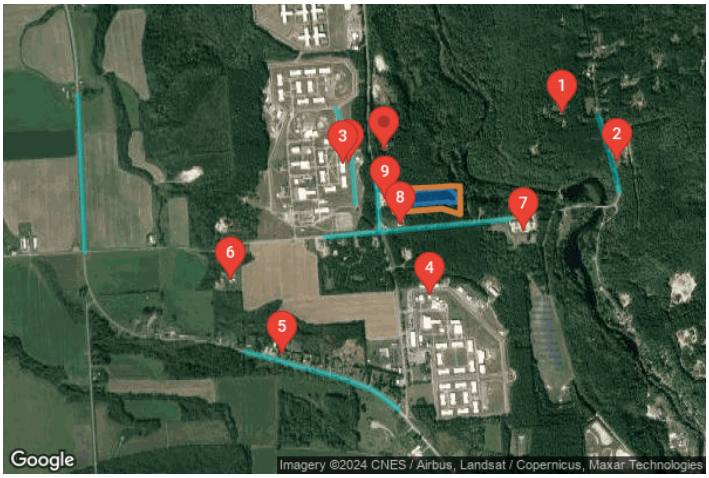
FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 1 - 1st Floor 10142024**

Client: Nautilus

Created 14 Oct, 2024
Updated 14 Oct, 2024
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 131244.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 10.0°
Ground Coverage Ratio: 0.49
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	44.877492	-74.317805	657.44	5.10	662.54
2	44.877598	-74.316047	661.16	5.10	666.26
3	44.877703	-74.314284	640.33	5.10	645.43
4	44.877630	-74.314093	638.41	5.10	643.51
5	44.877239	-74.313621	642.41	5.10	647.51
6	44.876965	-74.313608	644.10	5.10	649.20
7	44.876908	-74.314286	658.10	5.10	663.20
8	44.876988	-74.314281	658.67	5.10	663.77
9	44.876782	-74.317781	649.56	5.10	654.66

Route Receptors

Name: Bare Hill Correctional Facility
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.881806	-74.322556	615.80	3.50	619.30
2	44.880209	-74.321531	645.10	3.50	648.60
3	44.878579	-74.321317	655.20	3.50	658.70
4	44.876912	-74.321121	638.70	3.50	642.20

Name: Bare Hill Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875472	-74.319340	648.30	3.50	651.80
2	44.876578	-74.319442	644.30	3.50	647.80
3	44.877521	-74.319538	650.60	3.50	654.10
4	44.878635	-74.319705	663.90	3.50	667.40

Name: Brand Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875161	-74.323286	664.50	3.50	668.00
2	44.875423	-74.319386	649.50	3.50	653.00
3	44.875663	-74.315782	639.90	3.50	643.40
4	44.875853	-74.312892	638.40	3.50	641.90
5	44.876091	-74.309858	633.90	3.50	637.40

Name: Route 37 - North
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.882467	-74.341449	514.40	3.50	517.90
2	44.880277	-74.341299	521.80	3.50	525.30
3	44.877449	-74.341128	551.10	3.50	554.60
4	44.874438	-74.340956	572.10	3.50	575.60

Name: Route 37 - South
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.869223	-74.329176	635.90	3.50	639.40
2	44.868569	-74.325742	666.80	3.50	670.30
3	44.867900	-74.322416	670.90	3.50	674.40
4	44.867246	-74.319820	667.80	3.50	671.30
5	44.866227	-74.317953	661.10	3.50	664.60

Name: Shears Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.877569	-74.301794	636.90	3.50	640.40
2	44.878907	-74.302270	669.70	3.50	673.20
3	44.880255	-74.302814	668.10	3.50	671.60
4	44.881389	-74.303316	652.00	3.50	655.50

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.881545	-74.305966	652.00	6.00
OP 2	2	44.879060	-74.301877	675.00	6.00
OP 3	3	44.878947	-74.322005	647.40	6.00
OP 4	4	44.872091	-74.315611	632.60	6.00
OP 5	5	44.869046	-74.326489	665.80	6.00
OP 6	6	44.872908	-74.330228	652.80	6.00
OP 7	7	44.875483	-74.308749	631.40	6.00
OP 8	8	44.875750	-74.317814	639.80	6.00
OP 9	9	44.877103	-74.318920	653.10	6.00
OP 10	10	44.879645	-74.319013	666.70	6.00
OP 11	11	44.879011	-74.321556	655.00	6.00

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.93
2	44.877646	-74.318053	670.21
3	44.877766	-74.314692	678.49
4	44.877810	-74.314148	621.82
5	44.877787	-74.313454	580.35
6	44.877185	-74.313443	635.35

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

PV array 1 and Route: Bare Hill Correctional Facility

No glare found

PV array 1 and Route: Bare Hill Road

No glare found

PV array 1 and Route: Brand Road

No glare found

PV array 1 and Route: Route 37 - North

No glare found

PV array 1 and Route: Route 37 - South

No glare found

PV array 1 and Route: Shears Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

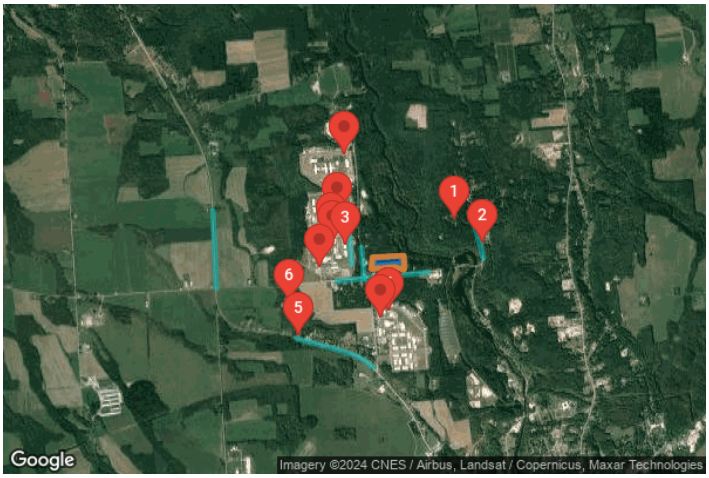
FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 2 - 2nd Floor 10142024**

Client: Nautilus

Created 14 Oct, 2024
Updated 14 Oct, 2024
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 131245.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 10.0°
Ground Coverage Ratio: 0.49
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	44.877492	-74.317805	657.44	5.10	662.54
2	44.877598	-74.316047	661.16	5.10	666.26
3	44.877703	-74.314284	640.33	5.10	645.43
4	44.877630	-74.314093	638.41	5.10	643.51
5	44.877239	-74.313621	642.41	5.10	647.51
6	44.876965	-74.313608	644.10	5.10	649.20
7	44.876908	-74.314286	658.10	5.10	663.20
8	44.876988	-74.314281	658.67	5.10	663.77
9	44.876782	-74.317781	649.56	5.10	654.66

Route Receptors

Name: Bare Hill Correctional Facility
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.881806	-74.322556	615.80	7.50	623.30
2	44.880209	-74.321531	645.10	7.50	652.60
3	44.878579	-74.321317	655.20	7.50	662.70
4	44.876912	-74.321121	638.70	7.50	646.20

Name: Bare Hill Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875472	-74.319340	648.30	7.50	655.80
2	44.876578	-74.319442	644.30	7.50	651.80
3	44.877521	-74.319538	650.60	7.50	658.10
4	44.878635	-74.319705	663.90	7.50	671.40

Name: Brand Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875161	-74.323286	664.50	7.50	672.00
2	44.875423	-74.319386	649.50	7.50	657.00
3	44.875663	-74.315782	639.90	7.50	647.40
4	44.875853	-74.312892	638.40	7.50	645.90
5	44.876091	-74.309858	633.90	7.50	641.40

Name: Route 37 - North
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.882467	-74.341449	514.40	7.50	521.90
2	44.880277	-74.341299	521.80	7.50	529.30
3	44.877449	-74.341128	551.10	7.50	558.60
4	44.874438	-74.340956	572.10	7.50	579.60

Name: Route 37 - South
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.869223	-74.329176	635.90	7.50	643.40
2	44.868569	-74.325742	666.80	7.50	674.30
3	44.867900	-74.322416	670.90	7.50	678.40
4	44.867246	-74.319820	667.80	7.50	675.30
5	44.866227	-74.317953	661.10	7.50	668.60

Name: Shears Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.877569	-74.301794	636.90	7.50	644.40
2	44.878907	-74.302270	669.70	7.50	677.20
3	44.880255	-74.302814	668.10	7.50	675.60
4	44.881389	-74.303316	652.00	7.50	659.50

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.881535	-74.305969	652.00	16.00
OP 2	2	44.879072	-74.301909	674.60	16.00
OP 3	3	44.878849	-74.321989	647.60	16.00
OP 4	4	44.872091	-74.315579	663.40	16.00
OP 5	5	44.869532	-74.328882	631.50	16.00
OP 6	6	44.872919	-74.330261	652.20	16.00
OP 12	12	44.881897	-74.323184	615.20	30.00
OP 13	13	44.876533	-74.325807	657.20	30.00
OP 14	14	44.871377	-74.316808	672.30	30.00
OP 15	15	44.888254	-74.322128	635.40	30.00
OP 16	16	44.878931	-74.323917	634.10	30.00
OP 17	17	44.879782	-74.324016	625.10	30.00

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.93
2	44.877646	-74.318053	670.21
3	44.877766	-74.314690	678.49
4	44.877810	-74.314148	621.82
5	44.877787	-74.313454	580.35
6	44.877185	-74.313443	635.35

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

PV array 1 and Route: Bare Hill Correctional Facility

No glare found

PV array 1 and Route: Bare Hill Road

No glare found

PV array 1 and Route: Brand Road

No glare found

PV array 1 and Route: Route 37 - North

No glare found

PV array 1 and Route: Route 37 - South

No glare found

PV array 1 and Route: Shears Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 3 - FAA 05062024**

Client: Nautilus

Created 06 May, 2024
Updated 06 May, 2024
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 118466.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-14	0	0.0	0	0.0
MAL-23	0	0.0	0	0.0
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 10.0°
Ground Coverage Ratio: 0.49
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	44.877492	-74.317805	657.44	5.10	662.54
2	44.877598	-74.316047	661.16	5.10	666.26
3	44.877703	-74.314284	640.33	5.10	645.43
4	44.877630	-74.314093	638.41	5.10	643.51
5	44.877239	-74.313621	642.41	5.10	647.51
6	44.876965	-74.313608	644.10	5.10	649.20
7	44.876908	-74.314286	658.10	5.10	663.20
8	44.876988	-74.314281	658.67	5.10	663.77
9	44.876782	-74.317781	649.56	5.10	654.66

Flight Path Receptors

Name: MAL-14
Description: None
Threshold height: 50 ft
Direction: 127.0°
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	44.855822	-74.330108	757.00	50.00	807.00
Two-mile	44.873222	-74.362719	496.50	864.00	1360.50

Name: MAL-23
Description: None
Threshold height: 50 ft
Direction: 217.0°
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	44.857883	-74.327465	753.80	50.00	803.80
Two-mile	44.880974	-74.302890	666.30	691.00	1357.30

Name: MAL-32
Description: None
Threshold height: 50 ft
Direction: 307.0°
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	44.851025	-74.321121	787.20	50.00	837.20
Two-mile	44.833625	-74.288513	800.20	590.40	1390.60

Name: MAL-5
Description: None
Threshold height: 50 ft
Direction: 37.0°
Glide slope: 3.15°
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	44.849861	-74.335929	767.80	50.00	817.80
Two-mile	44.826770	-74.360501	936.70	462.20	1398.90

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.93
2	44.877646	-74.318053	670.21
3	44.877766	-74.314692	678.49
4	44.877810	-74.314148	621.82
5	44.877787	-74.313454	580.35
6	44.877185	-74.313443	635.35

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-14	0	0.0	0	0.0
MAL-23	0	0.0	0	0.0
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-14	0	0.0	0	0.0
MAL-23	0	0.0	0	0.0
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

PV array 1 and FP: MAL-14

No glare found

PV array 1 and FP: MAL-23

No glare found

PV array 1 and FP: MAL-32

No glare found

PV array 1 and FP: MAL-5

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
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Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

Attachment J – October 5, 2022 Photographic Simulations

Existing

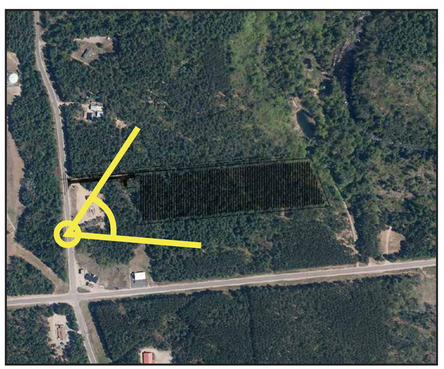
Proposed

Location 1

Bare Hill Road, Looking South East

Existing

Proposed



Location 2

Bare Hill Road, Looking North East

Existing

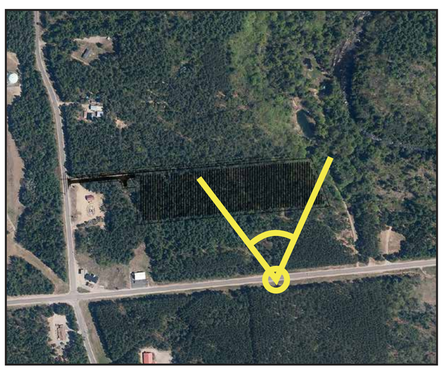
Proposed

Location 3

Cady Road, Looking North

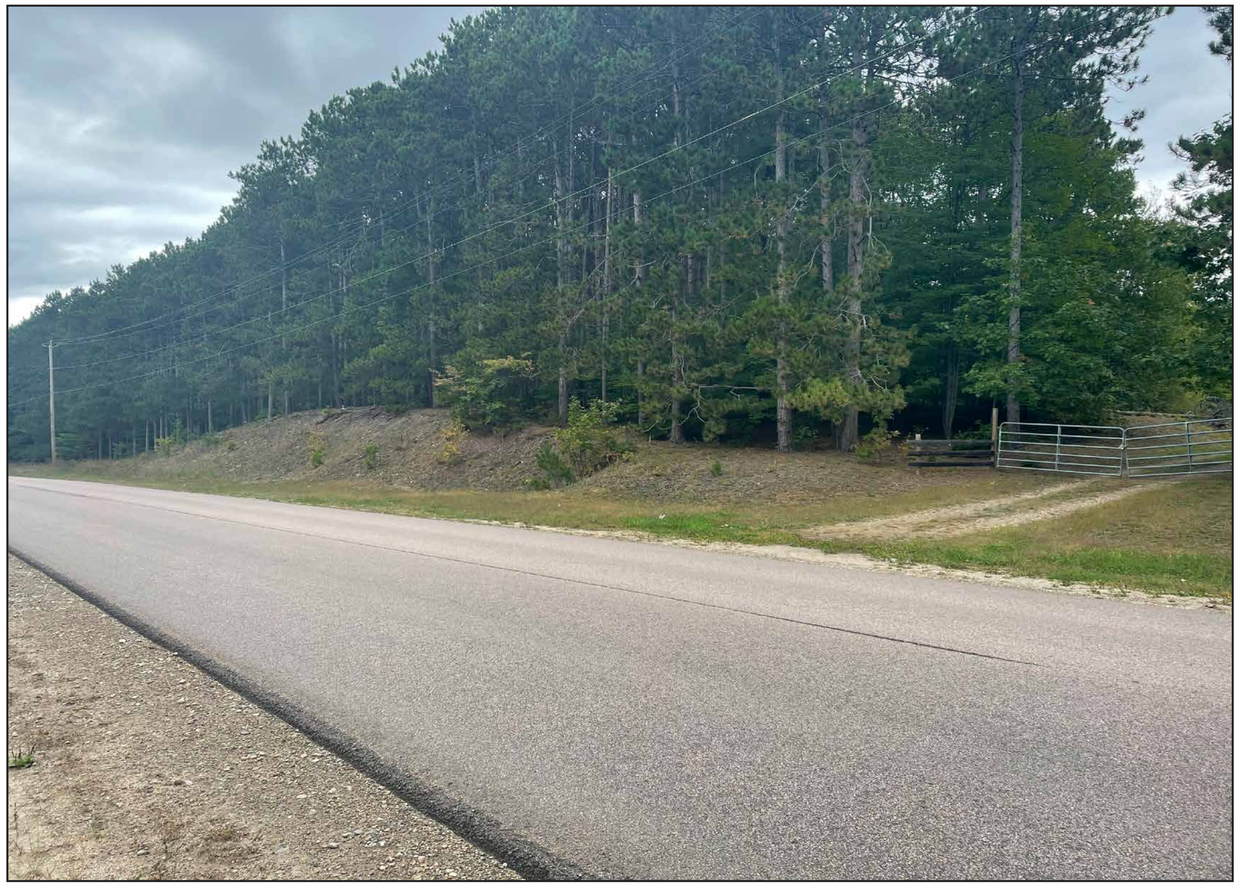
Existing

Proposed

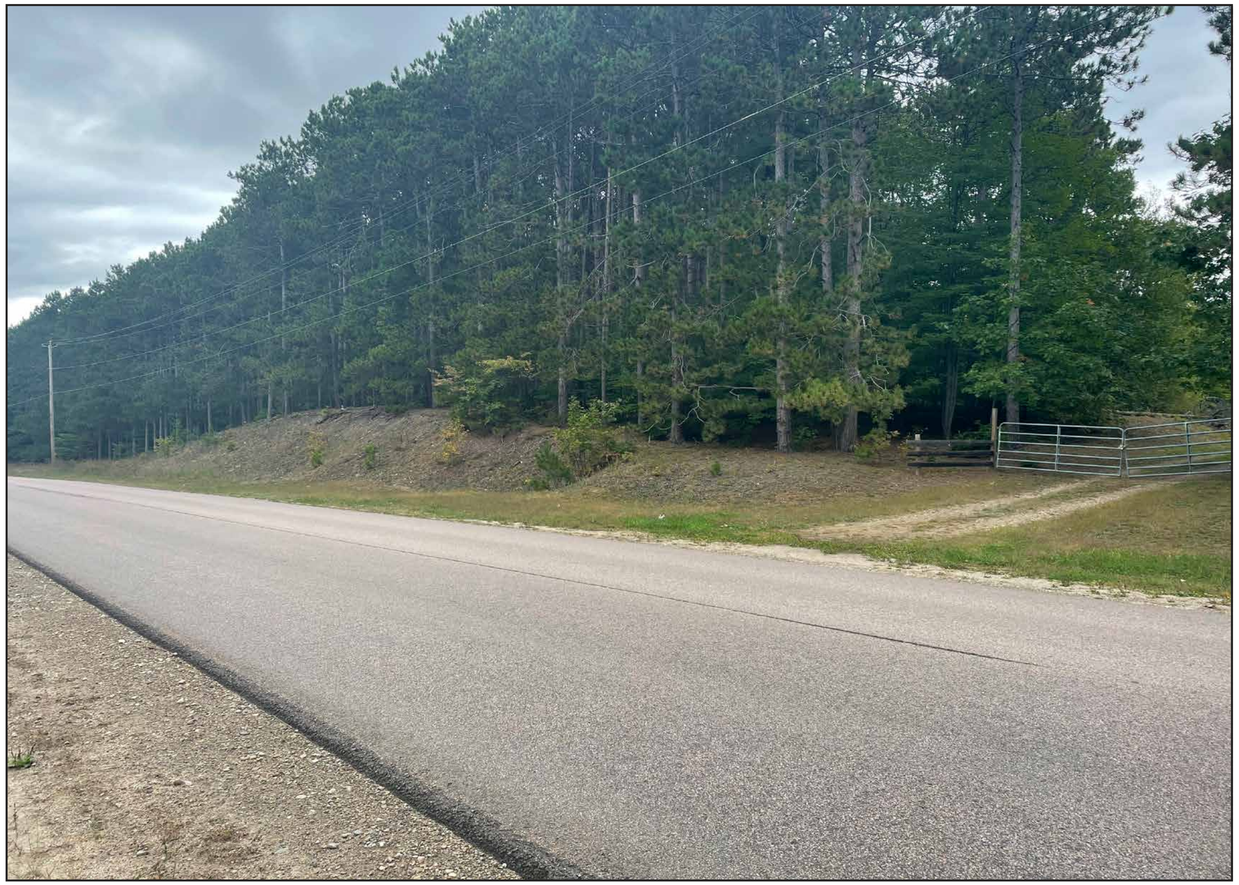


Location 4

Cady Road, Looking North



Existing



Proposed

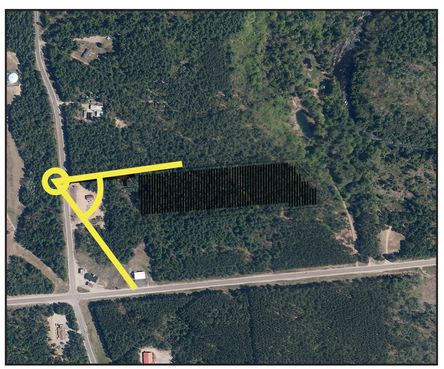
Location 5

Cady Road, Looking North West

Attachment K – Updated Photographic Simulations

Existing

Proposed - 1 Year

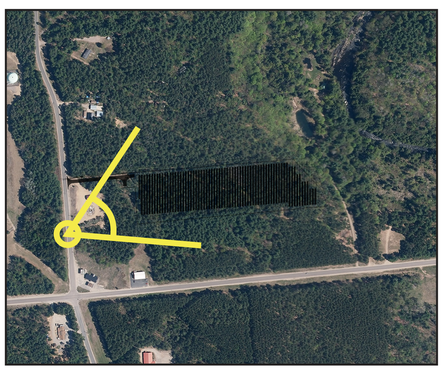


Location 1

Bare Hill Road, Looking South East

Existing

Proposed

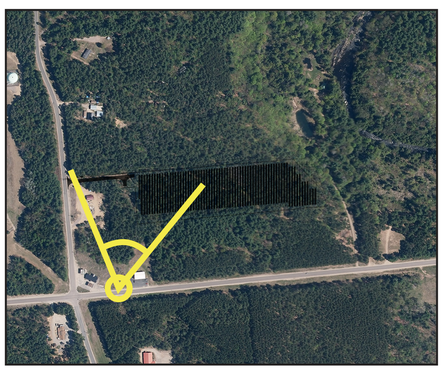


Location 2

Bare Hill Road, Looking North East

Existing

Proposed

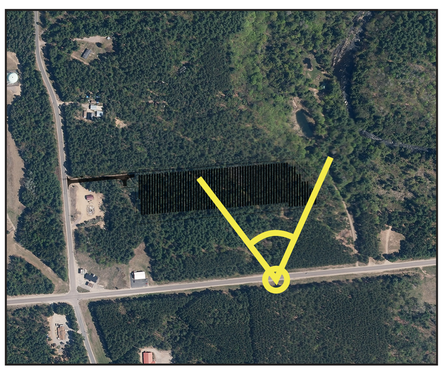


Location 3

Cady Road, Looking North

Existing

Proposed

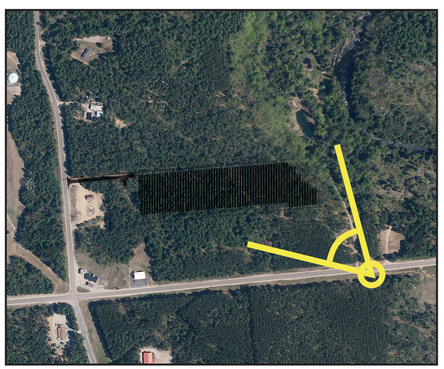


Location 4

Cady Road, Looking North

Existing

Proposed



Location 5

Cady Road, Looking North West

Attachment L – Memorandum of Lease

FRANKLIN COUNTY – STATE OF NEW YORK

KIP CASSAVAW, COUNTY CLERK
P.O. BOX 70, 355 W. MAIN ST, STE 248, MALONE, NEW YORK 12953

COUNTY CLERK'S RECORDING PAGE

THIS PAGE IS PART OF THE DOCUMENT – DO NOT DETACH

INSTRUMENT #: 2024-3362

Receipt#: 2024315648
Clerk: CW
Rec Date: 07/23/2024 11:06:25 AM
Doc Grp: RP
Descrip: OPTION
Num Pgs: 6
Rec'd Frm: NEWMARK TITLE SERVICES LLC

Party1: PIRIE KRISTOPHER
LUNA ROSSA MALONE SOLAR LLC
ROSSA LUNA MALONE SOLAR LLC
Party2: ROSSA LUNA MALONE SOLAR LLC
LUNA ROSSA MALONE SOLAR LLC
PIRIE KRISTOPHER
Town: MALONE

Recording:

Cover Page	5.00
Recording Fee	45.00
Cultural Ed	14.25
Records Management - Coun	1.00
Records Management - Stat	4.75
Notations	1.00
TP584	5.00
Sub Total:	76.00
Transfer Tax	
Transfer Tax	0.00
Sub Total:	0.00
Total:	76.00

**** NOTICE: THIS IS NOT A BILL ****

***** Transfer Tax *****
Transfer Tax #: 1953
Exempt

Total: 0.00

I hereby certify that the within and foregoing was recorded in the Franklin County Clerk's Office.

Kip Cassavaw

County Clerk

Record and Return To:

ELECTRONICALLY RECORDED BY SIMPLIFILE

Notice Information may change during the verification process and may not be reflected on this page

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

Luna Rossa Malone Solar, LLC
c/o Nautilus Solar Energy, LLC
369 Springfield Avenue Suite 2
Summit, NJ 07901
Attn: Legal
CROSS REFERENCE:
Instrument Number 2023-4457
Franklin County, New York

SECOND AMENDMENT TO MEMORANDUM OF OPTION AND LEASE AGREEMENT

THIS SECOND AMENDMENT TO MEMORANDUM OF OPTION AND LEASE AGREEMENT ("***Second Amendment***") is made and entered into as of July 18, 2024 (the "***Effective Date***"), by and between Kristopher Pirie residing at 21 Washington Street, Apartment 4, Malone, New York 12953 ("***Optionor***"), and Luna Rossa Malone Solar, LLC (fka Yellow 17 LLC (as assignee of Yellow 5 LLC)) a New York limited liability company, having an address at 369 Springfield Avenue Suite 2, Summit, NJ 07901("***Optionee***").

RECITALS

A. Optionor and Optionee are parties that certain Land Lease Option and Lease Agreement (Solar Farm) by and between Optionor and Optionee, dated July 31, 2020 (the "***Option Effective Date***"), as amended by that certain First Amendment to Land Lease Option and Lease Agreement (Solar Farm) dated June 23, 2022, as amended by that certain Second Addendum to Land Lease Option and Lease Agreement (Solar Farm) dated December 20, 2022 (the "***Second Addendum***"), and as further amended by that certain Third Addendum to Land Lease Option and Lease Agreement (Solar Farm) dated August 8, 2023 (the "***Third Addendum***"), and as further amended by that certain Fourth Addendum to Land Lease Option and Lease Agreement (Solar Farm) dated July 18th, 2024 (the "***Fourth Addendum***"), for certain property located in the ** County of Franklin, New York, tax parcel number 84.-1-73.100 (collectively, the "***Option Agreement***"). * TOWN OF Malone

B. Optionor and Optionee executed a Memorandum of Option and Lease Agreement dated December 2, 2022 and recorded in the land records of Franklin County, New York, instrument number 2022-6630 (the "***Memorandum***"), and amended the Memorandum by executing an Amendment to Memorandum of Option and Lease Agreement dated August 8, 2023 and recorded in the land records of Franklin County, New York, instrument number 2023-4457,

to put third parties on record notice of the Option Agreement.

C. The Fourth Addendum to Land Lease Option and Lease Agreement granted the Optionee additional Option Period extension terms. The parties wish to enter into this Amendment to put third parties on record notice of the amended term of the Option.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, and intending to be legally bound hereby, the parties agree as follows:

OPTION AGREEMENT

1. **Term of Option**. Paragraph 2 of the Memorandum is hereby deleted in its entirety and replaced with the following:

> "The Option is for a term of twelve (12) months (the "***Initial Option Period***"). The Initial Option Period commenced on the Option Effective Date and shall expire on the date that is twelve (12) months after the Option Effective Date, unless earlier terminated as provided in the Option Agreement. Optionee may extend the Initial Option Period for six (6) additional six (6) month periods and two (2) twelve (12) month periods (each, an "***Extension Option Period***", and together with the Initial Option Period, collectively, the "***Option Period***") upon giving written notice to Optionor before the end of the Initial Option Period or then-current Extension Option Period, as applicable. If Optionee exercises all Extension Option Periods, the Option Period shall expire on July 31, 2026."

2. **Notice**. This Amendment has been executed for the purpose of submitting it to be recorded among the Land Records of Franklin County, New York, and for giving notice of the Option Agreement and in no way modifies the express provisions of the Option Agreement. This Amendment, together with the Memorandum, will continue to constitute notice of the Option Agreement, even if the Option Agreement is subsequently amended.

3. **Successors and Assigns**. The terms of this Amendment and the Option Agreement are covenants running with the land and inure to the benefit of, and are binding upon, the parties and their respective successors and assigns, including all subsequent owners of all or any portion of the Landlord Property (as defined in the Memorandum). References to Optionor and Optionee include their respective successors and assigns. References to the Option Agreement includes any amendments thereto.

4. **Counterparts**. This Amendment may be executed in one or more counterparts, each of which will be an original instrument, but all of which, when taken together, will constitute one and the same instrument.

[*Signatures appear on following page*]

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment, to be effective as of the Effective Date.

OPTIONOR:

Name: Kristopher Pirie

ACKNOWLEDGMENT OF OPTIONOR

State of New York)

)ss.:

County of Franklin)

On the 16 day of July in the year 2024 before me, the undersigned notary public, personally appeared Kristopher Pirie, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

CATHLEEN L. PRUE
Notary Public, State of New York
Qualified in Franklin County
Reg. No. 01PR6140660
My Commission Expires 01/30/2026

[Optionor's Signature Page to Amendment]
[Optionee's Signature Page Follows.]

OPTIONEE:
Luna Rossa Malone Solar, LLC

By: _____

Name: Rachel Tutak

Title: Authorized Representative

ACKNOWLEDGMENT OF OPTIONEE

State of _____)

)ss.:

County of _____)

On the _____day of _____ in the year_____, before me, the undersigned notary public, personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

PLEASE SEE ATTACHMENT FOR NOTARY SEAL

_____Notary Public

[Optionee's Signature Page to Amendment]

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles)

On July 18, 2024 before me, Richard A. Aguilar II, Notary Public .
(insert name and title of the officer)

personally appeared Rachel Tutak
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature R. Aguilar II (Seal)

RICHARD A. AGUILAR II
Notary Public - California
Los Angeles County
Commission # 2439535
My Comm. Expires Feb 28, 2027

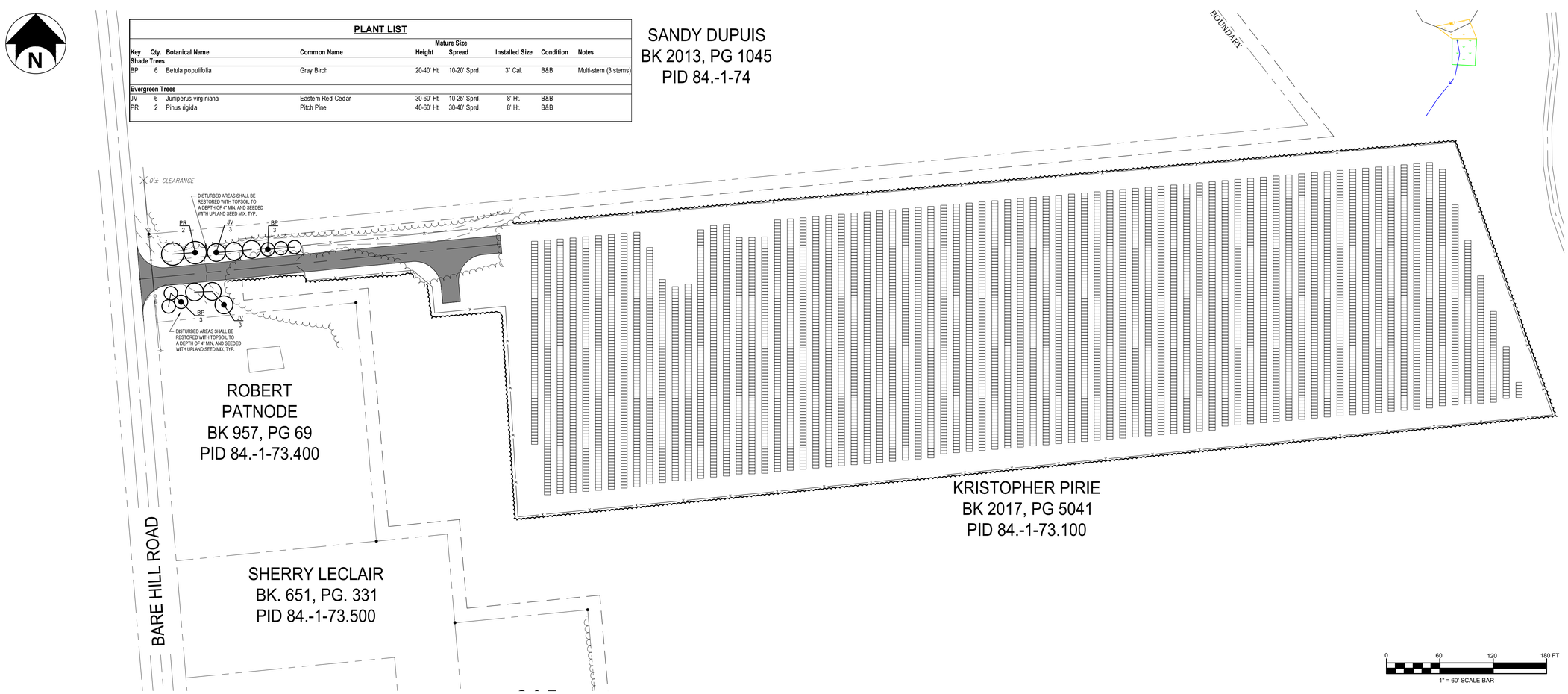
Re: Second Amendment to Memorandum of Option and Lease Agreement

Attachment M – Original Landscaping Plan

ARCH D 24x36

PLANT LIST

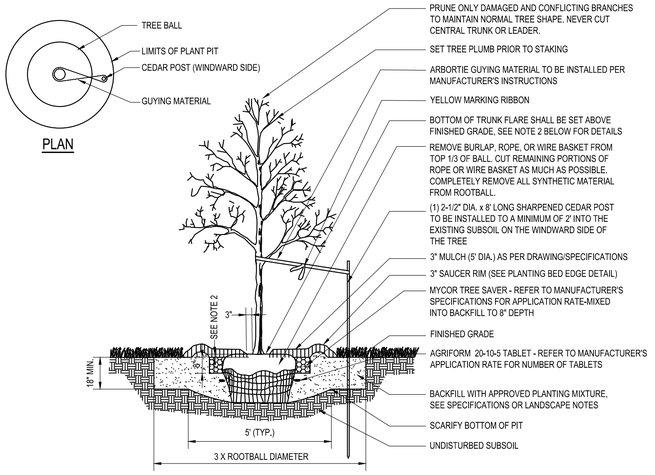
Key	Qty.	Botanical Name	Common Name	Mature Size Height	Mature Size Spread	Installed Size	Condition	Notes
Shade Trees								
BP	6	Betula populifolia	Gray Birch	20-40' Ht.	10-20' Sprd.	3" Cal.	B&B	Multi-stem (3 stems)
Evergreen Trees								
JV	6	Juniperus virginiana	Eastern Red Cedar	30-60' Ht.	10-25' Sprd.	8' Ht.	B&B	
PR	2	Pinus rigida	Pitch Pine	40-60' Ht.	30-40' Sprd.	8' Ht.	B&B	



LANDSCAPE NOTES:

1. ALL PLANTS MUST BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
2. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK", ANSI, Z60.1 (LATEST EDITION), REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
3. ALL PLANTS MUST BE HARDY UNDER CLIMATE CONDITIONS THAT EXIST AT THE PROJECT SITE AND GROWN AT A NURSERY AT THE SAME HARDINESS ZONE AS THE PROJECT LOCATION.
4. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF OWNER'S REPRESENTATIVE.
5. ALL TREES MUST BE STRAIGHT TRUNKED, INJURY FREE, AND FULL HEADED.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
7. ANY DISCREPANCY WITH QUANTITIES, LOCATIONS AND / OR FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
8. MULCH ALL ISLANDS AND PLANTINGS IN LAWN AREAS WITH DOUBLE GROUND HARDWOOD BARK MULCH. MULCH SHALL BE AGED A MIN. OF ONE (1) YEAR FOR PARTIAL DECOMPOSITION. IT SHALL BE SCREENED TO EXCLUDE PARTICLES LARGER THAN ONE (1) INCH IN DIAMETER. MATERIAL SHALL BE COMPOSED OF BARK AND HAVE A LOW WOOD CONTENT WITH NO HIDDEN WOODS FROM CONSTRUCTION DEBRIS, PALLETS OR PRESSURE TREATED LUMBER AND BE FREE OF WEEDS, SEEDS, AND GREEN LEAF MATTER. IT SHALL BE NATURALLY DARK BROWN IN COLOR. NO DYED MULCH WILL BE ACCEPTED. MULCH DEPTH SHALL BE THREE (3) INCHES UNLESS OTHERWISE DIRECTED.
9. ANY PLANT WHICH DIES, TURNS BROWN, OR DEFOLIATES (PRIOR TO FINAL ACCEPTANCE OF THE WORK) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY AND SIZE MEETING ALL PLANT LIST SPECIFICATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR FULLY MAINTAINING ALL PLANT MATERIALS (INCLUDING, BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, AND REMOVAL OF STAKES AND GUYS) AND LAWN AREAS UNTIL FINAL ACCEPTANCE BY THE OWNER.
11. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR, BEGINNING ON THE DATE OF FINAL ACCEPTANCE, THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS BEFORE THE END OF THE GUARANTEE PERIOD.
12. ALL AREAS DISTURBED BY UTILITY INSTALLATION AND SITE GRADING ACTIVITY SHALL RECEIVE APPROVED TOPSOIL (TO A COMPACTED DEPTH OF FOUR (4) INCHES, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING MUNICIPALITY), BE FINE GRADED, SEEDED, MULCHED AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
13. ALL TOPSOIL SHALL BE SCREENED LOAM SURFACE SOIL, FREE OF STONES AND SHALL HAVE THE FOLLOWING MINIMUM REQUIREMENTS:
    a) AN ORGANIC CONTENT OF 6-12%
    b) SOIL ACIDITY RANGE OF pH 6.0 TO pH 6.8
    c) SOLUBLE SALTS OF 1000 PPM OR LESS
    d) MAXIMUM CLAY CONTENT OF 15-20%
14. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING, AT THEIR EXPENSE, A CERTIFIED SOIL TEST ANALYSIS OF ON SITE AND / OR IMPORTED TOPSOIL. TOPSOIL ANALYSIS TO INCLUDE THE FOLLOWING DATA:
    a) pH FACTOR,
    b) MECHANICAL ANALYSIS, INCLUDING SIEVE ANALYSIS PROVIDING SEPARATE SAND, SILT AND CLAY PERCENTAGES.
    c) PERCENTAGE OF ORGANIC CONTENT BY WEIGHT
    d) NUTRIENT LEVELS INCLUDING NITROGEN, PHOSPHOROUS AND POTASSIUM.
15. SHOULD TESTS AND ANALYSIS INDICATE THAT SOIL PROPOSED FOR USE IS DEFICIENT IN ANY OF THE ABOVE REQUIREMENTS; A SYSTEM OF AMELIORATING MAY BE PROPOSED FOR APPROVAL. ANY SYSTEM PROPOSED SHALL PROVIDE FOR AN ACIDITY RANGE OF Ph 6.0 TO 6.8 INCLUSIVE.
16. COMPOST SHALL MEET THE FOLLOWING MINIMUM REQUIREMENTS:
    a) ORGANIC CONTENT OF 35-60% (DRY WEIGHT BASIS)
    b) LOOSE AND FRIABLE WITH MOISTURE CONTENT OF 35-60% (WET WEIGHT BASIS)
    c) PARTICLE SIZE SHALL BE <1/2 INCH (100% PASSING)
    d) SOLUBLE SALTS CONCENTRATION SHALL BE <4.0 MMHOS/CM (DS/M), MAXIMUM
    e) pH RANGE OF 6.0-8.5
17. PLANTING MIX FOR PLANT PITS SHALL BE COMPOSED OF (2) PARTS APPROVED IMPORTED OR ON-SITE SCREENED TOPSOIL AND (1) PART COMPOST.
18. LOCATIONS OF EXISTING BURIED UTILITIES SHOWN ON THE PLAN ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITY LINES ADJACENT TO THE WORK AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES AND SITE APPURTENANCES, ETC., WHICH OCCURS AS A RESULT OF THE LANDSCAPE INSTALLATION.
19. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PLANT MATERIAL PER DETAILS. ANY DEVIATIONS FROM THE DETAIL MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
20. UPON FINAL ACCEPTANCE OF THE LANDSCAPE INSTALLATION, THE OWNER WILL ASSUME MAINTENANCE OF THE LANDSCAPED AREAS.
21. EXISTING TREES TO REMAIN SHALL BE PROTECTED BY INSTALLING A TEMPORARY FENCE AT THE OUTER LIMITS OF THE TREE CANOPY.
22. SEE SHEET C010 FOR SEED SCHEDULE DETAILS

0 60 120 180 FT
1" = 60' SCALE BAR

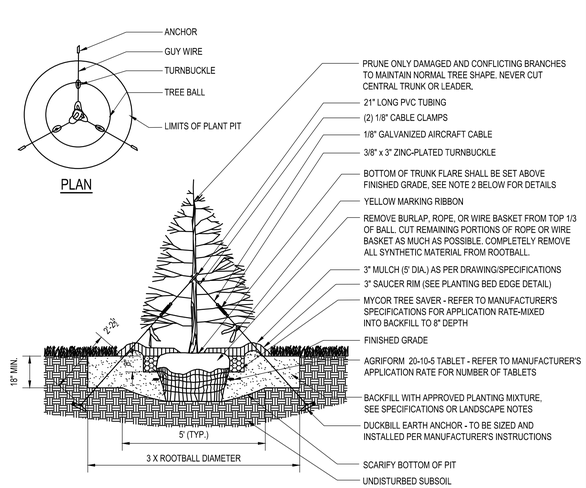


NOTES:

1. MAINTAIN A 3" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   - FOR SANDY OR LOAMY SOILS: 1"
   - FOR CLAY OR POORLY DRAINED SOILS: 3"

   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE.

DECIDUOUS TREE PLANTING LESS THAN 4" CAL.
N.T.S.



NOTES:

1. MAINTAIN A 2" MINIMUM RADIUS CLEAR OF MULCH AROUND THE TRUNK.
2. THE DISTANCE BETWEEN THE BOTTOM OF THE TRUNK FLARE AND THE FINISHED GRADE SHALL BE AS FOLLOWS:
   - FOR SANDY OR LOAMY SOILS: 1"
   - FOR CLAY OR POORLY DRAINED SOILS: 3"

   THE CONTRACTOR SHALL REVIEW THE APPROPRIATE PLANTING DEPTH WITH THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
3. WHEN TAGGING TREES AT THE NURSERY, MARK THE NORTH SIDE OF THE TREE IN THE FIELD AND WHEN INSTALLING, ROTATE TREE TO FACE NORTH WHENEVER POSSIBLE.

EVERGREEN TREE PLANTING
N.T.S.

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

2 Winners Circle, Suite 102
Albany, NY 12205
www.bergmannpc.com
office: 518.862.0325

CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE REVISED	DESCRIPTION

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
ECR	**ECR**
Designer	Reviewer
MS	**ES**
Date Issued	Project Number
09/04/2021	**14859.09**

Sheet Name

SITE PLAN

Drawing Number

C005

of **11**

Attachment N – FAA Determination Letters

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2022-AEA-17714-OE

Issued Date: 12/19/2022

Christopher Stroud
Cipriani Energy Group Corp.
125 Wolf Road
Suite 312
Albany, NY 12205

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Solar Panel Cipriani Malone Solar Farm
Location:	Malone, NY
Latitude:	44-52-37.00N NAD 83
Longitude:	74-18-59.00W
Heights:	652 feet site elevation (SE) 10 feet above ground level (AGL) 662 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 06/19/2024 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within

6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6068, or Dianne.Marin@FAA.GOV. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-AEA-17714-OE.

Signature Control No: 562601033-565294221 (DNE)
Dianne Marin
Technician

Attachment(s)
Map(s)

Verified Map for ASN 2022-AEA-17714-OE

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2022-AEA-17714-OE

Issued Date: 07/09/2024

Christopher Stroud
Cipriani Energy Group Corp.
125 Wolf Road
Suite 312
Albany, NY 12205

**** Extension ****

A Determination was issued by the Federal Aviation Administration (FAA) concerning:

Structure:	Solar Panel Solar Panel Cipriani Malone Solar Farm
Location:	Malone, NY
Latitude:	44-52-37.00N NAD 83
Longitude:	74-18-59.00W
Heights:	652 feet site elevation (SE) 10 feet above ground level (AGL) 662 feet above mean sea level (AMSL)

In response to your request for an extension of the effective period of the determination, the FAA has reviewed the aeronautical study in light of current aeronautical operations in the area of the structure and finds that no significant aeronautical changes have occurred which would alter the determination issued for this structure.

Accordingly, pursuant to the authority delegated to me, the effective period of the determination issued under the above cited aeronautical study number is hereby extended and will expire on 01/09/2026 unless otherwise extended, revised, or terminated by this office. You must adhere to all conditions identified in the original determination.

This extension issued in accordance with 49 U.S.C., Section 44718 and, if applicable, Title 14 of the Code of Federal Regulations, part 77, concerns the effect of the structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (404) 305-6068, or Dianne.Marin@FAA.GOV. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2022-AEA-17714-OE.

Signature Control No: 562601033-626772974 (EXT)
Dianne Marin
Technician

Attachment O – CESIR Study

For
Cipriani Energy Group
2,000 KVA Solar Inverter Generator System
176 Bare-Hill Road. Malone, NY 12953

Interconnection to National Grid
NY Central Division
Northern Region
Malone District
Malone 895 Substation
13.2 kV Feeder 89551

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the analysis results of the Niagara Mohawk Power Corporation, d/b/a National Grid ("National Grid" or the "Company"), interconnection study based on the proposed interconnection and design submittal from the Interconnection Customer in accordance with the Company ESB 750 series bulletins. The intent of this report is to assess this project's feasibility, determine its impact to the existing electric power system (EPS), determine interconnection scope and installation requirements, and determine costs associated with interconnecting the Interconnection Customer's generation to the Company's Electric Power System (EPS). This Coordinated Electric System Impact Review (CESIR) study; according to the NYSSIR Section I.C Step 6; identifies the scope, schedule, and costs specific to this Interconnection Customer's installation requirements.

2.0 EXECUTIVE SUMMARY

The total estimated planning grade cost of the work associated with the interconnection of the Interconnection Customer is $756,453.

The interconnection was found to be feasible with modifications to the existing Company EPS and operating conditions, which are described in detail in the body of this Study.

The ability to generate is contingent on this facility being served by the interconnecting circuit during normal Utility operating conditions. Therefore, if the interconnecting circuit is out of service, or if abnormal Utility operating conditions of the area EPS are in effect National Grid reserves the right to disengage the facility.

No future increase in generation output beyond that which specified herein for this interconnection has been studied. Any increase in system size and/or design change is subject to a new study and costs associated shall be borne by the Interconnection Customer. An increase in system size may also forfeit the Interconnection Customer's existing queue position.

3.0 COMPANY EPS PARAMETERS

Substation	Malone 895
Transformer Name	T.B. NO.3
Transformer Peak Load (MVA)	15.01
Contingency Condition Load, N-1 Criteria (MVA) (as applicable)	4.73
Day Time Light Load (MVA)	8.46
Generation: Total, Connected, Queued Ahead (MVA)	11.04, 0.62, 8.42
Contingency Condition Generation: Total, Connected, Queued Ahead (MVA)	10.5, 0.08, 8.42
Supply Voltage (kV)	115/13.2
Transformer Maximum Nameplate Rating	25 MVA
Distribution Bus Voltage Regulation	Yes
Transmission GFOV Status	Not Installed
Bus Tie	N/A
Number of Feeders Served from this Bus	3

Connecting Feeder/Line	89551
Peak Load on feeder (MVA)	5.09
Day Time Light Load on Feeder (MVA)	2.8
Feeder Primary Voltage at POI (kV)	13.2
Line Phasing at POI	3 Phase
Circuit Distance from POI to Substation (Miles)	4.3
Distance to nearest 3-phase, (Miles)	N/A
Line Regulation	No
Line/Source Grounding Configuration at POI	Effective
Generation: Total, Connected, Queued Ahead (MVA)	2.0, 0, 0

System Fault Characteristics without Interconnection Customer DG at POI	
Interconnection Customer POI Location	P17, Bare Hill Road
I 3-phase (3LLL)	1,818 Amps
I Line to Ground (3I0)	1,212 Amps
Z1 (100 MVA base)	0.7561 + j 2.2968 PU
Z0 (100 MVA base)	2.1126 + j 5.6707 PU

4.0 INTERCONNECTION CUSTOMER SITE

The Interconnection Customer is proposing a new primary service connection with Account No. 4042454002.

This location is presently served by the Company's 13.2 kV radial distribution feeder 89551 from Malone substation.

The proposed generating system consists of:

- Sixteen (16) 125KVA SCH125KTL-Do/US-600 inverters with a generation total of 2,000 kVA.
- One (1) 2000 kVA, 600V/13.2kV wye-grounded/wye-grounded step up transformers Z=5.75% X/R=6
- One (1) 134 kVA Zig Zag Grounding Transformer Z=4.1% X/R 4.
- Blade Switch
- Fuse
- Primary Utility Meter
- Gang Operated Generator Loadbreak Switch

The proposed system configuration is not acceptable.

5.0 SYSTEM IMPACT ANALYSIS

Category	Criteria	Limit	Result
Voltage	Overvoltage	< 105% (ANSI C84.1)	**Pass**
With the addition of the subject generator the maximum voltage as modeled on the Feeder is 103.9% of nominal.			
Voltage	Undervoltage	> 95% (ANSI C84.1)	**Pass**
With the addition of the subject generator the minimum voltage as modeled on the Feeder is 98.1% of nominal.			
Voltage	Substation Regulation for Reverse Power	<100% minimum load criteria	**Fail**
The total generation on Feeders [89551, 89552, 89553] is 11.04 MVA. The total minimum load on these Feeders is 8.46 MVA. Therefore, the generation to load ratio is 130%. *The following system upgrades are required:* ***Controller for the transformer LTC shall be upgraded to Bi-directional control co-generation capability.***			
Voltage	Feeder Regulation for Reverse Power	<100% Minimum load to generation ratio	**n/a**
There is no voltage regulator between the station and generator system.			
Voltage	Fluctuation	<3% steady state from proposed generation on feeder.	**Pass**
The greatest voltage fluctuation on the feeder occurs at P.36 Bare Hill Road. The resulting fluctuation at the feeder location is 1.4% due to the proposed generation.			
Voltage	Flicker	Screen H Flicker	**Pass**
The Pst for the location with the greatest voltage fluctuation is 0.089 and the emissions limit is 0.35.			
Equipment Ratings	Thermal (continuous current)	<100% thermal limits	**Pass**
The subject generator's full output current is 87.5 A. The total full output current of all DER downstream of [Overhead Conductor at Fort Covington St.] is 87.5 A. The [Overhead Conductor at Fort Covington St.] thermal capabilities are 330A.			
Equipment Ratings	Withstand (fault current)	<90% withstand limits	**Pass**
The additional fault current contribution from the generation does not contribute to interrupting ratings in excess of existing EPS equipment.			
Protection	Unintentional Islanding	Unintentional Islanding Document & Company Guidelines	**Fail**
The subject generator is a ***2.0 MW*** PV generation system. The proposed generation system exceeds the Company's criteria for islanding a distributed resource, therefore unintentional islanding is a concern. *Therefore, the following system upgrades are required*: ***National Grid Protection and Control package (e.g. the PCC Recloser)***			
Protection	Protective device coordination	Company Guidelines	**Fail**
The DG Interconnection Customer has proposed a fuse for use as primary service protection. This protective device is ***not shown in the proper location on the submitted line diagrams***. This device needs to be shown upstream of the utility metering to provide adequate service protection. This			

proposed fuse is adequate with respect to coordination and it is the responsibility of the DG Interconnection Customer to ensure it is thermally viable for use at the site.

The customer shall submit formal fuse curves and specifications for review and approval by National Grid to ensure proper coordination, correct fuse type, curves, etc. if the project moves forward.

Protection	Fault Sensitivity	Rated capabilities of EPS equipment	**Fail**

Of the currently active protectives devices (line reclosers, Station breaker relays) on this portion of the system, Malone Feeder 51 Ground Overcurrent settings were impacted negatively by the addition of this Interconnection. *Therefore, the following system upgrades are required*:

Install New Line Recloser (SEL-651R with 6IVS and Deadline Sensing) at Pole 14.

New settings will be issued for this device.

Protection	Ground Fault Detection	Reduction of Reach	**Pass**

The DG Interconnection Customer has proposed one (1) ***134 kVA*** (High-Side Connected – 13.2 kV) zig-zag grounding transformers with ***Z*** (***%) = 4.10*** or ***X/R = 4.00*** values.

This unit satisfies the requirements for effective grounding and provides current limiting in order to satisfactorily comply with National Grid standards. This transformer has an equivalent ohmic impedance of ***53.31 Ω*** when connected on the 13.2 kV side of the customer GSU as proposed.

The Interconnection Customer will contribute approximately ***117 A*** of 3I0 current to remote bolted line to ground faults and ***217 A*** to faults at the PCC.

Overvoltage - Transmission System Fault	Overvoltage - Transmission System Fault	Company 3V0 criteria	**Fail**

The interconnection of distributed generation facilities to National Grid distribution substations can result in conditions whereby line-to-ground faults on the transmission system could go undetected. This scenario was analyzed for the proposed interconnection to determine if the addition of the subject generator meets the Company's criteria for requiring transmission system line-to-ground fault protection.

The existing station protection schemes were reviewed, and analysis performed, and it has been determined that the addition of this DG Interconnection triggers the requirement for transmission system ground fault protection. *Therefore, the following system upgrades are required*:

A $3V_0$ protection scheme is required to mitigate the transmission system line-to-ground fault condition.

Protection	Overvoltage - Distribution System Fault	< 125 % voltage rise	**Pass**

With subject generator interconnected the maximum modeled voltage rise on the unfaulted phases of the system is ***115.9%***.

Protection	Effective Grounding	R0/X1 $\leq$ 1 and X0/X1 $\leq$ 3	**Pass**

With subject generator interconnected the maximum modeled ***R0/X1*** is ***0.8517 PU*** and the maximum modelled ***X0/X1*** is ***2.2977 PU***.

SCADA	Required EMS Visibility for Generation Sources	Monitoring & Control Requirements	**Fail**
The ***2.00 MW*** subject generator triggers the requirement for SCADA reporting to the Utility. *This requirement is covered by the following:* • ***National Grid Protection and Control package (e.g. the PCC Recloser)***			

6.0 MITIGATIONS FOR SYSTEM IMPACT ANALYSIS FAILURES

Detail below is intended to provide sufficient information and clarity to give the Interconnection Customer an understanding to the relationship of costs and scope associated with the DER interconnection and the system modifications due to the DER impact. Where scope items are identified, associated labor, equipment rentals and indirect project support functions (such as engineering and project management) are intended and implied.

Upgrade Required	Option 1	Option 2	Failures Addressed
3V0 Substation Upgrade	$567,231	n/a	Overvoltage – Transmission System Fault
LTC Bi-directional Control Co-generation Capability	Included in 3V0 Cost	n/a	Substation Regulation for Reverse Power
National Grid Protection and Control Package	103,920	n/a	Unintentional Islanding/ Required EMS Visibility for Generation Sources
New Recloser Installation	$67,302	n/a	Fault Sensitivity

Additional details on the scope of each option can be found below:

Option 1:

The Substation upgrades required to facilitate the proposed installation include the following:

- Construction of 3V0 protection at Malone station will been required.
  - 115 kV CCVTs with supporting structures, relaying with supporting devices, and cabling with conduit.
  - LTC bi-directional control co-generation capability.
  - This project can qualify for cost-sharing with other project in queue.

The Distribution upgrades required to facilitate the proposed installation include the following:

- National Grid protection and control package.
  - 13.2 kV recloser, switch, pole, and associated hardware.
  - SCADA Integration.
    - Equipment integrated into PCC Recloser.
- Installation of a new recloser.
  - Recloser shall be capable of voltage supervised reclose.

- The location is P14 Maple St.
- 13.2 kV recloser, switch, and associated hardware.

7.0 CONCEPTUAL COST ESTIMATE

The following items are a good faith estimate for the scope and work required to interconnect the project estimated under rates and schedules in effect at the time of this study in accordance with the most recent version of the New York State Standardized Interconnection Requirements ("SIR").

National Grid Work Segment	Planning Grade Cost Estimate not including Tax Liability				Capital portion for calculating tax liability	Tax Liability Applied to Capital	Customer Cost Totals
Description of Scope	**Material**	**Labor**	**Overheads**	**Pre-Tax Total**	**Capital Costs**	**Rate**	**Total**
Distribution System Modifications						**14.03%**	
National Grid Protection and Control Package *(Recloser, Switches, and Poles)*	$ 37,478	$ 16,566	$ 37,415	**$ 91,459**	*$ 88,816*	$ 12,461	**$ 103,920**
Install New Recloser.	$ 30,117	$ 7,297	$ 22,528	**$ 59,941**	*$ 52,465*	$ 7,361	**$ 67,302**
Substation Modifications						**14.03%**	
3V0 Substation Upgrade (*EPC with CCVTs, protection relays and test switches, relay panel*)	$ 221,110	$ 103,490	$ 183,400	**$ 508,000**	*$ 422,175*	*$ 59,231*	**$ 567,231**
Non-System Costs						**0%**	
Customer Documentation Review, Field Verification and Witness Testing		$ 12,000	$ 6,000	**$ 18,000**	$ -	0	**$ 18,000**
Total Project Costs:	**$ 288,704**	**$ 139,353**	**$ 249,343**	**$ 677,400**	***$ 563,456***	***$ 79,053***	**$ 756,453**

1. These estimated costs are based upon the results of this study and are subject to change. All costs anticipated to be incurred by the Company are listed.
2. The Company will reconcile actual charges upon project completion and the Interconnection Customer will be responsible for all final charges, which may be higher or lower than estimated according to the SIR I.C step 11.
3. This estimate does not include the following:
   - additional interconnection study costs, or study rework
   - additional application fees,
   - applicable surcharges,
   - property taxes,
   - overall project sales tax,
   - future operation and maintenance costs,
   - adverse field conditions such as weather and Interconnection Customer equipment obstructions,
   - extended construction hours to minimize outage time or Company's public duty to serve,
   - the cost of any temporary construction service, or
   - any required permits.
4. Cost adders estimated for overtime would be based on 1.5 and 2 times labor rates if required for work beyond normal business hours. Per Diems are also extra costs potentially incurred for overtime labor.

Attachment P – Town of Malone's Comments on the DEIS

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VIA EMAIL (astoklosa@hodgsonruss.com)

March 27, 2024

Alicia Stoklosa, Esq.
Hodgson Russ LLP
90 Linden Oaks
Suite 110
Rochester, NY 14625

RE: Town of Malone's Comments on the Draft Environmental Impact Statement Regarding Cipriani Energy Group's Proposed Solar Project at 176 Bare Hill Road

Dear Ms. Stoklosa,

As you know, this office is special counsel to the Town of Malone for this project. We are in receipt of Cipriani Energy's February 2024 Draft Environmental Impact Statement (DEIS) for the above stated project. The Town has the following comments on the DEIS:

1. The length of the term is misstated on Page 3 of the DEIS. The DEIS states that the lease term runs from 2020 to 2025, but the lease term is 25 years, subject to up to two, five year extensions. The attached lease option does not discuss a five-year option.

2. Sometimes the Applicant is referred to as Yellow 5 especially in the attachments, but to the Town they have referred to themselves as Yellow 17.

3. The list of required regulatory approvals for this project needs to be updated. The necessary use variances are not clearly described. Also, the reference to the SPDES General Permit should be edited because the current permit is SPDES General Permit for Stormwater Discharges from Construction Activity Permit No. GP-0-20-001.

4. The Existing Conditions discussion (Section 3, page 5) is insufficient and is lacking detail/organization that would be expected in an EIS. The Existing Conditions should relate back to the Town's initial SEQRA findings. For example:

a. Geologic setting is a list of bullet points that appear to discuss general land use items.
b. The wetland delineation figure and data is attached as Attachment E but a general summary of the Army Corps findings is not provided in the EIS document, other than a statement to indicate the project was "sited to avoid any impacts to wetlands." P. 21.
c. Noise impacts are discussed on page 19 in the Cumulative Impacts section but a basic summary of noise impacts and reference to the noise study is not provided in the Existing Conditions section.
d. The SHPO "no effect" letter is attached to the DEIS in Attachment G but a general explanation of what the letter means is not included in the Existing Conditions section.
e. The farmland classification figure/soils data (see Attachment E which includes a long list of sub-attachments which are not clearly referenced) is not discussed in the Existing Conditions section of the DEIS.

5. The Town would like more detail added to the FEIS to explain whether there are any grid interconnection concerns (reference in text to the CESIR in Section 5.1/Energy/Utility Facilities).

6. The DEIS includes a note about Photo Simulations but does not include a findings summary. A summary would be helpful in the FEIS to assist with impact determination.

7. In Section 9 Summary and Conclusions it says the document was prepared to "respond to concerns raised by the Town of Malone PB as noted in the SEQR Positive Declaration" but it was the Town Board who issued the positive declaration.

The Town has some clarifying questions on the DEIS glare issue summary and analysis:

8. Please confirm the height of the PV panels. Per page 4 of the EIS, the maximum panel tilt height will be 8.6 feet but the glare analysis indicated a height of 4.5 feet.

9. The DEIS Attachment B glint and glare analysis summary indicates "the analyses represented a fixed-tilt system," however, it appears from the model and from the plans that the system is a tracker system. Please confirm what system is being used.

10. The DEIS Attachment B glint and glare analysis was conducted at an array height of 4.5 feet above the ground. The provided Drawing Number C009 shows a racking height at 4.5 minimum, but the November 2022 analysis used 6.5 feet. Please explain why the height changed.

11. Clarification of the height of observation points in the DEIS Attachment B glint and glare study is necessary. It is noted that "the viewing height of observer in standard first floor

building at six feet above ground surface and standard commuter vehicle at five feet above ground surface" but five feet does not match either car or semi-truck height. Please clarify.

Please let me know if you have any additional questions or concerns.

Sincerely,

Bridget Cook

Bridget Cook, Esq.

CC: Andrea Stewart, Supervisor
Frances Kabat, LaBella
Mary Steblein, LaBella

Attachment Q – Town of Malone Public Hearing Minutes and Comments

TOWN OF MALONE
REGULAR MEETING
PUBLIC HEARING
March 27, 2024

A regular meeting of the Town Board of the Town of Malone, County of Franklin and State of New York was held at the Town Offices, 27 Airport Road, Malone, NY on the 27th day of March 2024 at 6:00 p.m.

PRESENT:

Andrea Stewart, Supervisor
Terrence Maguire, Deputy Supervisor
Jody Johnston, Councilor
Brian Taylor, Councilor
Paul Walbridge, Councilor

ALSO PRESENT:

Abby Monica, Town Clerk
Denice Hudson, Budget Officer
Michael Andrews, Highway Superintendent
John Manley, Deputy Highway Superintendent
Bruce Burditt, Airport Manager
Alex Violo, Malone Telegram
Scott Smith, Malone Resident
Greg Lawrence, Tetra Tech
Michael Quinn, Cipriani Energy Group
Mike Fournier, Malone Resident
Calvin Martin, Malone Resident
Bridget O'Toole, Malone Town Attorney

CALL TO ORDER: Supervisor Stewart called the Public Hearing to order at 6:00 PM with the Pledge of Allegiance.

PUBLIC HEARING:

The reason for this Public Hearing is for the Yellow 17, LLC (Bare Hill Solar Project).
Michael Quinn from Cipriani Energy Group spoke on behalf of the solar project, stating it is two megawatts, little more than 9 acres large and is surrounded by trees. Stated if anyone had any questions for him he would answer them.
Greg Lawrence, the Civil Engineer from Tetra Tech spoke on the glare analysis study. Lawrence stated he only found yellow and green glare which has minimal impact. When they did the test the yellow and green glare they did find was rounded around 70 minutes per the whole day. They did not find any glare off the guard fence from the prison, neighboring property's or roads. The project itself is far back in the woods. Even when the leaves fall off the tree's you still cannot see the project as it is behind existing vegetation and concealed from the roads and properties.
Calvin Martin had a few concerns; he gave a copy of a glare analysis study (that he conducted himself) and lease agreement to all the members of the board. Martin stated he got a different result study than what Tetra Tech did, the results he received are in the packet he gave the board members. Martin also discussed the lease agreement and stated in the lease there is an exit plan, and they could leave before the project is finished.
Mike Fournier had a few concerns; he stated there is a satellite program and it shows that where this project is going to be is one mile or less from this runway, the hospital, and the three prisons. Stated battery devices have a history of burning and are toxic. Fournier is worried about how they will evacuate the prisons and hospitals if the toxins end up getting in the buildings when the wind blows around. There are farmlands around this project as well, stated this will be toxic for the farm animals.
Bruce Burditt, Airport Manger asked how big the project is and what the Town of Malones local law allows. Michael Quinn answered his question and stated the project is a little bigger than 9 acres but a little smaller than 10 acres, and the Town of Malone local law allows seven thousand feet. Burditt asked when the project is completed will there be poles on the property. Yes, there will be poles for protection of the equipment.
Supervisor Stewart thanks everyone for their concerns and questions. If there is anyone who wants to look at the glare analysis study it is available in the Town Clerks office, Monday through Friday 9-4. Supervisor Stewarts closed the Public Hearing to oral comments but kept it open for written comments until April 12, 2024.

MINUTES: ***For review and approval***

RESOLUTION 89 -2024 – ***Minutes***

Upon motion by Councilor Walbridge, second by Councilor Johnston the following resolution was

ADOPTED Ayes 5 Johnston, Stewart, Taylor, Walbridge, Maguire
Nays 0

TOWN OF MALONE
REGULAR MEETING
PUBLIC HEARING
March 27, 2024

Approval of March 13, 2024 Regular Meeting Minutes
RESOLUTION 90 -2024 – ***Minutes***
Upon motion by Councilor Walbridge, second by Councilor Walbridge the following resolution was
ADOPTED Ayes 5 Johnston, Stewart, Taylor, Walbridge, Maguire
Nays 0
Approval of March 13, 2024 Executive Session Minutes

Reports:

RESOLUTION 91-2024- ***Reports***
Upon motion by Deputy Maguire, second by Councilor Taylor the following resolution was
ADOPTED Ayes 5 Stewart, Taylor, Johnston, Walbridge, Maguire
Nays 0
Resolved to approve the following reports
NYS Comptroller, Justice Court Fund- February 2024

OLD BUSINESS:

Road Posting

Superintendent Andrews states at this time the River and Low Road Signage posting regarding no thru truck traffic will be staying up. It will be readdressed in the future.

Malone Golf Club

SUPERVISORS REPORTS:
RESOLUTION 92-2024- ***MCF Physicals***
Upon motion made by Councilor Walbridge seconded by Deputy Maguire the following resolution was
ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0
Permission for Supervisor Stewart to sign MCF Physicals for Brandon Szkotak and to add the Franklin County Self Insurance Plan.
RESOLUTION 93-2024- ***Budget Authorization***
Upon motion made by Deputy Maguire seconded by Councilor Johnston the following resolution was
ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0
Permission for Supervisor Stewart to sign Budget Authorization for Variance Request and 2024 Monitoring Task Order.

BOARD MEMBER/COMMITTEE ITEMS:
Councilor Johnston stated he is getting excited about the Border Hounds season as it is approaching fast, he is very proud to see what they have brought to this town. The committee is expanding many new things for the field such as bleachers and getting houses ready for the players. Johnston states the Empire League is now getting sponsored by Major League Baseball, so it will bring in so many opportunities for the players and members of the community. Johnston thanks everyone involved with getting everything ready and making this happen for the second year in a row.
Councilor Walbridge states he wants to congratulate Supervisor Stewart on the award she received at the Elks Lodge last week, she truly deserved that reward. Walbridge thanks her for everything she has done and continues to do for the town.

SUPERINTENDENT OF HIGHWAY REPORTS:
Superintendent Andrews states he has some of the crew working on the Bloomer Road again, the road is coming along good. Andrews states we have gotten incredibly lucky with the weather we have been having, my crew is 2 ½ months ahead on this project due to the weather. He stated he

was contacted by 911, as two more individuals now want to receive a 911 address on Bloomer Road. Andrews stated he also has some of the crew sweeping the roads and cold patching. Neil and Mark are working on the paver and getting in the parts that are needed to begin paving when the time comes. Andrews has requested form the board members purchase two roadside mowers as the currents two the town highway owns currently are not in the best shape and it is getting hard to be able to find parts for the mowers. Andrews did receive 6 quotes on roadside mowers and the best quote is from Tiger Ditch Bank Mowers at $14,000 apiece.

RESOLUTION 94-2024- ***Two Roadside Mowers***

Upon motion made by Deputy Maguire seconded by Councilor Walbridge the following resolution was

ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0

Permission to purchase tow roadside Mowers at the price of $14,999.00 a piece from Tiger Ditch Bank Mowers using proceeds from the auction.

CORRESPONDENCE:

From NYS Ag & Markets: Dog Control Officer Inspection report "Satisfactory"

From Charter Communications: Changes to Lineup

RESOLUTION 95-2024- ***Court Clerk Training***

Upon motion made by Councilor Taylor seconded by Councilor Walbridge the following resolution was

ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0

Permission for two new Court Clerks to attend Clerk Core Training in Albany on May 8-11, all expenses paid by the town.

From NYS Homes and Community Renewal: Comprehensive Monitoring Report NYS CDBG Project #689HR313-19.

From Ryan M. Luppino, Barton and Loguidice: Franklin County Legislature establishing lead agency for Franklin County Multi-Use Recreational Trail System Project. Response due by April 29, 2024.

NEW BUSINESS:

RESOLUTION 96-2024- ***Journal Entry***

Upon motion made by Councilor Johnston seconded by Councilor Walbridge the following resolution was

ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0

Permission for Budget Officer to make the fowling Journal Entry as per Comptroller Notice for February 2024 from A690 Clearinghouse $8,944.50 to A980 Revenues $8,944.50 (A2610 court fines & fees).

RESOLUTION 97-2024- ***Journal Entry***

Upon motion made by Councilor Johnston seconded by Councilor Walbridge the following resolution was

ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0

Permission for the Budget Officer to make the following Journal Entries pertaining to Auction Sale of Code Vehicle- Increase revenue in Part Town General Fund (B510) by $9,200.00 (B2655 Sale of Equipment) Increase expenditures (B960) by $9,200.00 (B3620.0 Safety Inspection Equipment).

TOWN OF MALONE
REGULAR MEETING
PUBLIC HEARING
March 27, 2024

EXECUTIVE SESSION

RESOLUTION 98-2024- ***Enter Executive Session***

Upon motion made by Supervisor Stewart seconded by Councilor Johnston the following resolution was

ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0

Permission to enter executive session at 7:13 p.m.

RESOLUTION 99-2024- ***Exit Executive Session***

Upon motion made by Supervisor Stewart seconded by Deputy Maguire the following resolution was

ADOPTED Ayes 5 Stewart, Maguire, Johnston, Walbridge, Taylor
Nays 0

Permission to exit executive session at 7:37 p.m.

BILLS FOR AUDIT & PAYMENT: ***Batch No. 1410***
Voucher Nos. 253-296

General Fund (A)	***$30,904.96***
Part Town General Fund (B)	***556.91***
Highway Outside (DB)	***649.55***
Highway Townwide (DA)	***6,377.92***
Trust & Agency (T)	***1,273.94***
GRAND TOTAL	***$39,763.28***

RESOLUTION 100-2024 ***Bills***

Upon Motion by Deputy Maguire, second by Councilor Walbridge the following resolution was.

ADOPTED Ayes 5 Stewart, Johnston, Taylor, Walbridge, Maguire
Nays 0

Resolved to pay the bills listed.

RESOLUTION 101-2024 ***Adjourn***

Upon Motion of Councilor Walbridge and seconded by Supervisor Stewart the following resolution

Was ADOPTED Ayes 5 Stewart, Johnston, Taylor, Walbridge, Maguire
Nays 0

The next Regular Board Meeting will be on April 10, 2024 at 6:00 p.m., preceded by the IDA meeting at 5:45 p.m. at 27 Airport Rd. Malone, NY 12953.

RESPECTFULLY SUBMITTED,

Abby Monica, Town Clerk

Configuration 1 Site Config | ForgeSolar

forgesolar.com/projects/12540/configs/71050

Non-commercial/Student Version

Glare analyses and results are for non-commercial purposes only.

Created June 20, 2022
Updated June 20, 2022
Time-step 1 minute
Timezone offset UTC-5
Site ID 71050.12540

Project type Advanced
Project status: active
Category 1 MW to 5 MW

Summary of Results Glare with potential for temporary after-image predicted

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
PV ground	SA tracking	SA tracking	138	8,721	5,997,000.0

PV Array(s)

Total PV footprint area: 8.2 acres

Name: PV ground
Footprint area: 8.2 acres
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 0.0 deg
Ground Coverage Ratio: 0.5
Rated power: 2700.0 kW
Panel material: Smooth glass without AR coating
Vary reflectivity with sun position? Yes
Correlate slope error with surface type? Yes
Slope error: 6.55 mrad

Topographic map of proposed solar plant:

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	44.877513	-74.317785	668.55	5.00	673.55
2	44.877817	-74.313944	601.98	5.00	606.98
3	44.876996	-74.313408	658.61	5.00	663.61
4	44.876555	-74.317850	694.82	5.00	699.82

2-Mile Flight Path Receptor(s)

Name: FP 23-1 Runway 23 (NE)
Description:
Threshold height : 50 ft
Direction: 213.8 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	44.858032	-74.327280	753.23	50.00	803.23
2-mile point	44.882049	-74.304546	664.52	692.16	1356.68

Name: FP 23-2 Runway 5 (SW)
Description:
Threshold height : 50 ft
Direction: 34.6 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	44.849736	-74.336051	767.10	50.00	817.11
2-mile point	44.825949	-74.359259	927.51	443.05	1370.56

Name: FP 32-1
Description:
Threshold height : 50 ft
Direction: 129.9 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	44.855993	-74.330440	756.32	50.00	806.32
2-mile point	44.874539	-74.361766	492.02	867.76	1359.78

Name: FP 32-2 Runway 14 (NW)
Description:
Threshold height : 50 ft
Direction: 305.9 deg
Glide slope: 3.0 deg
Pilot view restricted? Yes
Vertical view restriction: 30.0 deg
Azimuthal view restriction: 50.0 deg

Point	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
Threshold	44.851493	-74.322018	783.80	50.00	833.80
2-mile point	44.834531	-74.288952	764.18	623.08	1387.26

Route Receptor(s)

Name: Bare Hill Road
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	44.881570	-74.320511	684.00	5.00	689.00
2	44.880445	-74.320382	668.00	5.00	673.00
3	44.879958	-74.320296	676.69	5.00	681.69
4	44.879563	-74.320253	667.41	5.00	672.41
5	44.879107	-74.320253	670.14	5.00	675.14
6	44.878681	-74.319824	666.04	5.00	671.04
7	44.878438	-74.319824	665.25	5.00	670.25
8	44.877769	-74.319781	657.07	5.00	662.07
9	44.876826	-74.319567	647.99	5.00	652.99
10	44.876127	-74.319610	644.23	5.00	649.23
11	44.875853	-74.319481	643.43	5.00	648.43
12	44.875184	-74.319352	655.80	5.00	660.80
13	44.874788	-74.319180	658.68	5.00	663.68
14	44.874241	-74.318966	657.29	5.00	662.29
15	44.873876	-74.318665	655.42	5.00	660.42
16	44.873481	-74.318580	663.52	5.00	668.52
17	44.873177	-74.318451	665.78	5.00	670.78
18	44.872872	-74.318408	673.92	5.00	678.92
19	44.872507	-74.318236	674.30	5.00	679.30

Name: Brand Road
Route type Two-way
View angle: 50.0 deg

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	44.876644	-74.305319	587.09	5.00	592.09
2	44.876096	-74.309181	630.69	5.00	635.69
3	44.875822	-74.313044	639.21	5.00	644.21
4	44.875579	-74.316176	639.92	5.00	644.92
5	44.875457	-74.318623	640.90	5.00	645.90
6	44.875245	-74.320983	657.15	5.00	662.15
7	44.875093	-74.323944	664.28	5.00	669.28
8	44.874971	-74.326562	660.21	5.00	665.21
9	44.874788	-74.329266	649.07	5.00	654.07
10	44.874667	-74.330038	634.86	5.00	639.86
11	44.874393	-74.331025	613.26	5.00	618.26
12	44.874302	-74.331926	602.09	5.00	607.09

- 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.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
- Several V1 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.)
- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- 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.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

Configuration 1 Site Config | ForgeSolar

forgesolar.com/projects/12540/configs/71050

Non-commercial/Student Version

Glare analyses and results are for non-commercial purposes only.

Created June 20, 2022
Updated June 20, 2022
Time-step 1 minute
Timezone offset UTC-5
Site ID 71050.12540

Project type Advanced
Project status: active
Category 1 MW to 5 MW

Topographic map showing proposed solar project and receptors: 2 airport runways and 2 town roads (Bare Hill Rd. & Brand Rd.)

Summary of PV Glare Analysis

Yellow glare is also known as “flash blindness,” causing a temporary after-image.

PV Name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced	Data File
	deg	deg	min	min	kWh	
PV ground	SA tracking	SA tracking	138	8,721	5,997,000.0	

Green glare has a low potential to cause “flash-blindness”

Distinct glare per month

PV	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
pv-ground (green)	0	0	0	0	0	112	26	0	0	0	0	0
pv-ground (yellow)	1291	1206	1120	357	0	0	0	67	974	1302	1242	1162

PV & Receptor Analysis Results

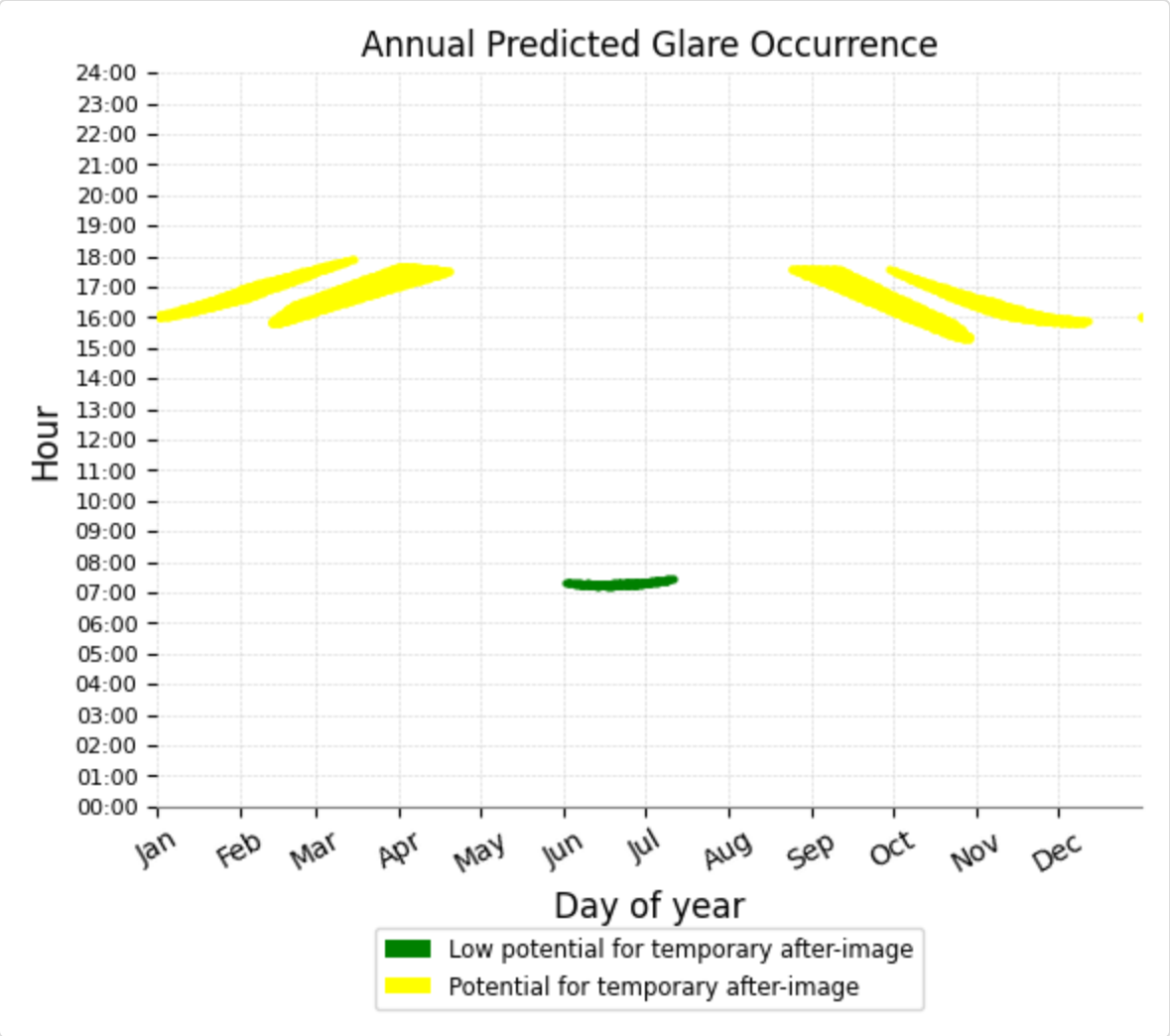
PV ground potential temporary after-image

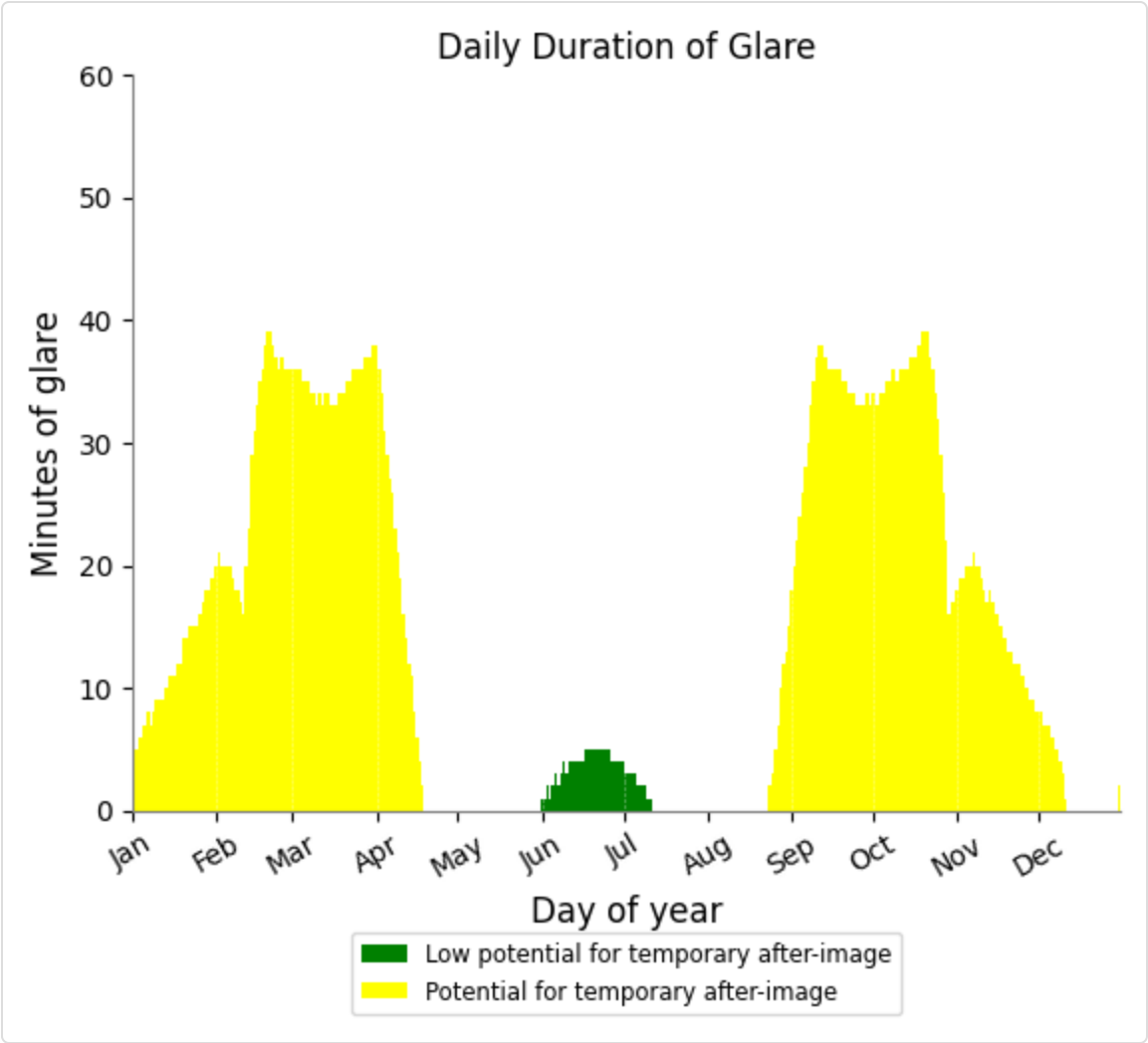
Predicted energy output: 5,997,000.0 kWh (assuming sunny, clear skies)

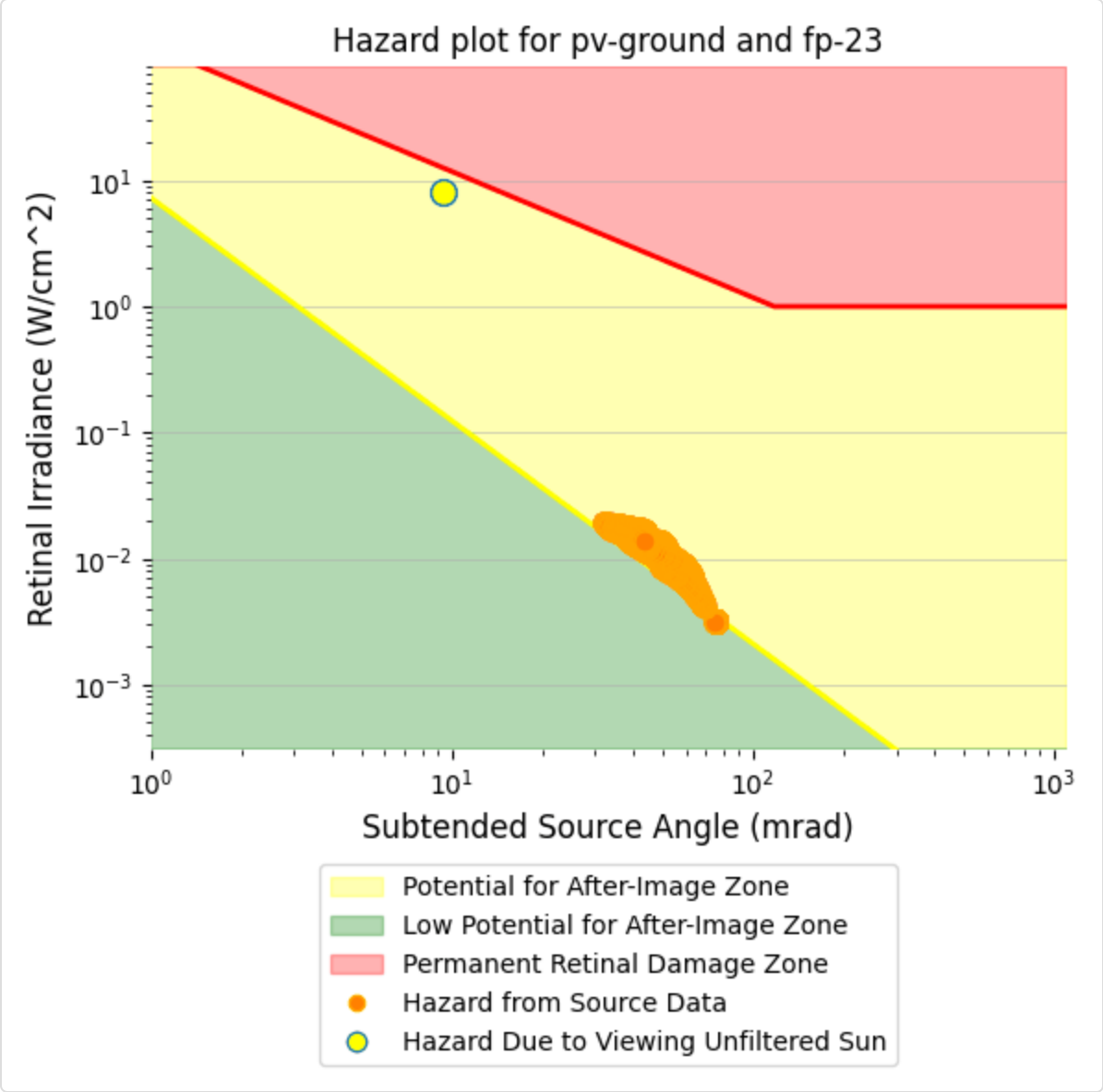
Component	Green glare (min)	Yellow glare (min)
Runway 23 (NE)		
FP: FP 23-1	138	5171
FP: FP 23-2	0	0
FP: FP 32-1	0	0
FP: FP 32-2	0	0
Route: Bare Hill Road	0	3550
Route: Brand Road	0	0

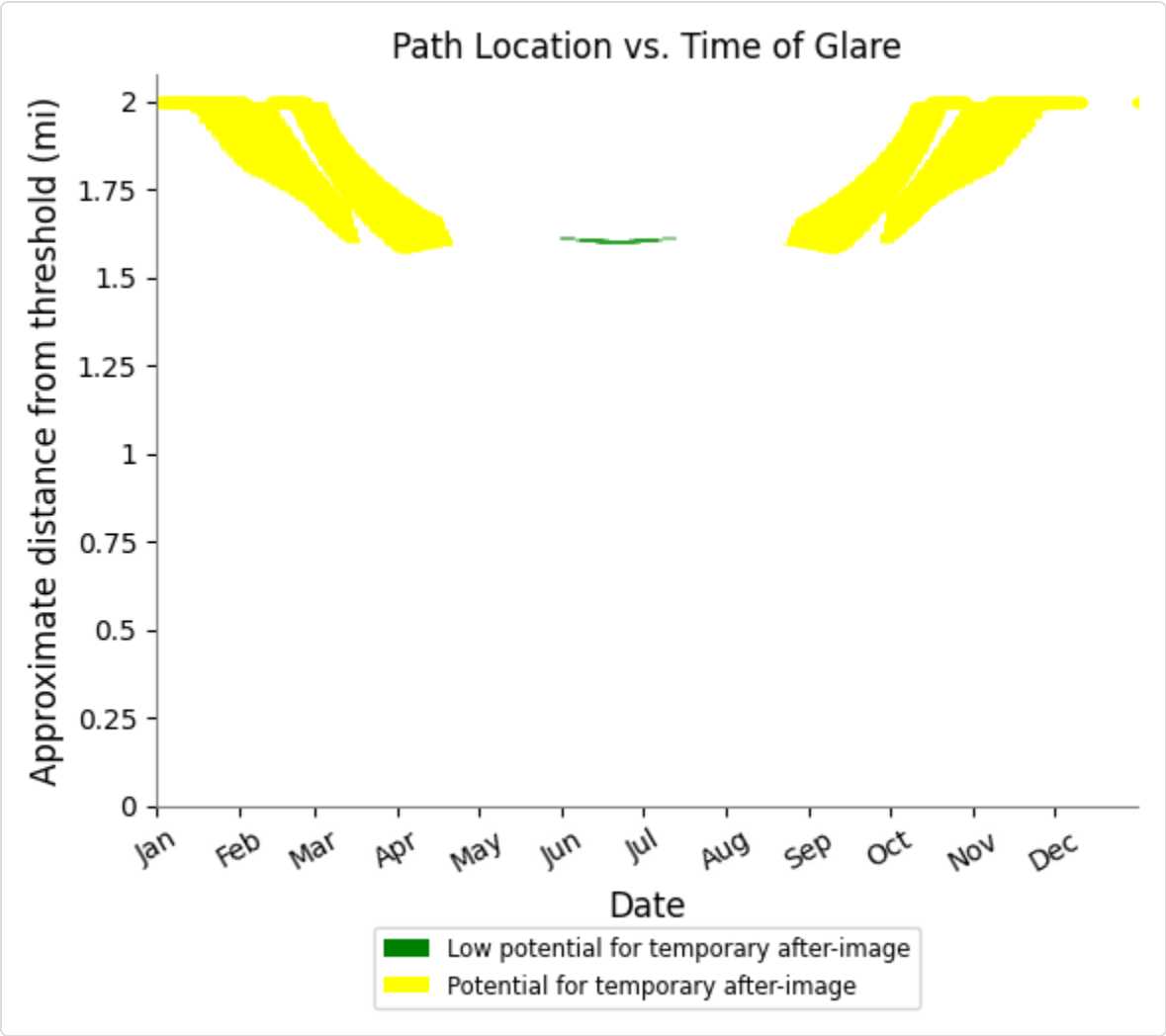
PV array is expected to produce the following glare for observers on this flight path:

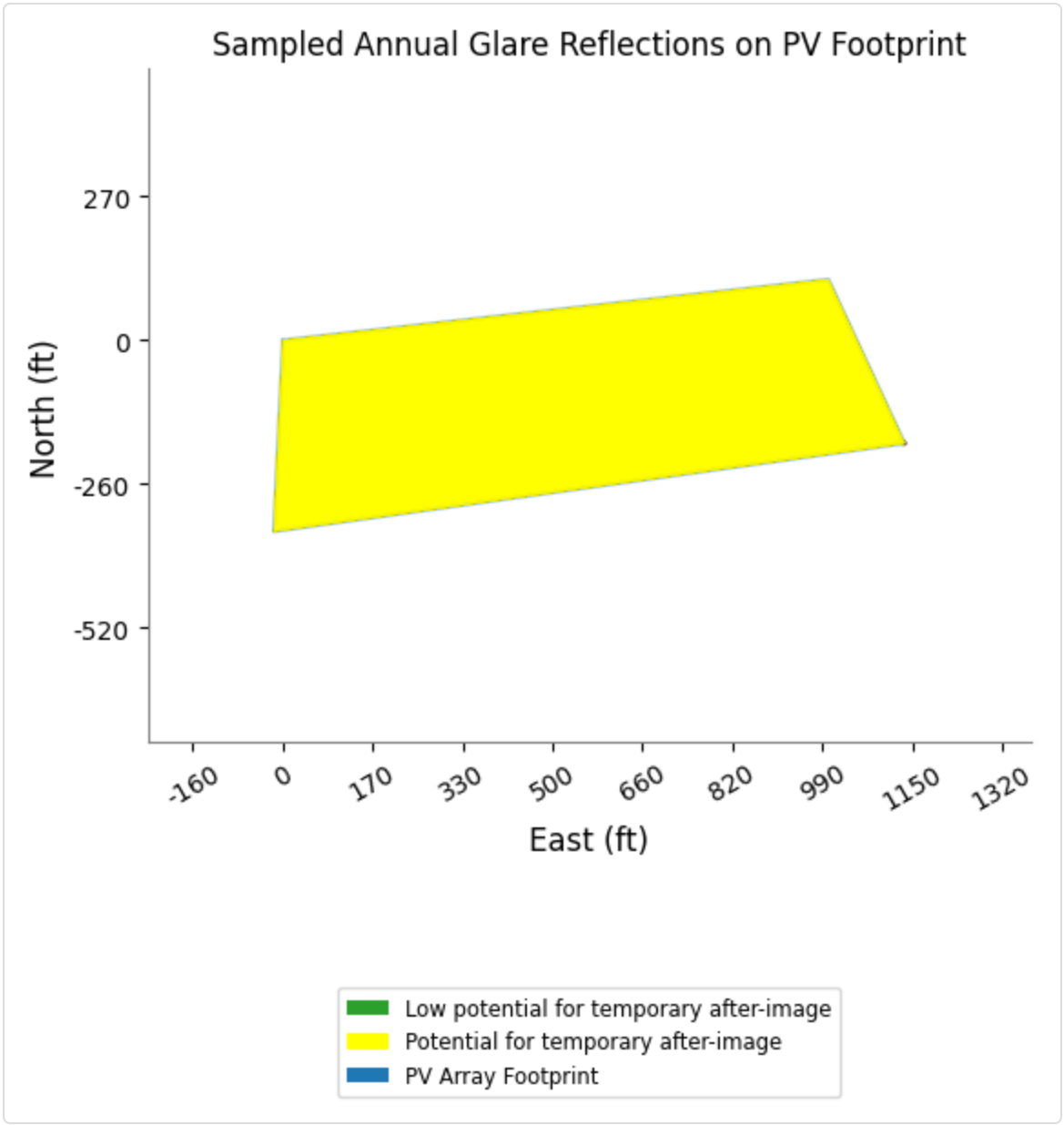
- 138 minutes of "green" glare with low potential to cause temporary after-image.
- 5,171 minutes of "yellow" glare with potential to cause temporary after-image.

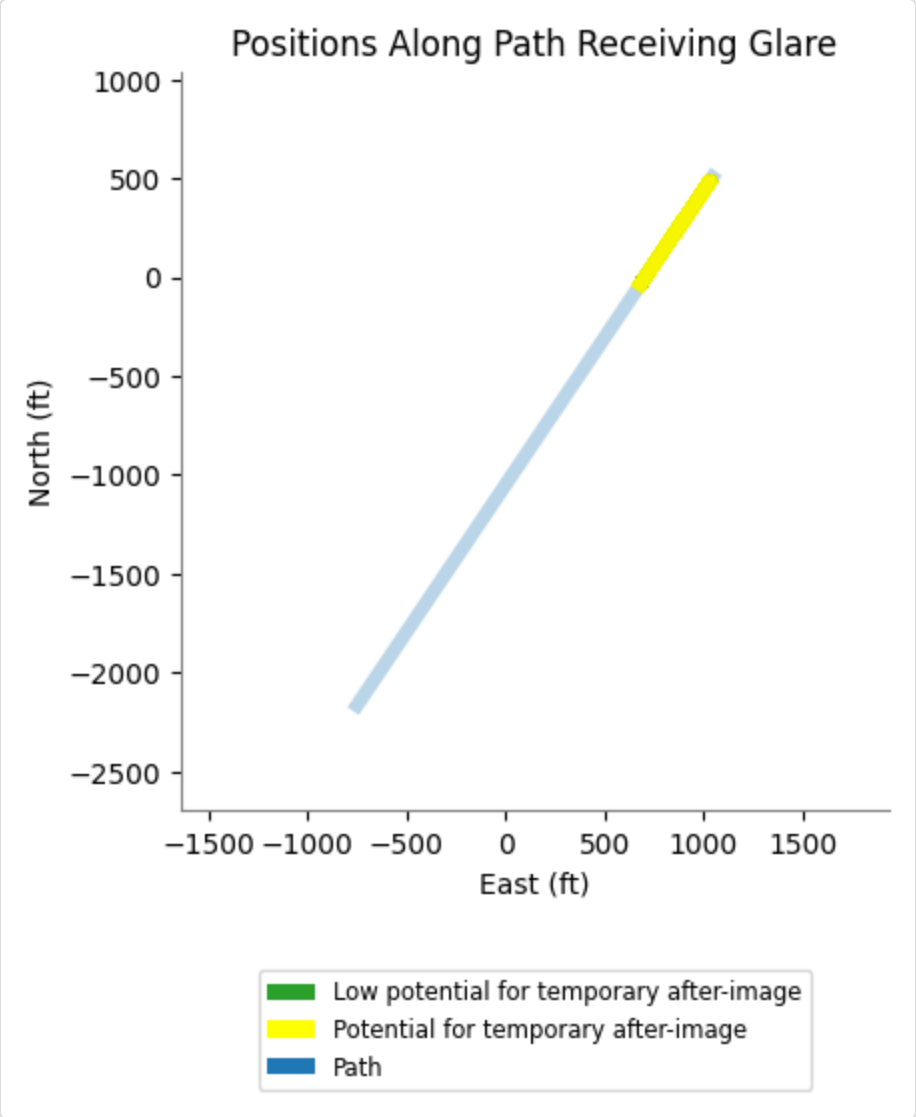



Daily Duration of Glare
Minutes of glare
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year
Low potential for temporary after-image
Potential for temporary after-image


Hazard plot for pv-ground and fp-23
Retinal Irradiance (W/cm^2)
10^{1}
10^{0}
10^{-1}
10^{-2}
10^{-3}
10^{0}
10^{1}
10^{2}
10^{3}
Subtended Source Angle (mrad)
Potential for After-Image Zone
Low Potential for After-Image Zone
Permanent Retinal Damage Zone
Hazard from Source Data
Hazard Due to Viewing Unfiltered Sun


Path Location vs. Time of Glare
Approximate distance from threshold (mi)
2
1.75
1.5
1.25
1
0.75
0.5
0.25
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Date
Low potential for temporary after-image
Potential for temporary after-image


Sampled Annual Glare Reflections on PV Footprint
North (ft)
270
0
-260
-520
-160
0
170
330
500
660
820
990
1150
1320
East (ft)
Low potential for temporary after-image
Potential for temporary after-image
PV Array Footprint



PV ground - Receptor (FP 23-2)

No glare found

PV ground - Receptor (FP 32-1)

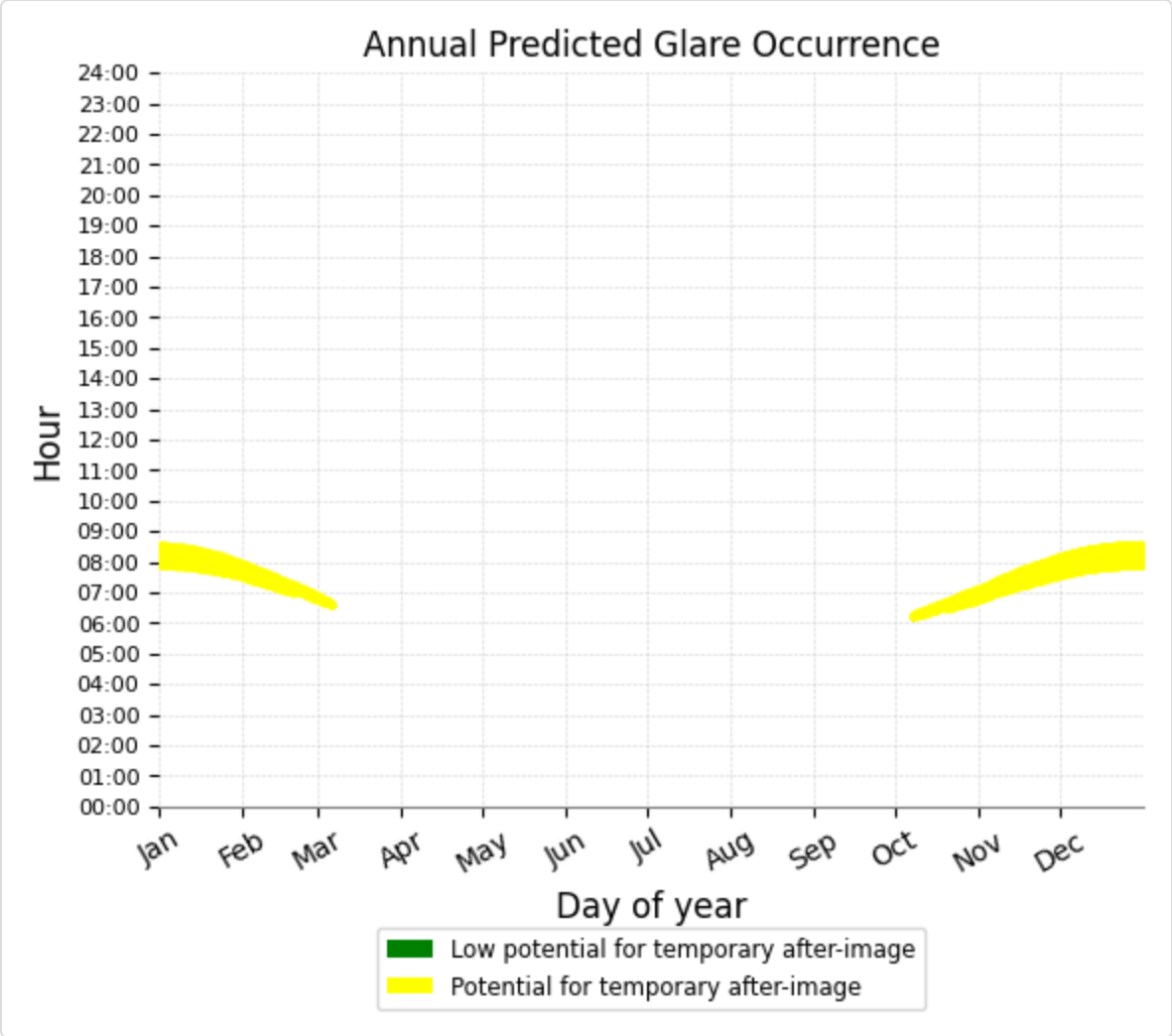
No glare found

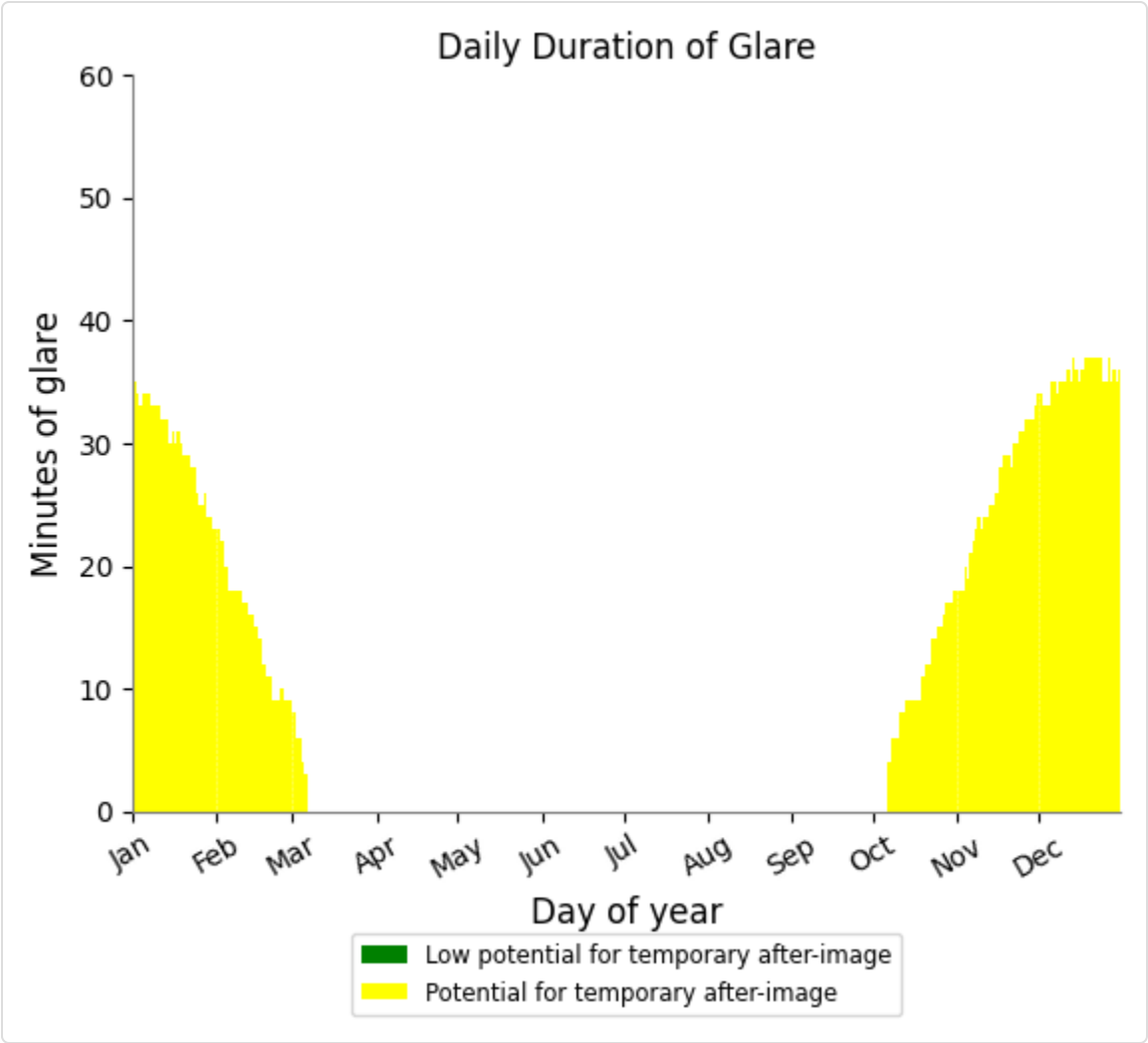
PV ground - Receptor (FP 32-2)

No glare found

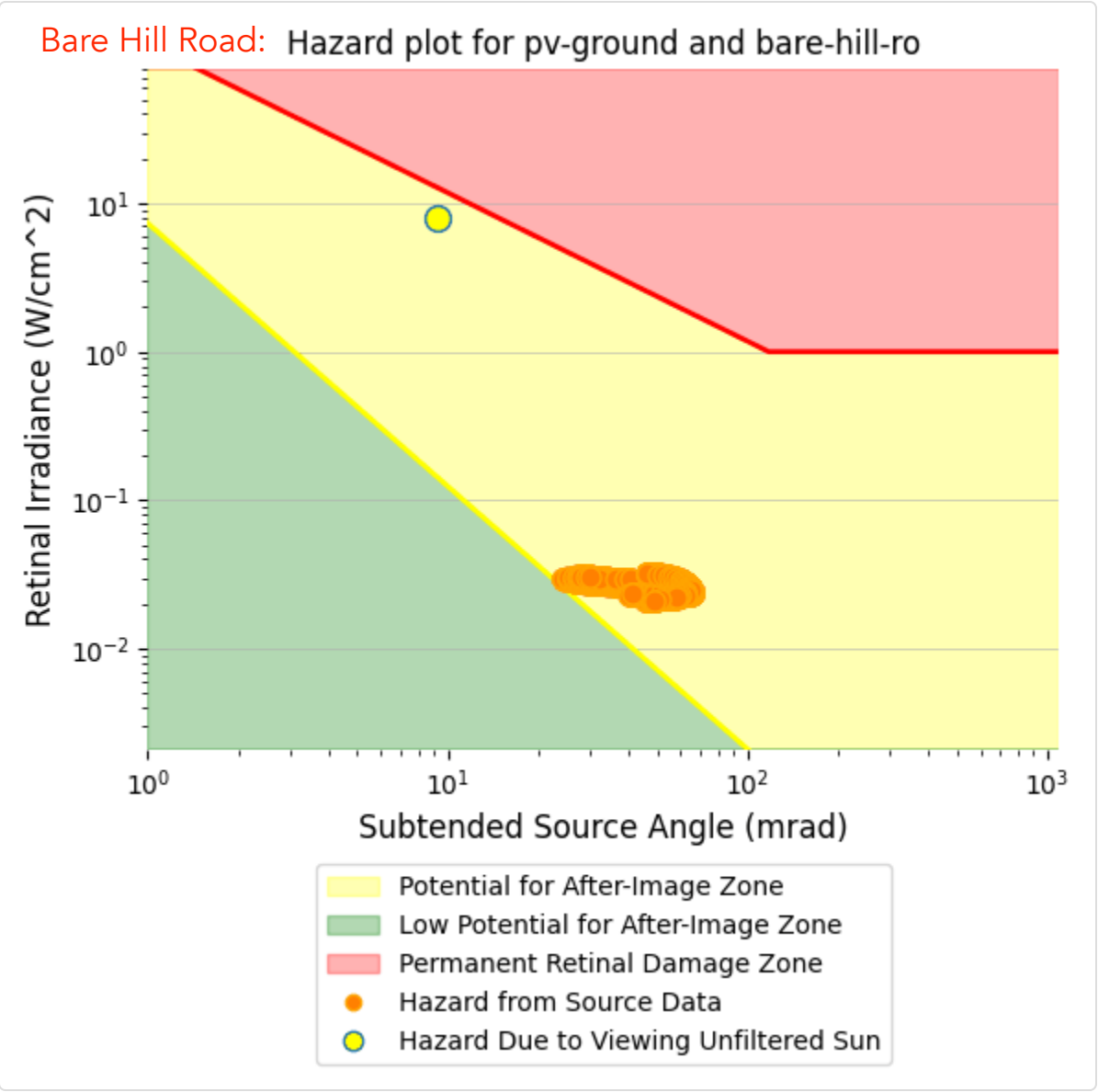
PV array is expected to produce the following glare for receptors at this location:

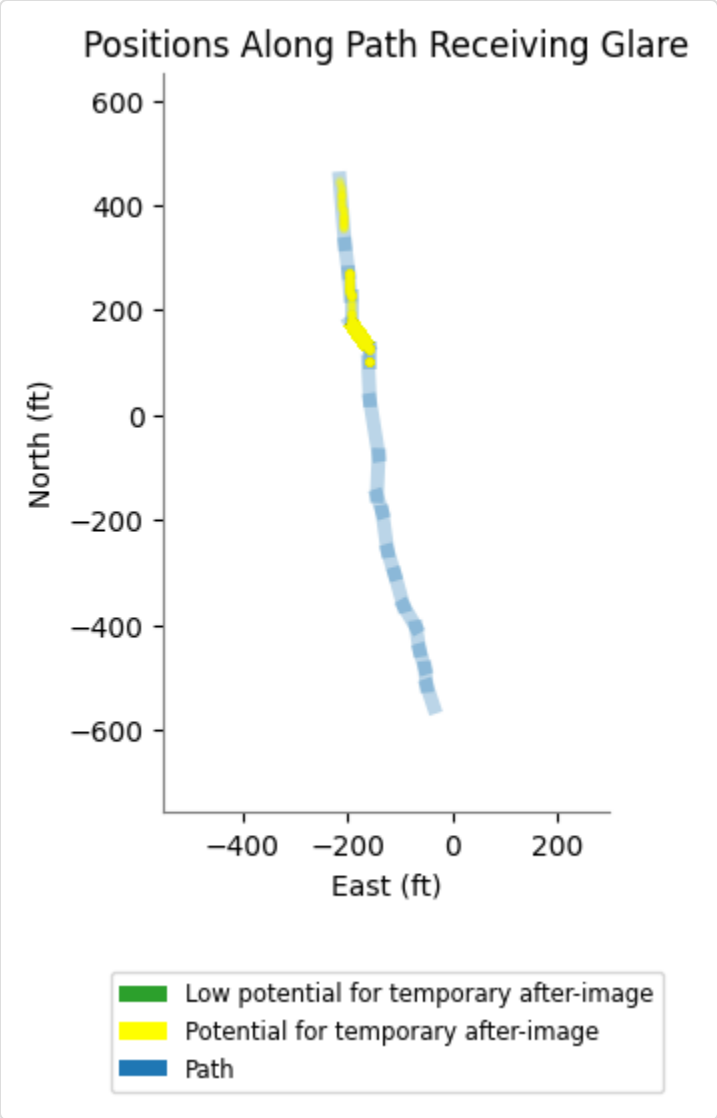
- 0 minutes of "green" glare with low potential to cause temporary after-image.
- 3,550 minutes of "yellow" glare with potential to cause temporary after-image.

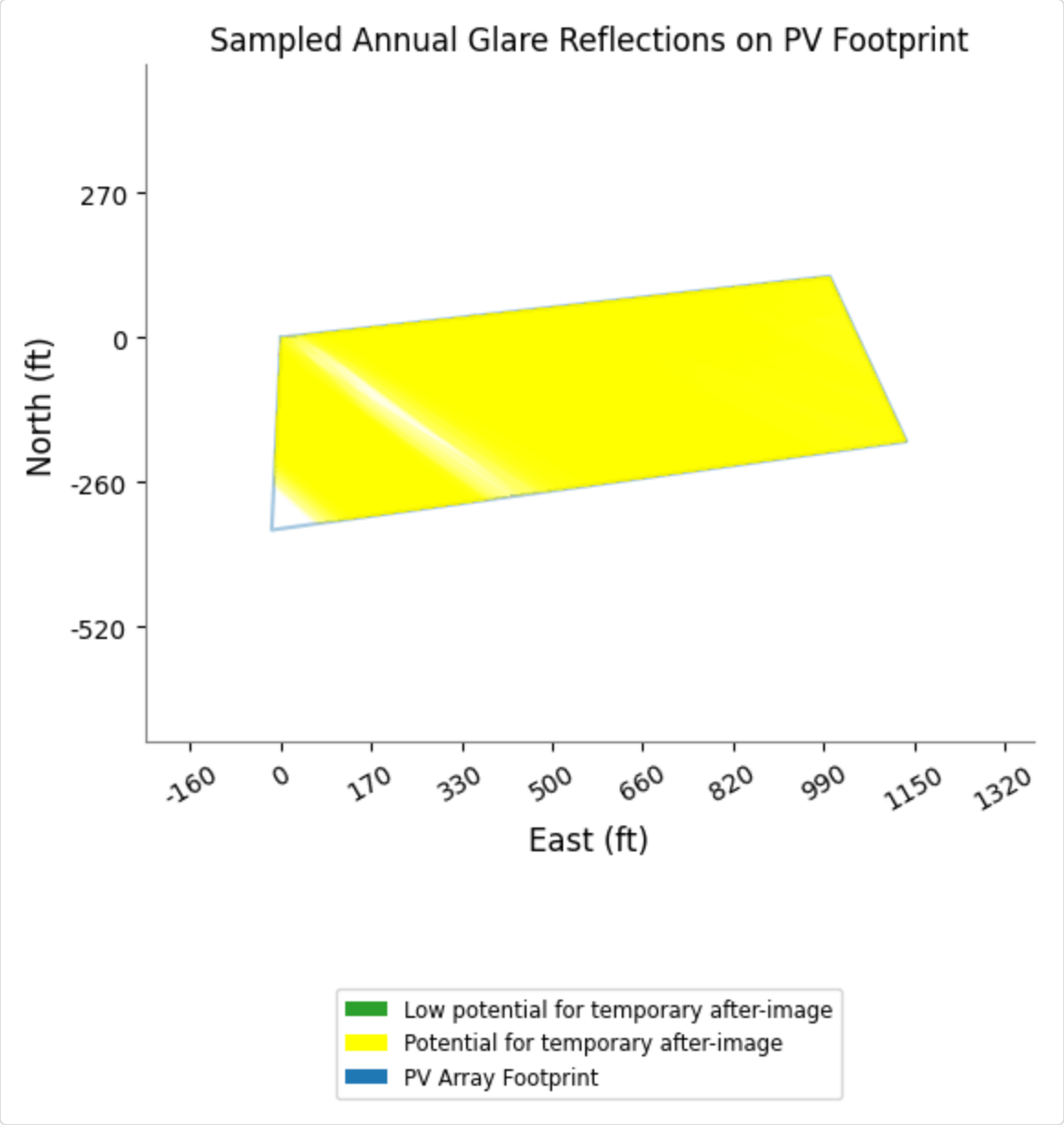



Daily Duration of Glare
Minutes of glare
60
50
40
30
20
10
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Day of year
Low potential for temporary after-image
Potential for temporary after-image

Bare Hill Road:




Positions Along Path Receiving Glare
600
400
200
0
−200
−400
−600
North (ft)
−400
−200
0
200
East (ft)
Low potential for temporary after-image
Potential for temporary after-image
Path



PV ground - Route Receptor (Brand Road)

No glare found

- 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.
- Detailed system geometry is not rigorously simulated.
- The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. Actual values and results may vary.
- The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.

- Several V1 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.
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- Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
- 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.
- Refer to the **Help page** for detailed assumptions and limitations not listed here.

Attachment R – Wetland Delineation and Soil Survey

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

November 23, 2020

Mr. Chris Stroud
Cipriani Energy Group
125 Wolf Road, Suite 312
Colonie, New York 12205

Re: Wetland/Watercourse Delineation &
Preliminary Threatened and Endangered Species Habitat Study Report
Malone Solar Project
Parcel I.D. No. 84-1-73.100
Town of Malone, Franklin County, New York

Dear Mr. Stroud:

In accordance with our Scope of Services, Bergmann performed a wetland and watercourse delineation and preliminary threatened and endangered species habitat study of the Malone Solar Project ("Project") site located on Franklin County parcel I.D. number 84-1-73.100. The Project's Study Area is located in the Town of Malone, Franklin County, New York (refer to Figure 1, Study Area Location Map). The field delineation and preliminary habitat study were performed by Bergmann on November 11, 2020. The intent of the field visit was to identify and delineate the boundaries of any potentially jurisdictional aquatic resources (i.e. wetlands and streams) and to assess habitat within the Study Area in relation to potential threatened and/or endangered species that may be located within the Study Area (refer to Figure 2, Aerial Imagery Map).

Preliminary Data Gathering

Preliminary data gathering was used to compile and review information that may be helpful in identifying wetlands and/or areas of interest during the field delineation. Preliminary data gathering included a review of the following resources:

- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soil survey mapping for Franklin County, New York,
- United States Federal Emergency Management Agency (FEMA) Flood Hazard Area Map for Franklin County, New York,
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping,
- New York State Department of Environmental Conservation (NYSDEC) Freshwater Wetlands (FWW) mapping and,
- New York State Water Quality Classifications mapping.

The NRCS Franklin County Soil Survey showed that the Study Area contained the following five (5) soil types and their hydric soil classifications (refer to Figure 3, NRCS Hydric Soil Survey Map and Attachment B, NRCS Custom Soil Resource Report for Franklin County, New York):

- Adams and Colton soils, 8 to 25 percent slopes, severely eroded (Abd). Rated 0% hydric.
- Colton and Constable gravelly loamy sands, 3 to 8 percent slopes (Cab). Rated 0% hydric.
- Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes (Ccd). Rated 0% hydric.

- Nicholville fine sandy loam, 2 to 6 percent slopes (Nab). Rated 0% hydric.
- Salmon stony very fine sandy loam over till, 20 to 45 percent slopes (Sce). Rated 0% hydric.

Review of the available FEMA data indicated that the Study Area is located on one (1) Flood Insurance Rate Map (FIRM) (Panel #360271B). The Study Area is within Zone C – "Areas Outside of 500 Year Flood" (refer to Figure 4, FEMA Flood Hazard Area Map).

A desktop review of the available USFWS NWI digital data indicated that the Study Area is located within the Salmon Watershed (HUC 04150307). There are no NWI wetland features mapped within the Study Area (refer to Figure 5, National Wetland Inventory Map).

Review of the available NYSDEC FWW mapping indicated there are no NYSDEC FWW or their checkzones located within the Study Area (refer to Figure 6, NYSDEC Freshwater Wetland and Stream Map).

Review of the New York State Water Quality Classification mapping indicated that there are no streams mapped within the Study Area (please refer to Figure 6).

Preliminary Threatened and Endangered Species Habitat Study Results

The Study Area was reviewed using the USFWS's online Information, Planning and Consultation System (IPaC). According to the Official Species List (Consultation Code: 05E1NY00-2021-SLI-0530), no federally listed threatened or endangered species are expected to occur within the Study Area (refer to Attachment C, IPaC Official Species List & NYSDEC ERM Results).

The Study Area was reviewed using the NYSDEC ERM. The Study Area does not occur within the "Rare Plants and Animals Layer" or the "Significant Natural Communities Layer" as mapped by the New York State Natural Heritage Program, indicating that there are no records of state or federal listed threatened or endangered species within the Study Area (refer to Attachment C).

Field Delineation Results

During the field delineation, wetlands were identified and delineated in accordance with the Corps of Engineers 1987 Wetland Delineation Manual and accompanying 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0. Any location meeting the three (3) wetland criteria (wetland hydrology, hydrophytic vegetation and hydric soils) was identified and delineated. Streams were identified and delineated based on morphological and hydrological characteristics of the channel. For streams with a top-of-bank width of less than ten feet (<10') the centerline of the stream was delineated. If a stream was observed to have a top-of-bank width of ten feet or greater (≥10') both streambanks were delineated.

The newly implemented federal Navigable Waters Protection Rule (NWPR) specifies which aquatic features (i.e. wetlands and streams) are considered federally jurisdictional Waters of the United States (WOTUS). In general, perennial, and intermittent streams and wetlands that are directly adjacent to a perennial or intermittent stream are considered WOTUS. It is important to note that some streams and wetlands may be delineated but are not considered federally jurisdictional WOTUS under the NWPR and are therefore not regulated by the U.S. Army Corps of Engineers ("Corps" or "USACE)". Jurisdictional status is based on the professional opinion of Bergmann and must be confirmed through the Jurisdictional Determination (JD) process by Corps.

Generally, the upland habitat observed within the Study Area consisted of mature coniferous forest. Bare Hill Road bordered the Study Area to the west and Brand Road bordered the Study Area to the south. Forested land occurred north of the Study Area while a residential property occurred directly east of the Study Area (please refer to Attachment D, Representative Study Area Photographs).

One (1) palustrine emergent/palustrine unconsolidated bottom (PEM/PUB) wetland was identified and delineated within the Study Area (Figure 7, Delineated Resources Map). In order to document site conditions, a U.S. Army Corps of Engineers (Corps) Wetland Determination Data Form was completed for the wetland and upland reference (Attachment E, USACE Wetland Determination Data Forms & Linear Waters of the U.S. Field Classification Forms). Information on the delineated wetland can be found in Table 1 and photographs of the wetland are included in Attachment D.

One (1) intermittent stream was identified and delineated within the Study Area. Information on the delineated stream can be found in Table 2 and photographs of the stream are included in Attachment D.

Table 1: Wetlands Identified within the Study Area

Wetland I.D.[1]	Cowardin Classification[2]	Latitude[3]	Longitude[3]	Size[4] (acres)	Jurisdiction[5]	Hydrology Indicator(s)[6]	Dominant Species[6]	Hydric Soil Indicator(s)[6]
Wetland 1	PEM	44.878042	-74.31373	0.01	USACE	A1, A3, D2	*Tsuga canadensis, Acer rubrum, Onoclea sensibilis, Solidago rugosa*	A11, S5, F6
	PUB	44.878109	-74.313753	0.01	None	A1, A2, A3, B7, D2, D5	*N/A*	N/A

Notes:
1. Bergmann map designation.
2. PEM – Palustrine Emergent; PUB- Palustrine Unconsolidated
3. Center of wetland in North American Datum, 1983.
4. Total acreage of wetland located within the Study Area.
5. Jurisdictional status is the opinion of Bergmann and must be confirmed by the USACE and/or state agencies through the JD process.
6. As determined using the USACE Wetland Determination Data Form, Northcentral & Northeast Regional Supplement.

Table 2: Streams Identified within the Study Area

Stream I.D.[1]	Stream Name	Jurisdiction[2]	NYSDEC WQ Classification[3]	Flow Regime	Width (feet)[4]	OHWM Width (feet)	OHWM depth (inches)	Stream Length (feet)[5]	Substrate Types	Latitude[6]	Longitude[6]
Stream 1	UNT to Little Salmon River	USACE	N/A	Intermittent	1	1	1	97	Leaf litter, sand, gravel	44.877946	-74.31379

Notes:
1. Bergmann map designation.
2. Jurisdictional status is the opinion of Bergmann and must be confirmed by the USACE and/or state agencies through the JD process.
3. As defined by 6 NYCRR
4. Width in feet from top of stream bank.
5. Total stream length (in feet) located within the Study Area.
6. Center of stream centerline in North American Datum, 1983.

If you have any questions or require additional information, contact me by phone 567-318-1547 or email at rzack@bergmannpc.com.

Sincerely,

Rita Zack
Senior Ecologist, BERGMANN

Attachments:

- Attachment A: Figures
  - Figure 1. Study Area Location Map
  - Figure 2. Aerial Imagery Map
  - Figure 3. NRCS Hydric Soil Survey Map
  - Figure 4. FEMA Flood Hazard Area Map
  - Figure 5. National Wetland Inventory Map
  - Figure 6. NYSDEC Freshwater Wetland and Stream Map
  - Figure 7. Delineated Resources Map
- Attachment B: NRCS Custom Soil Resource Report for Franklin County, New York
- Attachment C: IPaC Official Species List & NYSDEC ERM Results
- Attachment D: Representative Study Area Photographs
- Attachment E: USACE Wetland Determination Data Forms & Linear Waters of the U.S. Field Classification Forms

ATTACHMENT A

Figures

Yellow 5 LLC
Malone Solar Project

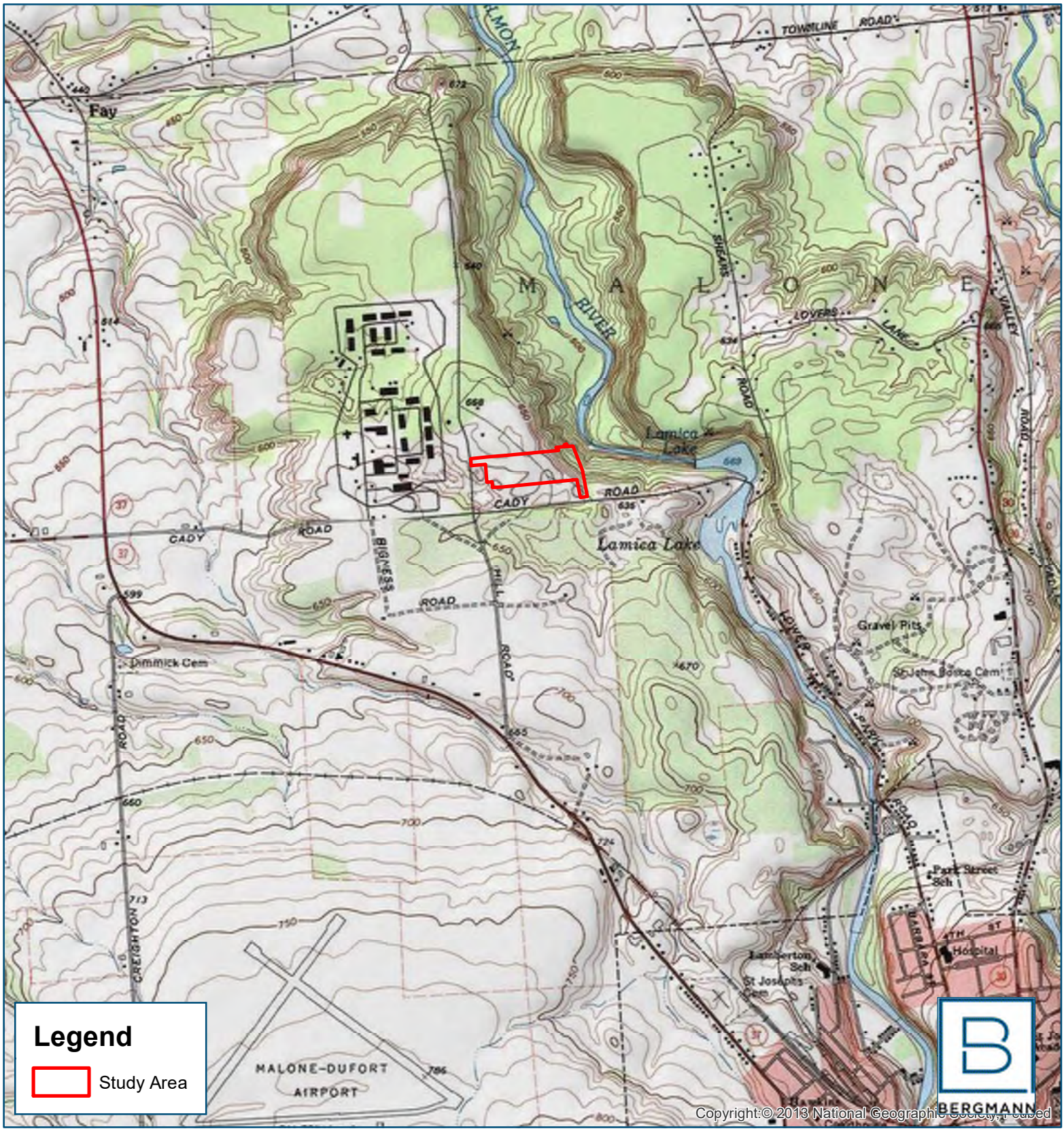
STUDY AREA LOCATION MAP

Fig. 1

2,000 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

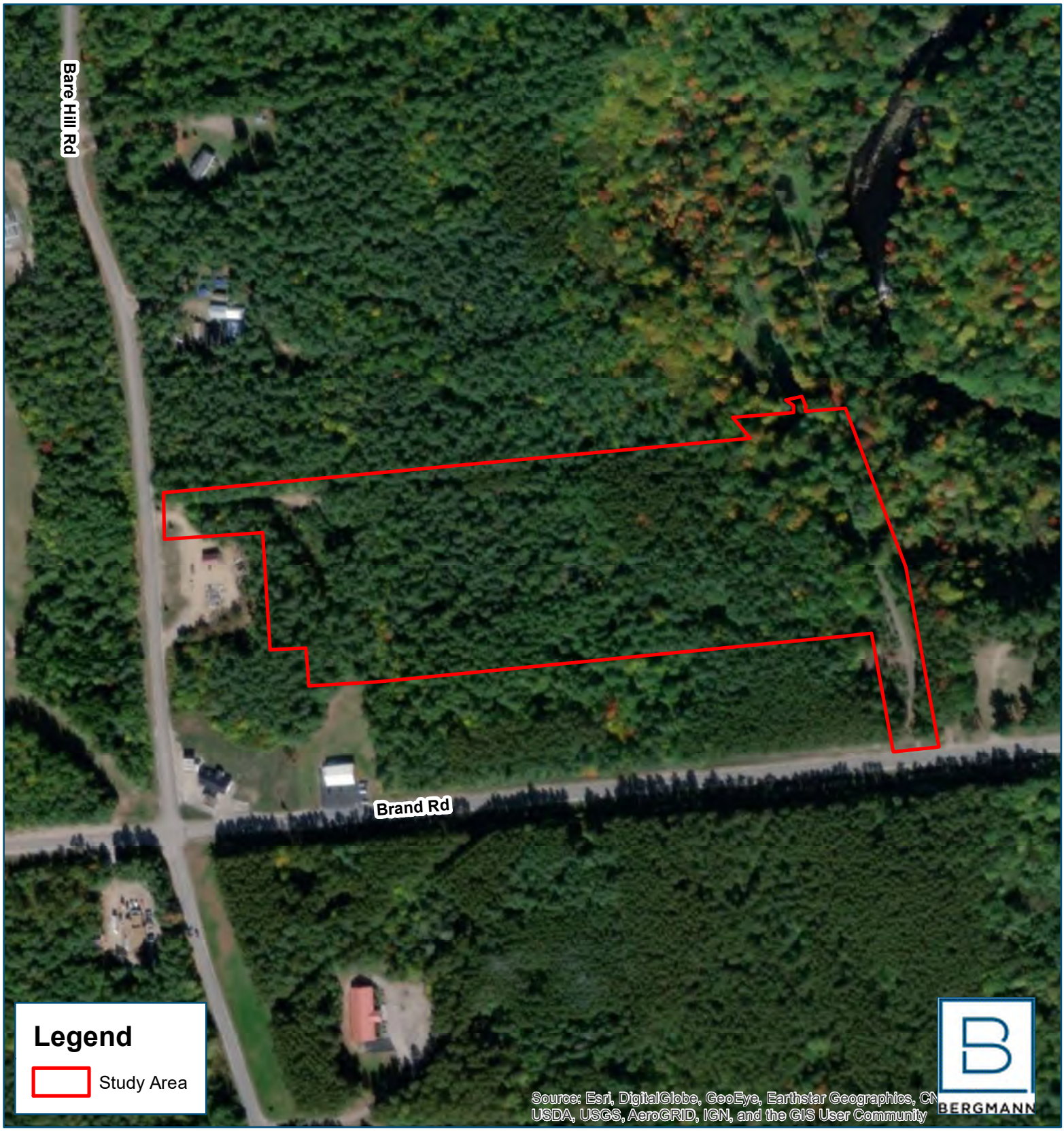
AERIAL IMAGERY MAP

Fig. 2

300 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

NRCS HYDRIC SOIL SURVEY MAP

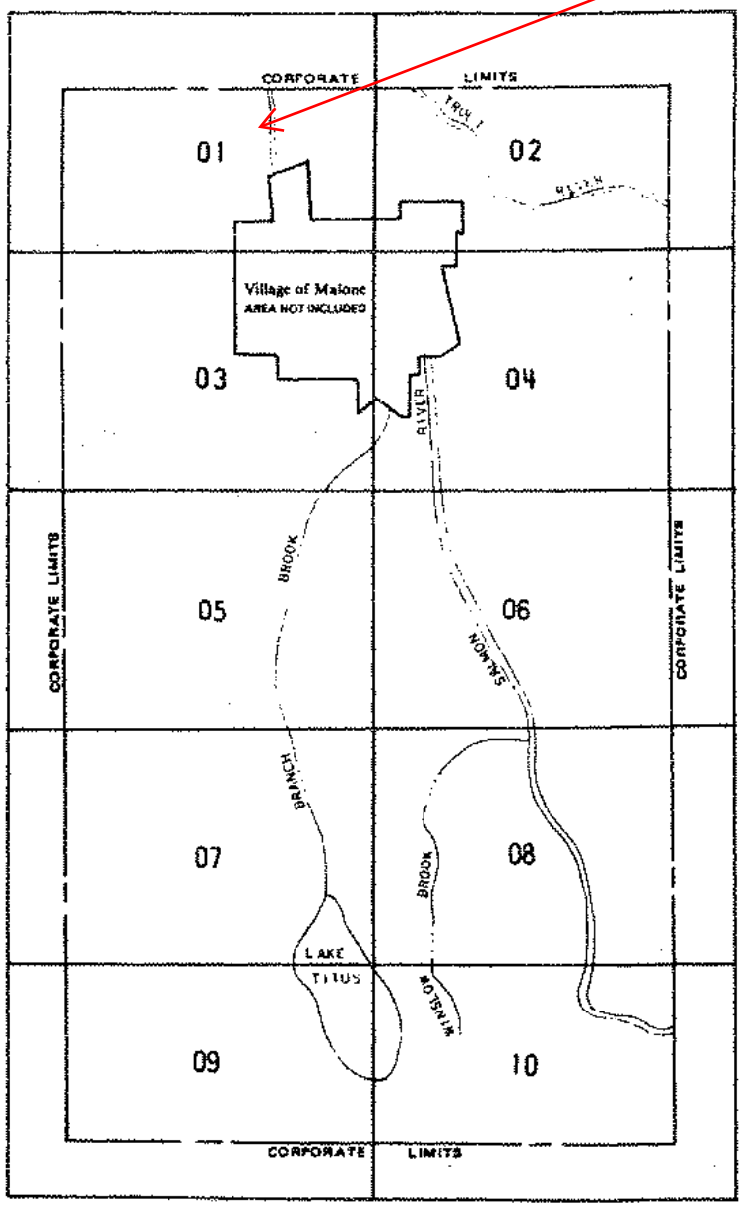
Fig. 3

300 Feet

N

Town of Malone, Franklin County, New York

Yellow 5 LLC
Malone Solar Project
Fig 4. FEMA Flood Hazard Area Map



KEY TO SYMBOLS

ZONE DESIGNATIONS*

ZONE C
ZONE A
ZONE C

Base Flood Elevation Line with elevation in feet — 513 —
Base Flood Elevation where uniform within zone (EL 987)
Elevation Reference Mark RM7×
River Mile • M1.6

*EXPLANATION OF ZONE DESIGNATIONS

A flood insurance map displays the zone designations for a community according to areas of designated flood hazards. The zone designations used by FEMA are

Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined
AO	Areas of 100-year shallow flooding; flood depth 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined
B	Areas between limits of 100-year flood and 500-year flood; areas of 100-year shallow flood where depths less than 1 foot
C	Areas outside 500-year flood
D	Areas of undetermined, but possible, flood hazards
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factor determined

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

INITIAL IDENTIFICATION SEPTEMBER 20, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS JANUARY 28, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE SEPTEMBER 4, 1985
FLOOD INSURANCE RATE MAP REVISIONS

federal emergency management agency

FIRM
FLOOD INSURANCE RATE MAP 01-10
MAP INDEX
TOWN OF MALONE, NY
(FRANKLIN CO.)

COMMUNITY NUMBER 360271 B

Yellow 5 LLC
Malone Solar Project

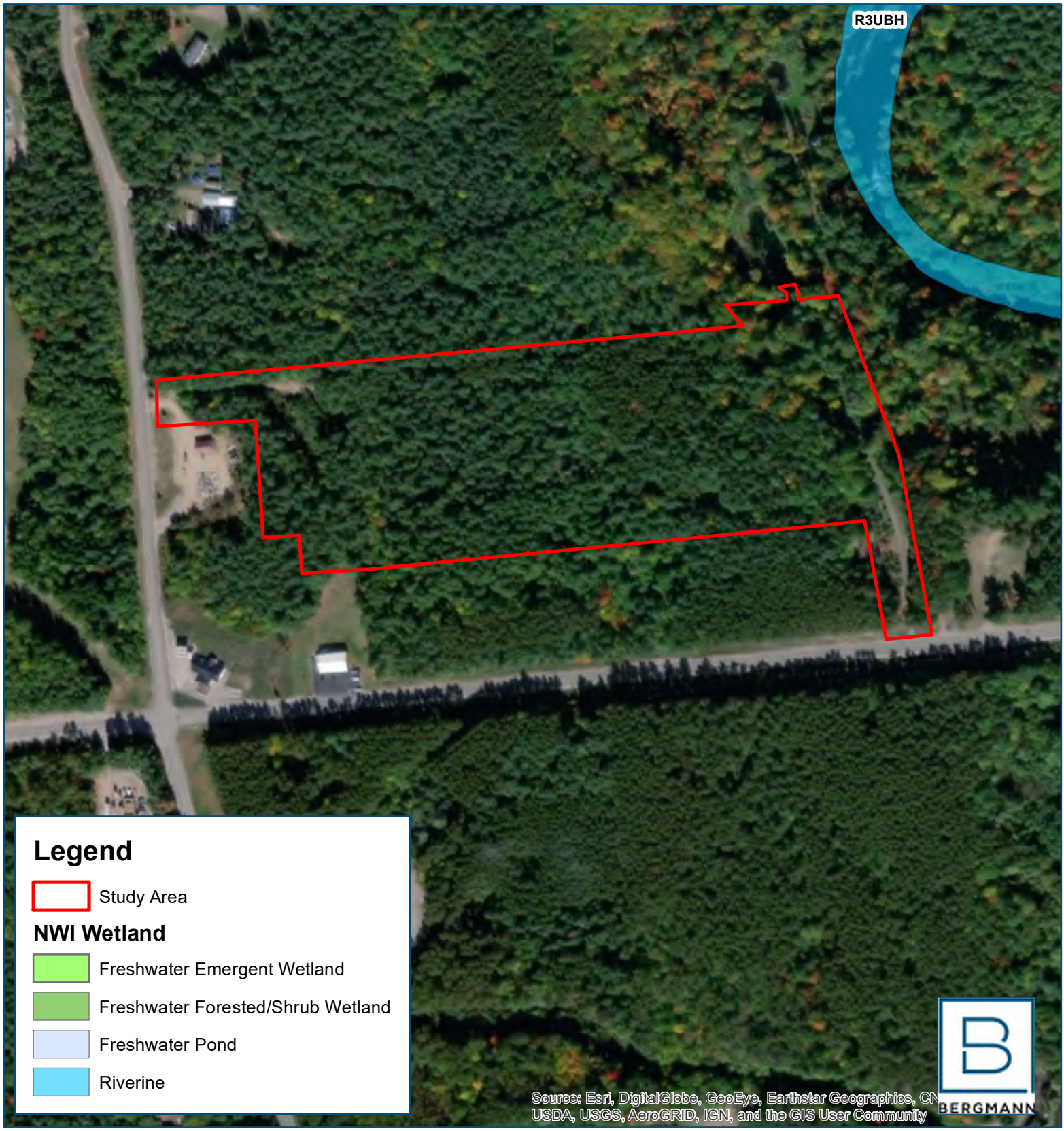
NATIONAL WETLAND INVENTORY MAP

Fig. 5

300 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

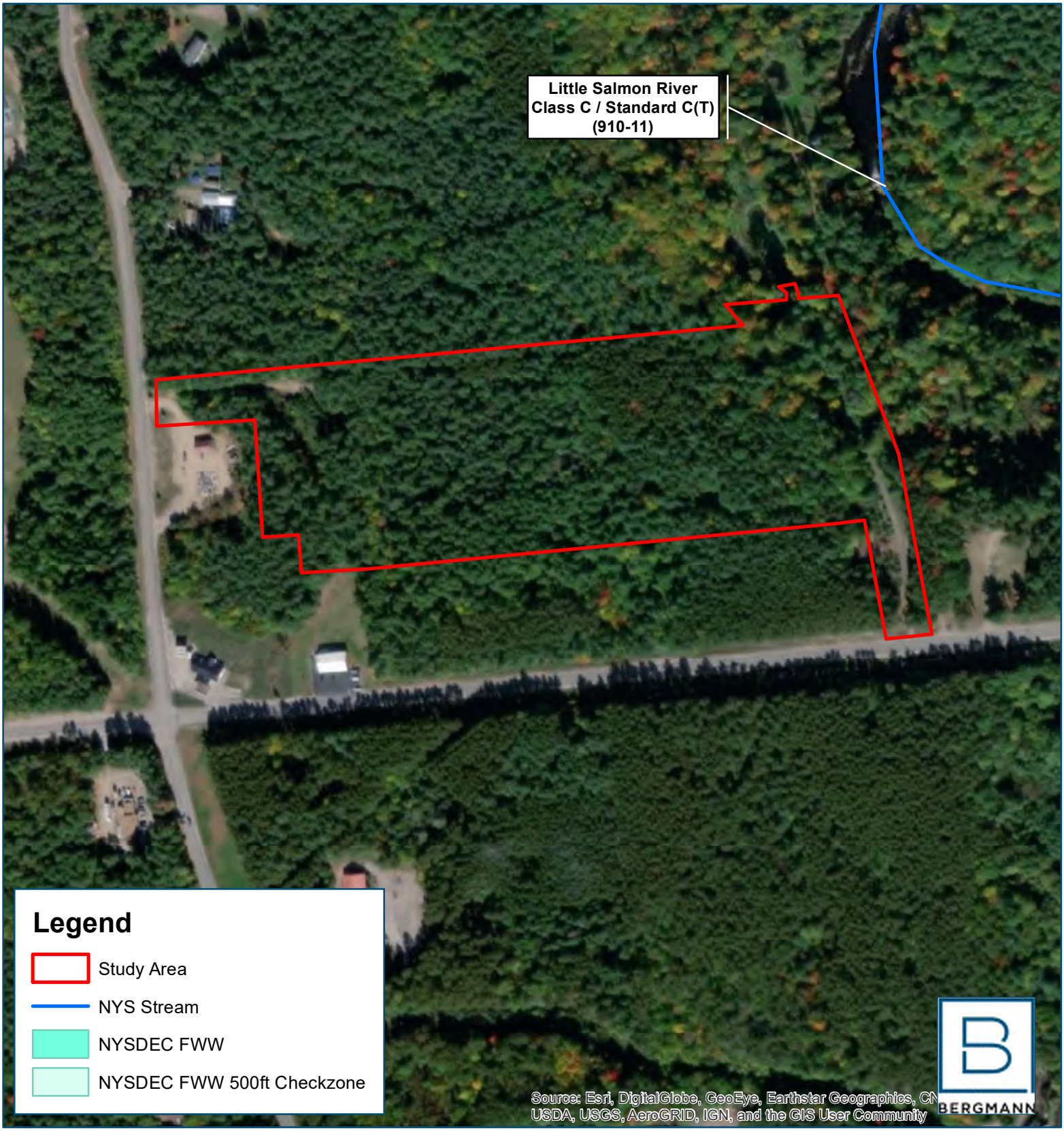
NYSDEC FRESHWATER WETLANDS & STREAMS MAP

Fig. 6

300 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

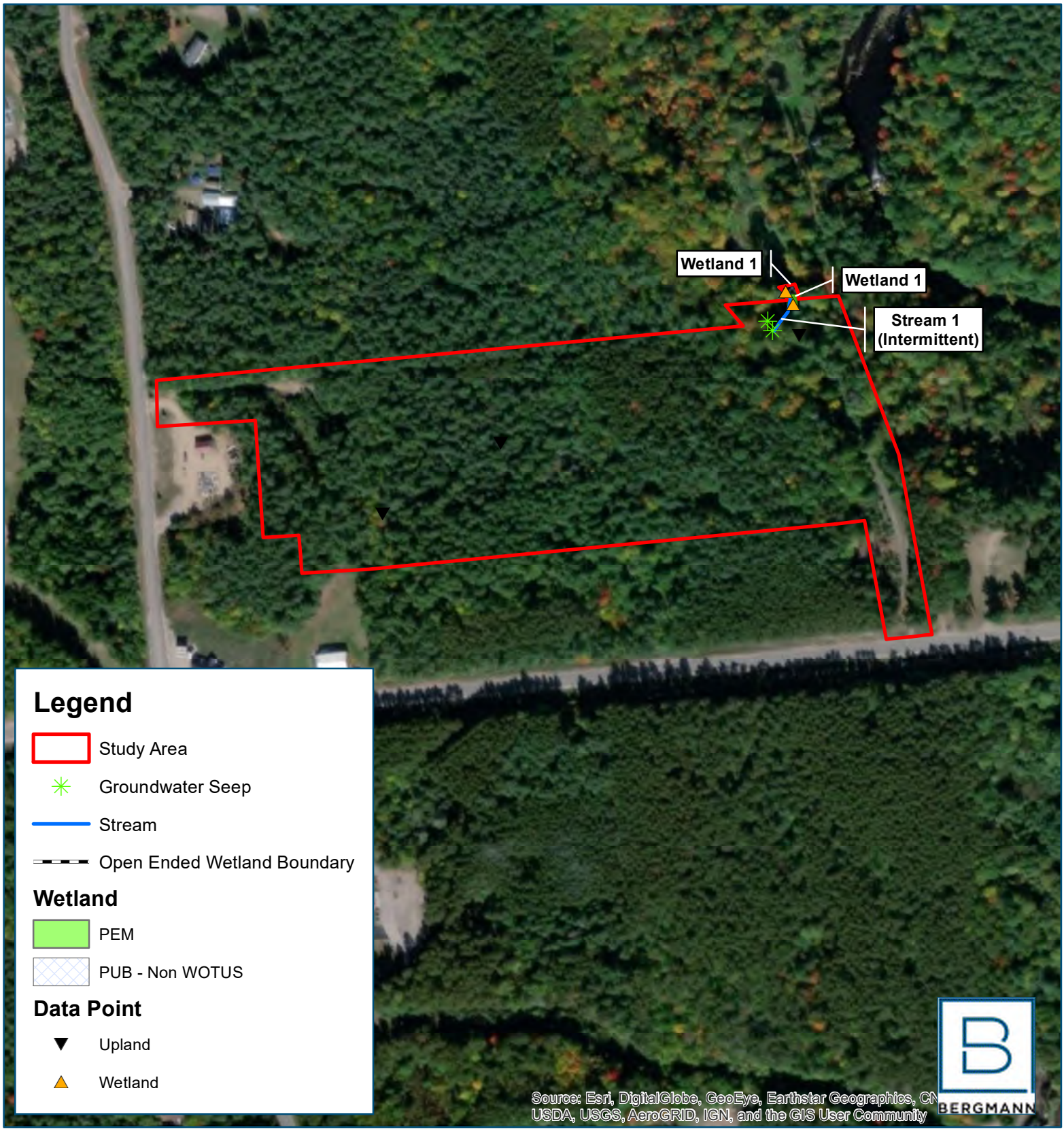
DELINEATAED RESOURCES MAP

Fig. 7

300 Feet

N

Town of Malone, Franklin County, New York



ATTACHMENT B

NRCS Custom Soil Resource Report for
Franklin County, New York

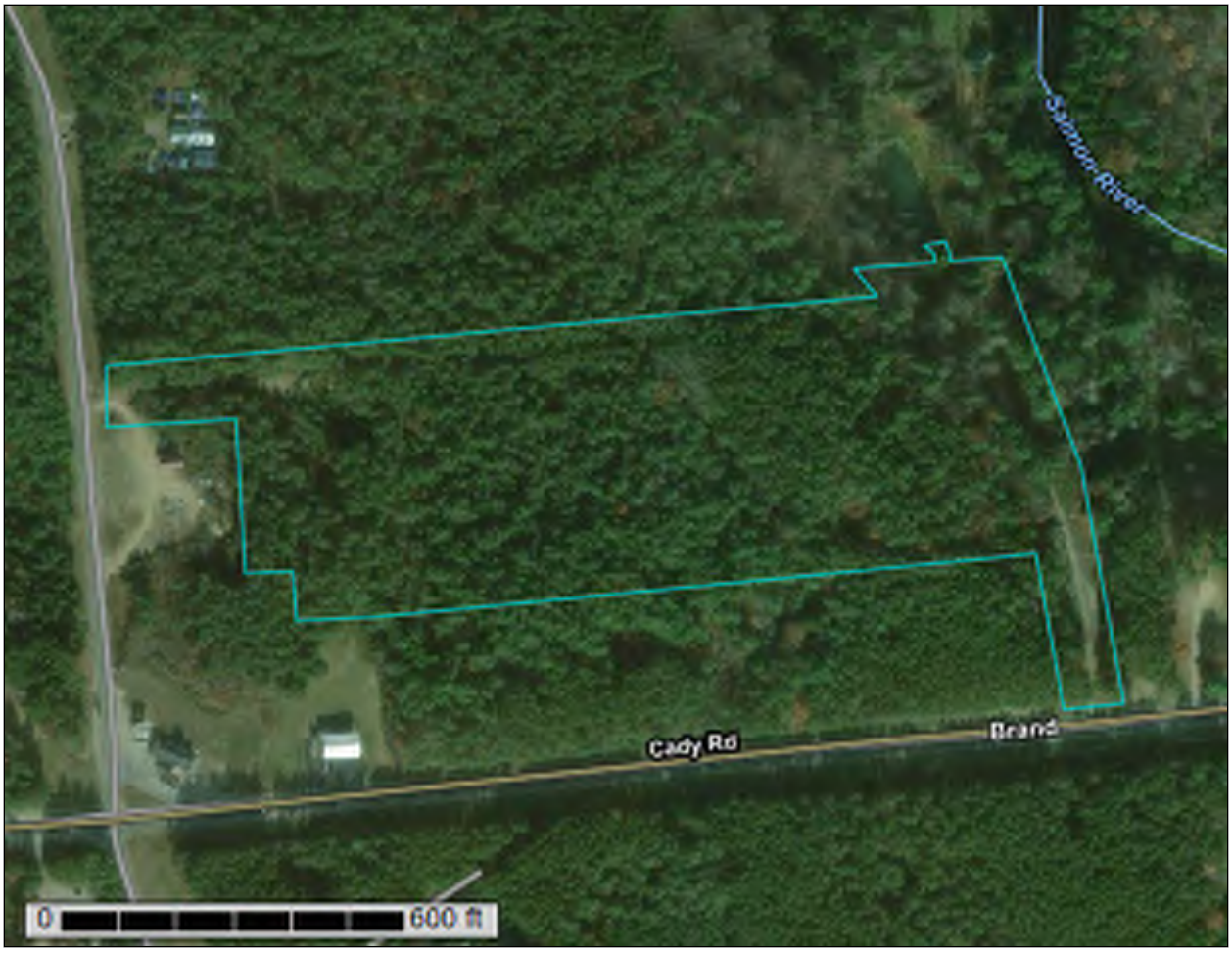
United States Department of Agriculture

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 Franklin County, New York



November 20, 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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Contents

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: 1:2,980 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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 1:24,000.

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: Franklin County, New York
Survey Area Data: Version 4, Jun 11, 2020

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

Date(s) aerial images were photographed: Aug 10, 2014—Nov 11, 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
Abd	Adams and Colton soils, 8 to 25 percent slopes, severely eroded	5.5	32.4%
Cab	Colton and Constable gravelly loamy sands, 3 to 8 percent slopes	7.5	44.2%
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	1.0	5.8%
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	0.9	5.2%
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	2.1	12.5%
Totals for Area of Interest		**17.1**	**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.

Franklin County, New York

Abd—Adams and Colton soils, 8 to 25 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: bmbp
Elevation: 10 to 2,200 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Adams and similar soils: 45 percent
Colton and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adams

Setting

Landform: Deltas, kame terraces, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciofluvial or deltaic deposits derived mainly from crystalline rock and/or sandstone

Typical profile

H1 - 0 to 22 inches: loamy sand
H2 - 22 to 60 inches: sand

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F142XA005NY - Acidic Dry Outwash Frigid
Hydric soil rating: No

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

H1 - 0 to 11 inches: gravelly loamy sand
H2 - 11 to 27 inches: gravelly loamy sand
H3 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Minor Components

Wallace

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

Constable

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

Croghan

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

Cab—Colton and Constable gravelly loamy sands, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bmc3
Elevation: 10 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Colton and similar soils: 40 percent
Constable and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: gravelly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Description of Constable

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: Sandy and gravelly glaciofluvial deposits derived mainly from acid sandstone or igneous rock

Typical profile

O - 0 to 3 inches: moderately decomposed plant material

H1 - 3 to 9 inches: loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 8 to 20 inches to ortstein
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: F142XA004NY - Acidic Shallow Dry Outwash Frigid
Hydric soil rating: No

Minor Components

Duane

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

Croghan

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

Wallace

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

Fahey

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

Adams

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

Ccd—Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: bmc6
Elevation: 10 to 2,000 feet

Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Colton and similar soils: 40 percent
Constable and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: cobbly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Description of Constable

Setting

Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits derived mainly from acid sandstone or igneous rock

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: gravelly cobbly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 8 to 20 inches to ortstein
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F142XA004NY - Acidic Shallow Dry Outwash Frigid
Hydric soil rating: No

Minor Components

Adams

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

Croghan

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

Duane

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

Trout river

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

Wallace

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

Nab—Nicholville fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: bmdt

Elevation: 200 to 1,490 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Nicholville

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits having a high content of silt and very fine sand

Typical profile

O - 0 to 2 inches: moderately decomposed plant material
H1 - 2 to 5 inches: fine sandy loam
H2 - 5 to 17 inches: fine sandy loam
H3 - 17 to 26 inches: fine sandy loam
H4 - 26 to 60 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.3 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

Wallington

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

Croghan

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

Unnamed soils

Percent of map unit: 5 percent

Salmon

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

Worth

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

Sce—Salmon stony very fine sandy loam over till, 20 to 45 percent slopes

Map Unit Setting

National map unit symbol: bmfn
Elevation: 800 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Salmon, Till Substratum

Setting

Landform: Lake plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits, dominated by silt and very fine sand

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 5 inches: loamy very fine sand
H2 - 5 to 33 inches: very fine sandy loam
H3 - 33 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 20 to 45 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 19 to 40 inches
Frequency of flooding: None

Frequency of ponding: None
Available water capacity: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Nicholville

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

Worth

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

Empeyville

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

Wallington

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

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations 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 interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

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

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

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

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- 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 1:24,000.

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: Franklin County, New York
Survey Area Data: Version 4, Jun 11, 2020

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

Date(s) aerial images were photographed: Aug 10, 2014—Nov 11, 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—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Abd	Adams and Colton soils, 8 to 25 percent slopes, severely eroded	0	5.5	32.4%
Cab	Colton and Constable gravelly loamy sands, 3 to 8 percent slopes	0	7.5	44.2%
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	0	1.0	5.8%
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	0	0.9	5.2%
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	0	2.1	12.5%
Totals for Area of Interest			**17.1**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

References

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

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

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

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

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

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

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

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

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

ATTACHMENT C

IPaC Official Species List & NYSDEC ERM Results

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: November 20, 2020
Consultation Code: 05E1NY00-2021-SLI-0530
Event Code: 05E1NY00-2021-E-01592
Project Name: Malone Solar Project

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: 05E1NY00-2021-SLI-0530

Event Code: 05E1NY00-2021-E-01592

Project Name: Malone Solar Project

Project Type: ** OTHER **

Project Description: Development of a +/- 5.00 MW solar farm.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.87702103420704N74.31562413294199W

Counties: Franklin, NY

Endangered Species Act Species

There is a total of 0 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.

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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.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Environmental Resource Mapper

The coordinates of the point you clicked on are:

UTM 18	**Easting:**	554039.5770566261	**Northing:**	4969492.54073729
Longitude/Latitude	**Longitude:**	-74.31581819165342	**Latitude:**	44.87681161183947

The approximate address of the point you clicked on is:
Town of Malone, New York

County: Franklin
Town: Malone
USGS Quad: CONSTABLE, NY-QUE

DEC Region

Region 5:
(Eastern Adirondacks/Lake Champlain) Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington counties. For more information visit **http://www.dec.ny.gov/about/631.html**.

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another

data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

ATTACHMENT D

Representative Study Area Photographs

Photo 1: Wetland 1 (PEM). Facing west.

Photo 2: Wetland 1 (PEM). Facing north.

Photo 3: Wetland 1 (PUB). Facing north.

Photo 4: Wetland 1 (PUB). Facing east.

Photo 5: Stream 1 (intermittent) upstream. Facing southwest.

Photo 6: Stream 1 (intermittent) downstream. Facing northeast.

Photo 7: Groundwater seep. Facing west.

Photo 8: Groundwater seep. Facing west.

Photo 9: Representative upland habitat. Facing east.

Photo 10: Representative upland habitat. Facing north.

ATTACHMENT E

USACE Wetland Determination Data Forms

&

Linear Waters of the U.S. Field Classification Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: W001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Toe of Slope - Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.878013 Long: -74.313722 Datum: NAD 83

Soil Map Unit Name: NaB - Nicholville fine sandy loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Emergent wetland representative to Wetland 1. Located within the northeastern corner of the Study Area.
Adjacent to Stream 1.

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)
- ____ 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)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 0

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes X No ____ Depth (inches): 0

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary and secondary wetland hydrology indicators present.
Wetland receives hydrology from Stream 1.

VEGETATION – Use scientific names of plants. Sampling Point: W001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	5	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Onoclea sensibilis*	40	Yes	FACW
2. *Solidago rugosa*	30	Yes	FAC
3. *Juncus effusus*	15	No	OBL
4. *Phalaris arundinacea*	10	No	FACW
5. *Epilobium coloratum*	10	No	OBL
6. *Osmunda regalis*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	50	x 2 =	100
FAC species	35	x 3 =	105
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	120 (A)		255 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	90	7.5YR 3/4	10	C	M	Loamy/Clayey	Prominent redox concentrations
6-16	10YR 5/2	70	10YR 2/1	20	D	M	Sandy	
			7.5YR 4/6	10	C	M		Prominent redox concentrations

[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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Meets A11, S5 & F6.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: W001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.878094 Long: -74.31379 Datum: NAD 83

Soil Map Unit Name: NaB - Nicholville fine sandy loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**	
Hydric Soil Present?	Yes N/A	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Pond representative to Wetland 1. Located within the northeastern corner of the Study Area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X 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)
- ____ 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)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	3-4'
Water Table Present?	Yes X	No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary and secondary wetland hydrology indicators present.
Pond receives hydrology from Stream 1 and Wetland 1.

VEGETATION – Use scientific names of plants. Sampling Point: W001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 05')			
1. *Phragmites australis*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	5 (A)		10 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland fringe

SOIL

Sampling Point: W001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Inundated at time of survey.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: UPL001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.877816 Long: -74.313669 Datum: NAD 83

Soil Map Unit Name: NaB - Nicholville fine sandy loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Forested habitat.
Representative upland habitat, located in the northeastern portion of the Study Area.

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 X	Depth (inches): ____	
Water Table Present?	Yes ____ No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____ No X	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No pimary or secondary wetland hydrology indicators present.

VEGETATION – Use scientific names of plants. Sampling Point: UPL001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Tsuga canadensis*	15	Yes	FACU
4. *Ostrya virginiana*	10	No	FACU
5. *Fagus grandifolia*	10	No	FACU
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Osmunda claytoniana*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	90 (A)		350 (B)

Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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.)

Heavily browsed understory

SOIL

Sampling Point: UPL001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	90	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
8-16	10YR 4/1	85	10YR 3/6	15	C	M	Sandy	Prominent redox concentrations

[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)
- X 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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Meets A11 & F6.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: STP001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Slight slope Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.877153 Long: -74.316314 Datum: NAD 83

Soil Map Unit Name: CaB - Colton and Constable gravelly loamy sands, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

Forested habitat.
Located centrally within the Study Area.

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 X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No pimary or secondary wetland hydrology indicators present.

VEGETATION – Use scientific names of plants. Sampling Point: STP001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus sylvestris*	55	Yes	UPL
2. *Pinus strobus*	20	Yes	FACU
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fagus grandifolia*	15	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	55	x 5 =	275
Column Totals:	105 (A)		475 (B)

Prevalence Index = B/A = 4.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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.)

Heavily browsed understory

SOIL

Sampling Point: STP001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Sandy	
3-10	10YR 3/6	100					Sandy	
10-20	10YR 4/6	100					Sandy	

[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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: STP002

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.876706 Long: -74.317364 Datum: NAD 83

Soil Map Unit Name: Abd - Adams and Colton soils, 8 to 25 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

Forested habitat.
Located within the southwestern portion of the Study Area.

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)
- X 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)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____	
Water Table Present?	Yes ____	No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary and secondary wetland hydrology indicators present.

VEGETATION – Use scientific names of plants. Sampling Point: STP002

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Pinus sylvestris*	20	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Pinus strobus*	15	Yes	FACU
2. *Fagus grandifolia*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Osmunda claytoniana*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	20	x 4 =	80
UPL species	20	x 5 =	100
Column Totals:	80 (A)		300 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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.)

Heavily browsed understory

SOIL

Sampling Point: STP002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Loamy/Clayey	
2-16	10YR 3/4	100					Sandy	

[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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

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**)
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- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Linear Waters of the U.S. Field Classification Form

Whenever an ephemeral stream, intermittent stream, or perennial stream is identified on a project site, use this form to document field observations in support of the field interpreted stream classification.

Stream Feature: Stream 1 **Watershed:** Salmon Watershed (HUC 04150307)

Field Observations (check all that apply and describe if applicable):

☑ Surface water flow within a defined channel SW - NE

☑ Presence of Ordinary High Water Mark
(If OHWM is present, place a stake to mark its location) OHWM W=1' OHWM D=1"

☐ Water seeping from banks (or ice along banks in winter)

☐ Channel has a floodplain or observable bankfull bench

☐ Presence of fish or macroinvertebrates N/A

☐ Primarily erosive features

☑ Recent sediment deposits or accumulations in channel

☐ Algae growing on bed materials

☑ Rooted plants growing in channel bed

☐ Hydric soils in sides of channel

Provide a detailed description for each (use additional space in remarks section if necessary):

Antecendent weather conditions 66°F 100% cloud cover, wind ssw 11mph, slight rain

Position of channel within the drainage basin (high, middle, low)? low

Gradient of the channel (steep, moderately sloping, flat)? moderately sloping

Channel morphology (linear/meandering)? linear

Width of channel? Approximately 1' Height of bank? Approximately 5"

Interpreted water table position above or below defined channel? below

Bed materials (provide description of bed materials and indicate if different from surrounding ground surface):
leaf litter, sand, gravel

Topographic map designation? ☐ Intermittent ☐ Perennial ☑ Not Mapped

Describe off-site conditions:

Is there development upgradient of channel? N/A

Any artificial structures (i.e. culvert, detention basin) regulating flow?
N/A

Remarks:

Groundwater seep provides flow to Stream 1. Drains into a PUB outside of the Study Area. UNT to Salmon River.

Based on observations, characterize the stream type (check one):

Ephemeral Stream ☐ Intermittent Stream ☑ Perennial Stream ☐

Project Name: Malone Solar Project Date of Field Review: November 11, 2020

Project Number: 14859.09 Field Reviewer: S. Parsons / R. Zack

Attachment S – SHPO No Effect Letter

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

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

December 01, 2020

Stephanie Parsons
Natural Resource Scientist
Bergmann
280 East Broad Street
Suite 200
Rochester, NY 14604

Re: USACE
Yellow 5 LLC Malone Solar Farm Project/2 MW/3.25 of 49.6 Acres
Brand Rd and Bare Hill Rd, Town of Malone, Franklin County, NY
20PR07602

Dear Stephanie Parsons:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include 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 National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If 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 State Historic Preservation Officer
Division for Historic Preservation

Attachment T – Noise Study Memo

Client
Cipriani Energy Group
Colonie, NY

Project
Malone Solar Project

Prepared for
Megan Zimba
Solar Developer

Prepared By
Brad Berlin

Bradley Stuart Berlin
Principal Designer

NY OFFICE
28 Strawtown Road
Loft D, West Street entrance
West Nyack, New York
10994

MOBILE PHONE
New York
+1 201.694.2328

Buenos Aires
+54 9 11 4440 2713

BerlinAcoustics@me.com
www.BerlinAcoustics.com

Acoustic Observations and Comments
Malone Solar Project
176 Bare Hill RD
Malone, N.Y.

October 19th, 2022

Ms. Megan Zimba,

As per our phone discussions, my site visit and the documentation provided, please accept this report.

Goal

Provide environmental acoustic sound transfer comments on potential noise emanating from a future solar electric generation package.

Site Observations

The property is inhabited by dense vegetation with no road or trail access.

Ambient noise measurements were acquired from the closest accessible location to the noise generating hardware location, the driveway of New Energy on Bare Hill Road.

The location is between two correctional facilities.

Ambiant Noise Observations

Site sound levels were recorded to help understand the existing ambient noise condition.

Measurements were acquired utilizing a 2021 iPad Pro running Audio Tools software v15.9.3. The microphone is a Audio Tools type 2 uTest mic which was calibrated using a Cirrus Research calibrator.

The following results were acquired at 4PM on September 28th.

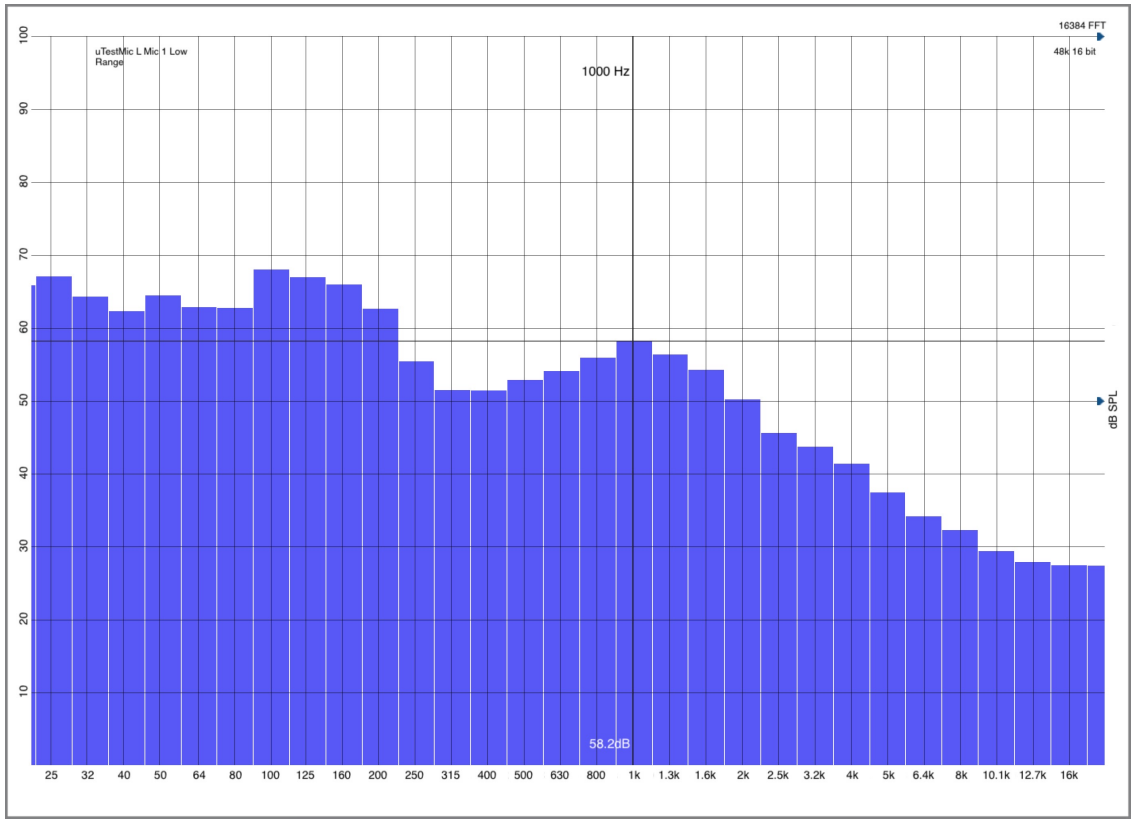
Human hearing is most sensitive at 1-2k Hz.

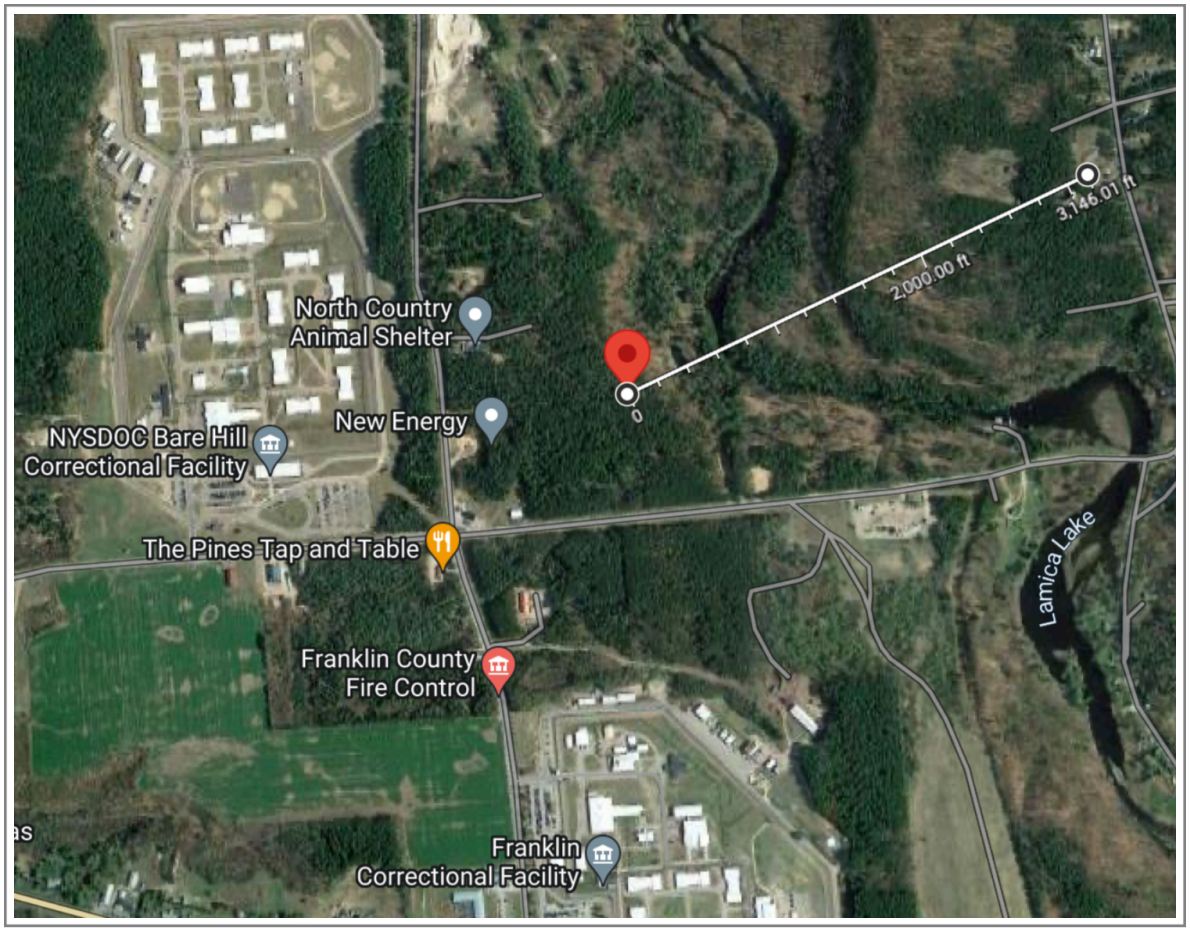
Typical low frequency (100-200 Hz) ambient noise is 68dB.

Typical high frequency (1-2K) is 58dB.

Sound levels below these levels will not be obvious unless they are percussive. The inverters are NOT percussive.

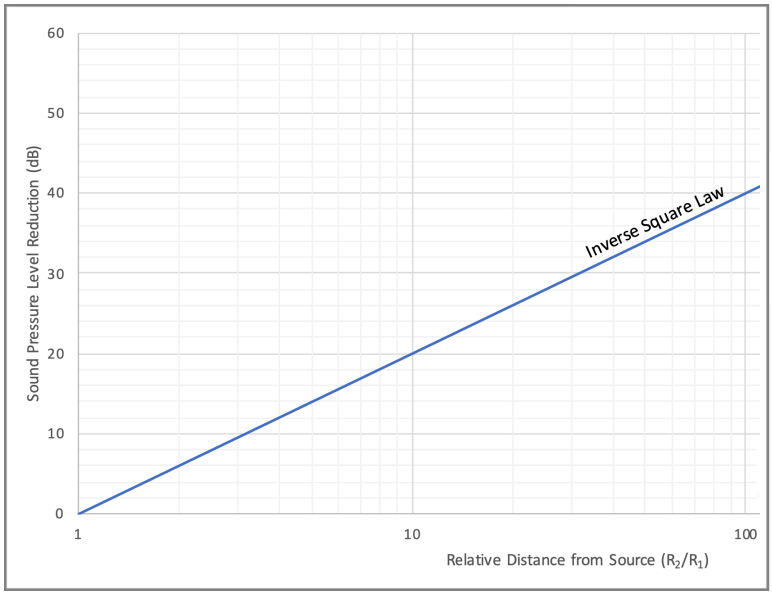
The CPS SCH100 inverters specified emit 65dB at 1 meter.



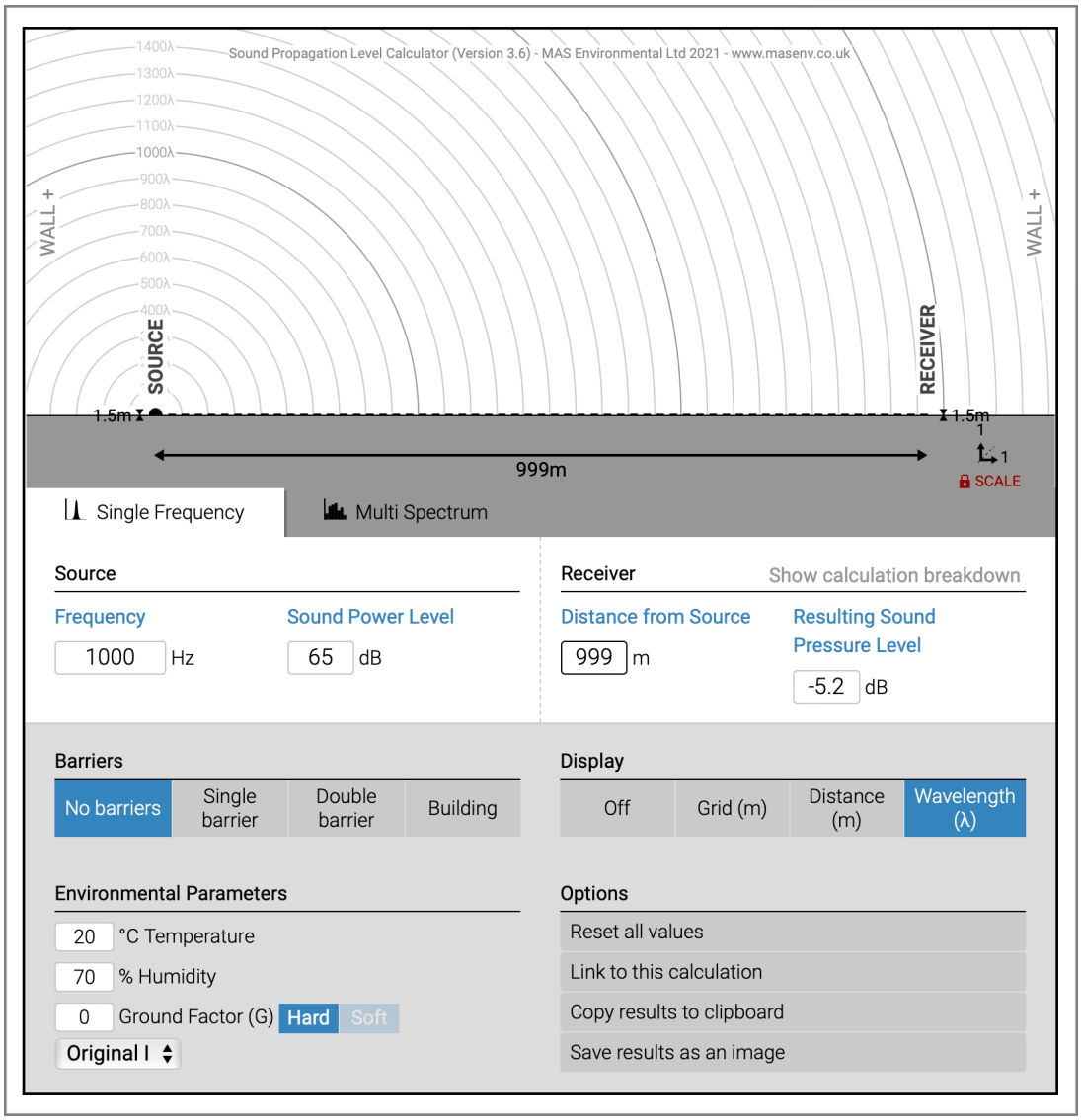


The closest observed residence is located approximately 3,146 feet (~1,000 meters) from the sound source. The Correctional Facility is approximately 350 meters.

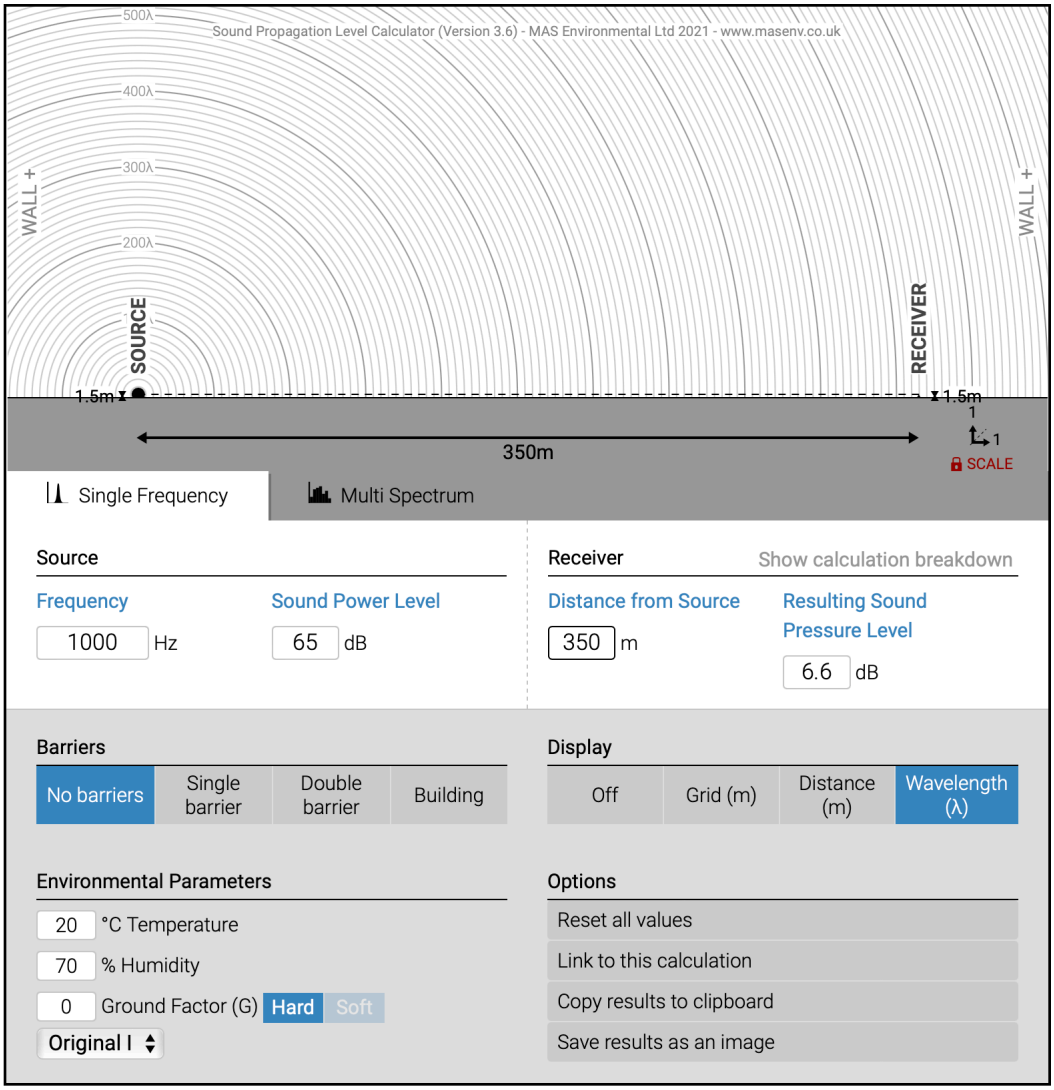
Using the Inverse Square Law, I can estimate the sound level at various distances.



This is the nearest residential sound level prediction at 999 meters. -5.2dB is below the threshold of human hearing.



This is the correctional facility sound level prediction at 350 meters. 6.6 dB is below the threshold of human hearing.



Final Comments

With the existing environmental conditions, the sound emulating from this solar plant will not be audible except very close to the inverter package.

Solar inverters only work during the sunlight, no sound will be created at night as the plant will be off.

If environmental conditions change, simple solutions exist to remediate and contain any apparent noise.

I hope you find this report useful. If I can be of further assistance, please do not hesitate to contact me.

Kind Regards,

Brad Berlin
Principal Designer
Berlin Acoustics

(end of document)

Appendix 1 – DEIS

DRAFT Environmental Impact Statement

for the

Malone Solar Project

proposed in

Franklin County, New York

February 2024

PREPARED FOR

Project Owner:

Nautilus Solar Energy, LLC
396 Springfield Ave, 2nd Floor
Summit, New Jersey 07901

Project Developer:

Cipriani Energy Group Corp
125 Wolf Rd, Suite 312
Colonie, New York 12205

PREPARED BY

Tetra Tech, Inc.
3136 South Winton Road, Suite 303
Rochester, New York 14623

TABLE OF CONTENTS

LIST OF ATTACHMENTS

LIST OF APPENDICES

ACRONYMS/ABBREVIATIONS

Acronym/Abbreviation	Definition
%	percent
AADT	annual average daily traffic
AC	alternating current
the Applicant	Yellow 17 LLC
AR	anti-reflective
ATCT	air traffic control tower
CES	Clean Energy Standards
CFR	Code of Federal Regulations
CLCPA	New York State Climate Leadership and Community Protection Act
DC	direct current
DEIS	Draft Environmental Impact Statement
DOT	New York State Department of Transportation
ENB	Environmental Notice Bulletin
FAA	Federal Aviation Administration
FEAF	Full Environmental Assessment Form
IT	information technology
kV	kilovolt
LLC	Limited Liability Company
LWRP	Local Waterfront Revitalization Program
MAL	Malone-Dufort Airport
MW	megawatt
NNSA	National Nuclear Security Administration
NYCRR	New York Codes, Rules, and Regulations
NYS	New York State
NYSERDA	New York State Energy Research and Development Authority
NYSDAM	New York State Department of Agriculture and Markets
NYSDEC	New York State Department of Environmental Conservation

Acronym/Abbreviation	Definition
PB	Planning Board
PD	Planned Development
PILOT	Payment in Lieu of Taxes
Project	Malone Solar Project, a 2-MW AC electric generating facility
Project Area	50.42-acre parcel 2.25 miles northwest of the Town of Malone
PV	photovoltaic
SEQR	State Environmental Quality Review
SGHAT	ForgeSolar Glare Hazards Analysis Tool
USGS	United States Geological Survey

1. EXECUTIVE SUMMARY

Yellow 17 LLC, (the Applicant), a wholly owned subsidiary of Nautilus Solar (Nautilus), has been working with Cipriani Energy Group, a community solar developer, to secure discretionary permits for the proposed Malone Solar Project (the Malone Solar Project or the Project), a 2-megawatt (MW) alternating current (AC) electric generating facility. As part of the discretionary permitting process a Full Environmental Assessment Form (FEAF) was completed and submitted to the Town Board for review. After this submission, the Town Board assumed lead agency status and began the New York State Environmental Quality (SEQR) Review process. The Town Board conducted public hearings as required under New York State Town Law and heard concerns from local community members about the perceived environmental impacts of the project. In response to the concerns raised, the following documentation was submitted at the request of the Town Board:

- Viewshed impact analysis
- Detailed glare analysis
- Manufacturers specifications for the solar panels
- Stormwater Pollution Prevention Plan
- Acoustical analysis
- Memo outlining the methodology underlying the response to noise concerns
- Memo outlining the methodology underlying the decommissioning estimate

After a review of the provided materials and Parts I and II of the FEAF, a "Positive Declaration of Significant Adverse Impact" pursuant to SEQR was determined. More specifically, the Town Board stated in Part II of the FEAF, Section 15d that "*The proposed action may result in light shining onto adjoining properties…*" a "*Moderate to large impact may occur*." The Town Board found that the project would not have a significant adverse impact on any of the other categories outlined in the FEAF Part II, and no moderate to large impacts related to these other categories were identified on the FEAF Part III.

The Town of Malone posted the SEQR Determination on the New York State Department of Environmental Conservation (NYSDEC) Environmental Notice Bulletin (ENB) on November 30, 2022. The SEQR Positive Declaration and associated documentation is included as ***Attachment A***.

Pursuant to 6 NYCRR 617.9, the Applicant has prepared a Draft Environmental Impact Statement (DEIS) that will discuss the potential adverse environmental impacts identified by the Planning Board (PB) during

the November 2022 meeting and identify resources that are unlikely to be impacted by the Project. The area of concern raised by the Town is related to possible glare impacts to adjoining and nearby properties from constructed solar panels.

In support of this determination, Tetra Tech, Inc. (Tetra Tech) completed a Glint and Glare Analysis dated May 2, 2023, using the ForgeSolar Glare Hazards Analysis Tool (SGHAT) developed by Sandia National Laboratories. ForgeSolar is used globally by industry, academia, and military to evaluate photovoltaic (PV) glare and satisfies Federal Aviation Administration (FAA), United States Department of Energy, National Nuclear Security Administration (NNSA), and other regulatory requirements including ocular impact and luminance. The tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The SGHAT was utilized to evaluate the potential for glint and glare when driving along 1) proximal segments of Bare Hill Road, Brand Road, Shears Road, Route 37, and a road that runs through the Bare Hill Correctional Facility; and 2) 17 nearby locations selected to represent observer views at neighboring properties. No glint or glare was predicted in the analyses for nearby points of observation or vehicle routes. This report is included as ***Attachment B***.

The enclosed DEIS has been prepared based on the outline provided in the Final Scoping Document prepared by Tetra Tech and accepted by the Town of Malone Town Board on September 27, 2023. The Scoping Document was prepared, filed, distributed, and published as prescribed in NYCRR Section 617.12. The focus of analyses included herein are project-related factors that could influence the perceptibility of glare resulting from a new solar project, as well as other cursory visual impacts. In summary, Tetra Tech finds that no adverse impact will occur as a result of glare originating from solar panels associated with this project.

2. PROJECT DESCRIPTION

2.1. DESCRIPTION OF APPLICANT, OWNERSHIP RIGHTS AND INTERESTS

Yellow 17 LLC, is a limited liability corporation that will develop, own, operate, and maintain a solar-powered wholesale generating facility in Franklin County, New York. Yellow 17 LLC's parent company, Nautilus Solar, is headquartered in Summit, New Jersey, and is a leading community solar developer, providing clean energy to residential and commercial customers in local communities. Founded in 2006 by Co-Founders Jim Rice and Laura Stern, Nautilus Solar's team members have developed and/or operate solar farms in 10 different states.

Nautilus has successfully developed over 800 MW of renewable power plants throughout North America and continues to develop community solar projects throughout the country. Through its Community Solar initiative, Nautilus is committed to making solar energy available to a broader marketplace, including low to middle income households and unrated businesses that wish to reduce their carbon footprint and utility bills.

Nautilus has worked closely with the landowners of the parcels that comprise the Malone Solar Project's Project Area. A Land Lease Option and Lease Agreement was entered into between Yellow 17 LLC, and the landowners in August 2020. The Memorandum of Lease is provided as ***Attachment C***. The term of the lease extends from 2020 – 2025, subject to two, five-year lease term extensions. The 25-year lease period begins when the lease is executed. However, the Applicant currently has site control through a Lease Option Agreement. When the project is ready to build, the lease will be executed, and the 25-year lease period will begin.

2.2. PROJECT SITE AND REQUIRED REGULATORY APPROVALS

The land that is being evaluated for a potential solar development is located at 176 Bare Hill Road (Tax Parcel ID: 84.-1-73.100) Franklin County, New York and is identified on the Site Location Map in ***Attachment D***. The Project is located about 2.25 miles northwest of the Town of Malone and is sited on an approximately 50.42-acre parcel with a proposed development footprint of approximately 9.725 acres (hereafter "Project Area"). According to the Town's Zoning Map, the parcel containing the Project Area is zoned as a "Planned Development" (PD) district. The Project site itself consists of wooded land and is bounded by wooded land to the north; wooded land followed by Little Salmon River to the east; wooded land followed by Brand Road and G & E Extinguishers LLC to the south; and wooded land followed by New Energy and Bare Hill Road to the west.

As referenced in Section B of the Full Environmental Site Assessment Form ("FEAF") for the Project, the following regulatory approvals are required to construct and operate the Project:

- Zoning Permit – Town of Malone Board
- Special Use Permit – Town of Malone Town Board
- Site Plan review – Town of Malone Town Board
- Building Permit – Town of Malone Code Officer
- Stormwater Prevention Protection Plan (SWPPP); GP-0-10-001 General SPDES Permit -- NYS Department of Environmental Conservation
- Historic/Cultural Resources Review -- NYS State Historic Preservation Office

2.3. PROPOSED ACTION

The Applicant proposes to build ground-mounted solar arrays with the capacity to generate a total of 2 MW AC. It is anticipated that the PV panels will be similar to those installed on over one million homes in the United States. The PV panels for the proposed Project will be ground-mounted on a low-profile single-axis tracking system that will have a small post footprint, typically consisting of small I-beam posts driven into the ground. The Project facilities will consist of the following components:

- A solar field of PV panels producing direct current (DC) electricity mounted on single-axis tracking structures that will follow the sun throughout the day;
- Inverters placed throughout the Project Area to convert DC electricity to AC electricity;
- A medium voltage cable collection system that will aggregate the AC output from the inverters;
- A point of interconnection where the Project's electrical output will be connected to the National Grid Substation via a 13.2 kV direct feeder line;
- Internal infrastructure including access roads and fencing; and
- Temporary laydown areas for equipment staging during construction.

Public roads will be used for construction access and general access during Project operation. Materials required for the construction of the Project are expected to be transported via New York State Route 37 to Brand Road, and then from Bare Hill Road to the Project Site located at 176 Bare Hill Road. The project's privately owned driveway will proceed east from Bare Hill Road to Brand Road then onto State Route 37. It is not anticipated that any improvements to public roads, including items such as widening, shoulder improvements, or the addition of turnarounds, will be required.

Solar energy facilities have no direct air or wastewater emissions, are very quiet, and generate no vibration. The PV panels proposed to be used for the Project will not exceed a height of 8.6 feet. Setbacks, fencing,

and landscape buffering allow solar energy projects to have minimal, ground-level visual impacts on the community and natural setting of the area.

The Project will not include any outdoor artificial lighting on the Property. Additionally, there will be no motion-activated lighting, or any other security lighting mechanisms, installed around the Project Site or on the Project perimeter fence.

3. EXISTING CONDITIONS & LAND USE HISTORY OF THE PROJECT SITE

Existing conditions at the Site were covered in detail through documentation submitted during the discretionary permitting process. Information provided during the discretionary permitting process was thorough and none of the existing conditions at the Site were identified by the Lead Agency on the Positive Declaration. The following documents were provided to the Town as part of the original Special Use Permit application and are also provided again as attachments to this DEIS at the specific request of the Town Board as follows:

Attachment E: Wetland delineation

Attachment F: CESIR Study

Attachment G: SHPO No Effect letter

Attachment H: FEAF, which addresses the following:

1. Geologic setting:
    a. Land uses on or near site: Rural (non-farm), Forest, Residential (suburban), Commercial.
    b. The site is not in proximity to a National Landmark.
    c. The site is not used for public recreation.
    d. The site is not in proximity to facilities serving children, the elderly, or people with disabilities.
    e. There is no dam on site.
    f. The site has never been used for waste management nor has hazardous waste been used, disposed, generated or stored on site.
    g. There is no history of contamination on site, nor is the site listed in the NYSDEC Spills Incidents database or Environmental Site remediation database.
    h. The site is not within 2,000 feet of any site in the NYSDEC Environmental Site Remediation database.
    i. There is no institutional control on the site limiting property use.
    j. There are no bedrock outcroppings on site.
2. Site drainage

a. 95.5% of the site is well drained.

b. 4.4% of the site is Moderately well drained.

3. Floodplains

    a. The project site in not in a 100-year or 500-year Floodplain.

    b. The project site is not in a designated Floodway.

4. Surface and Groundwater Resources

    a. Average depth of the water table at the site is 4.77 feet.

    b. The project site is located over or immediately adjoining principle aquifer.

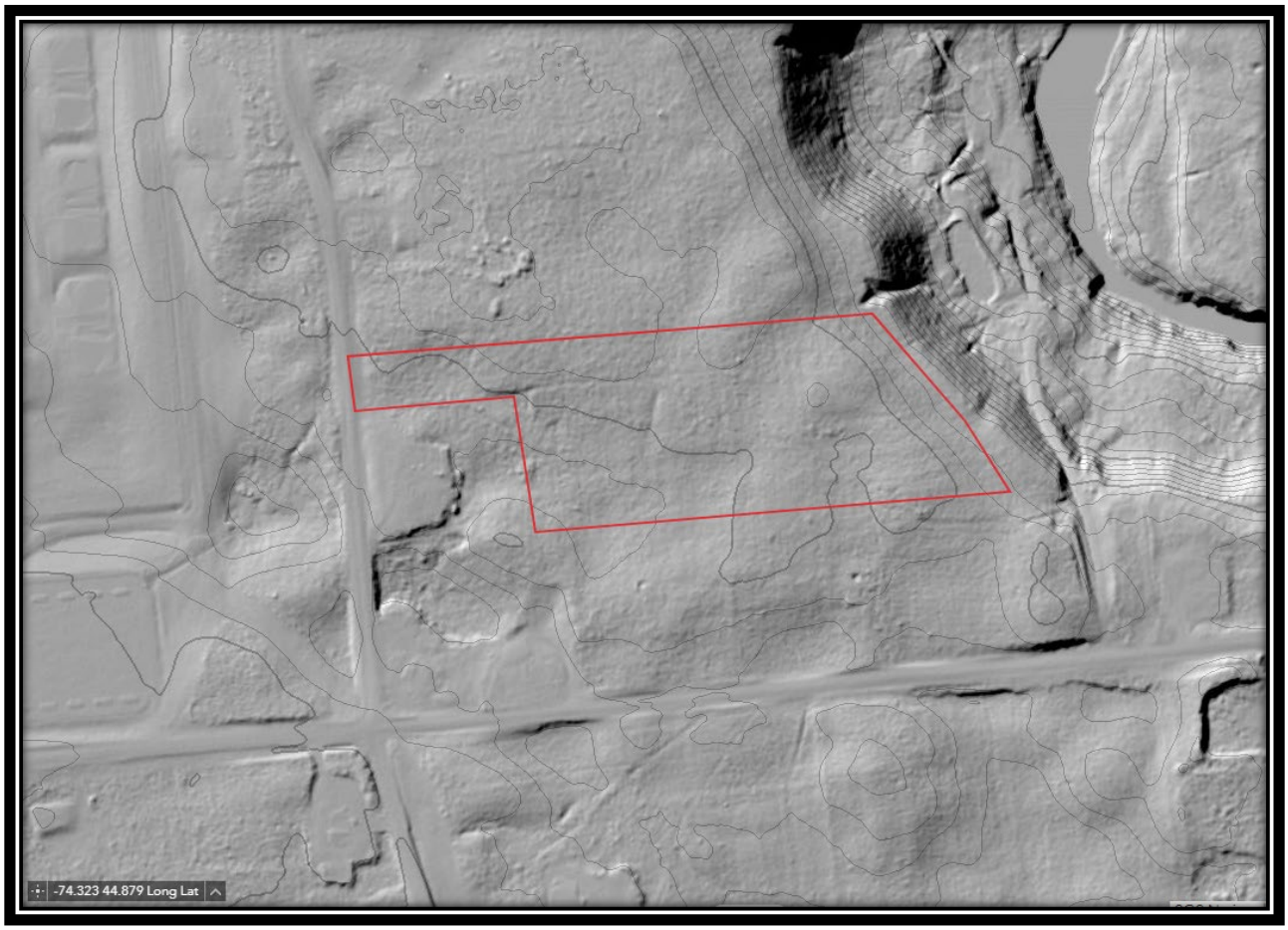
The following description of current conditions and historical context of the Project site and surrounding area presents a baseline against which impacts of the proposed action can be evaluated.

The Project is located within a sparsely populated neighborhood that contains a mix of land uses interspersed with patches of forest. Of note is the presence of two medium- and one high-security correctional facilities along Bare Hill Road and Brand Road. Per data provided by the New York State Department of Transportation (DOT), annual average daily traffic (AADT) for Brand Road, just south of the Project area, is estimated to be 1,977 vehicles, with trucks comprising six percent of that total (NYSDOT 2023). DOT statistics are not available for Bare Hill Road; however, the AADT for those local roads is likely less than that of Brand Road, but perhaps more than typical local roads due to likely traffic to and from the correctional facilities. There are no public transportation stations in the vicinity of the Project.

When choosing the location for a solar energy facility, it is important to ensure that there are sufficient support services to respond to unforeseen emergencies. The Project area is located within two miles of the Malone Fire Department and within 0.5 mile of the office of Franklin County emergency services. Another key consideration for siting of the Project is access to utility infrastructure. The project is to be interconnected to Malone 895 Substation via Feeder 89551 at Pole 17 on Bare Hill Road. Protective equipment used to evaluate and control the system's connection with the grid includes a utility owned recloser pole, a customer owned Gang Operated Air Break switch (GOAB) pole, and a customer owned pole with fused cutouts. This equipment can be accessed via a 20-foot wide pervious gravel driveway. Emergency services will have access to the site via a 20-foot wide double swing gate with a knox box.

In terms of visual setting, the Project site is located on relatively flat tract of land directly upslope to the west from the Little Salmon River. The Project area lies east of Bare Hill Road and north of Brand Road, neither of which are designated as scenic highways. The Project parcels range in elevation from approximately 650 to 660 feet above sea level. Surrounding parcels are similar in elevation, except for the area around the Little Salmon River to the east which is approximately 100 feet lower. This is evident in the USGS National Map National Boundaries Dataset hillshade elevation image shown in Figure 1.

Figure 1. Hillshade Map Showing Sunken Elevation of Project Area



(USGS, The National Map National Boundaries Dataset, 2023)

3.1. LAND USE IN THE VICINITY

The Project parcels are currently forested and not used for cultivation or other purposes. Directly adjacent land parcels are also forested and undeveloped. A New York Department of Corrections facility is located on the opposite side of Bare Hill Road to the Project Area, which is hardscaped and largely devoid of vegetation. This facility is presumably well-lit for security purposes. Based on aerial imagery, the other areas in the vicinity of the proposed Project contain agricultural lands where row crops are cultivated. An additional approximately 11.5-acre solar development is present approximately 0.6 mile to the southeast. Some rural residential development is present as well.

3.2. NEIGHBORHOOD CHARACTER AND VISUAL SETTING

The character of the neighborhood in which the Project area is situated is best described as a mix of industry, rural residential properties, forested land, and public land. Developed elements include:

- Two medium-security and one maximum-security correctional facilities, one directly to the west and one directly to the south of the Project Area:
  - New York State Department of Corrections Bare Hill Correctional Facility
  - Franklin Correctional Facility
  - Upstate Correctional Facility
- G&E Extinguishers LLC, a retail location selling and servicing fire extinguishers, located to the south of the Project Area along Brand Road.
- New Energy, a building materials supplier, located directly adjacent to the development footprint to the West.
- Franklin County Solid Waste which currently consists of a transfer station to the south of the Project Area along Brand Road. Portions of this property have been developed into a solar-on-landfill project of approximately 11.6 acres.
- North County Animal Shelter located to the northwest of the Project Area.
- The Pines Tap and Table restaurant, located southwest of the Project Area.

Residential development in the immediate vicinity is limited, presumably due to the presence of the correctional facilities. There is one residence to the north of the Project Area at approximately 210 Bare Hill Road. This residence would be separated from the proposed development by approximately 0.1 mile of forest. Of note as well is the riparian corridor of the Little Salmon River to the east of the Project Area, which provides natural value. No work is proposed that would affect the area directly adjacent to this river.

3.3. TRANSPORTATION AND TRAFFIC

The Project Area is located directly to the east of Bare Hill Road and to the north of Brand Road. Both roads are relatively small local conveyances that chiefly serve as access points for local residences and the nearby correctional facilities. Per data provided by the New York State Department of Transportation (DOT), annual average daily traffic (AADT) for Brand Road, just south of the Project area, is estimated to be 1,977 vehicles, with trucks comprising six percent of that total (NYSDOT 2023). DOT statistics are not available for Bare Hill Road; however, the AADT for those local roads is likely less than that of Brand Road, but perhaps more than typical local roads due to likely traffic to and from the correctional facilities. There are no public transportation stations in the vicinity of the Project.

The Project Area is 1.4 miles to the northeast of the Malone-Dufort Airport (MAL). MAL is a small municipal airport operated by the Town of Malone. This airport does not have an air traffic control tower, and mainly provides a landing location for personal aircraft.

3.4. TOWN AND VILLAGE OF MALONE LOCAL WATERFRONT REVITALIZATION PROGRAM (LWRP)

The Project Area is located within the Town and Village of Malone Local Waterfront Revitalization Program (LWRP) area boundaries. A summary of the project's accordance with LWRP policy standards is provided as ***Attachment I***.

4. ASSESSMENT OF SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACTS

As discussed above, the Town of Malone posted a SEQR "Positive Declaration of Significant Adverse Impact", stating "the proposed action may result in light shining onto adjoining properties." The following section discusses this potentially significant impact and addresses factors that could contribute to the perception of glare in the area surrounding the Project Area.

4.1. IMPACTS FROM GLARE

4.1.1. Project Setting

The Project is situated on the east side of Bare Hill Road and on the north side of Brand Road within a sparsely populated neighborhood that contains a mix of land uses interspersed with patches of forest. The Project parcels are currently forested and are not used for cultivation or other purposes. Directly adjacent land parcels are also forested and undeveloped. A New York Department of Corrections facility is located on the opposite side of Bare Hill Road to the Project Area, which is hardscaped and largely devoid of vegetation. This facility is presumably well-lit for security purposes. The vicinity also contains agricultural lands where row crops are cultivated based on aerial imagery. The Project will be concealed on all sides due to its setting within a heavily forested area set back from the roads, nearby open areas, and adjacent properties.

Project components have been carefully designed to avoid and minimize environmental and visual impacts to the maximum extent practicable. The solar arrays will consist of PV panels mounted on single-axis tracking systems arranged in rows running north to south. The panels will pivot east to west, following the sun throughout the day, and will have a maximum tilt height of approximately 8.6 feet at a 52-degree maximum tilt and will not exceed the Town Code's 15-foot height limit from natural grade to maximum tilt. The PV panels will be ground-mounted on racking that will be supported by I-beam posts driven into the ground; this will result in extremely small ground disturbance associated with the panels. The PV panels will generally follow the existing contours of the land. Inverters (with integrated transformers) within boxes on concrete pads will be located throughout the Project (amongst the solar arrays) to convert DC electricity to AC electricity. Internal infrastructure will be limited to permanent gravel access roads (approximately 20 ft wide), grassed access corridors, and security fencing around the Project perimeter. Security fencing will consist of an approximately 7-foot-high fence, subject to electrical and building code requirements. Fencing materials will be decided in consultation with the Town of Malone and residential stakeholders.

4.1.2. Glare Analysis

Based on concerns expressed by the Town of Malone that the Project may result in significant glare impacts to the surrounding area, Tetra Tech completed a Glint and Glare Analysis dated May 2, 2023, using the SGHAT developed by Sandia National Laboratories. ForgeSolar is used globally by industry, academia, and military to evaluate PV glare and satisfies FAA, United States Department of Energy, NNSA, and other regulatory requirements including ocular impact and luminance. The tool provides a quantified assessment of when and where glare will occur, as well as information about potential ocular impacts. The SGHAT was utilized to evaluate the potential for glint and glare when driving along 1) proximal segments of Bare Hill Road, Brand Road, Shears Road, Route 37, and a road that runs through the Bare Hill Correctional Facility; and 2) 17 nearby locations selected to represent observer views at neighboring properties. The analysis used a viewing height of an observer in a standard first floor building at six feet above ground surface and a standard vehicle at five about ground surface. These observation heights are industry standard for the northeast United States. Typically, driver viewpoint ranges between 3.5 feet to 6 feet above ground surface depending upon the vehicle. Due to the densely forested nature of the area immediately surrounding the Project Area, an "obstruction" was included in the model to represent the dense forest surrounding the development footprint. During summer months, foliage and understory of forested areas would likely act as a near complete barrier for glare to any modeled receptor. The height of this obstruction was modeled at 20 feet to account for average tree height, which in many cases likely underestimates the shielding effect from the glare that the forest would have on surrounding receptors. While it is possible that the completeness of this barrier could be reduced in winter months when deciduous trees have reduced canopy foliage, aerial imagery and supporting data suggest that the forest is at least partially coniferous, and thus would not change significantly in foliage density with the change in seasons. Thus, the included obstruction is expected to have a similar shielding effect on surrounding receptors regardless of time of year.

The results of the analyses indicate that nearby points of observation and vehicle routes would experience no glare as a result of the Project. This included receptors at 30 feet high to represent guard towers at the nearby correctional facilities, which were taller than the modelled forest obstruction. The Glint and Glare analysis suggests no significant impact resulting from glint and glare to receptors surrounding the Project Area. The updated Glint and Glare Analysis is included as ***Attachment B***.

4.1.3. Aviation Considerations

As is typical for new solar developments, the notice criteria tool administered by the FAA is often used 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). The notice criteria tool was run for this project using a maximum structure height of 9 feet which exceeds the expected height above ground of

the proposed panels. The results of this tool indicate that the project does not exceed notice criteria, and that notice to the FAA is not required.

In the aforementioned glare analysis, Tetra Tech additionally considered potential glare impacts on flight paths. The nearest airport to the Project Area, the Malone-Dufort Airport, is located approximately 1.4 miles to the southwest of the Project Area. The glare analysis assessed glare for the two-mile flight paths for Runway 5/23 and 14/32 at the Malone-Dufort Airport: Labeled "MAL-5," "MAL -23," "MAL -14," and "MAL -32". Based on the modeling approach described in the glare analysis, a small amount of "green" and "yellow" glare, i.e., glare that is unlikely to leave a visual impression after viewing, will be visible from the Project Area from late-February through late-April and mid-August through mid-October for less than 70 minutes per day in the late afternoon. While this glare is already minimal and low risk, The FAA released a Final Policy (86 FR 25801) on May 11, 2021 with regards to solar facilities and glare. With this policy the FAA changed their stance on glare thresholds, allowing glare for final approach paths but not allowing glare to impact the air traffic control tower (ATCT) for Federally Obligated Airports. A review of FAA provided information for the Malone-Dufort Airport indicates that there is no ATCT for the airport. Therefore, an ATCT was not included in the analysis. Based on these standards, the project would be compliant with relevant FAA regulations and would not present a glare-related risk

4.1.4. Conclusion of Glare Analysis

Based on the various analyses described above as well as the assessment of existing conditions around the Project Area, glare will not constitute a significant impact resulting from the Project. Glare analyses that take into account existing conditions surrounding the Project Area have demonstrated that no glare will occur that would affect any modelled receptors. These modeled receptors are additionally representative of locations that could theoretically experience glare were it present, such as cars travelling along Bare Hill Road or Brand Road, residents in first or second story rooms, and guards in guard towers at the nearby correctional facility. The dense mixed forest that surrounds the Project Area provides a significant glare obstruction between the Project Area and nearby potential receptors; this visual shielding should be effective during various times of year regardless of canopy leaf cover of deciduous trees due to the presumed presence of coniferous trees within the forest matrix.

4.1.5. Photographic Simulations

Photographic simulations were created for five representative viewpoints to illustrate the Facility components and the potential visual changes to the existing landscape. The simulations were used to determine the level of contrast between the existing landscape and the expected landscape after the Facility is constructed. Simulations also were created to illustrate proposed mitigation for those representative

viewpoints where landscaping is proposed to help screen the Facility. Photographic Simulations are included as ***Attachment J.***

5. ADDITIONAL REQUIRED CONSIDERATIONS

Pursuant to 6 NYCRR 617.9(b)(5), SEQR regulations require that if the proposed action is for development of an electric generating facility, the DEIS must include a demonstration that the Project will satisfy electric generating capacity needs or other electric systems needs in a manner reasonably consistent with the most recent state energy plan. This section discusses how the Project will help meet energy needs in the region and advance New York State goals to implement a Clean Energy Standard (CES), which promotes the development of clean energy and renewable resources.

5.1. ENERGY/UTILITY FACILITIES

New York State's CES mandates that 70% of the State's electricity come from renewable generation by 2030. The State's Climate Leadership and Community Protection Act (CLCPA) has set the framework to achieve at least ten gigawatts of distributed solar by 2030, enough to annually power over 700,000 homes. The proposed Project is consistent with State policies that encourage the development of renewable energy projects, seek solutions to fight climate change, and emphasize the need to transition New York's energy markets away from a reliance on fossil fuels for electricity generation.

One of the impediments to successful solar project development is cost effective access to utility infrastructure. There is limited hosting capacity for renewable energy projects to connect to utility infrastructure throughout New York State, and in particular, the National Grid service territory. Substations and 3-phase distribution feeders can only support a finite number of these projects, and those projects must be sited near these utility assets in order to achieve cost effective interconnection. Project access to utility infrastructure with hosting capacity is further limited by the availability of land suitable to host such projects. Environmental, regulatory, and permitting constraints on potential host properties negate many sites within sufficient proximity to viable interconnections. Land constraints may include presence of New York State Department of Environmental Conservation (NYSDEC) wetlands, prime farmland, threatened and endangered species habitat, and/or cost prohibitive commercial or industrial land-use with which solar projects cannot compete.

The Project Area is situated close to another completed solar project that was constructed on an old municipal landfill site (North Woods Engineering 2016, NNY360.com 2018). The 3.5 MW solar project was constructed in 2017 just southeast of the Project Area at the former Village of Malone landfill off Brand Road. This project was developed in conjunction with Franklin County and the Village of Malone and covers nine acres and includes 11,258 solar panels and 58 inverters. This project also involved Franklin

County, the Village of Malone, and other interested parties joining into a power-purchase agreement with National Grid, though the project experienced some delays in completing the interconnection with National Grid's power system.

The siting of the Malone Solar Project is ideal because the property is not currently utilized for agriculture and is concealed from neighboring properties and roadways by the surrounding forest. The site has access to the necessary hosting capacity via Feeder 89551 connecting to Malone 895 Substation. The final piece needed to ensure successful integration with the regional power grid and to advance New York CLCPA energy goals to 2030 and beyond is an assurance of interconnection and utilization of the electricity generated by the Project.

5.2. SOCIOECONOMIC CONDITIONS

According to data gathered by the United States Census Bureau, the Town of Malone population during the 2020 Census was 12,433 people, with a median household income of $55,426 and an employment rate of 37.3%. The Malone Solar Project will not displace people or employment within the Town, nor will it have a negative impact on median incomes in the community. This section further considers the social and economic impact of converting currently undeveloped land into a solar energy generating facility.

The Project will involve the removal of trees which will slightly reduce available open space in the vicinity of the Town of Malone; however, the Project will provide several tangible and intangible community benefits:

- production of clean energy to support national, statewide and local decarbonization goals;
- potential to reduce overall energy costs in the region;
- temporary local employment during the construction phase of the project;
- the ability to re-purpose the land after decommissioning by using it for agriculture, silviculture, or another community use.

Earthwork, piles, racking and panel installations, collecting system and construction of the substation are several examples of work that will be done exclusively by local suppliers. A register of local suppliers will be developed, and networking events will be held to connect local businesses with the Project's contractor prior to construction. The Applicant also intends to pursue a Payment in Lieu of Taxes (PILOT) program, wherein the Applicant will provide monetary benefit to the community at a proportionally large scale to the land use in question.

During the construction phase, emergency services could be called upon in the unlikely event of a job site accident. However, employment at the site will not create an increase in local population that would disproportionately affect municipal resources such as fire and police protection, schools, parks & recreation, etc. In fact, the temporary minor increase in population and the Project itself are anticipated to result in a net economic benefit to the community resulting from opportunities for local businesses to offer their services, including environmental consultants, engineering consultants, legal firms, hotels, restaurants, and grocery stores. Ongoing local investments by the Applicant during construction and operation may also include, but not be limited to, access road maintenance, snow removal, internet and IT maintenance, vehicle leasing and maintenance, and land maintenance.

The Malone Solar Project will not result in adverse socioeconomic impacts to the Town's population, housing, or economic opportunities. It will instead provide a short-term boost in employment and patronage of local goods and services and long-term investment in the community.

6. CUMULATIVE IMPACTS

The SEQR process encourages consideration of the cumulative impacts of new development and, in this case, on the expansion of solar facilities in the region. An additional solar project of similar size is present to the southeast of the Project Area. However, it is not anticipated that that project site will be visible from the currently considered Project Area or vice versa. Additionally, because this project is expected to present minimal visual impacts to the area at large, no cumulative impacts will occur resulting from the potential visibility of multiple solar projects in relatively close proximity. Both projects are well-shielded within larger blocks of forest land. Although the Project will add significantly to the amount of solar generation in Malone, it will not represent an adverse cumulative impact on glare or on other factors typically considered during the SEQR process such as traffic, ambient noise levels, or stormwater drainage. It is also unlikely to encourage additional development of surrounding parcels given the presence of the correctional facilities and the bounding of the property by the Little Salmon River to the east.

As discussed throughout the DEIS, the existence of the landfill solar project located in the Village of Malone does not represent a negative cumulative impact with respect to the Project. While the project in the Village is near the Project, this proximity will not create or increase any environmental concerns, such as noise, traffic, or visuals. As evidenced by the site plan document set in Appendix D of the DEIS, the Project Site is well shielded by existing and to-be-planted vegetation, and as already mentioned in the DEIS, the Village Project is not visible from the Project Site, or vice versa due to both project sites being surrounded by heavily wooded land. As also discussed throughout the DEIS, community solar projects do not create an increase in traffic, particularly after construction. As already mentioned, the Project will be visited a few times a year for operational and property maintenance, and presumably, the Village solar project is also minimally visited during the year for similar maintenance activities. Thus, the construction and operation of solar projects result in far less traffic than residential or commercial development. Nor will the proximity of these projects cause a negative cumulative impact with respect to noise, as the inverters and associated equipment for the Project will be located far from adjoining residential neighbors, and as solar projects only operate during daylight hours, no noise will be detected at night from the Project.

With respect to interconnecting the Project after construction, at this point in the permitting process, there are no concerns with timely interconnecting and operating the Project once construction is complete. More information regarding the interconnection timeline will become available as the Project receives all required approvals and construction of the Project begins.

7. PROJECT ALTERNATIVES

The purpose of an alternatives analysis is to examine reasonable and practicable options that avoid or reduce project-related significant adverse impacts while achieving the goals and objectives of the proposed Project. Alternatives for the Malone Solar Project would require a similarly sized area with available hosting capacity by the regional utility and an equal or reduced level of environmental and community impact.

7.1. NO ACTION ALTERNATIVE

The no action alternative would leave the parcel as wooded land. The most significant benefit of maintaining the current use of the land is that it presents no change in visual aesthetics to the surrounding area. Considering the sparse residential properties in the immediate area, that benefit would be enjoyed by relatively few residents and those traveling on Bare Hill Road and Brand Road.

- A potential drawback is that the owner may opt to sell the parcel to an industrial or commercial interest that is less environmentally friendly compared to utilizing the land for renewable energy generation. Finally, on a grander scale, the no-action alternative would deprive the community and the region of a source of clean energy and the dual benefit of both energy cost reductions and a local source of revenue.

7.2. PROJECT DESIGN / LAYOUT CONSIDERATIONS

The design and layout of the Solar Project was produced carefully and intentionally following a significant amount of environmental, economic, and community consideration. This section of the DEIS will provide an evaluation and description of the site layout including a discussion of the constraints considered in developing the layout. Potential layout adjustments will be discussed to address adverse impacts, if any.

The Malone Solar Project was designed to maximize efficient use of the most suitable area within the parcel while adhering to Town zoning and planning requirements and minimizing adverse environmental or community impact. The arrays were oriented in a pattern that allows them to follow the sun and take advantage of the best angle of solar radiation throughout the day. They have been placed in discrete sections of the parcel in a layout that observes required setbacks from property lines and wetland areas, as well as being concealed with landscape buffering.

The Project's design process has taken into consideration stakeholder input. The Applicant has met with Malone's Town Board, PB, and Code Enforcement Officer, as well as the NYSDEC, NYSDAM and area residents to discuss the project and solicit feedback. Most of the Project area is comprised of forested land that will be cleared for placement of panels. However, in recognition of the value of natural buffers, the

Project has been designed to limit clearing of trees that line its periphery and maintain forest in the surrounding area to the greatest extent practical. It was also sited to avoid any impacts to wetlands or other sensitive habitat area, particularly vegetated areas surrounding the Little Salmon River.

7.3. DISCUSSION OF ALTERNATIVE SITES

The Applicant is not able to invest the amount of time and resources that would be needed to fully vet alternative sites and identify a similar nexus of environmental, economic and interconnection benefits. However, siting of the Solar Project was performed carefully with great due diligence. Among the many characteristics of the Project site that make it suitable for a solar energy facility, access to utility infrastructure and adequate hosting capacity are critical due to shrinking interconnection opportunities across the region and state. Other necessary considerations were to select a site that would render minimal impacts to the environment, avoid NYS certified agricultural districts, and fit in with surrounding land use patterns. As discussed throughout preceding sections, the selected Project site satisfies all of these key criteria.

8. PROPOSED MITIGATION MEASURES

Under SEQR (6 NYCRR 617), the Lead Agency is responsible for eliminating consideration of impacts and concerns identified during the scoping process determined to be irrelevant or insignificant either because they are not legally relevant to the environmental review of the proposed action, environmentally significant, or have been adequately addressed prior to the scoping process. This section addresses mitigation measures to address glint and glare and specific impacts to light shining onto adjoining properties as stated in the SEQR Positive Declaration. Mitigation measures included in this section include AR coatings, landscape plantings, and maintenance of existing visual buffers. The Applicant considers these mitigation measures to have adequately alleviated concerns regarding visual impacts of light shining onto adjoining properties resulting from the proposed action.

Required Setbacks

As mentioned in Section 7.2 of the DEIS and illustrated by the Project site plan document set in Appendix D to the DEIS, the Project will comply with all setbacks required by Section 5 (A)(1) of the Town of Malone Local Law 2 of 2018 ("Solar Law"). The Project will also comply with the setback requirements required in the underlying Planned Development zoning district where the Project is located. Specifically, the Project will provide for a 50-foot side yard setback where 15 feet is required, a 300-foot rear yard setback where 15 feet is required, and a 400-foot front yard setback where 75 feet is required. As such, the Project does not require any area variances and is in full compliance with the required setbacks in the Solar Law and Town of Malone Zoning Regulations.

Operational Planning and Maintenance

With respect to operational planning, the maintenance and operation of distribution level equipment required for community solar is less intensive than what is required for transmission level solar farms. The Project will be subject to preventive maintenance semi-annually as well as an annual full maintenance visit. The Project owner will monitor the electrical and mechanical components of the Project on an as-determined basis, and the solar panel modules will be cleaned at least once a year. Access road maintenance during the warmer months will include vegetation management, preventative maintenance to avoid erosion to roadway or roadbed, unclogging of roadside ditches, and inspections of the roadway to check for erosion at a minimum of once per year. Maintenance during the winter will include plowing of the access road, including snow removal as needed, from the site entrance to the Project. Stormwater management maintenance requires monitoring of swales and culverts. The diversion swale must be checked after major storm events for obstructions, erosion, or bank collapse. Maintenance is required on the culverts if too much sediment or debris accumulates and interferes with volume capacity or if erosion is observed at the culvert

inlet or outlet. To the extent that vegetation serving as a landscape buffer to the Project dies, such vegetation shall be removed and replaced as soon as practicable.

AR Coating

An AR coating is a transparent or semitransparent layer that's applied during manufacturing over the surface of a solar panel. Solar panels require sunlight to generate electricity, however, bare silicon glass is approximately 30% reflective (meaning nearly one-third of the sunlight that strikes its surface will be reflected). AR coatings are designed to maximize the absorption of sunlight while simultaneously minimizing light reflection or glare.

Most AR coatings consist of titanium oxide (used in sunscreens, cosmetics, and food products) or silicon nitride (a high-strength ceramic used in the biomedical, electronic, and automobile industries). With their transparent or semitransparent properties, they are typically invisible to the naked eye. But the anti-reflective coatings will increase the light absorption of the solar panels on which they are applied.

AR coatings are widely used in solar panels, as well as other optical devices such as camera lenses, glasses, and screens. They can enhance the efficiency, power output, and aesthetic appearance of solar panels by allowing more light to reach the solar cells and reducing glare. Panel specification sheet and anti-reflection glass declaration included as ***Attachment K.***

Landscape Plantings

In addition to maintaining existing tree lines and heavily forested buffers around the Project area, additional plantings will further conceal the project site and significantly reduce views of the solar array, as well as any risk of perceived glare, from Bare Hill Road. A mix of coniferous and deciduous trees will be planted surrounding the site entrance to the gravel access driveway off Bare Hill Road. Six gray birch (*Betula populifolia*), along with eight total evergreens (six eastern red cedar [*Juniperus virginiana*] and two pitch pines [*Pinus rigida*]), will surround the construction entrance and supplement the existing heavily wooded tree lines in creating a significant visual buffer from Bare Hill Road. These plantings will serve to mitigate the minor loss in vegetative screening from nearby receptors associated with tree clearing that will be required to build the site access road.

Maintenance of Existing Visual Buffers

The Project will maintain existing tree lines along the southern boundary of the Project Area along Brand Road and also along the Project area boundaries adjacent to the neighboring residences, businesses, and Bare Hill Road. These tree lines act as existing visual buffers between the roadways and the neighboring properties. The placement of the solar array within the parcel also leaves a wide, heavily forested buffer

between the 7-foot perimeter fence around the array and Brand Road to the south and neighboring properties to the east and west. The tree line along the proposed gravel access driveway, particularly the construction entrance from Bare Hill Road, will also maintain an existing visual buffer between the roadway and the Project. Thus, the existing tree lines, wooded areas within the Project area, and the setbacks from neighboring properties all help maintain existing visual buffers preventing views from the neighboring roadways and adjacent properties.

9. SUMMARY AND CONCLUSIONS

This Draft Environmental Impact Statement has been prepared for the Malone Solar Project, a 2 MW PV solar energy generation facility in the Town of Malone, Franklin County, New York. The Project, proposed within an area of wooded land totaling approximately 9.725 acres, will consist of solar arrays, inverters, cable collection system, interconnection point, internal infrastructure (i.e. access roads and fencing), and temporary laydown areas. This document has been prepared to facilitate an understanding of the proposed Project, continue soliciting input from the public and other stakeholders, and comply with 6 NYCRR 617.12, and respond to concerns raised by the Town of Malone PB as noted in the SEQR Positive Declaration. Objectives of the DEIS are to facilitate an understanding in the community of the proposed Project and to provide discussion of potential impacts, mitigation strategies and overall benefit that the Project can bring to the community. In the sections above, the following potentially significant adverse environmental impact was evaluated:

- Glint and Glare impacts on adjoining and nearby properties

Existing conditions and land use patterns describe the character of the neighborhood in and around the Project area. These conditions were used as a baseline for assessing the potentially significant adverse impact that could be created by the Project.

Analyses contained within this document have demonstrated that no glare will be perceptible at a grouping of sensitive receptors that are representative of potentially impacted areas in the immediate vicinity of the Project Area. Dense and diverse forest surrounds the Project Area which will provide sufficient shielding during all times of year. Landscaping included in the Project design will additionally provide shielding for the small area that will need to be cleared for project access roadways.

It is expected that the Project will not detract from the overall visual appearance or in any way provide a negative impact to the community but will instead provide a boost to the local economy during the construction phase and a more subtle lift during the operational life of the facility. Approval of the Project by the Town of Malone will represent an important step toward not only achieving New York State's CLCPA decarbonization goals, but also providing cheaper, cleaner energy to the region at large.

10. REFERENCES

New York State Department of Transportation (NYSDOT). 2023. Traffic Data Viewer. AADT statistics for Brand Road accessed 10/18/2023 at https://gisportalny.dot.ny.gov/portalny/apps/webappviewer/index.html?id=28537cbc8b5941e19cf8e959b16797b4.

NNY360.com. 2018. Solar project in Malone done but faces delay. https://www.nny360.com/news/solar-project-in-malone-done-but-faces-delay/article_17717d76-adc9-57fd-84d4-53194adaa97b.html

North Woods Engineering. 2016. Village of Malone/Franklin County Solar Project at Former Landfill. https://adirondackengineering.com/malone-solar-development/

United States Geological Survey (USGS), The National Map National Boundaries Dataset, 2023. Image derived from 3DEP Elevation – Hillshade and Elevation Contours, accessed 10/18/2023 at https://apps.nationalmap.gov/viewer/.

11. ATTACHMENTS

Attachments included with this document are listed below:

Attachment A - SEQR Positive Declaration
Attachment B - Glint and Glare Analysis
Attachment C - Memorandum of Lease
Attachment D - Site Location Map
Attachment E - Wetland delineation
Attachment F - CESIR Study
Attachment G - SHPO No Effect letter
Attachment H - FEAF
Attachment I – Malone LWRP Section H: Summary of Accordance with Policy Standards
Attachment J - Photographic Simulations
Attachment K - Panel Specification Sheet and Anti-Reflective Glass Declaration

Attachment A – SEQR Positive Declaration

Town of Malone

27 Airport Road • Malone, New York 12953

November 22, 2022

Calista T. Montagnola
Agency Program Aide-Environmental Permits
New York State DEC
1115 State Route 86
P.O. Box 296
Ray Brook, New York 12977-0296

Dan Bagrow
NYS Parks, Recreation & Historic Preservation
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Thomas King, Senior Counsel
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17 Columbia Circle
Albany, New York 12203-6399

Town of Malone Planning Board
27 Airport Road
Malone, New York 12953

Robert Costa, Assistant Manager
Madelyn Sheehan, Environmental Protection Specialist
Federal Aviation Administration
New York Airport Districts office
1 Aviation Plaza
Jamaica, New York 11434

Yellow 17 LLC
125 Wolf Road, Suite 312
Colonie, New York 12205

RE: 176 Bare Hill Road

Dear Sirs and Madam:

As Lead Agency, the Town of Malone entered the enclosed Resolution adopting a Positive Declaration of Environmental Significance for the Proposed Community Solar Farm to be located at 176 Bare Hill Road under SEQRA.

Should you have any questions, please do not hesitate to contact Supervisor Stewart or the undersigned.

Very truly yours,

Nicole Guerin

Nicole Guerin
Town Clerk

Enclosures

RESOLUTION NO. 325-2022
TOWN OF MALONE TOWN BOARD RESOLUTION ADOPTING A POSITIVE DECLARATION OF ENVIRONMENTAL SIGNIFICANCE FOR THE PROPOSED COMMUNITY SOLAR FARM TO BE LOCATED AT 176 BARE HILL ROAD UNDER SEQRA

WHEREAS, on or about September 3, 2021, Yellow 17, LLC filed an application for a Zoning Permit for the "Malone Solar Project" to be located at 176 Bare Hill Road in the Town of Malone (the "Proposed Action"), and

WHEREAS, as part of its application for a Zoning Permit, the Applicant submitted a Full Environmental Assessment Form dated August 26, 2021, and

WHEREAS, on or about February 11, 2022, Yellow 17, LLC filed a response to a deficiency letter for the Proposed Action with supplemental materials in support of its application, and

WHEREAS, on or about October 12, 2022, Yellow 17, LLC filed supplemental materials in support of its application, and

WHEREAS, the Town Board adopted a Resolution on May 11, 2022, which classified the project as a Type I Action under the New York State Environmental Quality Review Act ("SEQRA"), and

WHEREAS, the Town Board assumed lead agency status pursuant to 6 NYCRR 617.6(b)(1), and

WHEREAS, the Town Board conducted public hearings on the proposed project on June 22, 2022, and July 13, 2022, and

WHEREAS, the Town Board reviewed Part I of the FEAF prepared by the Applicant and prepared Parts 2 and 3 of the Full Environmental Assessment Form, and

WHEREAS, the Town Board has considered the content of the proposed application, Local Laws, the FEAF, communications from interested agencies, and

WHEREAS, the Town Board has considered any relevant public input, and

WHEREAS, the Town Board has thoroughly analyzed any relevant concerns discussed om the attached positive declaration of environmental significance, and has determined that significant adverse environmental impacts may result from the proposed project, and

WHEREAS, upon review of the FEAF and the relevant environmental criteria under SEQRA, the Town Board believes that the preparation of a Draft Environmental Impact Statement ("DEIS") is warranted.

NOW THEREFORE, the Town Board of the Town of Malone finds that the proposed project may have significant adverse impacts to the environment.

AND THEREFORE, the Town Board of the Town of Malone finds that the proposed project may have significant adverse glare impacts to adjoining and nearby properties; and

AND THEREFORE, the Town Board of the Town of Malone further issues as SEQRA Lead Agency, a positive declaration of environmental significance for the Proposed Action, finding there is a potential for at least one or more significantly adverse environmental impacts that may result from the Proposed Action, and incorporating by reference into this resolution the attached Positive Declaration contained in the FEAF Part 3; and

AND THEREFORE, that the Town Board, as Lead Agency, will require the preparation of a DEIS for the review of the proposed Action; and

AND THEREFORE, the Town Board hereby adopts the attached positive declaration of environmental significance and incorporates it herein.

AND THEREFORE, the Town Clerk is hereby directed to enter this resolution and the attached positive declaration of environmental significance in the minutes of this meeting.

AND THEREFORE, the Town Clerk is hereby directed to transmit this positive declaration and resolution to the appropriate agencies in accordance with the requirements of 6 NYCRR 617.12(b).

Motion offered by: Supervisor Andrea Stewart
Second by: Councilor Jody Johnston
CARRIED (5-0) – Supervisor Stewart – Aye Deputy Supervisor Maguire - Aye, Councilor Johnston – Aye Councilor Taylor – Aye Councilor Walbridge - Aye

STATE OF NEW YORK
COUNTY OF FRANKLIN SS:

I, Nicole Guerin, Town Clerk of the Town of Malone, New York, do hereby certify that the foregoing resolution, #325-2022, was duly adopted at a Regular Meeting of the Malone Town Board, held on November 16, 2022; and the same is a true and complete copy of the record on file in the Office of the Town Clerk and of the whole thereof.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of said Town this 22nd day of November, 2022.

Nicole Guerin

Nicole Guerin

Full Environmental Assessment Form
Part 2 - Identification of Potential Project Impacts

Agency Use Only [If applicable]
Project :
Date :

Part 2 is to be completed by the lead agency. Part 2 is designed to help the lead agency inventory all potential resources that could be affected by a proposed project or action. We recognize that the lead agency's reviewer(s) will not necessarily be environmental professionals. So, the questions are designed to walk a reviewer through the assessment process by providing a series of questions that can be answered using the information found in Part 1. To further assist the lead agency in completing Part 2, the form identifies the most relevant questions in Part 1 that will provide the information needed to answer the Part 2 question. When Part 2 is completed, the lead agency will have identified the relevant environmental areas that may be impacted by the proposed activity.

If the lead agency is a state agency **and** the action is in any Coastal Area, complete the Coastal Assessment Form before proceeding with this assessment.

Tips for completing Part 2:

- Review all of the information provided in Part 1.
- Review any application, maps, supporting materials and the Full EAF Workbook.
- Answer each of the 18 questions in Part 2.
- If you answer "**Yes**" to a numbered question, please complete all the questions that follow in that section.
- If you answer "**No**" to a numbered question, move on to the next numbered question.
- Check appropriate column to indicate the anticipated size of the impact.
- Proposed projects that would exceed a numeric threshold contained in a question should result in the reviewing agency checking the box "Moderate to large impact may occur."
- The reviewer is not expected to be an expert in environmental analysis.
- If you are not sure or undecided about the size of an impact, it may help to review the sub-questions for the general question and consult the workbook.
- When answering a question consider all components of the proposed activity, that is, the "whole action".
- Consider the possibility for long-term and cumulative impacts as well as direct impacts.
- Answer the question in a reasonable manner considering the scale and context of the project.

1. Impact on Land
Proposed action may involve construction on, or physical alteration of, the land surface of the proposed site. (See Part 1. D.1) ☑ NO ☐ YES
If "Yes", answer questions a - j. If "No", move on to Section 2.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may involve construction on land where depth to water table is less than 3 feet.	E2d	☐	☐
b. The proposed action may involve construction on slopes of 15% or greater.	E2f	☐	☐
c. The proposed action may involve construction on land where bedrock is exposed, or generally within 5 feet of existing ground surface.	E2a	☐	☐
d. The proposed action may involve the excavation and removal of more than 1,000 tons of natural material.	D2a	☐	☐
e. The proposed action may involve construction that continues for more than one year or in multiple phases.	D1e	☐	☐
f. The proposed action may result in increased erosion, whether from physical disturbance or vegetation removal (including from treatment by herbicides).	D2e, D2q	☐	☐
g. The proposed action is, or may be, located within a Coastal Erosion hazard area.	B1i	☐	☐
h. Other impacts: _____ _____		☐	☐

2. Impact on Geological Features

The proposed action may result in the modification or destruction of, or inhibit access to, any unique or unusual land forms on the site (e.g., cliffs, dunes, minerals, fossils, caves). (See Part 1. E.2.g) ☑NO ☐YES

If "Yes", answer questions a - c. If "No", move on to Section 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Identify the specific land form(s) attached: _____ _____	E2g	☐	☐
b. The proposed action may affect or is adjacent to a geological feature listed as a registered National Natural Landmark. Specific feature: _____	E3c	☐	☐
c. Other impacts: _____ _____		☐	☐

3. Impacts on Surface Water

The proposed action may affect one or more wetlands or other surface water bodies (e.g., streams, rivers, ponds or lakes). (See Part 1. D.2, E.2.h) ☑NO ☐YES

If "Yes", answer questions a - l. If "No", move on to Section 4.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may create a new water body.	D2b, D1h	☐	☐
b. The proposed action may result in an increase or decrease of over 10% or more than a 10 acre increase or decrease in the surface area of any body of water.	D2b	☐	☐
c. The proposed action may involve dredging more than 100 cubic yards of material from a wetland or water body.	D2a	☐	☐
d. The proposed action may involve construction within or adjoining a freshwater or tidal wetland, or in the bed or banks of any other water body.	E2h	☐	☐
e. The proposed action may create turbidity in a waterbody, either from upland erosion, runoff or by disturbing bottom sediments.	D2a, D2h	☐	☐
f. The proposed action may include construction of one or more intake(s) for withdrawal of water from surface water.	D2c	☐	☐
g. The proposed action may include construction of one or more outfall(s) for discharge of wastewater to surface water(s).	D2d	☐	☐
h. The proposed action may cause soil erosion, or otherwise create a source of stormwater discharge that may lead to siltation or other degradation of receiving water bodies.	D2e	☐	☐
i. The proposed action may affect the water quality of any water bodies within or downstream of the site of the proposed action.	E2h	☐	☐
j. The proposed action may involve the application of pesticides or herbicides in or around any water body.	D2q, E2h	☐	☐
k. The proposed action may require the construction of new, or expansion of existing, wastewater treatment facilities.	D1a, D2d	☐	☐

l. Other impacts: _____ _____		☐	☐

4. Impact on groundwater

The proposed action may result in new or additional use of ground water, or may have the potential to introduce contaminants to ground water or an aquifer. (See Part 1. D.2.a, D.2.c, D.2.d, D.2.p, D.2.q, D.2.t) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", move on to Section 5.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may require new water supply wells, or create additional demand on supplies from existing water supply wells.	D2c	☐	☐
b. Water supply demand from the proposed action may exceed safe and sustainable withdrawal capacity rate of the local supply or aquifer. Cite Source: _____	D2c	☐	☐
c. The proposed action may allow or result in residential uses in areas without water and sewer services.	D1a, D2c	☐	☐
d. The proposed action may include or require wastewater discharged to groundwater.	D2d, E2l	☐	☐
e. The proposed action may result in the construction of water supply wells in locations where groundwater is, or is suspected to be, contaminated.	D2c, E1f, E1g, E1h	☐	☐
f. The proposed action may require the bulk storage of petroleum or chemical products over ground water or an aquifer.	D2p, E2l	☐	☐
g. The proposed action may involve the commercial application of pesticides within 100 feet of potable drinking water or irrigation sources.	E2h, D2q, E2l, D2c	☐	☐
h. Other impacts: _____ _____		☐	☐

5. Impact on Flooding

The proposed action may result in development on lands subject to flooding. (See Part 1. E.2) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", move on to Section 6.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in development in a designated floodway.	E2i	☐	☐
b. The proposed action may result in development within a 100 year floodplain.	E2j	☐	☐
c. The proposed action may result in development within a 500 year floodplain.	E2k	☐	☐
d. The proposed action may result in, or require, modification of existing drainage patterns.	D2b, D2e	☐	☐
e. The proposed action may change flood water flows that contribute to flooding.	D2b, E2i, E2j, E2k	☐	☐
f. If there is a dam located on the site of the proposed action, is the dam in need of repair, or upgrade?	E1e	☐	☐

g. Other impacts: _____ _____		☐	☐

6. Impacts on Air

The proposed action may include a state regulated air emission source. (See Part 1. D.2.f., D.2.h, D.2.g) ☑NO ☐YES

If "Yes", answer questions a - f. If "No", move on to Section 7.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. If the proposed action requires federal or state air emission permits, the action may also emit one or more greenhouse gases at or above the following levels:			
i. More than 1000 tons/year of carbon dioxide (CO_2)	D2g	☐	☐
ii. More than 3.5 tons/year of nitrous oxide (N_2O)	D2g	☐	☐
iii. More than 1000 tons/year of carbon equivalent of perfluorocarbons (PFCs)	D2g	☐	☐
iv. More than .045 tons/year of sulfur hexafluoride (SF_6)	D2g	☐	☐
v. More than 1000 tons/year of carbon dioxide equivalent of hydrochloroflourocarbons (HFCs) emissions	D2g	☐	☐
vi. 43 tons/year or more of methane	D2h	☐	☐
b. The proposed action may generate 10 tons/year or more of any one designated hazardous air pollutant, or 25 tons/year or more of any combination of such hazardous air pollutants.	D2g	☐	☐
c. The proposed action may require a state air registration, or may produce an emissions rate of total contaminants that may exceed 5 lbs. per hour, or may include a heat source capable of producing more than 10 million BTU's per hour.	D2f, D2g	☐	☐
d. The proposed action may reach 50% of any of the thresholds in "a" through "c", above.	D2g	☐	☐
e. The proposed action may result in the combustion or thermal treatment of more than 1 ton of refuse per hour.	D2s	☐	☐
f. Other impacts: _____ _____		☐	☐

7. Impact on Plants and Animals

The proposed action may result in a loss of flora or fauna. (See Part 1. E.2. m.-q.) ☑NO ☐YES

If "Yes", answer questions a - j. If "No", move on to Section 8.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may cause reduction in population or loss of individuals of any threatened or endangered species, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2o	☐	☐
b. The proposed action may result in a reduction or degradation of any habitat used by any rare, threatened or endangered species, as listed by New York State or the federal government.	E2o	☐	☐
c. The proposed action may cause reduction in population, or loss of individuals, of any species of special concern or conservation need, as listed by New York State or the Federal government, that use the site, or are found on, over, or near the site.	E2p	☐	☐
d. The proposed action may result in a reduction or degradation of any habitat used by any species of special concern and conservation need, as listed by New York State or the Federal government.	E2p	☐	☐

e. The proposed action may diminish the capacity of a registered National Natural Landmark to support the biological community it was established to protect.	E3c	☐	☐
f. The proposed action may result in the removal of, or ground disturbance in, any portion of a designated significant natural community. Source: _____	E2n	☐	☐
g. The proposed action may substantially interfere with nesting/breeding, foraging, or over-wintering habitat for the predominant species that occupy or use the project site.	E2m	☐	☐
h. The proposed action requires the conversion of more than 10 acres of forest, grassland or any other regionally or locally important habitat. Habitat type & information source: _____ _____	E1b	☐	☐
i. Proposed action (commercial, industrial or recreational projects, only) involves use of herbicides or pesticides.	D2q	☐	☐
j. Other impacts: _____ _____		☐	☐

8. Impact on Agricultural Resources

The proposed action may impact agricultural resources. (See Part 1. E.3.a. and b.) ☑NO ☐YES

If "Yes", answer questions a - h. If "No", move on to Section 9.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may impact soil classified within soil group 1 through 4 of the NYS Land Classification System.	E2c, E3b	☐	☐
b. The proposed action may sever, cross or otherwise limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc).	E1a, E1b	☐	☐
c. The proposed action may result in the excavation or compaction of the soil profile of active agricultural land.	E3b	☐	☐
d. The proposed action may irreversibly convert agricultural land to non-agricultural uses, either more than 2.5 acres if located in an Agricultural District, or more than 10 acres if not within an Agricultural District.	E1b, E3a	☐	☐
e. The proposed action may disrupt or prevent installation of an agricultural land management system.	E1 a, E1b	☐	☐
f. The proposed action may result, directly or indirectly, in increased development potential or pressure on farmland.	C2c, C3, D2c, D2d	☐	☐
g. The proposed project is not consistent with the adopted municipal Farmland Protection Plan.	C2c	☐	☐
h. Other impacts: _____		☐	☐

9. Impact on Aesthetic Resources

The land use of the proposed action are obviously different from, or are in sharp contrast to, current land use patterns between the proposed project and a scenic or aesthetic resource. (Part 1. E.1.a, E.1.b, E.3.h.) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", go to Section 10.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Proposed action may be visible from any officially designated federal, state, or local scenic or aesthetic resource.	E3h	☐	☐
b. The proposed action may result in the obstruction, elimination or significant screening of one or more officially designated scenic views.	E3h, C2b	☐	☐
c. The proposed action may be visible from publicly accessible vantage points: i. Seasonally (e.g., screened by summer foliage, but visible during other seasons) ii. Year round	E3h	☐ ☐	☐ ☐
d. The situation or activity in which viewers are engaged while viewing the proposed action is: i. Routine travel by residents, including travel to and from work ii. Recreational or tourism based activities	E3h E2q, E1c	☐ ☐	☐ ☐
e. The proposed action may cause a diminishment of the public enjoyment and appreciation of the designated aesthetic resource.	E3h	☐	☐
f. There are similar projects visible within the following distance of the proposed project: 0-1/2 mile ½ -3 mile 3-5 mile 5+ mile	D1a, E1a, D1f, D1g	☐	☐
g. Other impacts: _____		☐	☐

10. Impact on Historic and Archeological Resources

The proposed action may occur in or adjacent to a historic or archaeological resource. (Part 1. E.3.e, f. and g.) ☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 11.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may occur wholly or partially within, or substantially contiguous to, any buildings, archaeological site or district which is listed on the National or State Register of Historical 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.	E3e	☐	☐
b. The proposed action may occur wholly or partially within, or substantially contiguous to, an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory.	E3f	☐	☐
c. The proposed action may occur wholly or partially within, or substantially contiguous to, an archaeological site not included on the NY SHPO inventory. Source: _____	E3g	☐	☐

d. Other impacts: _____ _____		☐	☐
e. If any of the above (a-d) are answered "Moderate to large impact may occur", continue with the following questions to help support conclusions in Part 3:			
i. The proposed action may result in the destruction or alteration of all or part of the site or property.	E3e, E3g, E3f	☐	☐
ii. The proposed action may result in the alteration of the property's setting or integrity.	E3e, E3f, E3g, E1a, E1b	☐	☐
iii. The proposed action may result in the introduction of visual elements which are out of character with the site or property, or may alter its setting.	E3e, E3f, E3g, E3h, C2, C3	☐	☐

11. Impact on Open Space and Recreation

The proposed action may result in a loss of recreational opportunities or a reduction of an open space resource as designated in any adopted municipal open space plan. (See Part 1. C.2.c, E.1.c., E.2.q.)

☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 12.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in an impairment of natural functions, or "ecosystem services", provided by an undeveloped area, including but not limited to stormwater storage, nutrient cycling, wildlife habitat.	D2e, E1b E2h, E2m, E2o, E2n, E2p	☐	☐
b. The proposed action may result in the loss of a current or future recreational resource.	C2a, E1c, C2c, E2q	☐	☐
c. The proposed action may eliminate open space or recreational resource in an area with few such resources.	C2a, C2c E1c, E2q	☐	☐
d. The proposed action may result in loss of an area now used informally by the community as an open space resource.	C2c, E1c	☐	☐
e. Other impacts: _____ _____		☐	☐

12. Impact on Critical Environmental Areas

The proposed action may be located within or adjacent to a critical environmental area (CEA). (See Part 1. E.3.d)

☑ NO ☐ YES

If "Yes", answer questions a - c. If "No", go to Section 13.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may result in a reduction in the quantity of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
b. The proposed action may result in a reduction in the quality of the resource or characteristic which was the basis for designation of the CEA.	E3d	☐	☐
c. Other impacts: _____ _____		☐	☐

13. Impact on Transportation

The proposed action may result in a change to existing transportation systems. (See Part 1. D.2.j) ☑ NO ☐ YES

If "Yes", answer questions a - f. If "No", go to Section 14.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. Projected traffic increase may exceed capacity of existing road network.	D2j	☐	☐
b. The proposed action may result in the construction of paved parking area for 500 or more vehicles.	D2j	☐	☐
c. The proposed action will degrade existing transit access.	D2j	☐	☐
d. The proposed action will degrade existing pedestrian or bicycle accommodations.	D2j	☐	☐
e. The proposed action may alter the present pattern of movement of people or goods.	D2j	☐	☐
f. Other impacts: _____ _____		☐	☐

14. Impact on Energy

The proposed action may cause an increase in the use of any form of energy. (See Part 1. D.2.k) ☑ NO ☐ YES

If "Yes", answer questions a - e. If "No", go to Section 15.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action will require a new, or an upgrade to an existing, substation.	D2k	☐	☐
b. The proposed action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two-family residences or to serve a commercial or industrial use.	D1f, D1q, D2k	☐	☐
c. The proposed action may utilize more than 2,500 MWhrs per year of electricity.	D2k	☐	☐
d. The proposed action may involve heating and/or cooling of more than 100,000 square feet of building area when completed.	D1g	☐	☐
e. Other Impacts: _____ _____			

15. Impact on Noise, Odor, and Light

The proposed action may result in an increase in noise, odors, or outdoor lighting. (See Part 1. D.2.m., n., and o.) ☐ NO ☑ YES

If "Yes", answer questions a - f. If "No", go to Section 16.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may produce sound above noise levels established by local regulation.	D2m	☑	☐
b. The proposed action may result in blasting within 1,500 feet of any residence, hospital, school, licensed day care center, or nursing home.	D2m, E1d	☑	☐
c. The proposed action may result in routine odors for more than one hour per day.	D2o	☑	☐

d. The proposed action may result in light shining onto adjoining properties.	D2n	☐	☑
e. The proposed action may result in lighting creating sky-glow brighter than existing area conditions.	D2n, E1a	☑	☐
f. Other impacts: _____ _____		☐	☐

16. Impact on Human Health

The proposed action may have an impact on human health from exposure to new or existing sources of contaminants. (See Part 1.D.2.q., E.1. d. f. g. and h.) ☑ NO ☐ YES

If "Yes", answer questions a - m. If "No", go to Section 17.

	Relevant Part I Question(s)	No,or small impact may occur	Moderate to large impact may occur
a. The proposed action is located within 1500 feet of a school, hospital, licensed day care center, group home, nursing home or retirement community.	E1d	☐	☐
b. The site of the proposed action is currently undergoing remediation.	E1g, E1h	☐	☐
c. There is a completed emergency spill remediation, or a completed environmental site remediation on, or adjacent to, the site of the proposed action.	E1g, E1h	☐	☐
d. The site of the action is subject to an institutional control limiting the use of the property (e.g., easement or deed restriction).	E1g, E1h	☐	☐
e. The proposed action may affect institutional control measures that were put in place to ensure that the site remains protective of the environment and human health.	E1g, E1h	☐	☐
f. The proposed action has adequate control measures in place to ensure that future generation, treatment and/or disposal of hazardous wastes will be protective of the environment and human health.	D2t	☐	☐
g. The proposed action involves construction or modification of a solid waste management facility.	D2q, E1f	☐	☐
h. The proposed action may result in the unearthing of solid or hazardous waste.	D2q, E1f	☐	☐
i. The proposed action may result in an increase in the rate of disposal, or processing, of solid waste.	D2r, D2s	☐	☐
j. The proposed action may result in excavation or other disturbance within 2000 feet of a site used for the disposal of solid or hazardous waste.	E1f, E1g E1h	☐	☐
k. The proposed action may result in the migration of explosive gases from a landfill site to adjacent off site structures.	E1f, E1g	☐	☐
l. The proposed action may result in the release of contaminated leachate from the project site.	D2s, E1f, D2r	☐	☐
m. Other impacts: _____ _____			

17. Consistency with Community Plans

The proposed action is not consistent with adopted land use plans. (See Part 1. C.1, C.2. and C.3.) ☑ NO ☐ YES

If "Yes", answer questions a - h. If "No", go to Section 18.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action's land use components may be different from, or in sharp contrast to, current surrounding land use pattern(s).	C2, C3, D1a E1a, E1b	☐	☐
b. The proposed action will cause the permanent population of the city, town or village in which the project is located to grow by more than 5%.	C2	☐	☐
c. The proposed action is inconsistent with local land use plans or zoning regulations.	C2, C2, C3	☐	☐
d. The proposed action is inconsistent with any County plans, or other regional land use plans.	C2, C2	☐	☐
e. The proposed action may cause a change in the density of development that is not supported by existing infrastructure or is distant from existing infrastructure.	C3, D1c, D1d, D1f, D1d, E1b	☐	☐
f. The proposed action is located in an area characterized by low density development that will require new or expanded public infrastructure.	C4, D2c, D2d D2j	☐	☐
g. The proposed action may induce secondary development impacts (e.g., residential or commercial development not included in the proposed action)	C2a	☐	☐
h. Other: _____ _____		☐	☐

18. Consistency with Community Character

The proposed project is inconsistent with the existing community character. (See Part 1. C.2, C.3, D.2, E.3) ☑ NO ☐ YES

If "Yes", answer questions a - g. If "No", proceed to Part 3.

	Relevant Part I Question(s)	No, or small impact may occur	Moderate to large impact may occur
a. The proposed action may replace or eliminate existing facilities, structures, or areas of historic importance to the community.	E3e, E3f, E3g	☐	☐
b. The proposed action may create a demand for additional community services (e.g. schools, police and fire)	C4	☐	☐
c. The proposed action may displace affordable or low-income housing in an area where there is a shortage of such housing.	C2, C3, D1f D1g, E1a	☐	☐
d. The proposed action may interfere with the use or enjoyment of officially recognized or designated public resources.	C2, E3	☐	☐
e. The proposed action is inconsistent with the predominant architectural scale and character.	C2, C3	☐	☐
f. Proposed action is inconsistent with the character of the existing natural landscape.	C2, C3 E1a, E1b E2g, E2h	☐	☐
g. Other impacts: _____ _____		☐	☐

PRINT FULL FORM

Agency Use Only [If Applicable]

Project:

Date:

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

Part 3 provides the reasons in support of the determination of significance. The lead agency must complete Part 3 for every question in Part 2 where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.

Based on the analysis in Part 3, the lead agency must decide whether to require an environmental impact statement to further assess the proposed action or whether available information is sufficient for the lead agency to conclude that the proposed action will not have a significant adverse environmental impact. By completing the certification on the next page, the lead agency can complete its determination of significance.

Reasons Supporting This Determination:

To complete this section:

- Identify the impact based on the Part 2 responses and describe its magnitude. Magnitude considers factors such as severity, size or extent of an impact.
- Assess the importance of the impact. Importance relates to the geographic scope, duration, probability of the impact occurring, number of people affected by the impact and any additional environmental consequences if the impact were to occur.
- The assessment should take into consideration any design element or project changes.
- Repeat this process for each Part 2 question where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.
- Provide the reason(s) why the impact may, or will not, result in a significant adverse environmental impact
- For Conditional Negative Declarations identify the specific condition(s) imposed that will modify the proposed action so that no significant adverse environmental impacts will result.
- Attach additional sheets, as needed.

The proposed community solar farm to be located at 176 Bare Hill Road may have significant adverse impacts due to possible glare impacts. During public comments the Board was provided a glare analysis demonstarting significant adverse impact. The Applicant provided a contradicting glare study that concluded there would not be glare impacts. With the contradicting analyses, the Town's experts did not come to a conclusive decision on impacts. Therefore, there may be significant adverse impacts relating to glare.

Determination of Significance - Type 1 and Unlisted Actions

SEQR Status: ☑ Type 1 ☐ Unlisted

Identify portions of EAF completed for this Project: ☑ Part 1 ☐ Part 2 ☐ Part 3

Upon review of the information recorded on this EAF, as noted, plus this additional support information
public comments, proposed application and supplement documents, communications from interested parties, and expert consultant memoranda

and considering both the magnitude and importance of each identified potential impact, it is the conclusion of the
Town of Malone Town Board as lead agency that:

☐ A. This project will result in no significant adverse impacts on the environment, and, therefore, an environmental impact statement need not be prepared. Accordingly, this negative declaration is issued.

☐ B. Although this project could have a significant adverse impact on the environment, that impact will be avoided or substantially mitigated because of the following conditions which will be required by the lead agency:

There will, therefore, be no significant adverse impacts from the project as conditioned, and, therefore, this conditioned negative declaration is issued. A conditioned negative declaration may be used only for UNLISTED actions (see 6 NYCRR 617.7(d)).

☑ C. This Project may result in one or more significant adverse impacts on the environment, and an environmental impact statement must be prepared to further assess the impact(s) and possible mitigation and to explore alternatives to avoid or reduce those impacts. Accordingly, this positive declaration is issued.

Name of Action: Malone Solar Project (176 Bare Hill Road)

Name of Lead Agency: Town of Malone Town Board

Name of Responsible Officer in Lead Agency: Andrea Stewart

Title of Responsible Officer: Town Supervisor

Signature of Responsible Officer in Lead Agency: Andrea Stewart Date: 11/16/2022

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person: Andrea Stewart

Address: 27 Airport Road, Malone, NY 12853

Telephone Number: 518-483-4740

E-mail: supervisor@malonetown.com

For Type 1 Actions and Conditioned Negative Declarations, a copy of this Notice is sent to:

Chief Executive Officer of the political subdivision in which the action will be principally located (e.g., Town / City / Village of)
Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

PRINT FULL FORM

Agency Use Only [If Applicable]

Project :

Date :

Full Environmental Assessment Form
Part 3 - Evaluation of the Magnitude and Importance of Project Impacts
and
Determination of Significance

Part 3 provides the reasons in support of the determination of significance. The lead agency must complete Part 3 for every question in Part 2 where the impact has been identified as potentially moderate to large or where there is a need to explain why a particular element of the proposed action will not, or may, result in a significant adverse environmental impact.

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SEQR Status: ☑ Type 1 ☐ Unlisted

Identify portions of EAF completed for this Project: ☑ Part 1 ☐ Part 2 ☐ Part 3

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Name of Action: Malone Solar Project (176 Bare Hill Road)

Name of Lead Agency: Town of Malone Town Board

Name of Responsible Officer in Lead Agency: Andrea Stewart

Title of Responsible Officer: Town Supervisor

Signature of Responsible Officer in Lead Agency: Date: 11/16/2022

Signature of Preparer (if different from Responsible Officer) Date:

For Further Information:

Contact Person: Andrea Stewart

Address: 27 Airport Road, Malone, NY 12853

Telephone Number: 518-483-4740

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Other involved agencies (if any)
Applicant (if any)
Environmental Notice Bulletin: http://www.dec.ny.gov/enb/enb.html

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Attachment B – Glint and Glare Analysis

TETRA TECH

MEMO

To:	Nautilus Solar
From:	Ali Flake, Tetra Tech, Inc.
Date:	May 2, 2023
Subject:	Glint and Glare Analysis of the Yellow 17 LLC, Bare Hill Road Solar Project in Malone, New York

At the request of Nautilus Solar (Nautilus), Tetra Tech, Inc. (Tetra Tech) conducted a glint and glare analysis of the proposed Yellow 17 LLC, Bare Hill Road Solar Project (Project) located at 176 Bare Hill Road in Malone, New York. The Project site occupies an approximately 8.6-acre portion of a larger approximately 50.42-acre parcel (the "Target Property"). The Project site consists of wooded land and is bounded by wooded land to the north; wooded land followed by Little Salmon River to the east; wooded land followed by Brand Road and G & E Extinguishers LLC to the south; and wooded land followed by New Energy and Bare Hill Road to the west.

Topography throughout the Project site varies, ranging from approximately 710 feet above mean sea level (amsl) in the southeastern portion of the Project site to approximately 660 feet amsl in the northwestern portion of the Project site. The Malone-Dufort Airport (MAL), located approximately 1.5 miles south-southwest of the Project, is the closest airport to the Project.

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 the Sandia glare analysis reports (Attachment A), and the Federal Aviation Administration (FAA) Notice Criteria Tool Report (Attachment B).

GLARE ANALYSIS METHOD

With growing numbers of solar energy systems being proposed and installed throughout the United States, the potential impact of glint (a momentary flash of bright light) and glare (a continuous source of bright light) from solar photovoltaic modules has come under scrutiny by aviation authorities. The FAA issued an Interim Policy (78 FR 63276) on October 23, 2013, describing methods for obtaining FAA review and approval of proposed solar arrays on airport property. These methods involved the use of the Sandia Laboratories Solar Glare Hazard Analysis Tool (SGHAT), a modeling/compliance analysis tool now licensed for public use within the ForgeSolar GlareGauge cloud software application. The SGHAT is considered to be an industry best practice for analysis of glare related to solar energy generating facilities and is required by the FAA under 78 FR 63276 to measure ocular impacts for solar projects located on federally obligated airports and is recommended for projects located off federally obligated airports.

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).

Based on this background, Tetra Tech has utilized the SGHAT tool as licensed for use in ForgeSolar GlareGauge cloud software application for modeling and analysis. ForgeSolar GlareGauge with SGHAT modeling 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 National Laboratory. 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.

The SGHAT was utilized to evaluate the potential for glint and glare when driving along 1) proximal segments of Bare Hill Road, Brand Road, Shears Road, Route 37 and a road that runs through the Bare Hill Correctional Facility; and 2) 17 nearby locations selected to represent observer views at neighboring properties.

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 Project would require formal filing to the FAA. Based on the results of the FAA Notice Criteria Tool, the Project does not exceed notice criteria; therefore, it is not required for the Project to be formally filed with the FAA Obstruction Evaluation Group. The FAA Notice Criteria Tool Report is included as Attachment B.

The panels to be used on the proposed Project are smooth glass surface material with an anti-reflection coating (ARC), which is noted in the glare analysis. Two analyses were performed to simulate single-axis tracking panels with a 52˚ maximum tracking angle. The analyses were conducted for a panel height of 4.5 feet above ground surface (centroid height) with applicable panel specifications. The panel orientation, location, and some specifications used in the analysis were provided by Cipriani Energy Group in the Preliminary Development Plans issued on September 4th, 2021. The analysis includes calculations to predict potential glare minutes at the following specified receptors:

- Viewing height of observer in standard first floor building at six feet above ground surface and standard commuter vehicle at five feet above ground surface (Analysis 1),
- Viewing height of observer in standard second floor building at 16 feet above ground surface, a guard tower at 30 feet above ground surface, and typical semi-tractor-trailer truck at nine feet above ground surface (Analysis 2),
- Two-mile flight path for Runway 5/23 and 14/32 at the Malone-Dufort Airport: Labeled “MAL-5,” “MAL -23,” “MAL -14,” and “MAL -32” (Analysis 3).

The GlareGauge model does not consider obstacles (either man-made or natural) between the defined PV arrays and the receptors. ForgeSolar is updating their glare analysis tool and has provided a tool to model obstructions. The “Obstruction” component simulates obstacles and blocking geometries that may mitigate PV glare. These obstructions are modeled as multi-line paths as parallelograms with vertical sides that extend upward from ground

elevation. These obstructions are assumed to be opaque, with incoming sunlight and emanating glare reflections completely mitigated if they intersect with the obstruction face. All three analyses used this tool to model areas of dense forest and tree lines found along each side of the Project site. A total of two obstructions were used to simulate the natural vegetation buffer, using an average height of 20 feet.

GLARE ANALYSIS RESULTS

Analyses 1 – 1st Story Receptors

Analysis 1 analyzed PV Array 1 for eleven first-story receptors (OP-1 through OP-11) and five proximal route receptors along Bare Hill Road, Brand Road, Shears Road, Route 37 and a road that runs through the Bare Hill Correctional Facility from the height of a standard commuter vehicle. The SGHAT GlareGauge modeled the results for the Project. No glare was predicted.

Analyses 2 – 2nd Story Receptors

Analysis 2 analyzed PV Array 1 for 12 second-story receptors (OP-1 through OP-6 and OP-12 through OP-17) and five proximal route receptors along Bare Hill Road, Brand Road, Shears Road, Route 37 and a road that runs through the Bare Hill Correctional Facility from the height of a typical tractor trailer. OP-7 through OP-11 were not included in Analysis 2 because they are single story structures. Second-story structures in the area appear limited; therefore, OP-12 through OP-17 were included in the analysis and represent guard towers at the Bare Hill Correctional Facility. The guard towers were analyzed at 30 feet above ground surface. The SGHAT GlareGauge modeled the results for the Project. No glare was predicted.

Analysis 3 – FAA 2-Mile Flight Paths

The SGHAT GlareGauge modeled the flight path results for the Project. For the flight path analyses, a typical 30-degree maximum downward viewing angle and 50-degree maximum azimuthal viewing angle from the aircraft cockpit were included where exact values could not be confirmed based on public information. The simulation predicted 5,043 minutes of annual green glare and 184 minutes of annual yellow glare along flight path MAL-23. The green glare occurs from late-February through late-April and mid-August through mid-October for less than 70 minutes between the hours of approximately 3:45 PM and 6:15 PM. The yellow glare occurs from late-March through mid-April and late-August through mid-September for less than 70 minutes between the hours of 5:00 PM and 6:00 PM.

A summary of the inputs for the 2-mile flight paths is outlined in Table 3.

Table 3: Analysis 3 Federal Aviation Administration Input Features

Flight Path/ATCT Name	Associated Airport	True Direction (degrees)	Threshold Crossing Height (feet)	Glide Path[1] (degrees)	Height Above Ground (feet)
MAL-23	Malone-Dufort Airport	217	50	3.0	-
MAL-5	Malone-Dufort Airport	37	50	3.15	-

MAL-32	Malone-Dufort Airport	307	50	3.0	-
MAL-14	Malone-Dufort Airport	127	50	3.0	-

1. Angle of descent along final approach flight path.

SUMMARY

The Project Site layout was modeled on SGHAT GlareGauge in order to evaluate the potential extent of any glint and glare the proposed Project may have upon nearby points of observation, vehicle routes, and airports. Three analyses were performed: the analyses represented a fixed-tilt system with 52˚ tilt and panel specifications of smooth glass with ARC. No glare was predicted in Analysis 1 or Analysis 2. Green glare and minimal yellow glare was predicted in Analysis 3 along flight path MAL-23. No red glare was identified. The FAA released a Final Policy (86 FR 25801) on May 11, 2021 with regards to solar facilities and glare. With this policy the FAA changed the stance on glare thresholds, allowing glare for final approach paths but not allowing glare to impact the air traffic control tower (ATCT) for Federally Obligated Airports. A review of FAA provided information for the Malone-Dufort Airport indicates that there is no ATCT for the airport. Therefore, an ATCT was not included in the analysis. Based on these standards, the Project would pass FAA regulations.

The GlareGauge model does not account for varying ambient conditions (i.e., cloudy days, precipitation), atmospheric attenuation, screening due to existing topography not located within the defined array layouts, or existing vegetation or structures (including fences or walls), nor does the tool allow proposed landscaping to be included. However, through the use of the obstruction feature, sections of existing natural screening through the existing forested areas buffering between the Project and non-participating property lines was modeled. In addition, based on the results of the FAA Notice Criteria Tool, the Project does not exceed notice criteria; therefore, it is not required for the Project to be formally filed with the FAA Obstruction Evaluation Group.

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.

Attachment A

Glare Analysis Reports

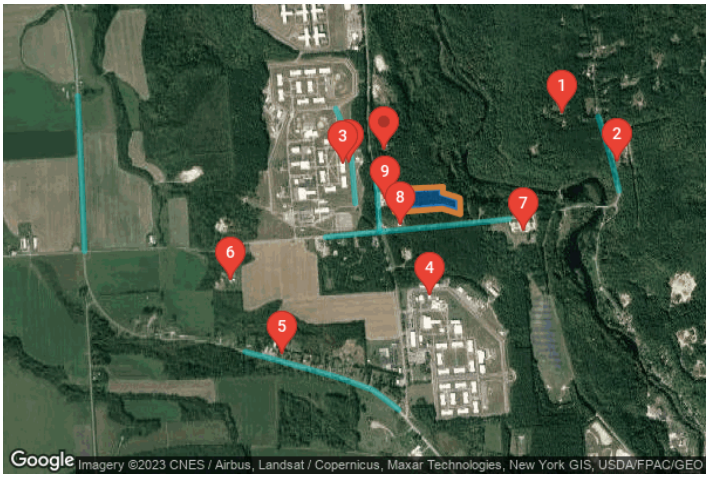
FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 1 - 1st Floor V4**

Client: Nautilus

Created 28 Apr, 2023
Updated 28 Apr, 2023
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 89398.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

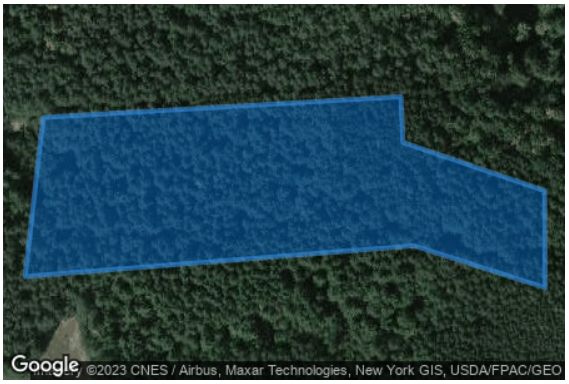
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
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	44.877556	-74.317932	663.10	4.50	667.60
2	44.877681	-74.314858	700.30	4.50	704.80
3	44.877404	-74.314842	709.70	4.50	714.20
4	44.877111	-74.313624	669.80	4.50	674.30
5	44.876522	-74.313619	706.70	4.50	711.20
6	44.876776	-74.314745	700.70	4.50	705.20
7	44.876590	-74.318087	699.00	4.50	703.50

Route Receptors

Name: Bare Hill Correctional Facility
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.881806	-74.322556	615.80	5.00	620.80
2	44.880209	-74.321531	645.10	5.00	650.10
3	44.878579	-74.321317	655.20	5.00	660.20
4	44.876912	-74.321121	638.70	5.00	643.70

Name: Bare Hill Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875472	-74.319340	648.30	5.00	653.30
2	44.876578	-74.319442	644.30	5.00	649.30
3	44.877521	-74.319538	650.60	5.00	655.60
4	44.878635	-74.319705	663.90	5.00	668.90

Name: Brand Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875161	-74.323286	664.50	5.00	669.50
2	44.875423	-74.319386	649.50	5.00	654.50
3	44.875663	-74.315782	639.90	5.00	644.90
4	44.875853	-74.312892	638.40	5.00	643.40
5	44.876091	-74.309858	633.90	5.00	638.90

Name: Route 37 - North
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.882467	-74.341449	514.40	5.00	519.40
2	44.880277	-74.341299	521.80	5.00	526.80
3	44.877449	-74.341128	551.10	5.00	556.10
4	44.874438	-74.340956	572.10	5.00	577.10

Name: Route 37 - South
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.869223	-74.329176	635.90	5.00	640.90
2	44.868569	-74.325742	666.80	5.00	671.80
3	44.867900	-74.322416	670.90	5.00	675.90
4	44.867246	-74.319820	667.80	5.00	672.80
5	44.866227	-74.317953	661.10	5.00	666.10

Name: Shears Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.877569	-74.301794	636.90	5.00	641.90
2	44.878907	-74.302270	669.70	5.00	674.70
3	44.880255	-74.302814	668.10	5.00	673.10
4	44.881389	-74.303316	652.00	5.00	657.00

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.881545	-74.305966	652.00	6.00
OP 2	2	44.879060	-74.301877	675.00	6.00
OP 3	3	44.878947	-74.322005	647.40	6.00
OP 4	4	44.872091	-74.315611	632.60	6.00
OP 5	5	44.869046	-74.326489	665.80	6.00
OP 6	6	44.872908	-74.330228	652.80	6.00
OP 7	7	44.875483	-74.308749	631.40	6.00
OP 8	8	44.875750	-74.317814	639.80	6.00
OP 9	9	44.877103	-74.318920	653.10	6.00
OP 10	10	44.879645	-74.319013	666.70	6.00
OP 11	11	44.879011	-74.321556	655.00	6.00

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.90
2	44.877646	-74.318053	670.20
3	44.877766	-74.314692	678.50
4	44.877451	-74.314705	705.20
5	44.877219	-74.313603	650.10

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0

PV array 1 and Route: Bare Hill Correctional Facility

No glare found

PV array 1 and Route: Bare Hill Road

No glare found

PV array 1 and Route: Brand Road

No glare found

PV array 1 and Route: Route 37 - North

No glare found

PV array 1 and Route: Route 37 - South

No glare found

PV array 1 and Route: Shears Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

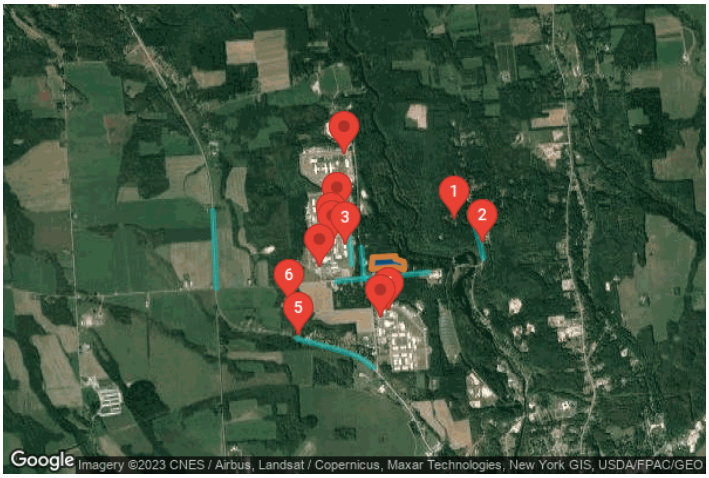
FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 2 - 2nd Floor V5**

Client: Nautilus

Created 28 Apr, 2023
Updated 28 Apr, 2023
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 89401.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
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	44.877549	-74.317926	662.20	4.50	666.70
2	44.877675	-74.314857	701.20	4.50	705.70
3	44.877397	-74.314841	709.70	4.50	714.20
4	44.877105	-74.313607	670.10	4.50	674.60
5	44.876527	-74.313618	706.30	4.50	710.80
6	44.876774	-74.314739	700.70	4.50	705.20
7	44.876626	-74.318076	698.20	4.50	702.70

Route Receptors

Name: Bare Hill Correctional Facility
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.881806	-74.322556	615.80	9.00	624.80
2	44.880209	-74.321531	645.10	9.00	654.10
3	44.878579	-74.321317	655.20	9.00	664.20
4	44.876912	-74.321121	638.70	9.00	647.70

Name: Bare Hill Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875472	-74.319340	648.30	9.00	657.30
2	44.876578	-74.319442	644.30	9.00	653.30
3	44.877521	-74.319538	650.60	9.00	659.60
4	44.878635	-74.319705	663.90	9.00	672.90

Name: Brand Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.875161	-74.323286	664.50	9.00	673.50
2	44.875423	-74.319386	649.50	9.00	658.50
3	44.875663	-74.315782	639.90	9.00	648.90
4	44.875853	-74.312892	638.40	9.00	647.40
5	44.876091	-74.309858	633.90	9.00	642.90

Name: Route 37 - North
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.882467	-74.341449	514.40	9.00	523.40
2	44.880277	-74.341299	521.80	9.00	530.80
3	44.877449	-74.341128	551.10	9.00	560.10
4	44.874438	-74.340956	572.10	9.00	581.10

Name: Route 37 - South
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.869223	-74.329176	635.90	9.00	644.90
2	44.868569	-74.325742	666.80	9.00	675.80
3	44.867900	-74.322416	670.90	9.00	679.90
4	44.867246	-74.319820	667.80	9.00	676.80
5	44.866227	-74.317953	661.10	9.00	670.10

Name: Shears Road
Path type: Two-way
Observer view angle: 50.0°

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	44.877569	-74.301794	636.90	9.00	645.90
2	44.878907	-74.302270	669.70	9.00	678.70
3	44.880255	-74.302814	668.10	9.00	677.10
4	44.881389	-74.303316	652.00	9.00	661.00

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	44.881535	-74.305969	652.00	16.00
OP 2	2	44.879072	-74.301909	674.60	16.00
OP 3	3	44.878849	-74.321989	647.60	16.00
OP 4	4	44.872091	-74.315579	663.40	16.00
OP 5	5	44.869532	-74.328882	631.50	16.00
OP 6	6	44.872919	-74.330261	652.20	16.00
OP 12	12	44.881897	-74.323184	615.20	30.00
OP 13	13	44.876533	-74.325807	657.20	30.00
OP 14	14	44.871377	-74.316808	672.30	30.00
OP 15	15	44.888254	-74.322128	635.40	30.00
OP 16	16	44.878931	-74.323917	634.10	30.00
OP 17	17	44.879782	-74.324016	625.10	30.00

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.90
2	44.877646	-74.318053	670.20
3	44.877766	-74.314692	678.50
4	44.877451	-74.314705	705.20
5	44.877219	-74.313603	650.10

Name: Obs 2
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
Bare Hill Correctional Facility	0	0.0	0	0.0
Bare Hill Road	0	0.0	0	0.0
Brand Road	0	0.0	0	0.0
Route 37 - North	0	0.0	0	0.0
Route 37 - South	0	0.0	0	0.0
Shears Road	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0
OP 17	0	0.0	0	0.0

PV array 1 and Route: Bare Hill Correctional Facility

No glare found

PV array 1 and Route: Bare Hill Road

No glare found

PV array 1 and Route: Brand Road

No glare found

PV array 1 and Route: Route 37 - North

No glare found

PV array 1 and Route: Route 37 - South

No glare found

PV array 1 and Route: Shears Road

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

PV array 1 and OP 17

No glare found

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.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 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. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
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.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
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.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

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

FORGESOLAR GLARE ANALYSIS

Project: **Yellow 17, LLC Malone Solar Project**
Site configuration: **Analysis 3 - FAA V4**

Client: Nautilus

Created 28 Apr, 2023
Updated 28 Apr, 2023
Time-step 1 minute
Timezone offset UTC-5
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 1 MW to 5 MW
Site ID 89399.15178

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2

Summary of Results

Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	5,043	84.0	184	3.1	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-14	0	0.0	0	0.0
MAL-23	5,043	84.0	184	3.1
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: Shade-slope
Tracking axis orientation: 180.0°
Max tracking angle: 52.0°
Resting angle: 5.0°
Ground Coverage Ratio: 0.5
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	44.877549	-74.317926	662.20	4.50	666.70
2	44.877675	-74.314857	701.20	4.50	705.70
3	44.877397	-74.314841	709.70	4.50	714.20
4	44.877105	-74.313607	670.10	4.50	674.60
5	44.876527	-74.313618	706.30	4.50	710.80
6	44.876774	-74.314739	700.70	4.50	705.20
7	44.876626	-74.318076	698.20	4.50	702.70

Flight Path Receptors

Name: MAL-14
Description: None
Threshold height: 50 ft
Direction: 127.0°
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	44.855822	-74.330108	757.00	50.00	807.00
Two-mile	44.873222	-74.362719	496.50	864.00	1360.50

Name: MAL-23
Description: None
Threshold height: 50 ft
Direction: 217.0°
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	44.857883	-74.327465	753.80	50.00	803.80
Two-mile	44.880974	-74.302890	666.30	691.00	1357.30

Name: MAL-32
Description: None
Threshold height: 50 ft
Direction: 307.0°
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	44.851025	-74.321121	787.20	50.00	837.20
Two-mile	44.833625	-74.288513	800.20	590.40	1390.60

Name: MAL-5
Description: None
Threshold height: 50 ft
Direction: 37.0°
Glide slope: 3.15°
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	44.849861	-74.335929	767.80	50.00	817.80
Two-mile	44.826770	-74.360501	936.70	462.20	1398.90

Obstruction Components

Name: Obs 1
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876458	-74.318243	695.90
2	44.877646	-74.318053	670.20
3	44.877766	-74.314692	678.50
4	44.877451	-74.314705	705.20
5	44.877219	-74.313603	650.10

Name: Obs 3
Top height: 20.0 ft

Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)
1	44.876444	-74.318089	691.50
2	44.876630	-74.314742	699.90
3	44.876339	-74.313420	707.30
4	44.877170	-74.313444	637.30

Glare Analysis Results

Summary of Results Glare with potential for temporary after-image predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	5,043	84.0	184	3.1	-

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
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MAL-23	5,043	84.0	184	3.1
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

PV: PV array 1 potential temporary after-image

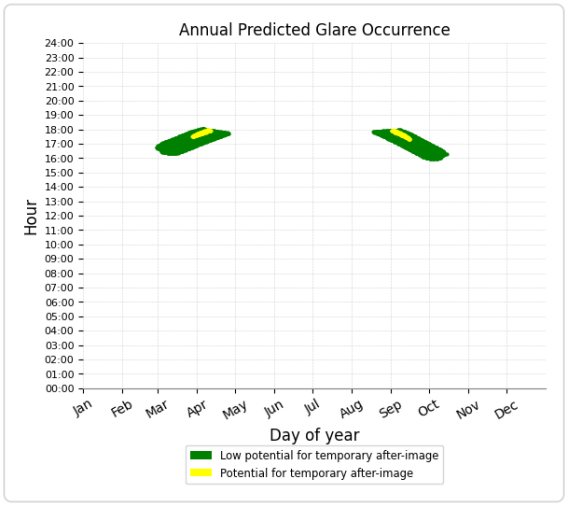
Receptor results ordered by category of glare

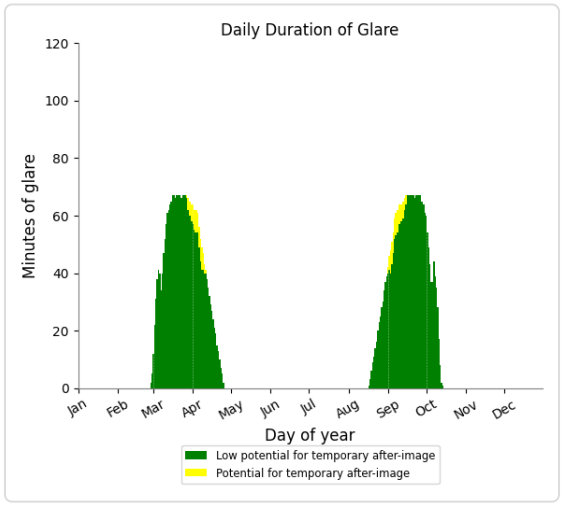
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
MAL-23	5,043	84.0	184	3.1
MAL-14	0	0.0	0	0.0
MAL-32	0	0.0	0	0.0
MAL-5	0	0.0	0	0.0

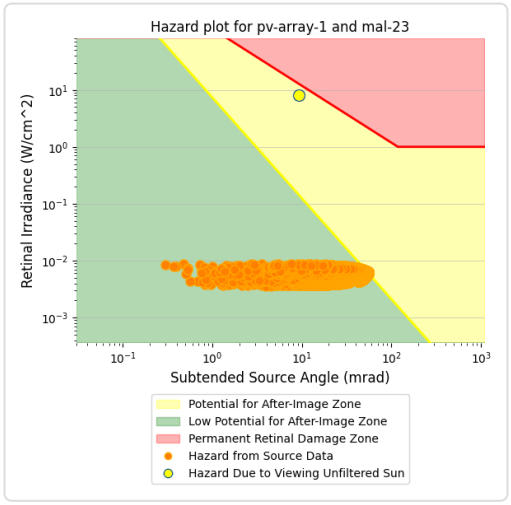
PV array 1 and FP: MAL-23

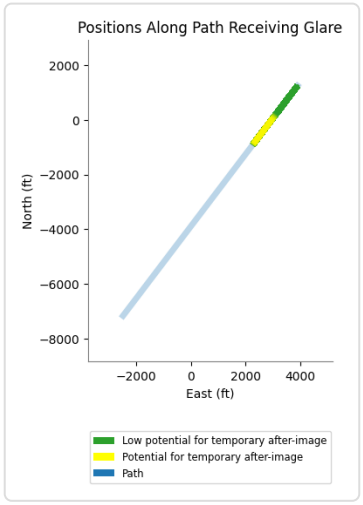
Yellow glare: 184 min.

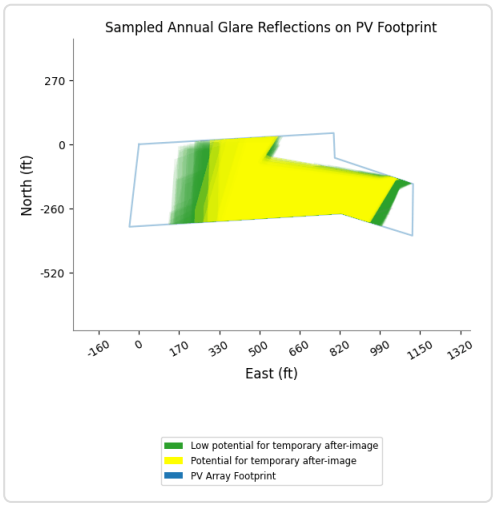
Green glare: 5,043 min.

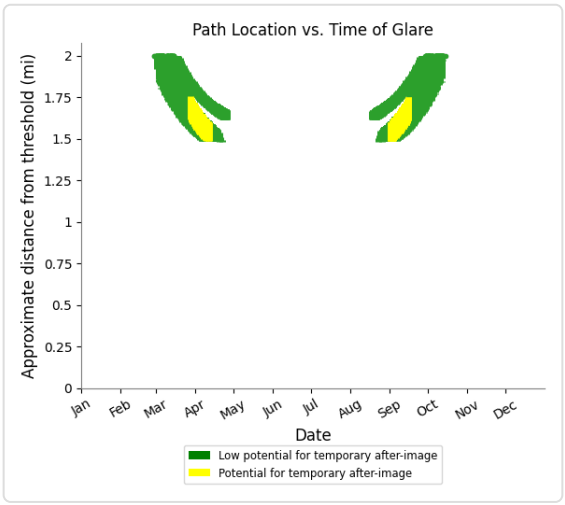












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No glare found

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No glare found

PV array 1 and FP: MAL-5

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- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
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Attachment B

FAA Notice Criteria Tool

Federal Aviation Administration

« OE/AAA

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

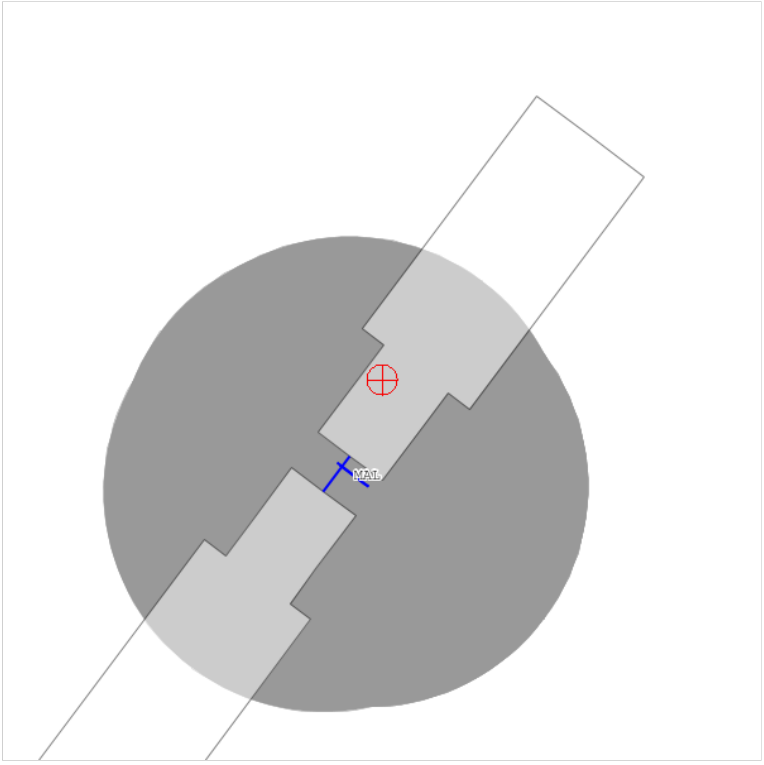
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

* **Structure Type:**	SOLAR | Solar Panel Please select structure type and complete location point information.
Latitude:	44 Deg 52 M 37.91 S N
Longitude:	74 Deg 18 M 56.96 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	700 (nearest foot)
Structure Height :	9 (nearest foot)
Is structure on airport:	(•) No ( ) Yes

Results

You do not exceed Notice Criteria.



Attachment C – Memorandum of Lease

Land Lease Option and Lease Agreement (Solar Farm)

Between:

Kristopher Pirie, LANDLORD and

Yellow 5 LLC, TENANT

Table of Contents

This Land Lease Option and Lease Agreement (the "Agreement") is made this _____ day of_____, 20_____, by and between Kristopher Pirie having an address of 21 Washington St Apt.4, Malone, NY 12953, USA ("Landlord"), and Yellow 5 LLC (or assigns), a New York limited liability company, having offices at 125 Wolf Rd, Suite 312,Colonie, NY 12205 ("Tenant").

1. The Option.

1.1. For the sum of $2,500 (the "Option Fee") to be paid to Landlord by Tenant upon execution of this Agreement and in consideration of the mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency thereof is hereby acknowledged, Landlord hereby grants to Tenant the exclusive and irrevocable right and option to lease the Leased Premises (as defined below) on the terms and conditions set forth below (the "Option").

1.2. The term of the Option shall commence on the date hereof and shall continue in full force and effect for twelve (12) months from the date of this agreement (the "Initial Option Period"). If Tenant desires to exercise the Option, it shall do so by written notice thereof to Landlord within the Option Period (the "Option Notice"), time being of the essence with respect to the giving of the Option Notice. In the event that Tenant fails to deliver the Option Notice to Landlord during the Option Period in accordance with the terms hereof, the Option set forth herein shall terminate and be of no further force or effect and Tenant shall have no further right to lease the Leased Premises.

1.3. Extension Option Periods. The option period may be extended by Tenant for two (2) six (6) month periods (the "Extension Option Period(s)") upon Tenant's written notice to Landlord before the end of the Initial Option Period or prior Extension Option Period, as applicable, together with payment of One Thousand Dollars ($1,000) per each Option Extension (the Initial Option Period and Extension Option Periods are hereinafter collectively referred to as the "Option Period").

1.4. Exercise of the Option. No later than 5:00 p.m. on the last day of the Option Period, Tenant shall have the right, in its sole and absolute discretion, to exercise the Option by giving Landlord written notice of such exercise in accordance with the Notice provision set forth in Section 15.

1.5. During the Option Period, Landlord shall permit Tenant and its authorized agents and representatives to enter upon the Landlord Property (as defined below) at reasonable times during normal business hours to inspect the Landlord Property and perform surveys. Tenant shall notify Landlord of its intention, or the intention of its agents or representatives, to enter the Landlord Property at least twenty-four (24) hours prior to such intended entry. Tenant shall bear the cost of all inspections.

1.6. Upon Tenant's exercise of the Option, the terms of this Agreement relating to the lease of the Leased Premises (the "Lease") that follows shall take effect. The date that the Option Notice is delivered shall be considered the "Lease Commencement Date".

1.7. In the event Landlord fails to perform its obligations under this Agreement for any reason other than Tenant's breach, Tenant may pursue all remedies available at law and in equity. Landlord hereby acknowledges that Tenant will incur significant expenses in reliance on this Agreement.

2. Leased Premises.

2.1. Upon Tenant's exercise of the Option, Landlord shall lease to Tenant an 8 to 11 acre parcel of real property, which is all or a portion of the real property located at Bare Hill Rd, Malone, NY, County of Franklin, tax parcel 84.-1-73.100 which property is more particularly described in Exhibit A-1 attached hereto ("Landlord Property"), together with ingress, egress, and utility easements providing access to and from a public road and the point of utility interconnection, as described in Sections 5 and 6 below (that portion of the Landlord Property being referred to herein as the "Leased Premises"). A legal description of the Leased Premises is attached hereto and incorporated herein as Exhibit A-2. Landlord grants to Tenant the right to survey the Leased Premises at Tenant's cost, and the legal description of the Leased Premises, including any access or utility easements, provided in the survey shall then become Exhibit B, which shall be attached hereto and made a part hereof. In the event of any discrepancy between the description of the property contained herein and the survey, the survey shall control.

3. Term.

The lease term (collectively, the "Term") shall be as follows:

3.1. The Primary Term shall be for twenty-five (25) years commencing on the Lease Commencement Date.

3.2. Tenant shall have the option and right to elect to extend this lease for up to two (2) extensions of five (5) years each (each such extension referred to as a "Renewal Term", or collectively as the "Renewal Terms"). Tenant shall give Landlord written notice of its election to extend the Lease on or before the commencement of the twenty fifth (25th) year of the Primary Term, or no later than 60 days prior to the end of the then-current Renewal Term, as appropriate.

3.3. A final term commencing upon expiration of the Primary Term, or expiration of the last Renewal Term, as appropriate, to allow for Tenant's decommissioning and removal of the Solar Farm (as defined below) (the "Final Term"). The Final Term shall last no longer than six (6) months, unless extended per mutual written agreement of Tenant and Landlord.

4. Rent.

In consideration for Landlord leasing the Leased Premises to Tenant, Tenant agrees to pay during the Term to Landlord in lawful money of the United States of America, basic rent as follows (collectively, the "Basic Rent"):

4.1. Primary Term Rent. Commencing on the Lease Commencement Date and continuing on each anniversary thereafter, with the last payment prorated based upon the number of days remaining in the Primary Term, the annual rent of $1,250 per acre payable to Landlord, in advance, in annual installments. The Primary Term Rent amount shall be increased by 1.5% annually after year one (1).

4.2. Renewal Term. Rent. Beginning on the first (1st) day of the first (1st) or second (2nd) Renewal Term the annual Rent for the first year of such renewal term shall be equal to 101.5% of the rent amount for the final year of the previous Term. All such rent during Renewal Term(s), if applicable, shall be paid in equal annual installments, in advance and shall increase at a rate of 1.5% per year.

4.3. Final Term Rent. Commencing on the first day of the Final Term as defined herein and expiring on the last day of the Final Term, monthly rent equal to the most recent rent annual amount divided by twelve (12) shall be paid ("Final Term Rent"), payable monthly to Landlord, in arrears, with the last monthly installment thereof pro-rated to the last day of the Final Term.

4.4. Any payment due under this Lease shall be timely if it is made on the due date or within thirty (30) calendar days thereof.

5. Improvements of Leased Premises.

5.1. Components. Tenant shall construct a solar farm (the "Solar Farm") at its sole expense. The Solar Farm shall consist of racking and foundations; inverters and transformers; necessary electrical interconnections and all improvements and connections required to transfer and deliver generation offsite, including three (3) phase extensions and power box(es); security fencing, as required, and gating, enclosing the Leased Premises; safety signage and solar photovoltaic ("PV") panels (collectively the "Site Improvements and Infrastructure"). Landlord has no obligation to make improvements on the Leased Premises or Landlord Property to accommodate the Solar Farm.

5.2. Preliminary Site Plan, Construction Plans. For any new construction on the Leased Premises, such construction shall be designed and built to the minimum standards for any county, state and federal codes and requirements in effect at the time of construction, including without limitation, the applicable building and fire codes.

5.3. Signage. Tenant shall have the right to place one or more signs advertising the Solar Farm provided that, prior to putting up any such signage, Tenant has obtained all required sign permits from the local governing authority,

5.4. Fencing. If and as required by the authorities having jurisdiction, Tenant shall maintain a fence around the Solar Farm for the duration of the Primary Term and any extensions thereto.

5.5. Utility Easement. Landlord agrees to execute any easement agreement required by the utility for interconnection in the form required by the utility.

6. **Ingress, Egress, Utility and Solar Easement.**

The rights granted to Tenant in this Lease include, without limitation the following easements and related rights:

6.1. the exclusive right to erect, construct, reconstruct, replace, relocate, remove, operate, maintain and use the following from time to time, on, under, over and across the Leased Premises, in connection with Solar Farm: (a) a line of utility poles, with such wires and cables as from time to time are suspended therefrom, and/or underground wires and cables, for the transmission of electrical energy and/or for communication purposes, and all necessary and proper foundations, footings, crossarms and other appliances and fixtures for use in connection with said utility poles, wires and cables (collectively "Transmission Facilities"); (b) facilities consisting of one or more substations for electrical collection, to step up the voltage, interconnect to transmission line or lines, and meter electricity, together with the right to perform all other ancillary activities normally associated with such a facility as may be necessary or appropriate to service Solar Farm, regardless where located (collectively "Interconnection Facilities", which collectively with the Transmission Facilities and improvements installed in connection with the Solar Farm, collectively constitute the "Solar Improvements"); and (c) with all necessary easements therefor;

6.2. an easement and right over and across the Landlord Property for any audio, visual, view, light, shadow, noise, vibration, electromagnetic or other effect of any kind or nature whatsoever resulting, directly or indirectly, from the Solar Farm, including but not limited to rights to cast shadows and reflect glare onto all of Landlord's property including any adjoining property, from the Solar Farm and/or any and all other related facilities, wherever located;

6.3. an exclusive easement and right to capture, use and convert sunlight and related solar resources on an unobstructed basis over and across the Landlord Property; any obstruction to the receipt of and access to sunlight throughout the entire area of the Leased Premises is prohibited;

6.4. an access easement over and across the Landlord Property for ingress and egress to the Leased Premises, to and from a public road, and a construction and utility easement over Landlord Property adjacent to the Leased Premises for construction and maintenance of the Solar Improvements.

6.5. a non-exclusive right for the installation, use, repair, replacement and removal of Transmission Facilities across the Landlord Property;

6.6. a non-exclusive right for the installation, use, operation, maintenance, repair, replacement and removal of Interconnection Facilities across the Landlord Property;

6.7. an easement and right on the Landlord Property to prevent measurable diminishment in output due to obstruction of the sunlight across the Leased Premises including but not

limited to an easement right to trim, cut down and remove all trees (whether natural or cultivated), rocks, brush, vegetation and fire and electrical hazards now or hereafter existing on the Landlord Property which might obstruct receipt of or access to sunlight throughout the Leased Premises or interfere with or endanger the Solar Farm or Tenant's operations, and dispose of such items in its sole discretion;

6.8. the right of subjacent and lateral support on the Landlord Property to whatever is necessary for the operation and maintenance of the Solar Farm, including, without limitation, guy wires and supports; and

6.9. the right to undertake any such purposes or other activities, whether accomplished by Tenant or a third party authorized by Tenant, that Tenant determines are necessary, useful or appropriate to accomplish any of the purposes or uses set forth in this Agreement or that are compatible with such purposes or uses.

The easement rights granted by Landlord under this Agreement constitute **EASEMENTS IN GROSS**, personal to and for the benefit of Tenant, its successors and assigns, as owner of such easements, and the parties expressly agree that such easement rights shall be transferable in accordance with the assignment provisions of this Agreement. The parties expressly intend for all easement rights herein to be, and for this Agreement to create, **EASEMENTS IN GROSS** in Tenant, and neither such easements nor this Agreement shall be appurtenant to any other property or interest. Notwithstanding the foregoing, if the Landlord conveys the Landlord Property during the Term, Landlord agrees that any granting document, including the deed, shall include within the property description, the existence of the easements contained herein.

The term of the easements described in this Section 6 shall commence upon the Lease Commencement Date of this Lease and shall continue until the last to occur of (i) expiration of the Term, or (ii) removal by Tenant of all of its property from the Leased Premises after expiration of the Term. Additional details concerning the location and configuration of the easement shall be set forth in a recordable instrument prepared by Tenant, which Landlord agrees to execute, and have notarized, within ten (10) days of any Tenant request therefor made from time to time. In addition, at Tenant's request and expense, the easements described in this Section 6 may be set forth in a separate standalone easement agreement, which Landlord and Tenant agree to execute and which Tenant shall have recorded as an encumbrance on the property of Landlord and binding upon all subsequent owners, successors, and assigns.

7. Maintenance and Security.

7.1. Maintenance. The Solar Farm shall be maintained by Tenant at its own expense. Tenant shall maintain, protect and preserve the Solar Farm in a safe, neat and attractive condition and in good and serviceable repair.

7.2. Snow Removal. Landlord does not provide snow removal service on the access road serving the Leased Premises. Snow removal on the Leased Premises, if needed, shall be the responsibility of Tenant as necessitated by Tenant's operation of the Solar Farm. Any snow removal activities will minimize any damage to the existing ground surface of the site.

Tenant will promptly repair any damage caused by its snow removal activities. Tenant will only use the existing or new access roads via the access easement for vehicle access to the site.

7.3. Security. Security for the Solar Farm shall be the responsibility of Tenant. Nothing in this Agreement shall be construed to impose security obligations upon Landlord, Landlord shall not be liable for any loss or damages suffered by Tenant or third party solar panel owners due to Tenant's and such third parties use and occupancy of and activities on the Leased Premises.

8. Title and Quiet Possession.

Landlord represents and covenants that Landlord owns the Leased Premises and the Landlord Property in fee simple, free and clear of all liens, encumbrances, and restrictions of every kind and nature, except for those that currently appear in the recorded chain of title and are reported as exceptions on the commitment for title insurance that Tenant may obtain. Tenant shall have the quiet use and enjoyment of the Leased Premises and the easements described herein in accordance with and subject to the terms of this Agreement, without any manner of hindrance, interference, or molestation of any kind by Landlord or any person claiming through Landlord.

9. Title to Site Improvements and Infrastructure.

9.1. Site Improvements and Infrastructure. Title to the Site Improvements and Infrastructure remains with Tenant at all times during the Term. Upon expiration of this Agreement, title to the Site Improvements and Infrastructure shall be designated in accordance with Section 24 below.

9.2. Repair of Landlord Property. In the event that Tenant causes any damage to the Landlord Property, including without limitation any above-ground or underground utilities, in the course of any activity undertaken by Tenant under this Agreement, Tenant shall facilitate the repair of such damage to return such property of Landlord to substantially the same condition as it existed prior to such damage, at Tenant's sole expense.

10. Uses and Operations.

Tenant shall construct, operate and maintain the Solar Farm as a renewable energy generation system. The Tenant's uses under this Lease include the construction, maintenance, operation, use, repair, replacement and removal of the Solar Farm, and activities related thereto.

11. Subordination, Attornment, and Non-disturbance.

Tenant agrees that, if requested by Landlord, this Lease shall be subject and subordinate to any mortgages or deeds of trust now or hereafter placed upon the Leased Premises and to all modifications thereto, and to all present and future advances made with respect to any such

mortgage or deed of trust, provided that Landlord first delivers to Tenant a Subordination and Non-Disturbance Agreement (defined below) from the holder of such lien or mortgage, and Landlord shall obtain the same from the holder of such lien or mortgage. Landlord agrees that any right, title or interest created by Landlord from and after the date hereof in favor of or granted to any third party shall be subject to (i) this Agreement and all of Tenant's rights, title and interests created in this Agreement, and (ii) any and all documents executed or to be executed by and between Tenant and Landlord in connection with this Agreement. A "Subordination and Non-Disturbance Agreement" shall mean an agreement, in form reasonably acceptable to Tenant, between Tenant, Landlord and the holder of a lien or a mortgage that provides that the holder of such lien or a mortgage (i) agrees not to disturb Tenant's possession or rights under this Agreement, (ii) agrees to provide notice of defaults under the lien or a mortgage documents to Tenant and agrees to allow Tenant and its lenders a reasonable period of time following such notice to cure such defaults on behalf of Landlord, and (iii) agrees to comply with such other requirements as may be reasonably required by Tenant or its lenders to ensure the interests of Tenant or its lenders are not interfered with. Within ten (10) business days of Tenant's Option Notice, or within ten (10) business days of the date of creation of any future mortgages or deeds of trust, Landlord shall request Landlord's secured lenders to provide an Subordination and Non-Disturbance Agreement in form reasonably acceptable to Tenant, executed and acknowledged by Landlord and the holder of any mortgage to which this Lease is, or shall become, subordinate.

12. Mortgagee Protection.

Any Mortgagee of the Leased Premises, or any portion of Leased Premises, shall, for so long as its Mortgage is in existence and until the lien thereof has been extinguished, be entitled to the following protections, upon delivery to Landlord of notice of its name and address:

12.1. Mortgagee's Right to Possession, Right to Acquire and Right to Assign. A Mortgagee shall have the absolute right: (a) to assign its security interest; (b) to enforce its lien and acquire title to the leasehold estate by any lawful means; (c) to take possession of and operate the Leased Premises or any portion thereof and to perform all obligations to be performed by Tenant under this Agreement, or to cause a receiver to be appointed to do so; and (d) to acquire the leasehold estate by foreclosure or by an assignment in lieu of foreclosure and thereafter to assign or transfer the leasehold estate to a third party. Landlord's consent shall not be required for (a) the pledge, mortgage or hypothecation of Tenant's rights in the Agreement, the Solar Improvements, or Tenant, or (b) the acquisition of Tenant's leasehold estate by a third party who acquires the same by foreclosure or assignment in lieu of foreclosure. As used in this Lease, (i) the term "Mortgagee" means any financial institution or other person or entity that from time to time provides secured financing for or otherwise encumbers some or all of Tenant's interest in the Agreement or Solar Farm, collectively with any security or collateral agent, indenture trustee, loan trustee or participating or syndicated lender involved in whole or in part in such financing, and their respective representatives, successors and assigns, (ii) the term "Mortgage" refers to the mortgage, deed of trust or other security interest in this Agreement and/or the Solar Farm and Solar Improvements given to a Mortgagee in connection with such financing and (iii) the term

"Mortgaged Interest" refers to the interest in this Agreement and/or the Solar Farm and Solar Improvements, that is held by the Mortgagee. Tenant shall have the right, without the consent of Landlord, to grant Mortgages on Tenant's interest hereunder.

12.2. Notice of Default: Opportunity to Cure. As a precondition to exercising any rights or remedies as a result of any alleged default by Tenant, Landlord shall give written notice of the default to each Mortgagee concurrently with delivery of such notice to Tenant, as applicable, specifying in detail the alleged event of default; provided however that such Mortgagee shall have provided Landlord with its current address. In the event the Landlord gives such a written notice of default, the following provisions shall apply:

12.2.1. A "Monetary Default" means failure to pay when due any rent or other monetary obligation of Tenant to Landlord under this Agreement; any other event of default is a "Non-Monetary Default."

12.2.2. The Mortgagee shall have the same period after receipt of notice of default to remedy the default, or cause the same to be remedied, as is given to Tenant, plus, in each instance, the following additional time periods: (i) sixty (60) days after receipt of the notice of default in the event of any Monetary Default; and (ii) ninety (90) days after receipt of the notice of default in the event of any non-monetary default, provided that such period shall be extended for the time reasonably required to complete such cure, including the time required for the Mortgagee to perfect its right to cure such non- monetary default by obtaining possession of the Leased Premises (including possession by a receiver) or by instituting foreclosure proceedings, provided the Mortgagee acts with reasonable and continuous diligence. The Mortgagee shall have the absolute right to substitute itself for Tenant and perform the duties of Tenant under this Agreement for purposes of curing such defaults. Landlord expressly consents to such substitution, agrees to accept such performance, and authorizes the Mortgagee (or its employees, agents, representatives or contractors) to enter upon the Leased Premises to complete such performance with all the rights, privileges and obligations of the Tenant. Landlord shall not terminate this Agreement prior to expiration of the cure periods available to a Mortgagee as set forth herein.

12.2.3. During any period of possession of the Mortgaged Interest by a Mortgagee (or a receiver requested by such Mortgagee) and/or during the pendency of any foreclosure proceedings instituted by a Mortgagee, the Mortgagee shall pay or cause to be paid the rent and all other monetary charges payable by Tenant under this Agreement which have accrued and are unpaid at the commencement of said period and those which accrue thereafter during said period. Following acquisition of Tenant's Mortgaged Interest by the Mortgagee or its assignee or designee as a result of either foreclosure or acceptance of an assignment in lieu of foreclosure, or by a purchaser at a foreclosure sale, this Agreement shall continue in full force and effect and the Mortgagee or party acquiring title to the Mortgaged Interest shall, as promptly as reasonably possible, commence the cure of all defaults under this Agreement and thereafter diligently process such cure to completion, whereupon Landlord's right to terminate this Agreement based upon such defaults shall be deemed waived; provided, however, the Mortgagee or party acquiring title to the Mortgaged Interest shall not be required to cure those non-monetary defaults which are

not capable of being cured or performed by such party ("non-curable defaults") Non-curable defaults shall be deemed waived by Landlord upon completion of foreclosure proceedings or acquisition of interest in this Agreement by such party.

12.2.4. Any Mortgagee or other party who acquires the Mortgaged Interest pursuant to foreclosure or assignment in lieu of foreclosure shall not be liable to perform the obligations imposed on Tenant by this Agreement incurred or accruing after such party no longer has ownership of the leasehold estate or possession of the Leased Premises.

12.2.5. Neither the bankruptcy nor the insolvency of Tenant or any Assignee shall be grounds for terminating this Agreement as long as the rent and all other monetary charges payable by Tenant under this Agreement are paid by the Mortgagee in accordance with the terms of this Agreement.

12.2.6. Nothing in this Agreement shall be construed to extend this Agreement beyond the Term or to require a Mortgagee to continue foreclosure proceedings after the default has been cured. If the default is cured and the Mortgagee discontinues foreclosure proceedings, this Agreement shall continue in full force and effect.

12.3. New Agreement to Mortgagee. If this Agreement terminates because of Tenant's default or if the Mortgaged Interest is foreclosed, or if this Agreement is rejected or disaffirmed pursuant to bankruptcy law or other law affecting creditors' rights, then Landlord shall, upon written request from any Mortgagee, enter into a new lease of the Leased Premises, on the following terms and conditions:

12.3.1. The terms of the new agreement shall commence on the date of termination, foreclosure, or rejection and shall continue for the remainder of the Term of this Agreement, at the same rent and subject to the same terms and conditions set forth in this Lease. Such new agreement shall be subject to all existing subleases, provided the subtenants are not then in default.

12.3.2. The new agreement shall be executed within thirty (30) days after receipt by Landlord of written notice of the Mortgagee's election to enter a new agreement, provided said Mortgagee: (i) pays to Landlord all rent and other monetary charges payable by Tenant, as applicable, under the terms of this Agreement up to the date of execution of the new agreement, as if this Agreement had not been terminated, foreclosed, rejected or disaffirmed, less the rent and other income actually collected by Landlord from subtenants or other occupants of the Leased Premises; and (ii) perform all other obligations of Tenant under the terms of this Agreement, to the extent performance is then due and susceptible of being cured and performed by the Mortgagee; and (iii) agrees in writing to timely perform, or cause to be performed, all non-monetary obligations which have not been performed by Tenant and would have accrued under this Agreement up to the date of commencement of the new agreement, except those obligations which constitute non-curable defaults as defined above; (iv) reimburses Landlord for Landlord's reasonable attorney fees incurred in reviewing the same. Any new agreement granted the Mortgagee

shall enjoy the same priority as this Agreement over any lien, encumbrance or other interest created by Landlord.

12.3.3. At the option of the Mortgagee, the new agreement may be executed by a designee of such Mortgagee without the Mortgagee assuming the burdens and obligations of the Tenant thereunder.

12.3.4. If more than one Mortgagee makes a written request for a new agreement pursuant hereto, the new agreement shall be delivered to the Mortgagee requesting such new lease whose Mortgage is prior in lien, and the written request of any other Mortgagee whose lien is subordinate shall be void and of no further force or effect. Landlord shall be reimbursed all reasonable expenses incurred in determining whose Mortgage is prior in lien.

12.4. Mortgagee's Consent to Amendment, Termination or Surrender. Notwithstanding any provision of this Agreement to the contrary, the parties agree that so long as there exists an unpaid Mortgage, this Agreement shall not be modified or amended and Landlord shall not accept a surrender of the Leased Premises or any part thereof or a cancellation or release of this Agreement from Tenant prior to expiration of the Term without the prior written consent of the Mortgagee. This provision is for the express benefit of and shall be enforceable by such Mortgagee.

12.5. No Waiver. No payment made to Landlord by a Mortgagee shall constitute an agreement that such payment was, in fact, due under the terms of this Agreement; and a Mortgagee having made any payment to Landlord pursuant to Landlord's wrongful, improper or mistaken notice or demand shall be entitled to the return of any such payment.

12.6. No Merger. There shall be no merger of this Agreement, or of the leasehold estate created by this Agreement, with the fee estate in the Leased Premises by reason of the fact that this Agreement or the leasehold estate or any interest therein may be held, directly or indirectly, by or for the account of any person or persons who shall own the fee estate or any interest therein, and no such merger shall occur unless and until all persons at the time having an interest in the fee estate in the Leased Premises and all persons (including Mortgagee) having an interest in this Agreement or in the estate of Landlord shall join in a written instrument effecting such merger and shall duly record the same.

12.7. Third Party Beneficiary. Each Mortgagee is and shall be an express third party beneficiary of the provisions of this Section, and shall be entitled to compel the performance of the obligations of Landlord under this Agreement.

12.8. Further Amendments. Provided that no material default in the performance of Tenant's obligations under this Agreement shall have occurred and remain uncured after the expiration of all applicable notice and cure periods, at Tenant's request, Landlord shall (a) amend this Agreement to include any provision that may reasonably be requested by an existing or proposed Mortgagee, or by any entity that is proposing to directly or indirectly acquire any Project, and (b) shall execute such additional documents as may reasonably be required to evidence such Mortgagee's or other entity's rights hereunder; provided,

however, that such amendment shall not materially impair the rights of Landlord under this Agreement, or extend the Term of this Agreement. Further, Landlord shall, within ten (10) days after written notice from Tenant or any existing or proposed Mortgagee, execute and deliver thereto a certificate to the effect that Landlord (a) recognizes a particular entity as a Mortgagee under this Agreement and (b) will accord to such entity all the rights and privileges of a Mortgagee hereunder.

12.9. Further Amendments to Leased Premises Description. In the event that it is determined by Tenant or any Mortgagee that there are any inaccuracies in or changes required to the legal description of the Leased Premises contained in Exhibit A-2, the validity of this Agreement shall not be affected, and, upon the request of Tenant made from time to time, Landlord shall execute an amendment to the legal description of the Leased Premises contained in Exhibit A-2 of this Agreement and in any memorandum of this Agreement to reflect the legal description of the Leased Premises as contained in any survey obtained by Tenant for the Leased Premises.

13. Governmental Approvals and Compliance.

Tenant shall obtain any necessary governmental licenses or authorizations required for the construction and use of the Site Improvements and Infrastructure on the Leased Premises and shall comply with government laws and regulations applicable thereto including but not limited to site plan review before the City planning board. Notwithstanding the foregoing, Tenant shall not be responsible for any matters arising in connection to Environmental Laws relating to the Leased Premises, except to the extent the need for compliance therefor arises directly out of the release by Tenant of any Hazardous Substances (as defined herein) on or about the Leased Premises.

14. Assignment.

Excluding assignments that occur pursuant to Section 12 above, Tenant shall not assign or transfer this Agreement, or any interest herein, without the prior written consent of Landlord which shall not be unreasonably withheld, delayed or conditioned, and consent to an assignment shall not be deemed to be a consent to any subsequent assignment. Notwithstanding the foregoing, Tenant is expressly permitted to assign its rights and responsibilities under this Agreement, without obtaining Landlord's consent and in its sole discretion, to any entity (a) owned or controlled by Tenant or under common ownership or control with Tenant, or (b) to which Tenant conveys all of its right title and interest in the Solar Farm. Notwithstanding the foregoing, Tenant is also expressly permitted to assign its rights and responsibilities under this Agreement, without obtaining Landlord's consent and in its sole discretion, to any person or entity, provided that Tenant remains responsible for the obligations hereunder.

15. Notices.

All notices, demands, requests, consents, approvals, and other instruments required or permitted to be given pursuant to this Agreement shall be in writing, signed by the notifying party, or officer,

agent, or attorney of the notifying party, and shall be deemed to have been effective upon delivery if served personally, including but not limited to delivery by messenger, overnight courier service or overnight express mail, or upon posting if sent by registered or certified mail, postage prepaid, return receipt requested, and addressed as follows:

To Landlord:	21 Washington St Apt.4, Malone, NY 12953, USA _____ _____	To Tenant;	Yellow 5 LLC c/o Christopher Stroud 125 Wolf Rd, Suite 312 Colonie, NY 12205

With a copy: By email to c.stroud@solreal.eu

The address to which any notice, demand, or other writing may be delivered to any party as above provided may be changed by written notice given by such party as above provided.

16. Insurance.

At all times during the Term of this Lease, Tenant shall maintain in full force a commercial general liability insurance policy covering Tenant's operations, activities, and liabilities on the Leased Premises, having singly or in combination limits not less than One Million Dollars ($1,000,000) in the aggregate. Such policy shall name Landlord as an additional insured under such policy as the Landlord's interests may appear. Upon Landlord's request, Tenant shall give Landlord a certificate of insurance evidencing that the insurance required under the Agreement is in force.

17. Operating Expenses.

Tenant shall fully and promptly pay for all water, gas, heat, light, power, telephone service, and other public utilities furnished to the Leased Premises and used by Tenant throughout the Term hereof, and for all other costs and expenses of every kind whatsoever in connection with the use, operation, and maintenance of the Leased Premises and all activities conducted thereon.

18. Taxes.

Landlord shall pay when due all real property taxes and all other fees and assessments attributable to the Leased Premises. However, Tenant shall pay, as additional Rent, any increase in real property taxes levied against the Leased Premises that is directly attributable to Tenant's improvements to the Leased Premises. Landlord agrees to furnish proof of such increase to Tenant.

19. Maintenance by Landlord.

Landlord shall maintain its property adjacent to the Leased Premises in good condition and state of repair to avoid interference with Tenant's use of the Leased Premises and the Easement. Landlord shall not construct or permit to be constructed structures or plant or permit to be planted trees adjacent to the Leased Premises that will impede solar access to Solar Farm.

20. Liabilities to Third Parties: Risk of Loss.

Tenant shall hold Landlord harmless from any liability (including reimbursement of Landlord's reasonable legal fees and all costs) for death or bodily injury to third parties, or physical damage to the property of third parties, to the extent caused by the fault of Tenant or any of Tenant's agents, servants, employees, or licensees, and Landlord shall hold Tenant harmless from any liability (including reimbursement of Tenant's reasonable legal fees and all costs) for death or bodily injury to third parties, or physical damage to the property of third parties, to the extent caused by the fault of Landlord or any of Landlord's agents, servants, employees, or licensees. Notwithstanding any provisions herein to the contrary, it is understood and agreed that all property kept, installed, stored, or maintained in or upon the Leased Premises by Tenant shall be so installed, kept, stored, or maintained at the risk of Tenant, Landlord shall not be responsible for any loss or damage to equipment owned by Tenant that might result from tornadoes, lightning, windstorms, or other Acts of God. The covenants of this paragraph shall survive and be enforceable and shall continue in full force and effect for the benefit of the Parties and their respective subsequent transferees, successors, and assigns, and shall survive the termination of this Lease, whether by expiration or otherwise.

21. Tenant's Performance and Surrender.

Tenant shall pay the rent and all other sums required to be paid by Tenant hereunder in the amounts, at the times, and in the manner herein provided, and shall keep and perform all terms and conditions hereof on its part to be kept and performed, and at the expiration or sooner termination of this Lease, surrender to Landlord the Leased Premises subject to the other provisions of this Lease.

22. Default and Termination for Default.

Landlord or Tenant shall be in default of this Lease if either party breaches any material provision hereof and said breach is not cured by the breaching party within sixty (60) days of receipt of notice of said breach from the non- breaching party, or if such cure cannot reasonably be had within said sixty (60) day period, then if cure of such breach is not commenced within thirty (30) days of receipt of such notice and not thereafter completed using diligent efforts. Upon the breaching party's failure to cure its breach within such time, as applicable, the non-breaching party shall have the right to terminate this Lease for default, and to pursue such remedies as may be available in law or equity.

23. Right to Terminate.

Tenant may terminate this Lease, at its option, after giving not less than thirty (30) days' notice to Landlord, if:

23.1. Any governmental agency denies a request by Tenant for or revokes a permit, license, or approval that is required for Tenant to construct or operate the Site Improvements and Infrastructure on the Leased Premises;

23.2. Tenant determines that technical problems, which problems cannot reasonably be corrected, preclude Tenant from using the Leased Premises for its intended purpose;

23.3. Tenant determines that Tenant does not have acceptable and legally enforceable means of ingress and egress to and from the Leased Premises;

23.4. Utilities necessary for Tenant's use of the Leased Premises are not available to the Leased Premises; or

23.5. The Leased Premises are damaged or destroyed to an extent that prohibits or materially interferes with Tenant's use of the Leased Premises.

In the event of termination by Tenant pursuant to this provision, Tenant shall be relieved of all further liability hereunder except its obligation to remove its improvements as provided herein. Any rental fees paid prior to said termination date shall be retained by Landlord.

24. Rights to Site Improvements and Infrastructure Upon Termination.

24.1. Title: Tenant. At least ninety (90) days prior to the expiration of the Term (including the expiration of any extension to such Term under Section 3), Tenant shall advise Landlord in writing of Tenant's intention regarding Tenant's ownership of the Solar Farm upon expiration, based upon one of the options set forth in this Section 24.1:

24.1.1. Retain Title and Operating Rights. Retain ownership of the Solar Farm and continue to operate the Leased Premises as a community- owned solar farm under a new lease agreement with Landlord if:

24.1.1.1. Tenant has advised Landlord of Tenant's desire to continue operations in writing a minimum of ninety (90) days prior to the expiration date of the applicable term, as required in this Section 24.1.1; and

24.1.1.2. Landlord and Tenant have agreed to the new lease provisions at least thirty (30) days prior to the expiration date of this Agreement. The newly negotiated lease shall then begin upon the expiration of this Agreement.

It is understood and agreed that if Tenant and Landlord are unable to agree upon the terms of such new lease, then the provisions of Section 24.1.2, below, regarding removal shall apply.

24.1.2. Remove. Remove the Solar Farm, including the Site Improvements and Infrastructure owned by Tenant and solar panels owned by third parties. Such removal shall

be completed within six (6) months following the expiration of the full term of this Agreement, during which time Tenant shall be subject to all terms and conditions in this Lease with respect to access and said removal as if still a tenant.

24.2. Abandonment/Noncompliance with Section 24.1. If Tenant either (i) abandons the Leased Premises or (ii) does not provide the notice to Landlord described in Section 24.1 within the time period for such notice described therein, then Landlord shall notify Tenant whether Landlord desires to enter into an new lease as described in Section 24.1.1 or desires Tenant to remove the Solar Farm as described in Section 24.1.2, and the parties shall proceed accordingly; provided however that in the event that Landlord and Tenant have not entered into the new lease described in Section 24.1.1 at least ten (10) days prior to the expiration of the Term (including the expiration of any extension to such Term under Section 3), then Tenant shall remove the Solar Farm as set forth in Section 24.1.2. If Tenant is obligated under this Section 24 to remove the Solar Farm and fails to do so within the time set forth in Section 24.1.2, then Tenant shall be in default, and Landlord, after notice of default and expiration of the applicable cure periods set forth in Section 22 hereof, may remove the Solar Farm at Tenant's cost.

25. Binding on Successors.

The covenants and conditions contained herein shall apply to and bind the heirs, successors, executors, administrators, and assigns of the parties hereto.

26. Access to Premises.

In addition to the Easement granted in Section 5, Tenant and its engineers, officers, employees, agents, and contractors shall have full access to the Leased Premises during the Term, consistent with Landlord's standard property security policy,

27. Governing Law.

The parties intend that this Agreement and the relationship of the parties shall be governed by the laws of the State or Commonwealth in which the Leased Premises are located.

28. Entire Agreement.

All of the representations and obligations of the parties are contained herein, and no modification, waiver, or amendment of this Agreement or of any of its conditions or provisions shall be binding upon a party unless in writing signed by that party or a duly authorized agent of that party empowered by a written authority signed by that party. The waiver by any party of a breach of any provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach of that provision by the same party, or of any other provision or condition of the Agreement.

29. Survey and Testing.

Tenant shall have the right during the Option Period and any extension to survey, soil test, and make any other investigations necessary to determine if the surface of the Leased Premises is suitable for construction of the Solar Farm. If Tenant, within the above-stated time, determines that for any reason the Leased Premises is not suitable, this Agreement, upon written notice given by Tenant to Landlord, shall become null and void; provided that at Tenant's sole expense any damage to the Leased Premises caused by such testing and investigations of Tenant shall be promptly repaired.

30. Oil, Gas and Mineral Rights.

Landlord does not grant, lease, let, or demise hereby, but expressly excepts and reserves here from all rights to oil, gas, and other minerals in, on, or under and that might be produced or mined from the Leased Premises; provided, however, that no drilling or other activity will be undertaken on the surface of the Leased Premises to recover any oil, gas, or minerals during the Term hereof, and further provided that any activity associated with such minerals shall not interfere with Tenant's quiet use and enjoyment of the Leased Premises. In the event that there shall exist at any time any mineral rights separate from Landlord's fee interest in the Leased Premises, Landlord shall deliver to Tenant, within ten (10) days of any request Tenant made by Tenant from time to time, such documentation as may be required to ensure that such mineral rights are subordinate and inferior to the rights, privileges, powers, options, immunities, and interests granted to Tenant hereunder and to allow Tenant to obtain an endorsement over such mineral rights in any title commitment or title policy requested by Tenant, including without limitation a non-disturbance agreement executed by Landlord and the holder of such mineral rights, in form acceptable to Tenant.

31. Hazardous Waste.

31.1. The term Hazardous Materials shall mean any substance, material, waste, gas, or particulate matter that is regulated by any local governmental authority, the State of New York, or the United States Government, including, but not limited to, any material or substance which is (i) defined as a "hazardous waste," "hazardous material," "hazardous substance," "extremely hazardous waste," or "restricted hazardous waste" under any provision of state or local law, (ii) petroleum, (iii) asbestos, (iv) polychlorinated biphenyl, (v) radioactive material, (vi) designated as a "hazardous substance" pursuant to Section 311 of the Clean Water Act, 33 U.S.C. Sections 1251 et seq. (33 U.S.C. Section 1317), (vii) defined as a "hazardous waste" pursuant to Section 1004 of the Resource Conservation and Recovery Act, 42 U.S.C. Sections 6901 et seq. (42 U.S.C. Section 6903), or (viii) defined as a "hazardous substance" pursuant to Section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. Sections 9601 et seq. (42 U.S.C. Section 9601). The term Environmental Laws shall mean all statutes specifically described in the foregoing sentence and all applicable federal, state, and local environmental health and safety statutes, ordinances, codes, rules, regulations, orders, and decrees regulating, relating to, or imposing liability or standards concerning or in connection with Hazardous Materials.

31.2. Landlord represents and warrants that, to the best of Landlord's knowledge, (i) the Leased Premises have not been used for the use, manufacturing, storage, discharge, release, or disposal of Hazardous Materials, (ii) neither the Leased Premises nor any part thereof is in breach of any Environmental Laws, (iii) there are no underground storage tanks located on or under the Leased Premises, and (iv) the Leased Premises are free of any Hazardous Materials that would trigger response or remedial action under any Environmental Laws or any existing common law theory based on nuisance or strict liability. If any such representation is in any manner inaccurate or any such warranty is in any manner breached during the term of this Agreement (collectively, a "Breach"), and if such Breach gives rise to or results in liability (including, but not limited to, a response action, remedial action, or removal action) under any Environmental Laws or any existing common law theory based on nuisance or strict liability, or causes a significant effect on public health, Landlord shall promptly take any and all remedial and removal action as required by law to clean up the Leased Premises and mitigate exposure to liability arising from, and keep the Leased Premises free of any lien imposed pursuant to, any Environmental Laws as a result of such Breach.

31.3. The following indemnities are provided hereunder by Landlord and Tenant:

31.3.1. Tenant agrees to indemnify, defend, and hold harmless Landlord, its officers, partners, successors, and assigns from and against any and all debts, liens, claims, causes of action, administrative orders and notices, costs (including, without limitation, response and/or remedial costs), personal injuries, losses, damages, liabilities, demands, interest, fines, penalties, and expenses, including reasonable attorneys' fees and expenses, consultants' fees and expenses, court costs, and all other out-of-pocket expenses, to the extent any such items arise out of the release of any Hazardous Substances on or about the Leased Premises by Tenant or Tenant's employees, contractors, agents, successors, or assigns.

31.3.2. Landlord agrees to indemnify, defend, and hold harmless Tenant, its officers, partners, agents, lenders, contractors, successors, and assigns from and against any and all debts, liens, claims, causes of action, administrative orders and notices, costs (including, without limitation, response and/or remedial costs), personal injuries, losses, damages, liabilities, demands, interest, fines, penalties, and expenses, including reasonable attorneys' fees and expenses, consultants' fees and expenses, court costs, and all other out-of- pocket expenses, to the extent any such items (a) arise out of the release of any Hazardous Substances on or about the Leased Premises except by Tenant or Tenant's employees, contractors, agents, successors, or assigns, or (b) arise out of any Breach by Landlord, or (c) arose prior to or during the Term of this Lease and that failed to comply with (i) the Environmental Laws then in effect or (ii) any existing common law theory based on nuisance or strict liability.

31.3.3. Landlord agrees to indemnify, defend, and hold harmless Tenant, its officers, partners, agents, lenders, contractors, successors, and assigns from and against any and all debts, liens, claims, causes of action, administrative orders and notices, costs (including, without limitation, response and/or remedial costs), personal injuries, losses damages,

liabilities, demands, interest, fines, penalties, and expenses, including reasonable attorneys' fees and expenses, consultants' fees and expenses, court costs, and all other out-of- pocket expenses, suffered or incurred by Tenant and its affiliates, successor or assigns as a result of (a) any Breach by Landlord, or (b) any matter or condition of the Leased Premises involving Environmental Laws or Hazardous Materials that was not caused by Tenant or its officers, partners, successors, or assigns and that existed on or arose prior to or during the Term of this Lease and that failed to comply with (i) the Environmental Laws then in effect or (ii) any existing common law theory based on nuisance or strict liability.

31.4. Landlord represents and warrants to Tenant that Landlord has received no notice that the Leased Premises or any part thereof is, and, to the best of its knowledge and belief, no part of, the Leased Premises is located within, an area that has been designated by the Federal Emergency Management Agency, the Army Corps of Engineers, or any other governmental body as being subject to special hazards, including floodplains.

31.5. The covenants of this Section shall survive and be enforceable and shall continue in full force and effect for the benefit of Tenant and its subsequent transferees, successors, and assigns and shall survive the Term of this Lease and any renewal periods thereof.

32. Mechanic's Liens.

Tenant will not cause any mechanic's or materialman's lien to be placed on the Leased Premises, and Tenant agrees to indemnify, defend, and hold harmless Landlord from any such lien from a party claiming by, through, or under Tenant; provided that Tenant shall be permitted to remove any such lien by bond or other suitable instrument.

33. Headings.

The headings of Sections and subSections are for convenient reference only and shall not be deemed to limit, construe, affect, modify, or alter the meaning of such Sections or subSections.

34. Time of Essence.

Time is of the essence for Landlord's and Tenant's obligations under this Agreement.

35. Severability.

If any Section, subSection, term, or provision of this Agreement or the application thereof to any party or circumstance shall, to any extent, be invalid or unenforceable, the remainder of said Section, subSection, term, or provision of the Agreement, or the application of same to parties or circumstances other than those to which it was held invalid or unenforceable, shall not be affected thereby and each remaining Section, subSection, term, or provision of this Agreement shall be valid or enforceable to the fullest extent permitted by law.

36. Real Estate Broker.

Landlord represents and warrants that Landlord has not signed a listing agreement, dealt with, or otherwise agreed to pay a broker's commission, finder's fee, or other like compensation to anyone in connection with the lease of the Leased Premises or the transaction contemplated by this Agreement.

37. Further Assurances.

Each of the parties agrees to do such further acts and things and to execute and deliver such additional agreements and instruments as the other may reasonably require to consummate, evidence, or confirm this Agreement or any other agreement contained herein in the manner contemplated hereby.

38. Dispute Resolution.

Any dispute between Landlord and Tenant arising under this Agreement shall in the first instance be addressed by taking the following steps; 1) by informal negotiations between Landlord and Tenant fallowing an exchange of written notice of and response to said dispute and for a period of time not to exceed 45 days unless extended by mutual agreement; and if not resolved by negotiations, then 2) by any other such remedy at law that may be available.

39. Right to Record.

The Tenant shall have the right to prepare, execute and record a memorandum of lease, setting forth the general terms of the Lease and such other information as Tenant deems necessary, which memorandum Landlord agrees to execute and deliver to Tenant. Tenant shall provide the Landlord a copy of the recorded Memorandum of Lease after recordation by the Registry of Deeds in the county where the Leased Premises are located.

40. Tax Credits.

If under applicable law the holder of any interest under this Agreement becomes ineligible for any tax credit, benefit or incentive for alternative energy expenditure established by any local, state or federal government, then, at Tenant's option, Landlord and Tenant shall amend this Agreement or replace it with a different instrument so as to convert Tenant's interest in the Property to a substantially similar interest that makes Tenant eligible for such tax credit, benefit or incentive; provided, however, that nothing in this Agreement shall entitle Tenant to a fee interest in the Leased Premises, diminish Tenant's payment obligations under this Agreement or extend the Term of this Agreement.

41. Attorneys' Fees.

The prevailing party in any action or proceeding for the enforcement, protection, or establishment of any right or remedy under this Agreement or for the interpretation of this Agreement shall be entitled to recover its reasonable attorneys' fees and costs in connection with such action or proceeding from the non-prevailing party.

42. Interpretation.

Each party to this Agreement and its counsel have reviewed and revised this Agreement. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement or of any-amendments or exhibits to this Agreement.

43. Date of Agreement.

The parties acknowledge that certain obligations of Landlord and Tenant are to be performed within certain specified periods of time which are determined by reference to the date of execution of this Agreement. The parties therefore agree that wherever the term "date of execution of this Agreement," or words of similar import are used herein, they shall mean the date upon which this Agreement has been duly executed by Landlord or Tenant, whichever is the later to so execute this Agreement. The parties further agree to specify the date on which they execute this Agreement beneath their respective signatures in the space provided and warrant and represent to the other that such a date is in fact the date on which each duly executed this Agreement.

(Signature page follows)

IN WITNESS WHEREOF, the parties hereto have executed this Agreement, as a sealed instrument, as of the day and year first above written.

LANLORD:

Kristopher Pirie

By: _____

Name: Kristopher M. Pirie

Title: Owner

Date: 7/31/2020

TENANT

Yellow 5 LLC (or Assigns)

By: Yellow 5 LLC

Name: _____

Title: PRESIDENT

Date: 07/31/2020

COMMONWEALTH / STATE OF _)

COUNTY OF_) FRANKLIN) ss

On this 31st day of July, 2020, before me, the undersigned notary public in and for said Commonwealth/State, personally appeared proved to me on the basis of satisfactory evidence of identification, which were Kristopher M. Pirie, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he)(she) signed such document voluntarily for its stated purpose (as Landlord).

WITNESS my hand and official seal.

Notary Public

KAY L. BRAND
Notary Public, State of New York
No. 01BR5041999
Qualified in Franklin County
My Commission Expires April 10, 2023

COMMONWEALTH / STATE OF _)

COUNTY OF_) FRANKLIN) ss

On this 31st day of July, 2020, before me, the undersigned notary public in and for said Commonwealth/State, personally appeared proved to me on the basis of satisfactory evidence of identification, which were Lorenzo Cipriani, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that (he)(she) signed such document voluntarily on behalf of Yellow 5 LLC for its stated purpose (as Tenant).

WITNESS my hand and official seal.

Notary Public

KAY L. BRAND
Notary Public, State of New York
No. 01BR5041999
Qualified in Franklin County
My Commission Expires April 10, 2023

EXHIBIT A-1 LEGAL DESCRIPTION OF THE LANDLORD PROPERTY

SCHEDULE "A"

ALL THAT TRACT OR PARCEL OF LAND situate in Great Lot 24, Township 6, Great Tract One, Macomb's Purchase, Town of Malone, County of Franklin and State of New York bounded and described as follows:

BEGINNING at a point in the centerline of the Bare Hill Road, said point being North 08 degrees 53 minutes 25 seconds East for a distance of 400.00 feet from the centerline intersection of the Bare Hill Road and the Cady Road and at the Southwest corner of a parcel of land conveyed to Robert R. LeClair, Sr. by deed recorded in the Franklin County Clerk's Office in Liber 745 at Page 193 and at the Northwest corner of a parcel of land conveyed to the Robber R. & Sherry L. LeClair by deed recorded in the Franklin County Clerk's Office in Liber 651 at Page 331; **THENCE** North 08 degrees 53 minutes 25 seconds East for a distance of 268.90 feet along the centerline of the Bare Hill Road to a point, said point being South 08 degrees 53 minutes 25 seconds West for a distance of 100.00 feet from a computed point at the Northwest corner of the said Robert R. LeClair, Sr. parcel; **THENCE** South 81 degrees 47 minutes 35 seconds East for a distance of 250.00 feet through the lands of the said Robert R. LeClair, Sr. to a 5/8" rebar set, passing over a 5/8" rebar set 24.75 feet from the point in the centerline of the said road; **THENCE** South 08 degrees 53 minutes 25 seconds West for a distance of 268.90 feet through the lands of the said Robert R. LeClair, Sr. to a 5/8" rebar set in the Southerly bounds of the said Robert R. LeClair, Sr. parcel and the Northerly bounds of the said Robert & Sherry LeClair parcel; **THENCE** North 81 degrees 47 minutes 35 seconds West for a distance of 250.00 feet along the Southerly bounds of the said Robert R. LeClair, Sr. parcel and the Northerly bounds of the Robert & Sherry LeClair parcel, to the point of beginning, passing over a 5/8" rebar found 24.75 feet from the point of beginning.

CONTAINING +/- 1.543 acres of land as surveyed by Chateaugay Lake Surveying, August 27, 2002.

SUBJECT TO any rights the public may have within the right-of-way of said roads.

All bearings are based on Magnetic North 1996.

BEING a portion of the premises conveyed to Robert R. LeClair, Sr. by deed recorded in the Franklin County Clerk's Office in Liber 745 at Page 193.

ALL THAT TRACT OR PARCEL OF LAND, situate and being a part of lot 24, Town of Malone, Great Tract 1, Macomb's Purchase, Township 6, County of Franklin, State of New York, described as follows: **BEGINNING** at a point in the centerline of Cady Road, in the south line of lot 24, at a distance of 68.25 chains easterly from the southwest corner of said lot 24, and at a distance of 0.25 chains S 8 degrees W from an iron pipe and stones set as a reference, running thence N 82 degrees W along the center line of Cady Road for a distance of 28.25 chains to the southwest corner of property owned by E.W. Sears and Harry Holcomb; running thence N 8 degrees E for a distance of 0.25 chains to an iron pipe and stones; thence continuing N 8 degrees E a distance of 11.40 chains to an iron pipe and stones; running thence S 82 degrees E a distance of 20.36 chains to an iron pipe and stones; running thence S 30 degrees E a distance of 8.89 chains to an iron pipe

and stones; running thence S 80- degrees E a distance of 3.29 chains to a 4" soil pipe in the easterly line of property owned by E.W. Sears and Harry Holcomb; running thence 8 degrees W a distance of 5.66 chains to an iron pipe and stones; and thence continuing S 8 degrees W a distance of 0.25 chains to the place of beginning. The above described property contains 26 acres of land, more or less.

EXCEPTING AND RESERVING therefrom a right-of-way approximately 16 feet in width, over the existing roadway which extends in a general northeasterly direction from the Cady Road to an across the properties owned by Harry Holcomb and Esmond W. Sears along the Salmon River.

SUBJECT TO a fishing easement conveyed by Harry Holcomb and Edmond Sears to the State of New York on November 17, 2966 and recorded in Liber 434 of Deeds at Page 654.

SUBJECT TO a parking easement conveyed by Winifred V.B. Sears to the State of New York on January 12, 1966 and recorded in Liber 431 of Deeds at Page 149.

FURTHER CONVEYING ALL THAT TRACT OR PARCEL OF LAND, situate in an being a part of Lot 24, Great Tract One, Macomb's Purchase, Township 6, Town of Malone, County of Franklin, State of New York, bounded and described as follows: **BEGINNING** at a point marked by a 4-iinch soil pipe set in the easterly bounds of lands conveyed by Fred Conrad, Franklin County Treasurer, to Harry Holcomb and Esmond W. Sears by deed dated March 9, 1956, and recorded March 29, 1956, in Book 354 of Deeds, Page 259, in the Franklin County Clerk's Office (said point being located North 8 degrees-00' East a distance of 373.56 feet, more or less from the center line of Cady Road, said last described point being located 68.25 chains, or 4,504.5 feet, easterly from the southwest corner of Lot 24); running thence from said point of beginning North 80 degrees West along lands of Winifred V. Sears a distance of 217 feet, more or less to a point marked by an iron pipe; running thence along lands of Winifred V. Sears, North 30 degrees West a distance of 454.7 feet, more or less, to a point marked by an iron pipe and stones; running thence along lands owned now or formerly by Harry W. Holcomb, North 25 degrees West a distance of 334.6 feet, more or less, to a point marked by an iron pipe; running thence further along lands of said Harry W. Holcomb, North 2 degrees West a distance of 631.6 feet, more or less, to a point marked by an iron pipe set in the southerly bounds of lands of the Village of Malone; running thence along the southerly bounds of lands of the Village of Malone, and along a wire fence line in part, South 82 degrees East, a distance of 302 feet, more or less to a point marked by an iron pipe running thence further along the easterly bounds of lands of the Village of Malone, along a wire fence line and line of blazed trees, in part, North 8 degrees East a distance of 858 feet, more or less, to a point marked by an iron pipe, running thence along a wire fence line and blazed line of trees, in part, South 82 degrees east a distance of 594 feet more or less, to a point in the center line of the Salmon River; running thence up the center line of the Salmon River; running thence up the center line of the Salmon River, a distance of 1848 feet, more or less, to a point; running thence South 8 degrees West a distance of 418 feet, more or less, along a wire fence line, in part, and along a line of blazed trees, to the point of beginning, containing 34 acres, more of less.

TOGETHER with a right of way sixteen feet in width over the lands of Winifred V.B. Sears, extending northerly from Cady Road, a distance of 400 feet, more or less, to the parcel herein conveyed. This right of way is described in the deed from Esmond W. Sears and Winifred V.B. Sears to Winifred

V.B. Sears by deed recorded in the Franklin County Clerk's Office on Janupry 24, 19 4, in Book 417 of Deeds at Page 3d8.

SUBJECT, however, to a Public Fishing Right Easement, granted by Esmond W. Sears and Harry W. Holcomb to the State of New York, extending along the westerly bank of the Salmon River, and with a right of way for ingress and egress extending along the easterly bounds of the lands herein conveyed.

BEING part of the premises conveyed to James W. Overfield by Warranty Deed from James W. Overfield and Peggy Ann Overfield, his wife, dated May 11, 1978 and recorded in the Office of the Franklin County Clerk on November 20, 1978 in Liber 490 at Page 499.

EXCEPTING AND RESERVING, ALL THAT TRACT OR PARCEL OF LAND, situate in Lot 24, Township 6, Great Tract One, Macomb's Purchase, Town of Malone, County of Franklin and State of New York bounded and described as follows: **BEGINNING** at a point at the intersection of the centerline of the Cady Road and the centerline of the Bare Hill Road at the Southwest corner of a parcel of land conveyed to Robert LeClair by deed recorded in the Franklin County Clerk's Office in Liber 643 at Page 120 (parcel 1); **THENCE** North 08 degrees 53 minutes 25 seconds East for a distance of 400.00 feet along the centerline of the Cady Road to a point; **THENCE** South 81 degrees 47 minutes 35 seconds East for a distance of 330.00 feet to a 5/8" rebar set, passing over a 5/8" rebar set 24.75 feet from the centerline of said road; **THENCE** South 08 degrees 53 minutes 25 seconds West for a distance of 400.00 feet to a point in the centerline of said Cady Road, passing over a 5/8" rebar set 24.75 feet from the centerline of said road; **THENCE** North 81 degrees 47 minutes 35 seconds West for a distance of 330.00 feet along the centerline of said Cady Road to the point of beginning.

CONTAINING +/- 3.030 acres of land as surveyed by Chateaugay Lake Surveying, February 5, 1996.

BEING the same premises conveyed to Robert R. LeClair and Sherry L. LeClair, his wife, by Warranty Deed from Robert LeClair dated and recorded May 23, 1996 in the Office of the Franklin County Clerk in Liber 651 of Deeds at Page 331.

ALSO EXCEPTING ALL THAT TRACT OR PARCEL OF LAND, situate in Lot 24, Township 6, Great Tract One Macomb's Purchase, Town of Malone, County of Franklin and State of New York bounded and described as follows: **BEGINNING** at a point in the centerline of the Cady Road, South 81 degrees 47 minutes 35 seconds East and a distance of 330.00 feet from the intersection of the centerline of the Cady Road and the centerline of the Bare Hill Road and from the Southwest corner of a parcel of land conveyed to Robert LeClair by deed recorded in the Franklin County Clerk's Office in Liber 643 at Page 120 (parcel 1); **THENCE** North 08 degrees 53 minutes 25 seconds East for a distance of 300.00 feet to a 5/8" rebar set, passing over a 5/8" rebar set 24.75 feet from the centerline of said Cady Road; **THENCE** South 81 degrees 47 minutes 35 seconds East for a distance of 150.00 feet to a 5/8" rebar set; **THENCE** South 08 degrees 53 minutes 25 seconds West for a distance of 300.00 feet to a point in the centerline of said Cady Road, passing over a 5/8" rebar set 24.75 feet from the centerline of said road; **THENCE** North 81 degrees 47 minutes 35 seconds West for a distance of 150.00 feet along the centerline of said Cady Road to the point of beginning.

CONTAINING +/- 1.033 acres of land as surveyed by Chateaugay Lake, Surveying, February 5, 1996. All bearings are based on Magnetic North 1996.

BEING part the same premises conveyed to Charles Gardner by Warranty Deed from Robert LeClair dated and recorded June 26, 1996 in the Office of the Franklin County Clerk in Liber 654 of Deeds at Page 49.

BEING the same premises conveyed to Robert R. LeClair, Sr. by Warranty Deed from Robert LeClair March 8, 2000 and recorded March 22, 2000 in the Office of the Franklin County Clerk in Liber 745 of Deeds at Page 193.

EXHIBIT A-2 DESCRIPTION OF THE LEASED PREMISES

EXHIBIT B TENANT'S SURVEY OF "THE LEASED PREMISES"

To be revised by Tenant based upon the survey referenced in Section 2 of the Agreement.

EXHIBIT C CERTIFICATE OF INSURANCE

EXHIBIT D LANDLORD ACKNOWLEDGEMENT OF COLLATERAL ASSIGNMENT OF LEASE

Attachment D – Site Location Map

Legend

- Project Boundary
- Franklin County Parcels

*All locations are approximate

TETRA TECH

Parcel Map

Approximate scale:

0 300 600 900 1,200 Feet

Malone Solar Project
176 Bare Hill Rd
Malone, NY 12953

ARCH D 24x36

PRELIMINARY DEVELOPMENT PLANS FOR
PROPOSED
MALONE SOLAR PROJECT
SOLAR DEVELOPMENT
176 BARE HILL RD
MALONE, NEW YORK

PROJECT CONTACTS

CIVIL ENGINEER
BERGMANN
2 WINNERS CIRCLE, SUITE 102
ALBANY, NY 12205
CONTACT: ERIC REDDING, PE
PHONE: 518.556.3631

OWNER
KRISTOPHER PIRIE
21 WASHINGTON ST
MALONE, NY 12919

APPLICANT
CIPRIANI ENERGY GROUP CORP.
125 WOLF ROAD, SUITE 312
COLONIE, NY 12205
CONTACT: CHRIS STROUD
PHONE: 518.390.4004

ELECTRICAL ENGINEER
BERGMANN
280 E BROAD STREET, SUITE 200
ROCHESTER, NY 14604
CONTACT: KATHLEEN CONNOLLY
PHONE: 585.555.3631

SITE LOCATION MAP
1"=1000'

N

DRAWING INDEX		
DRAWING NO.	DRAWING TITLE	SHEET NO.
C000	COVER	1
C001	GENERAL NOTES	2
C002	AREA PARCEL PLAN	3
C003	EXISTING CONDITIONS PLAN	4
C004	OVERALL SITE PLAN	5
C005	SITE PLAN	6
C006	GRADING & EROSION CONTROL PLAN	7
C007	GRADING PLAN DETAIL	8
C008	DETAILS I	9
C009	DETAILS II	10
C010	DETAILS III	11

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

2 Winners Circle, Suite 102
Albany, NY 12205
www.bergmannpc.com
office: 518.862.0325

CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE	DESCRIPTION
04/06/2022	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
LICENSED PROFESSIONAL ENGINEER
092442

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

COVER

Drawing Number

C000

1 of 11

M:\Cipriani Energy Group\014859.09 Cipriani Energy - Malone Solar Project\4.0 Dwgs\4.1 Civil\14859090C000.dwg
1/16/2023 11:46 AM

ARCH D 24x36

SEQUENCE OF CONSTRUCTION:

1. PRE-CONSTRUCTION MEETING HELD TO INCLUDE PROJECT MANAGER, OPERATOR'S ENGINEER, CONTRACTOR, AND SUB-CONTRACTORS PRIOR TO LAND DISTURBING ACTIVITIES.
2. CONSTRUCT CONSTRUCTION ENTRANCE/EXIT AT LOCATIONS DESIGNATED ON PLANS.
3. INSTALL PERIMETER SILT FENCE.
4. HAVE A QUALIFIED PROFESSIONAL CONDUCT AN ASSESSMENT OF THE SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
5. BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE CONSTRUCTION IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
6. USE THE EXISTING GRAVEL ROAD DURING CONSTRUCTION.
7. STRIP TOPSOIL AND STOCKPILE IN A LOCATION ACCEPTABLE TO CONSTRUCTION MANAGER. WHEN STOCKPILE IS COMPLETE, INSTALL PERIMETER SILT FENCE, SEED SURFACE WITH 100% PERENNIAL RYEGRASS MIXTURE AT A RATE OF 2-4 LBS. PER 1000 SF. APPLY 90-100 LBS PER 1000 SF OF MULCH.
8. COMMENCE EARTHWORK CUT AND FILLS. THE WORK SHALL BE PROGRESSED TO ALLOW A REASONABLE TRANSFER OF CUT AND FILL EARTH FOR ROUGH GRADING AND EARTH MOVING. THE CONTRACTOR WILL BE GIVEN SOME LATITUDE TO VARY FROM THE FOLLOWING SCHEDULE IN ORDER TO MEET THE FIELD CONDITIONS ENCOUNTERED. CONTRACTOR SHALL REVIEW VARIATIONS TO SWPPP WITH DESIGN ENGINEER AND QUALIFIED PROFESSIONAL PRIOR TO IMPLEMENTATION.
9. REMOVE THE EXISTING GRAVEL DRIVEWAY AND CONSTRUCT THE PROPOSED PERVIOUS GRAVEL DRIVEWAY AFTER CONSTRUCTION ACTIVITIES SUCH AS THE INSTALLATION OF THE PANELS AND PERIMETER FENCE. THE SUB-GRADE MATERIAL WHERE THE DRIVEWAY IS TO BE INSTALLED SHALL BE DECOMPACTED PER NYSDEC'S "DEEP-RIPPING AND DECOMPACTION" MANUAL, DATED APRIL 2008. CONTRACTOR SHALL AVOID FREQUENT HEAVY TRAFFIC ON THE LIMITED USE PERVIOUS GRAVEL.
10. AS ROADWAY AND ACCESS DRIVES ARE BROUGHT TO GRADE, THEY WILL BE STABILIZED WITH CRUSHED STONE SUBBASE AT A DEPTH SPECIFIED ON PLANS TO PREVENT EROSION AS SOON AS PRACTICABLE.
11. STABILIZE ALL AREAS AS SOON AS PRACTICABLE, IDLE IN EXCESS OF 7 DAYS AND IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
12. INSTALL UTILITIES. TRENCH EXCAVATION/BACKFILL AREAS SHOULD BE STABILIZED PROGRESSIVELY AT THE END OF EACH WORKDAY WITH SEED AND STRAW MULCH AT A RATE OF 100% PERENNIAL RYE GRASS AT 2-4 LBS/1000 SF MULCHED AT 90-100 LBS/1000 SF.
13. STABILIZE ALL AREAS IDLE IN EXCESS OF 7 DAYS IN WHICH CONSTRUCTION WILL NOT RECOMMENCE WITHIN 14 DAYS.
14. REMOVE TEMPORARY CONSTRUCTION EXITS AND PERIMETER SILT FENCE ONCE SITE HAS ACHIEVED 80% UNIFORM STABILIZATION.

GENERAL NOTES:

1. THE UNDERGROUND STRUCTURES AND UTILITIES SHOWN ON THIS MAP HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORD MAPS, THEY ARE NOT CERTIFIED TO THE ACCURACY OF THEIR LOCATION AND/OR COMPLETENESS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND EXTENT OF ALL UNDERGROUND STRUCTURES AND UTILITIES PRIOR TO ANY DIGGING OR CONSTRUCTION ACTIVITIES IN THEIR VICINITY. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES FIELD STAKED BEFORE STARTING WORK BY CALLING 1-800-962-7962.
2. THE CONTRACTOR SHALL PERFORM ALL WORK IN COMPLIANCE WITH TITLE 29 OF FEDERAL REGULATIONS, PART 1926, SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION (OSHA).
3. HIGHWAY DRAINAGE ALONG ALL ROADS AND PRIVATE DRIVES SHALL BE KEPT CLEAN OF MUD, DEBRIS ETC. AT ALL TIMES.
4. THE CONTRACTOR SHALL CONSULT THE DESIGN ENGINEER BEFORE DEVIATING FROM THESE PLANS.
5. IN ALL TRENCH EXCAVATIONS, CONTRACTOR MUST LAY THE TRENCH SIDE SLOPES BACK TO A SAFE SLOPE, USE A TRENCH SHIELD OR PROVIDE SHEETING AND BRACING.
6. IF SUSPICIOUS AND/OR HAZARDOUS MATERIAL IS ENCOUNTERED DURING DEMOLITION/CONSTRUCTION, ALL WORK SHALL STOP AND THE FRANKLIN COUNTY DEPARTMENT OF PUBLIC HEALTH AND THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION SHALL BE NOTIFIED IMMEDIATELY. WORK SHALL NOT RESUME UNTIL THE DEVELOPER HAS OUTLINED APPROPRIATE ACTION FOR DEALING WITH THE WASTE MATERIAL AND THE DEVELOPMENT PLANS ARE MODIFIED AS MAY BE NECESSARY.
7. EXCAVATED WASTE MATERIAL REMOVED FROM THE SITE SHALL BE PLACED AT A LOCATION ACCEPTABLE TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.
8. AREAS DISTURBED OR DAMAGED AS PART OF THIS PROJECTS CONSTRUCTION THAT ARE OUTSIDE OF THE PRIMARY WORK AREA SHALL BE RESTORED, AT THE CONTRACTORS EXPENSE, TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.
9. UNLESS COVERED BY THE CONTRACT SPECIFICATIONS OR AS NOTED ON THE PLANS, ALL WORK SHALL CONFORM TO THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS DATED JANUARY 1, 2020 AND ANY SUBSEQUENT APPENDICES.

WASTE/HAZARDOUS MATERIAL PRACTICES:

1. WHENEVER POSSIBLE COVERED TRASH CONTAINERS SHOULD BE USED.
2. DAILY SITE CLEANUP IS REQUIRED TO REDUCE DEBRIS AND POLLUTANTS IN THE ENVIRONMENT.
3. CONTRACTOR SHALL PROVIDE A SAFE STORAGE SPACE FOR ALL PAINTS, STAINS AND SOLVENTS INSIDE A COVERED STORAGE AREA.
4. ALL FUELS, OILS, AND GREASE MUST BE KEPT IN CONTAINERS AT ALL TIMES.

EROSION & SEDIMENT CONTROL NOTES:

1. INSTALL EROSION CONTROL MEASURES AS INDICATED ON THE PLAN PRIOR TO THE START OF ANY EXCAVATION WORK. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, AND THE GOVERNING MUNICIPAL REQUIREMENTS.
2. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER REPLACE TOPSOIL TO A MINIMUM 4" DEPTH WITH TOPSOIL OR AMENDED SOIL. ALL DISTURBED AREAS TO BE SEEDED TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
3. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATIVE COVER HAS BEEN ACHIEVED.
5. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL OR AMENDED TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
7. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
8. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
9. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
10. DUST SHALL BE CONTROLLED BY WATERING.
11. ADJOINING PROPERTY SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
12. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. THE CONTRACTOR SHALL PROVIDE A QUALIFIED INSPECTOR TO INSPECT THE PROJECT AT THE END OF EACH WORK WEEK AND PROVIDE A REPORT AT LEAST ONCE PER WEEK.
2. EROSION CONTROL MEASURES WILL BE IMPLEMENTED IN ACCORDANCE WITH THE NEW YORK STATE GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL MANUAL, FRANKLIN COUNTY PUBLIC HEALTH DEPARTMENT, AND THE TOWN OF MALONE REQUIREMENTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP'S) UNTIL GROUND COVER IS ESTABLISHED.
4. REMOVE AND STOCKPILE TOPSOIL AS DIRECTED BY THE CONSTRUCTION MANAGER. REPLACE TOPSOIL TO A MINIMUM 4" DEPTH. ALL DISTURBED AREAS TO BE HYDROSEEDED AS DIRECTED BY THE CONSTRUCTION MANAGER TO PROMOTE VEGETATION AS SOON AS PRACTICABLE.
5. IF THE SEASONS PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREAS WILL BE MULCHED WITH STRAW HAY OR EQUIVALENT AND ANCHORED IN ACCORDANCE WITH THE "STANDARDS", NETTING OR LIQUID MULCH BINDER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE 80% UNIFORM VEGETATION HAS BEEN ACHIEVED.
7. ALL EROSION CONTROL MEASURES ARE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR INOPERABLE AND SHALL BE REPLACED WHEN THEY HAVE REACHED THE DESIGN LIFE INDICATED IN THE NYS GUIDELINES FOR URBAN EROSION SEDIMENT CONTROL DESIGN MANUAL OR EVERY THREE MONTHS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
9. THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL AND EROSION CONTROL STRUCTURES THROUGHOUT CONSTRUCTION.
10. ALL DISTURBED AREAS SHALL BE FINISH GRADED TO PROMOTE VEGETATION ON ALL EXPOSED AREAS AS SOON AS PRACTICABLE. STABILIZATION PRACTICES (TEMPORARY/PERMANENT SEEDING, MULCHING, GEOTEXTILES, ETC.) MUST BE IMPLEMENTED WITHIN SEVEN (7) DAYS WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AND NOT EXPECTED TO RESUME WITHIN FOURTEEN (14) DAYS.
11. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES. ALL CONSTRUCTION DEBRIS AND SEDIMENT SPOILS, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
12. DUST SHALL BE CONTROLLED BY WATERING.
13. ADJOINING PROPERTIES SHALL BE PROTECTED FROM EXCAVATION AND FILLING OPERATIONS ON THE PROPOSED SITE.
14. EROSION CONTROL MEASURES SHOULD BE RELOCATED INWARD AS PERIMETER SLOPE CONSTRUCTION PROGRESSES AND RECONSTRUCTED TO THE NYS STANDARDS & SPECIFICATION AT THE END OF EACH DAY.
15. PERIMETER AREAS SHALL BE TEMPORARILY STABILIZED WITH SEED AND MULCH PROGRESSIVELY AT MINIMUM AT THE END OF EACH WEEK WITH 100% PERENNIAL RYEGRASS MIX AT A RATE OF 2-4 LBS PER 1000 SF AND MULCH 90-100 LBS PER 1000 SF OF WEED FREE STRAW.
16. SLOPE TRACKING SHALL BE IMPLEMENTED ON ALL SLOPE 1 ON 3 OR GREATER AT THE END OF EACH WORK DAY AND PRIOR TO FINAL SLOPE GRADING AND STABILIZATION.

SITE STABILIZATION:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON-GERMINATING MONTHS, THE AREA SHOULD BE MULCHED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN. A TRACTOR-DRAWN IMPLEMENTS MAY BE USED TO "CRIMP" THE STRAW OR HAY INTO THE SOIL - ABOUT 3 INCHES. THIS METHOD SHOULD BE LIMITED TO SLOPES NO STEEPER THAN 3H:1V. THE MACHINERY SHOULD BE OPERATED ALONG THE CONTOUR, NOTE: CRIMPING OF HAY OR STRAW BY RUNNING OVER IT WITH TRACKED MACHINERY IS NOT RECOMMENDED.
4. BEFORE SEEDING IS APPLIED THE CONTRACTOR SHALL SPREAD SOIL TO PREVENT PONDING AND CONFIRM THAT SOIL WILL SUSTAIN THE SEED GERMINATION AND ESTABLISHMENT OF VEGETATION.
5. GRADED AREAS SHOULD BE SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREAS AND TO PROVIDE A ROUGHENED SURFACE TO PREVENT TOPSOIL FROM SLIDING DOWN SLOPE. COMPACTED SOILS SHOULD BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES, ALONG CONTOUR WHEREVER POSSIBLE, PRIOR TO SEEDING.
6. TOPSOIL OR AMENDED SOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A MINIMUM DEPTH OF 6 INCHES. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE. IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOIL PLACEMENT SHOULD BE CORRECTED IN ORDER TO PREVENT FORMATION OF DEPRESSIONS.
7. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
8. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE ½" TO ¾". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
9. POLYMERIC AND GUM TACKIFIERS MIXED AND APPLIED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS MAY BE USED TO TACK MULCH. AVOID APPLICATION DURING RAIN AND ON WINDY DAYS. A 24-HOUR CURING PERIOD AND A SOIL TEMPERATURE HIGHER THAN 45° F ARE TYPICALLY REQUIRED. APPLICATION SHOULD GENERALLY BE HEAVIEST AT EDGES OF SEEDED AREAS AND AT CRESTS OF RIDGES AND BANKS TO PREVENT LOSS BY WIND. THE REMAINDER OF THE AREA SHOULD HAVE BINDER APPLIED UNIFORMLY. BINDERS MAY BE APPLIED AFTER MULCH IS SPREAD OR SPRAYED INTO THE MULCH AS IT IS BEING BLOWN ONTO THE SOIL. APPLYING STRAW AND BINDER TOGETHER IS GENERALLY MORE EFFECTIVE.
10. SYNTHETIC BINDERS, OR CHEMICAL BINDERS, MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THEY ARE NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
11. MULCH ON SLOPES OF 8% OR STEEPER SHOULD BE HELD IN PLACE WITH NETTING. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
12. SHREDDED PAPER HYDROMULCH SHOULD NOT BE USED ON SLOPES STEEPER THAN 5%. WOOD FIBER HYDROMULCH MAY BE APPLIED ON STEEPER SLOPES PROVIDED A TACKIFIER IS USED. THE APPLICATION RATE FOR ANY HYDROMULCH SHOULD BE 2,000 LB/ACRE AT A MINIMUM.
13. LIME, FERTILIZER, SEED, AND MULCH DISTURBED AREAS PER THE EROSION AND SEDIMENT CONTROL PLANS. IN AREAS OF STEEP SLOPES OR OBVIOUS AREAS WHERE POTENTIAL EROSION MAY OCCUR, AN EROSION CONTROL MAT OR FLEXIBLE GROWTH MEDIUM (FGM) SHALL BE USED. FGM SHALL BE APPLIED PER MANUFACTURER SPECIFICATIONS.
14. ONCE A SECTION OF THE ALIGNMENT HAS BEEN STABILIZED, NO CONSTRUCTION TRAFFIC SHALL OCCUR TO REMOVE ANY BMPS UNTIL THE SECTION HAS ACHIEVED 80% PERENNIAL VEGETATIVE COVER. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM 80% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NONVEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE	DESCRIPTION
04/06/2022	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

GENERAL NOTES

Drawing Number

C001

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LICENSED PROFESSIONAL ENGINEER
062442

NOT FOR CONSTRUCTION

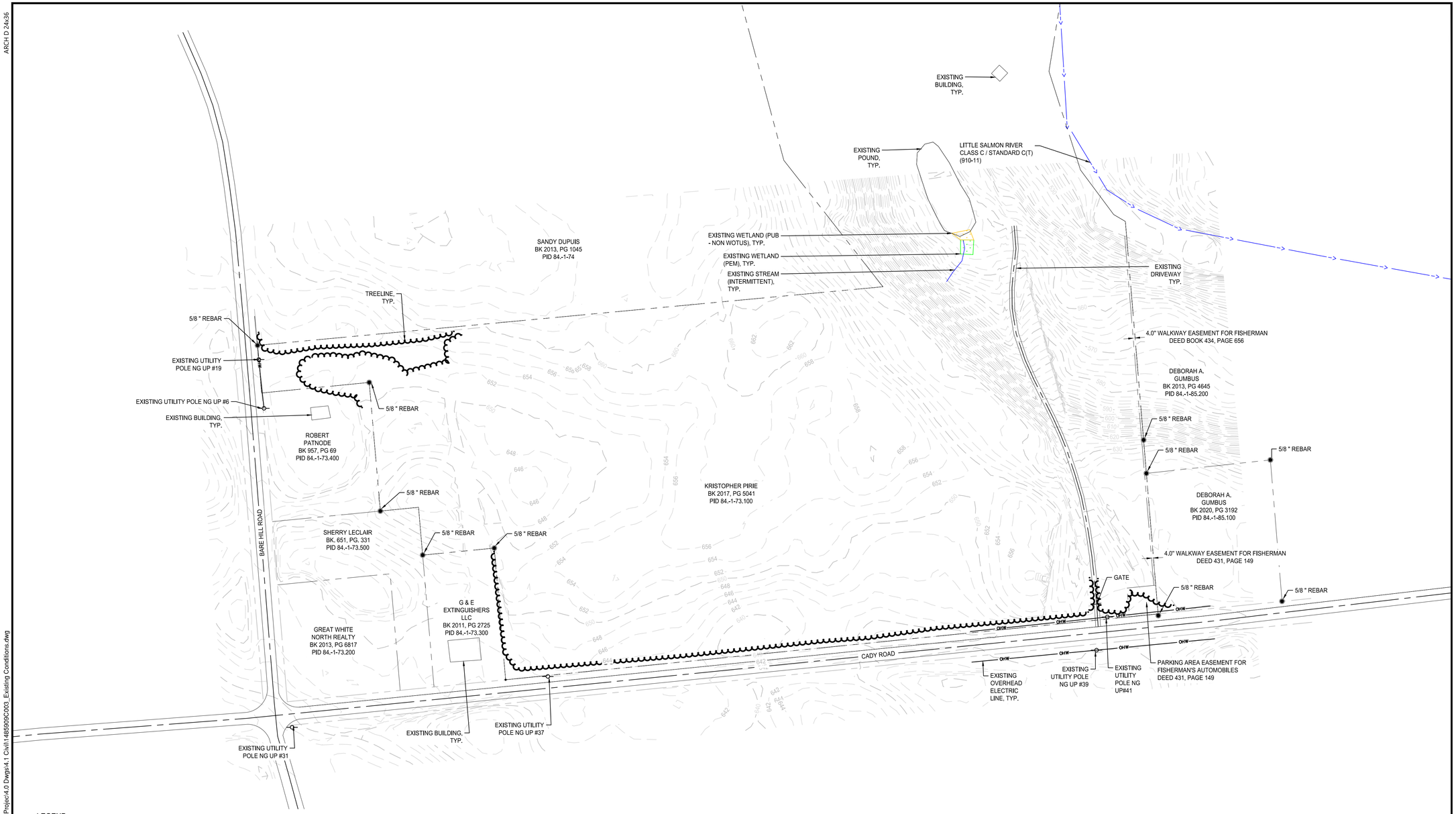
Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
08/27/2021	14859.09

Sheet Name

AREA PARCEL PLAN

Drawing Number

C002



LEGEND

- PROPERTY LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- ROAD CENTERLINE
- OHE — OHE — OVERHEAD WIRE
- STREAM CENTERLINE
- CONTOUR - MAJOR
- CONTOUR - MINOR
- SWL — SWL — SWALE CENTERLINE
- EDGE OF ASPHALT
- EXISTING TREELINE
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- UTILITY POLE
- FOUND IRON PIPE
- FOUND REBAR
- FOUND IRON ROD
- FOUND CONCRETE MONUMENT
- EXISTING SIGN

SURVEY NOTES

SURVEY BY PROGRESSIVE LAND SURVEY SERVICES, PLLC AND IS BASED ON A FIELD SURVEY IN DECEMBER 2020. THIS PLAN IS DATED 12/17/20.

COORDINATE SYSTEM: STATE PLANE NEW YORK EAST NAD83(2011), US SURVEY FEET

SURVEY LOCATION: CADY ROAD/BARE HILL ROAD, MALONE, FRANKLIN COUNTY, NEW YORK, 12953 (TAX ID: 84.-1-73.100)
SITE NAME: MALONE

PARCEL BOUNDARIES AS SHOWN HEREON ARE THE RESULT OF LIMITED TITLE RESEARCH TO DETERMINE PROPERTY LINES NEAREST THE PROJECT AREA. BOUNDARIES ARE NOT THE RESULT OF A COMPREHENSIVE BOUNDARY SURVEY AND ARE WITHOUT THE BENEFIT OF A FULL AND ACCURATE TITLE REPORT. THIS SURVEY IS SUBJECT TO REVISION UPON RECEIPT OF AN UPDATED TITLE REPORT AND COMPLETION OF A FULL BOUNDARY SURVEY. SURVEY WAS PREPARED IN ACCORDANCE WITH A CONTRACT WITH BERGMANN & ASSOCIATES ENTITLED "BERGMANN_NYS_10.1.3_PROPOSAL_REV1", DATED 11/17/2020.

LIDAR WAS OBTAINED FROM THE GIS.NY.GOV WEBSITE AND USED AS A BASE FOR THE OVERALL SURFACE. ACTUAL GROUND SURVEY WAS SUPPLEMENTED WHERE APPLICABLE.

LAND OWNER INFORMATION WAS COMPILED FROM THE FRANKLIN COUNTY ASSESSORS INFORMATION AT THE TIME OF THIS SURVEY.

THE LOCATION OF UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS ARE NOT ALWAYS KNOWN AND OFTEN MUST BE ESTIMATED. IF ANY UNDERGROUND IMPROVEMENTS OR ENCROACHMENTS EXIST OR ARE SHOWN, THE IMPROVEMENTS OR ENCROACHMENT ARE NOT COVERED BY THIS CERTIFICATE.

N

0 100 200 300 FT

1" = 100' SCALE BAR

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YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

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STATE OF NEW YORK — ERIC C. REDDING — LICENSED PROFESSIONAL ENGINEER — 092442

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Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
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Sheet Name

EXISTING CONDITION PLAN

Drawing Number

C003

ARCH D 24x36

SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C" COUNTRY SIDE DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78,100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 2 WINNERS CIRCLE, SUITE 102 ALBANY, NY 12205 (518) 862-0325		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	75 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- EXISTING REBAR

N

0 100 200 300 FT

1" = 100' SCALE BAR

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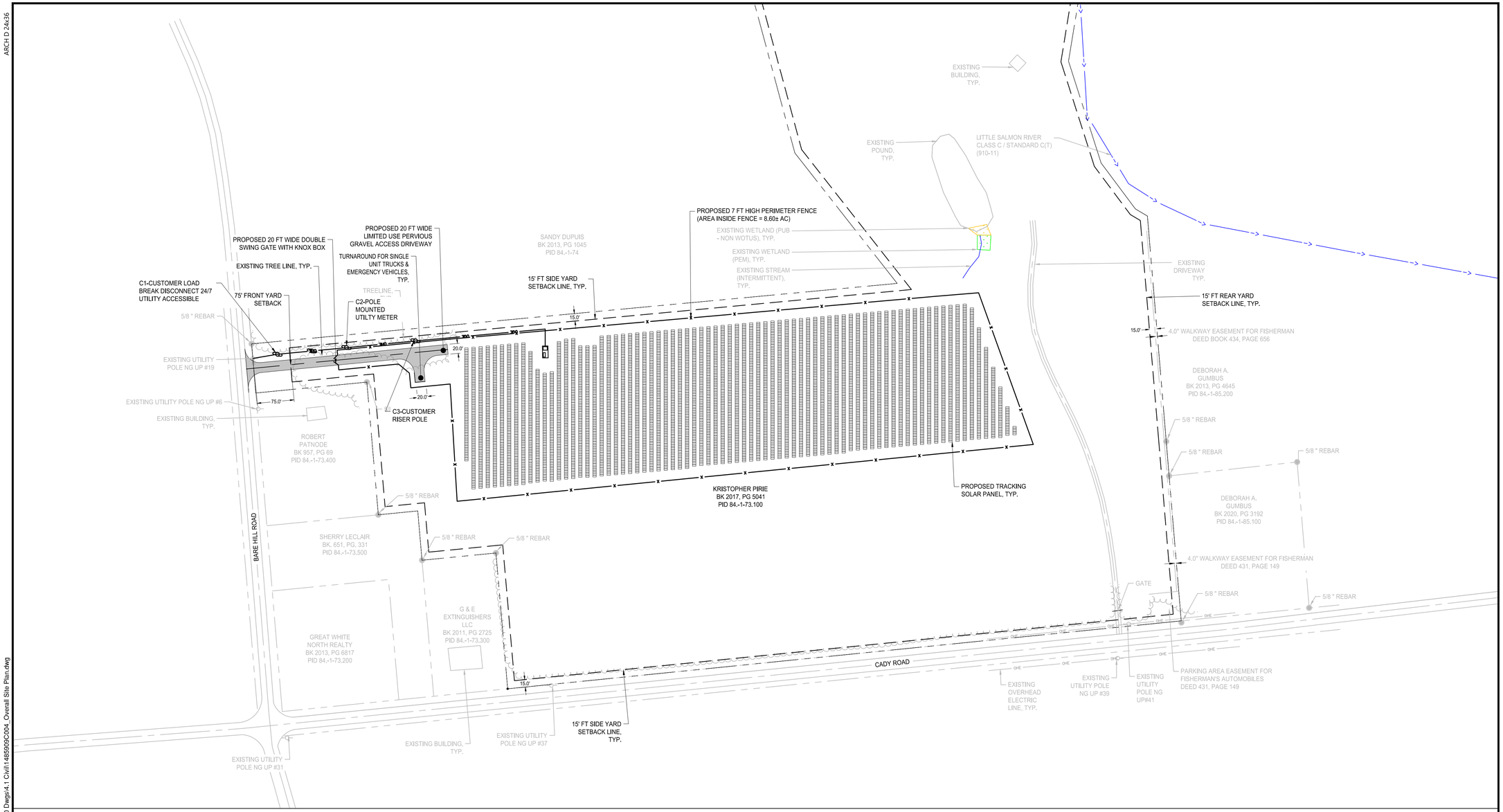
Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

OVERALL SITE PLAN

Drawing Number

C004



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C" COUNTRYSIDE DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 2 WINNERS CIRCLE, SUITE 102 ALBANY, NY 12205 (518) 862-0325		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	75 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- EXISTING WETLAND (PEM)
- EXISTING WETLAND (PUB - NON WOTUS)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- EXISTING REBAR

N

0 100 200 300 FT

1" = 100' SCALE BAR

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ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
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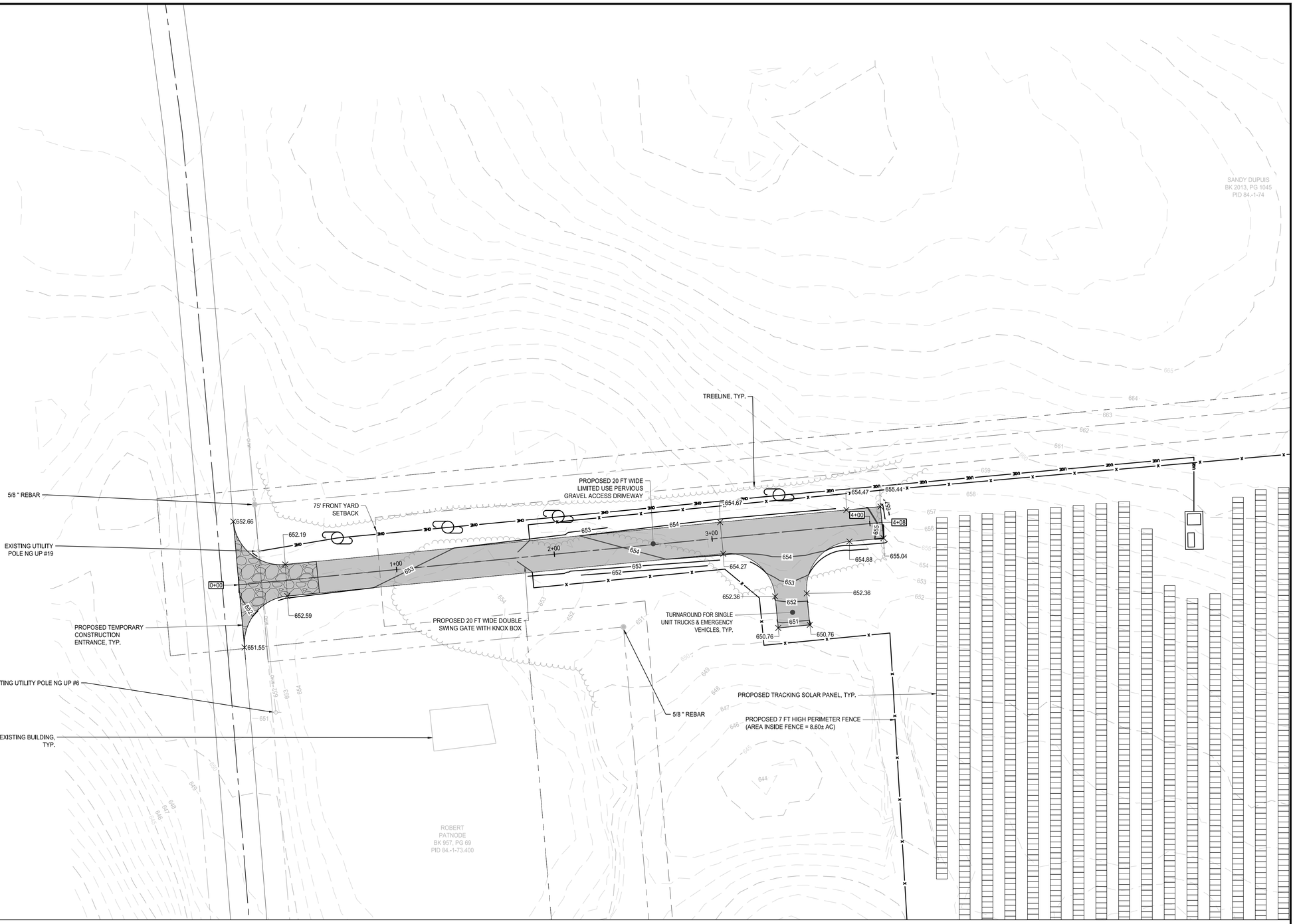
Sheet Name

SITE PLAN

Drawing Number

C005

ARCH D 24x36



GRADING & EROSION & SEDIMENT CONTROL LEGEND

- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- LOD — LOD — APPROXIMATE LIMITS OF DISTURBANCE
- DRIVEWAY SECTION ALIGNMENT
- SILT — PROPOSED SILT FENCE
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISITNG MAJOR CONTOUR
- EXISTING MINOR CONTOUR

N

0 30 60 90 FT

1" = 30' SCALE BAR

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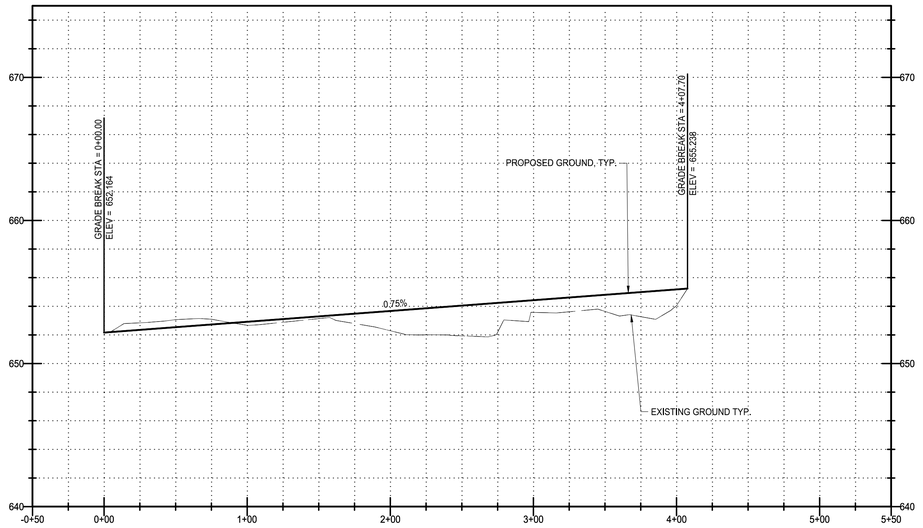
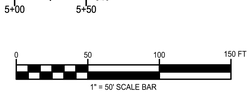
GRADING & EROSION CONTROL PLAN

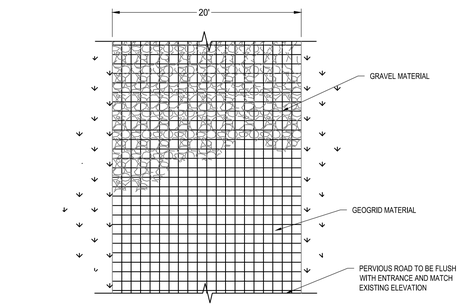
Drawing Number

C006

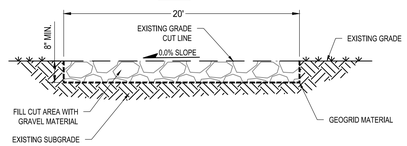


DRIVEWAY SECTION (STA. 0+00 TO 4+07.64)
1"=5' VERTICAL
1"=50' HORIZONTAL





PLAN



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

NO SCALE

GEOGRID MATERIAL NOTES:

1. THE GEOGRID, OR COMPARABLE PRODUCT, IS INTENDED FOR USE IN 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 SPECIFICATION OF NYSDOT 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 DRESSED AS REQUIRED WITH ONLY 1-4" CRUSHED STONE MEETING NYSDOT 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

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 OF POTENTIAL REDUCTION OF NATIVE INFILTRATION RATES DIE 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

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)
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 IN SITU SOIL. DO NOT PLACE IN AN AREA THAT IMPEDES STORM WATER DRAINAGE.
5. GRADE ROADWAY, WHERE NECESSARY, TO NATIVE SOILS 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 STORM WATER DRAINAGE.
7. ROADWAY WIDTH TO BE DETERMINED BY CLIENT.
8. THE LIMITED USE PERVIOUS ACCESS ROAD CROSS SLOPE SHALL BE 1.5% IN MOST CASES AND SHOULD NOT EXCEED 6%. 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 THE INITIAL PHASES OF CONSTRUCTION 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 ARES, 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 THE 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 DISCHARGE 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-CONSTRICTION 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 USED 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-0-20-001 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.

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CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE	DESCRIPTION
04/06/2022	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
092442
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	ECR
Date Issued	Project Number
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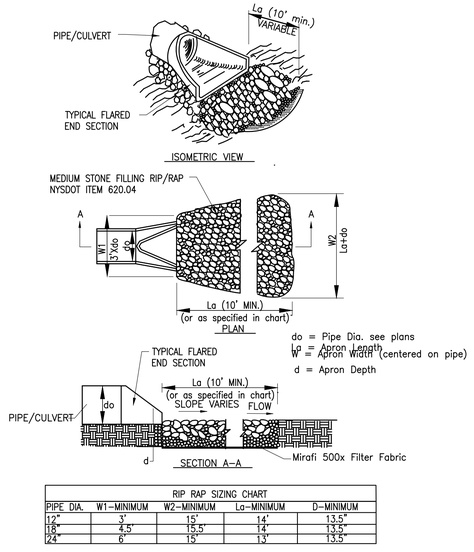
GRADING PLAN DETAILS

Drawing Number

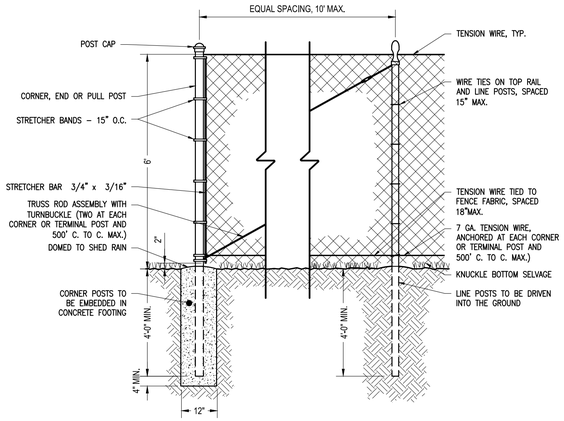
C007



RIP RAP SIZING CHART				
PIPE DIA.	W1-MINIMUM	W2-MINIMUM	La-MINIMUM	D-MINIMUM
12"	3'	15'	14'	13.5"
18"	4.5'	15.5'	14'	13.5"
24"	6'	15'	13'	13.5"

NOTES:
1. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NO LESS THAN 6".
2. NSTALL FILTER MIRAFI 500X OR APPROVED EQUAL FILTER FABRIC BETWEEN RIP-RAP AND SUBBGRADE

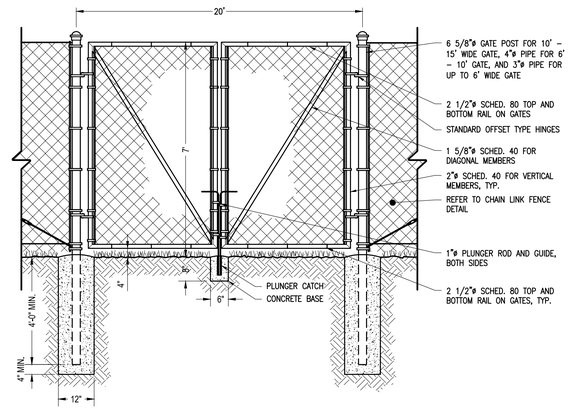
OUTLET PROTECTION RIP-RAP APRON
N.T.S.



USE	NOM. OD.
LINE POSTS	2 1/2"
CORNER, END, GATE, & PULL POSTS	3"
RAILS	1 5/8"
GATE FRAMES	2"

NOTES:
1. ALL POSTS SHALL BE PLUMB
2. WIRE TIES SHALL BE PLACED 15" ON CENTER ALONG TOP RAIL AND LINE POSTS.
3. LINE POSTS SHALL BE DRIVEN INTO THE GROUND.
4. CORNER POSTS SHALL BE EMBEDDED IN 12" DIAMETER CONCRETE FOOTING.

CHAIN-LINK FENCE DETAIL
N.T.S.



NOTES:
1. ALL POSTS SHALL BE PLUMB
2. WELD ALL PIPE CONNECTIONS.
3. GATE FABRIC TO MATCH FENCE FABRIC. PROVIDE MATCHING POST CAPS WHERE REQUIRED.
4. NOTCH CURBS TO MAINTAIN 4" HEIGHT BETWEEN BOTTOM OF GATE AND GRAVEL.
5. PROVIDE EMBEDDED METAL SLEEVE AND HOLD OPEN FOR EACH LEAF OF GATE.
6. CONTRACTOR SHALL INSTALL A KNOX BOX NEXT TO GATE FOR FIRE DEPARTMENT ACCESS

CHAIN-LINK FENCE GATE DETAIL
N.T.S.

NOTES:

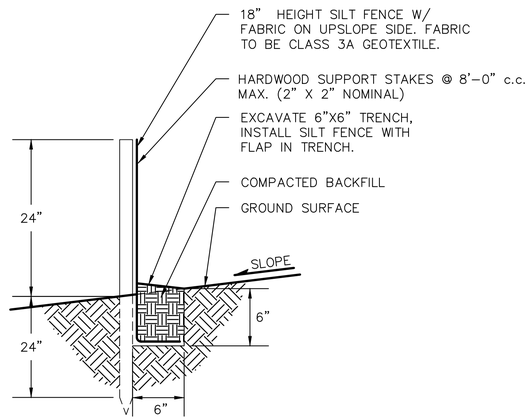
1. FENCE SHALL BE INSTALLED ON A LEVEL GRADE. EXTEND ENDS OF FENCING UPHILL SO BOTTOM OF FENCE IS AT AN ELEVATION ABOVE TOP OF FENCE.
2. SEDIMENT MUST BE REMOVED FROM SILT BARRIER FENCING WHEN HEIGHT OF SILT REACHES A MAXIMUM OF 9" AGAINST SILT FENCE.
3. MAXIMUM SLOPE LENGTHS CONTRIBUTING TO SILT FENCE MUST NOT EXCEED THE LENGTH BELOW:

SLOPE percent	SLOPE LENGTH feet
0 - 2	250
< 5	100
< 10	50
< 15	35
< 20	25
< 25	20
< 40	15
< 50	10

4. FABRIC SHALL BE FASTENED TO POSTS WITH METAL FASTENERS AND REINFORCING MATERIAL PLACED BETWEEN THE FABRIC AND FASTENER.
5. SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH STORM EVENT. SILT FENCE WHICH HAS BEEN UNDERMINED OR OVERTOPPED SHALL BE REPLACED WITH A STONE FILTER OUTLET.

COMPOST FILTER SOCK - SILT FENCE EQUIVALENCY CHART		
COMPOST FILTER SOCK	STACKED COMPOST FILTER SOCK	SILT FENCE
12" COMPOST FILTER SOCK	--	STANDARD 18" SILT FENCE
18" COMPOST FILTER SOCK	3 - 12" SOCKS	REINFORCED 30" SILT FENCE
24" COMPOST FILTER SOCK	2 - 18" SOCKS, 1 - 12" SOCK	SUPER SILT FENCE

SILT FENCE DETAIL
N.T.S.



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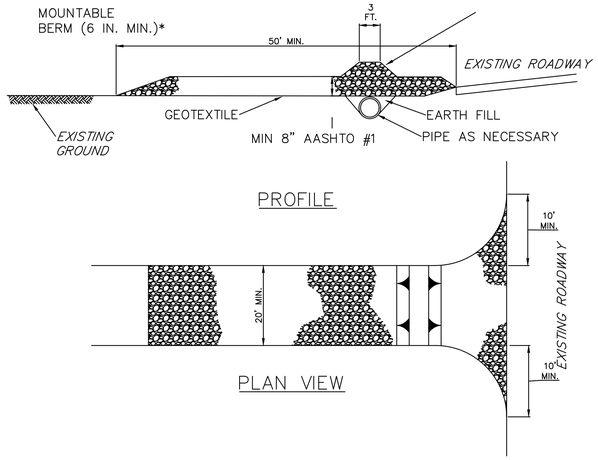
DETAILS I

Drawing Number

C008

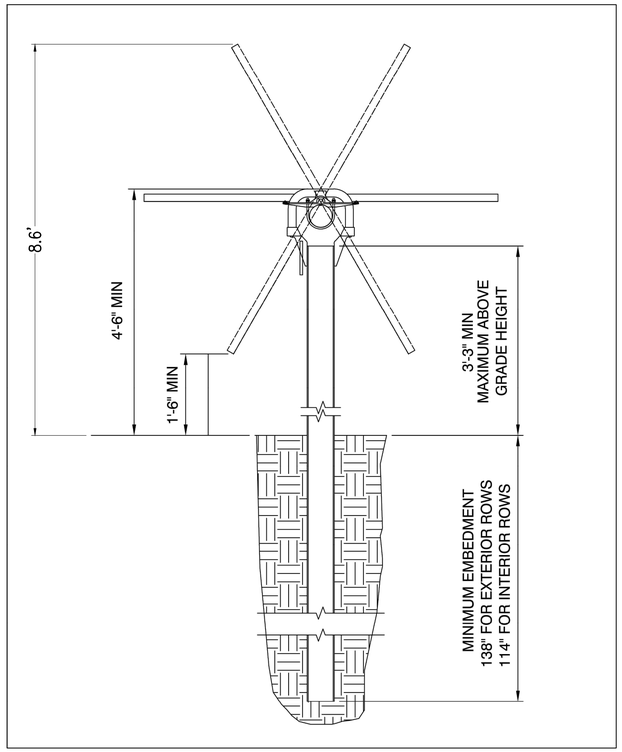


* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

NOTES:

1. REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
2. RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
3. MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
4. MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



TRACKER PANEL DETAIL
NO SCALE

GENERAL NOISE NOTES:

1. PROPOSED DECIBELS FOR SPECIFIED INVERTERS WILL BE APPROXIMATELY 69 dBA AT 5 FEET AND 70 DEGREES FAHRENHEIT.
2. PROPOSED DECIBELS FOR SPECIFIED TRACKER MOTORS WILL BE APPROXIMATELY 80 dBA AT 5 FEET AND 70 DEGREES FAHRENHEIT.

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DETAILS II

Drawing Number

C009

UPLAND SEED MIX		
LOW-GROWING WILDFLOWER & GRASS MIX - ERNMX #156		
SEEDING RATE: 20 LB PER ACRE WITH A COVER CROP OF GRAIN RYE AT 30 LB PER ACRE		
SCIENTIFIC NAME	COMMON NAME	% OF MIX
FESTUCA OVINA	SHEEP FESCUE, VARIETY NOT STATED	63.60%
LOLIUM MULTIFLORUM (L. PERENNE VAR. ITALICUM)	ANNUAL RYEGRASS	17%
LINUM PERENNE SSP. LEWISII	PERENNIAL BLUE FLAX	8%
RUDBECKIA HIRTA	BLACKEYED SUSAN, COASTAL PLAIN NC ECOTYPE	2%
COREOPSIS LANCEOLATA	LANCELEAF COREOPSIS, COASTAL PLAIN NC ECOTYPE	2%
CHRYSANTHEMUM LEUCANTHEMUM	OXEYE DAISY	2%
CHRYSANTHEMUM MAXIMUM	SHASTA DAISY	1%
CHAMAECRISTA FASCICULATA (CASSIA F.)	PARTRIDGE PEA, PA ECOTYPE	1%
PAPAVER RHOEAS, SHIRLEY MIX	CORN POPPY/SHIRLEY MIX	1%
ACHILLEA MILLEFOLIUM	COMMON YARROW	0.5%
ASTER OBLONGIFOLIUS (SYMPHYOTRICHUM OBLONGIFOLIUM)	AROMATIC ASTER, PA ECOTYPE	0.5%
EUPATORIUM COELESTINUM (CONOCLINIUM C.)	MISTFLOWER, VA ECOTYPE	0.5%
MONARDA PUNCTATA, COASTAL PLAIN SC ECOTYPE	SPOTTED BEEBALM, COASTAL PLAIN SC ECOTYPE	0.5%
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	0.3%
PYCNANTHEMUM TENUIFOLIUM	SLENDER MOUNTAINMINT	0.1%
COMPANY INFORMATION		
ERNST CONSERVATION SEEDS, INC.		
ADDRESS: 8884 MERCER PIKE, MEADVILLE, PA 16335		
PHONE: (800) 873-3321		
WEB: HTTP://WWW.ERNSTSEED.COM		

*OR APPROVED EQUIVALENT

SITE STABILIZATION - SEED MIX

N.T.S.

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS					
SOIL AMENDMENT		PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	NOTES
PERMANENT SEEDING	AGRICULTURAL LIME	6 TONS	240 LB.	2,480 LB.	OR AS PER SOIL TEST: MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
	10-10-20 FERTILIZER	1,000 L.B.	25 LB.	210 LB.	
TEMPORARY SEEDING	AGRICULTURAL LIME	1 TON	40 LB.	410 LB.	TYPICALLY NOT REQUIRED FOR TOPSOIL STOCKPILES
	10-10-20 FERTILIZER	500 LB.	12.5 LB.	100 LB.	

COMPOST STANDARDS	
ORGANIC MATTER CONTENT	80% - 100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
pH	5.5 - 8.0
MOISTURE CONTENT	35% - 55%
PARTICLE SIZE	98% PASS THROUGH 1" SCREEN
SOLUBLE SALT CONCENTRATION	5.0 dS/m (mmhos/cm) MAXIMUM

MULCH APPLICATION RATES				
MULCH TYPE	APPLICATION RATE (MIN.)			NOTES
	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YD.	
STRAW	3 TONS	140 LB.	1,240 LB.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LB.	1,240 LB.	TIMOTHY, MIXED CLOVER AND TIMOTHY, OR OTHER NATIVE FORAGE GRASSES
WOOD CELLULOSE	1,500 LB.	35 LB.	310 LB.	DO NOT USE ALONE IN WINTER, DURING HOT AND DRY WEATHER OR ON STEEP SLOPES (> 3:1)
WOOD	1,000 LB. CELLULOSE	25 LB.	210 LB.	WHEN USED OVER STRAW OR HAY
WOOD CHIPS	4 - 6 TONS	185 - 275 LB.	1,650 - 2,500 LB.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES

NOTES:

1. WHEN FINAL GRADE IS ACHIEVED DURING NON–GERMINATING MONTHS, THE AREA SHOULD BE TEMPORARILY STABILIZED UNTIL THE BEGINNING OF THE NEXT PLANTING SEASON.
2. MULCHES SHOULD BE APPLIED AT THE RATES SHOWN IN THE MULCH APPLICATION RATES TABLE. VERY LITTLE BARE GROUND SHOULD BE VISIBLE THROUGH THE MULCH.
3. STRAW AND HAY MULCH SHOULD BE ANCHORED OR TACKIFIED IMMEDIATELY AFTER APPLICATION TO PREVENT BEING WINDBLOWN.
4. TOPSOIL SHOULD BE UNIFORMLY DISTRIBUTED ACROSS THE DISTURBED AREA TO A DEPTH OF 4 INCHES MINIMUM. SPREADING SHOULD BE DONE IN SUCH A MANNER THAT SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL PREPARATION OR TILLAGE.
5. TOPSOIL SHOULD NOT BE PLACED WHILE THE TOPSOIL OF SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
6. WHEN USED AS A MULCH REPLACEMENT, THE APPLICATION RATE (THICKNESS) OF THE COMPOST SHOULD BE 1/2" TO 3/4". COMPOST SHOULD BE PLACED EVENLY AND SHOULD PROVIDE 100% SOIL COVERAGE. NO SOIL SHOULD BE VISIBLE.
7. BLANKETING SHALL BE USED ON ALL SLOPES 3H:1V OR STEEPER OR AS NOTED ON THE PLANS.
8. PERMANENT STABILIZATION SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF EARTH DISTURBANCE.

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ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
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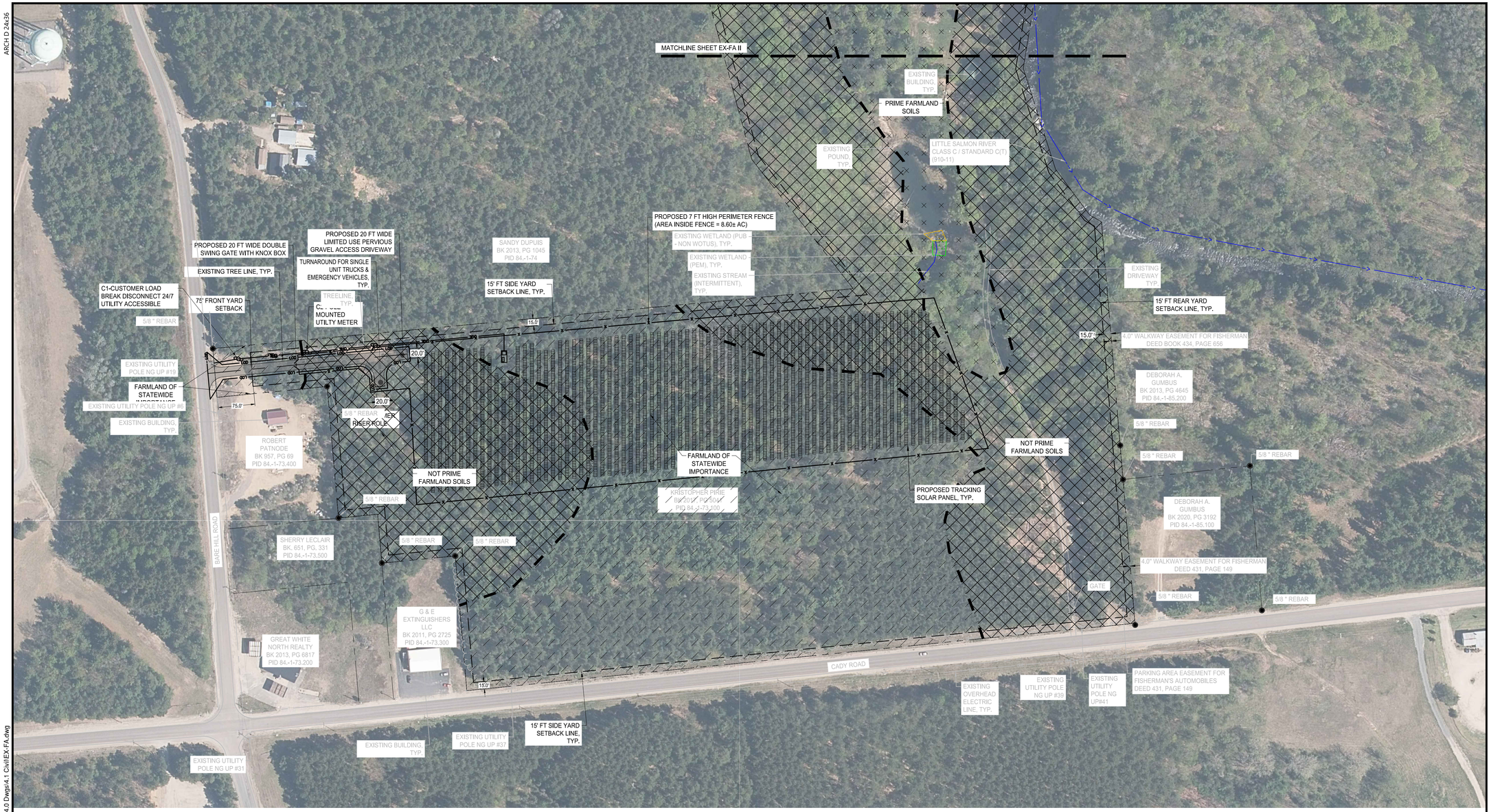
Sheet Name

DETAILS III

Drawing Number

C010

11 of 11



SITE PLAN DATA TABLE		
SITE IS LOCATED IN THE "C-G" GENERAL COMMERCIAL DISTRICT USE		
PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 2 WINNERS CIRCLE, SUITE 102 ALBANY, NY 12205 (518) 862-0325		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	100 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

NOTES

1. REQUIRED ZONING STANDARDS REFLECT THE MOST STRICT RESIDENTIAL ZONING REQUIREMENTS OF THE TOWN OF MALONE PER SECTION 79-10.1 "C-G GENERAL COMMERCIAL DISTRICT USES".

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- PALUSTRINE FORESTED WETLAND (PFO)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- FARMLAND CLASSIFICATION BOUNDARY
- NOT PRIME FARMLAND
- PRIME FARMLAND
- FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND DISTURBANCE TABLE			
FARMLAND CLASSIFICATION	EARTHWORK DISTURBANCE AREA	PERMANENT DISTURBANCE	PROJECT FOOTPRINT AREA (ACRES)
PRIME FARMLAND	0.00 AC.	0.00 AC.	10.92 AC.
FARMLAND OF STATEWIDE IMPORTANCE	0.13 AC.	0.13 AC.	17.16 AC.
NOT PRIME FARMLAND	0.19 AC.	0.19 AC.	21.52 AC.
TOTAL DISTURBANCE	0.32 AC.	0.32 AC.	49.60 AC.

N

0 80 160 240 FT

1" = 80' SCALE BAR

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AG	WDP
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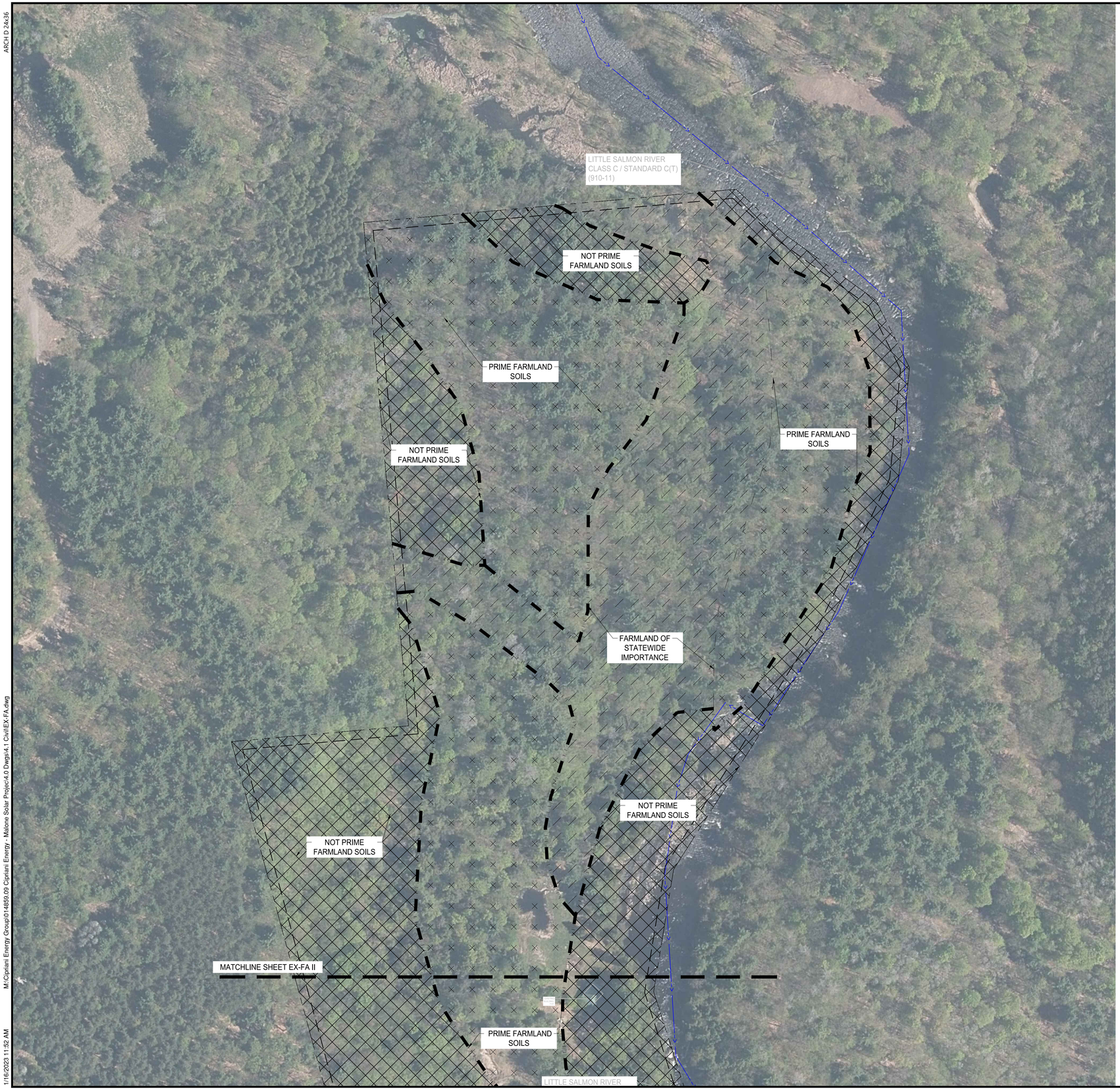
FARMLAND CLASSIFICATION EXHIBIT

Drawing Number

EX-FA I

1 of 2



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PROPOSED USE: SOLAR ENERGY SYSTEM		
PARCEL 84.-1-78.100 TOWN OF MALONE, COUNTY OF FRANKLIN STATE OF NEW YORK		
APPLICANT: CIPRIANI ENERGY GROUP 125 WOLF ROAD, SUITE 312 COLONIE NY, 12205 (518) 390-4004	OWNER(S) OF RECORD: KRISTOPHER PIRIE	
PLANS PREPARED BY: BERGMANN 2 WINNERS CIRCLE, SUITE 102 ALBANY, NY 12205 (518) 862-0325		
DESCRIPTION	REQUIRED	PROPOSED
MIN. LOT SIZE	43,560 SF	49.6 AC
MINIMUM LOT WIDTH	N/A	100± FT
MIN. SIDE YARD SETBACK	15 FT	50± FT
MIN. FRONT YARD SETBACK	100 FT	400±FT
MIN. REAR YARD SETBACK	15 FT	300±FT

NOTES

1. REQUIRED ZONING STANDARDS REFLECT THE MOST STRICT RESIDENTIAL ZONING REQUIREMENTS OF THE TOWN OF MALONE PER SECTION 79-10.1 "C-G GENERAL COMMERCIAL DISTRICT USES".

LEGEND

- PROPERTY LINE
- SETBACK LINE
- ADJOINER PROPERTY LINE
- ROAD RIGHT-OF-WAY
- EXISTING ROAD CENTERLINE
- EXISTING OVERHEAD WIRE
- EXISTING STREAM CENTERLINE
- PROPOSED FENCE LINE
- PROPOSED OVERHEAD UTILITY LINE
- PROPOSED UNDERGROUND UTILITY LINE
- PROPOSED TREELINE
- EXISTING EDGE OF ASPHALT
- EXISTING TREELINE
- PROPOSED DRIVEWAY
- PALUSTRINE FORESTED WETLAND (PFO)
- PROPOSED SOLAR PANEL
- EXISTING UTILITY POLE
- FARMLAND CLASSIFICATION BOUNDARY
- NOT PRIME FARMLAND
- PRIME FARMLAND
- FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND DISTURBANCE TABLE			
FARMLAND CLASSIFICATION	EARTHWORK DISTURBANCE AREA	PERMANENT DISTURBANCE	PROJECT FOOTPRINT AREA (ACRES)
PRIME FARMLAND	0.00 AC.	0.00 AC.	10.92 AC.
FARMLAND OF STATEWIDE IMPORTANCE	0.13 AC.	0.13 AC.	17.16 AC.
NOT PRIME FARMLAND	0.19 AC.	0.19 AC.	21.52 AC.
TOTAL DISTURBANCE	0.32 AC.	0.32 AC.	49.60 AC.

N

0 80 160 240 FT

1" = 80' SCALE BAR

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

2 Winners Circle, Suite 102
Albany, NY 12205
www.bergmannpc.com
office: 518.862.0325

CIPRIANI ENERGY GROUP

YELLOW 17 LLC

MALONE SOLAR PROJECT

176 BARE HILL RD
MALONE, NY 12953

DATE	DESCRIPTION
04/06/2022	DRAWING UPDATES

STATE OF NEW YORK
ERIC C. REDDING
092443
LICENSED PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION

Project Manager	Discipline Lead
ECR	ECR
Designer	Reviewer
AG	MDP
Date Issued	Project Number
09/04/2021	14859.09

Sheet Name

FARMLAND CLASSIFICATION EXHIBIT

Drawing Number

EX-FA II

Attachment E - Wetland Delineation

ATTACHMENT A

Figures

Yellow 5 LLC
Malone Solar Project

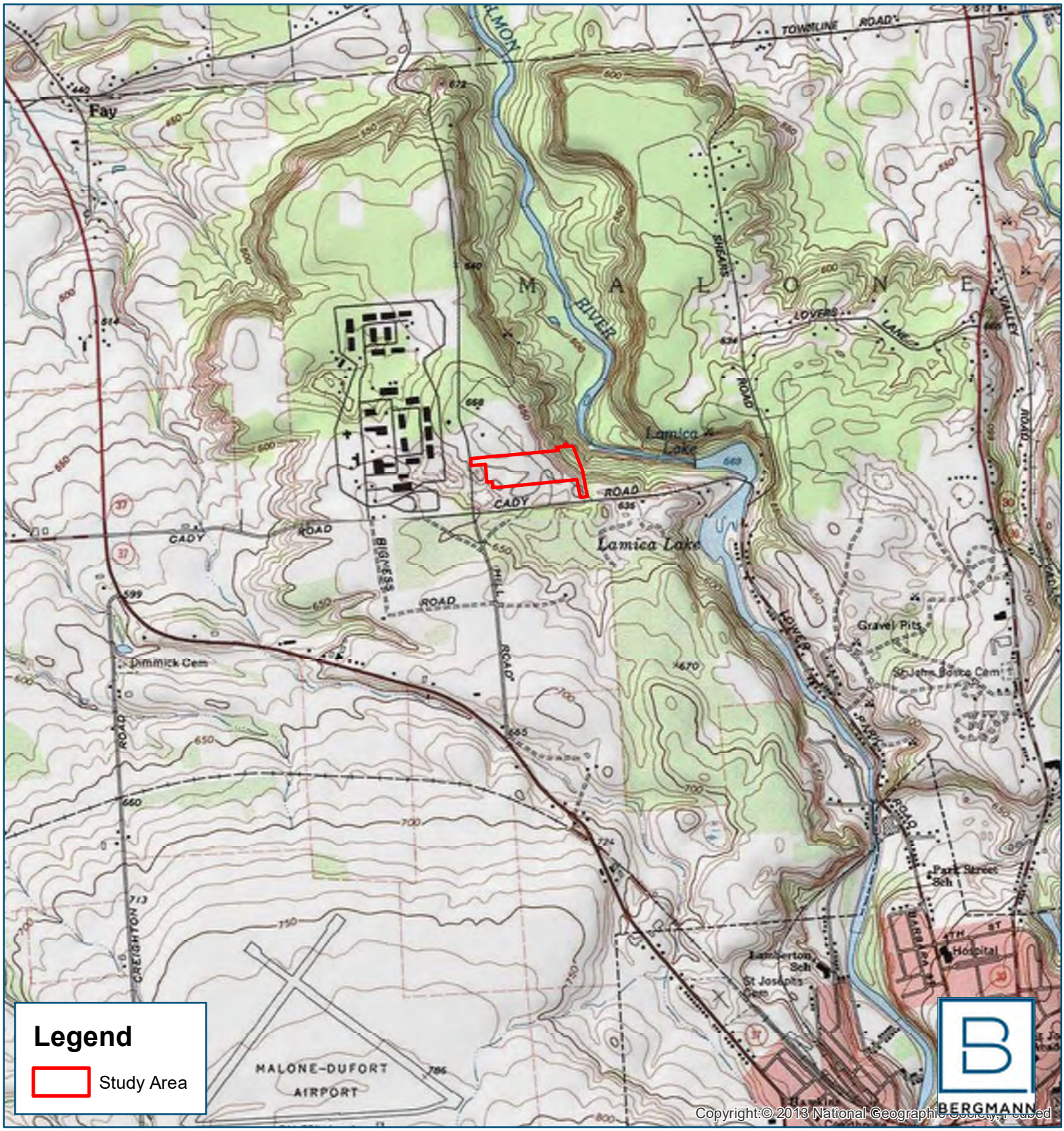
STUDY AREA LOCATION MAP

Fig. 1

2,000 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

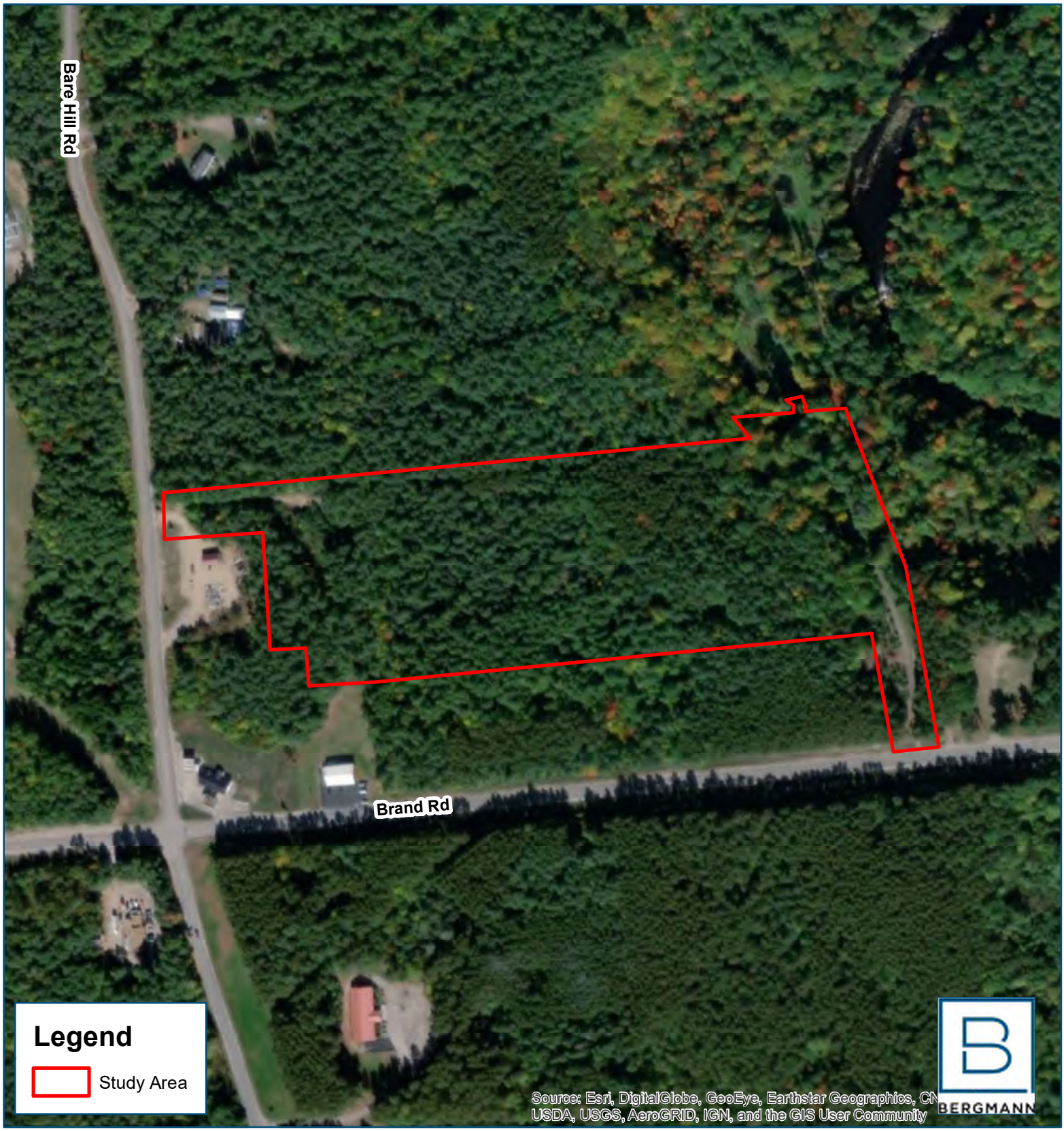
AERIAL IMAGERY MAP

Fig. 2

300 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

NRCS HYDRIC SOIL SURVEY MAP

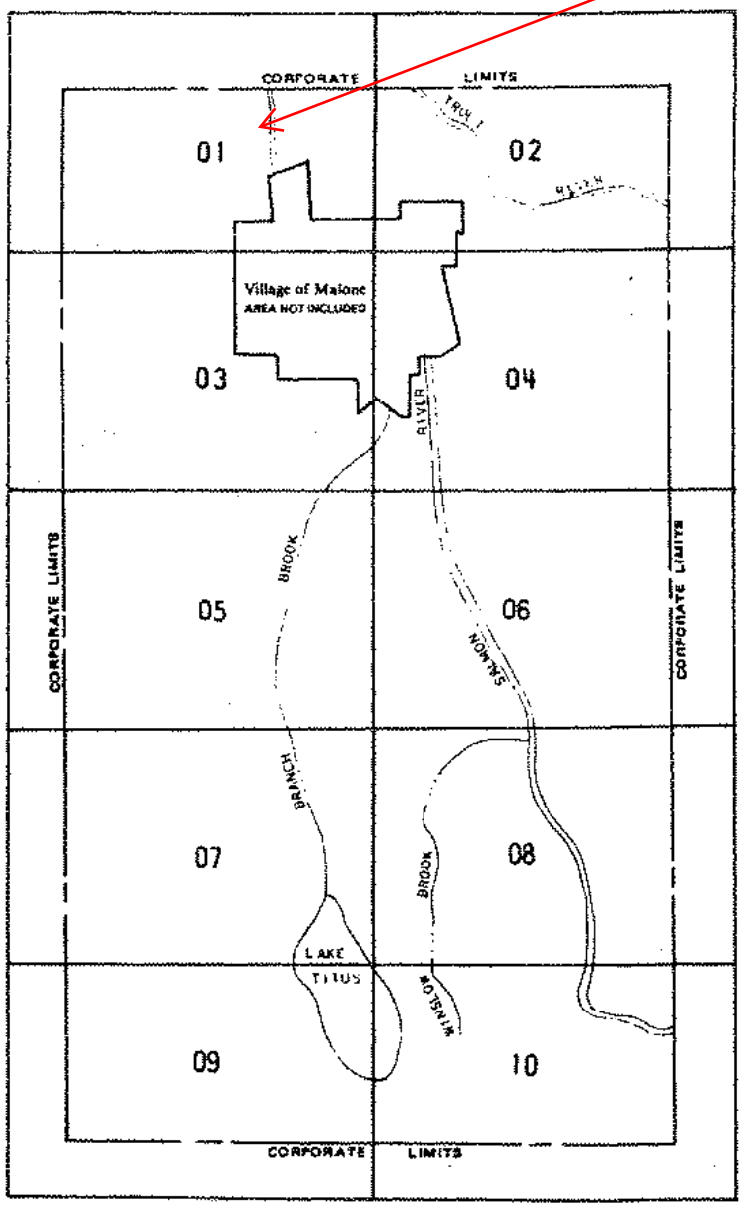
Fig. 3

300 Feet

N

Town of Malone, Franklin County, New York

Yellow 5 LLC
Malone Solar Project
Fig 4. FEMA Flood Hazard Area Map



KEY TO SYMBOLS

ZONE DESIGNATIONS*

ZONE C
ZONE A
ZONE C

Base Flood Elevation Line with elevation in feet — 513 —
Base Flood Elevation where uniform within zone (EL 987)
Elevation Reference Mark RM7×
River Mile • M1.6

*EXPLANATION OF ZONE DESIGNATIONS

A flood insurance map displays the zone designations for a community according to areas of designated flood hazards. The zone designations used by FEMA are

Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined
AO	Areas of 100-year shallow flooding; flood depth 1 to 3 feet; product of flood depth (feet) and velocity (feet per second) less than 15
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined
A99	Areas of 100-year flood to be protected by a flood protection system under construction; base flood elevations and flood hazard factors not determined
B	Areas between limits of 100-year flood and 500-year flood; areas of 100-year shallow flood where depths less than 1 foot
C	Areas outside 500-year flood
D	Areas of undetermined, but possible, flood hazards
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factor determined

NOTES TO USER

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine when actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

INITIAL IDENTIFICATION SEPTEMBER 20, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS JANUARY 28, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE SEPTEMBER 4, 1985
FLOOD INSURANCE RATE MAP REVISIONS

federal emergency management agency

FIRM
FLOOD INSURANCE RATE MAP 01-10
MAP INDEX
TOWN OF MALONE, NY
(FRANKLIN CO.)

COMMUNITY NUMBER 360271 B

Yellow 5 LLC
Malone Solar Project

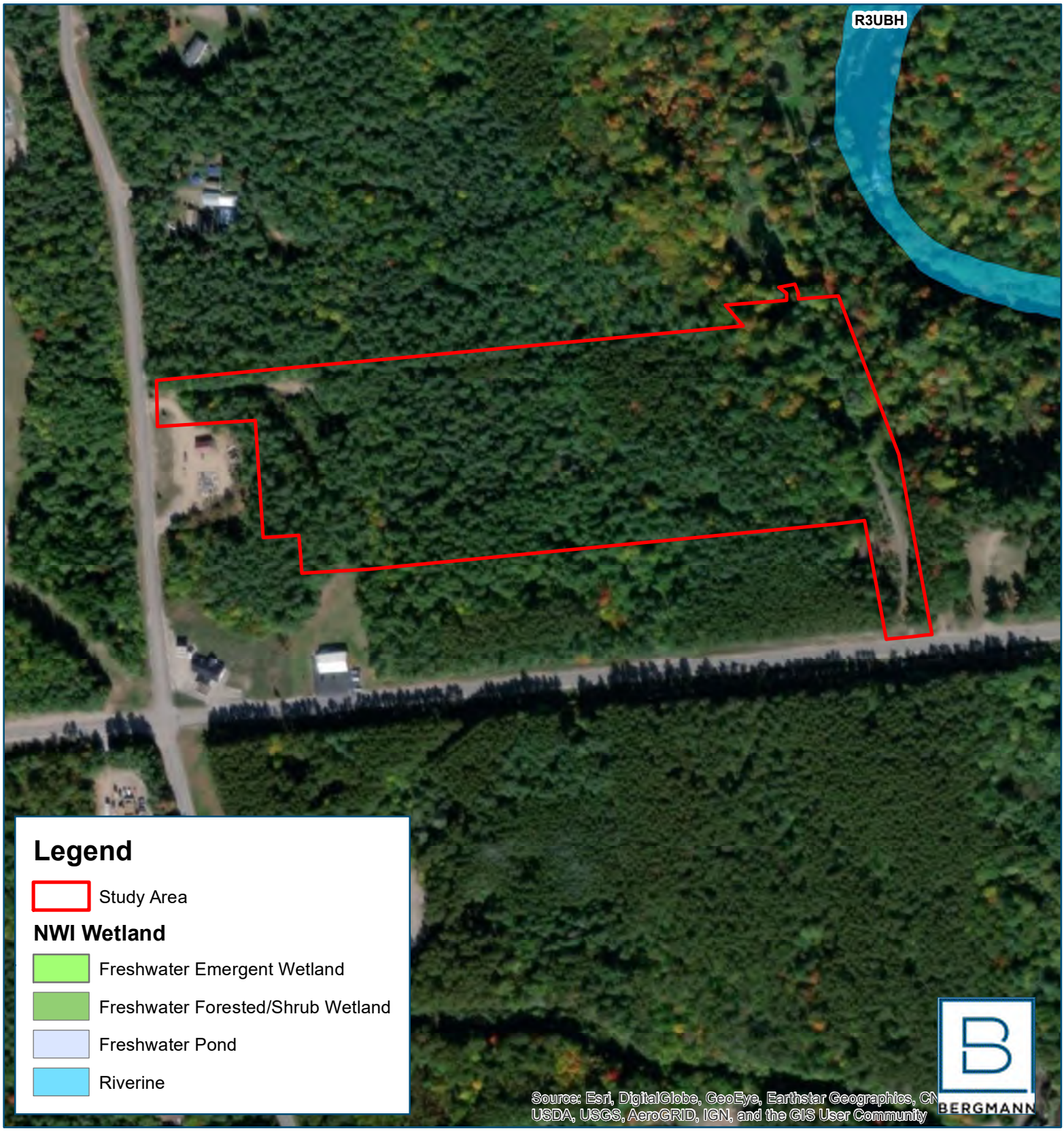
NATIONAL WETLAND INVENTORY MAP

Fig. 5

300 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

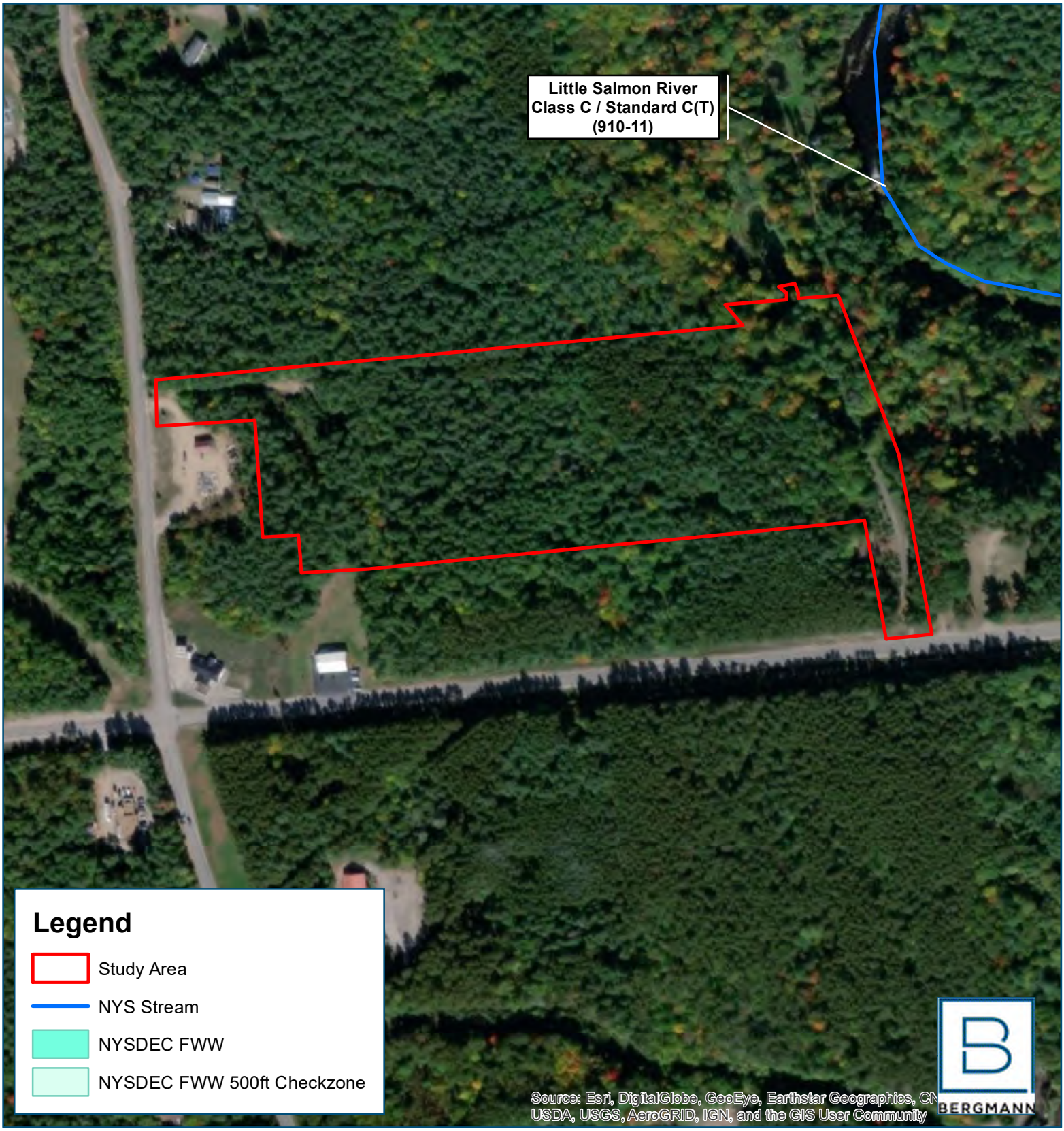
NYSDEC FRESHWATER WETLANDS & STREAMS MAP

Fig. 6

300 Feet

N

Town of Malone, Franklin County, New York



Yellow 5 LLC
Malone Solar Project

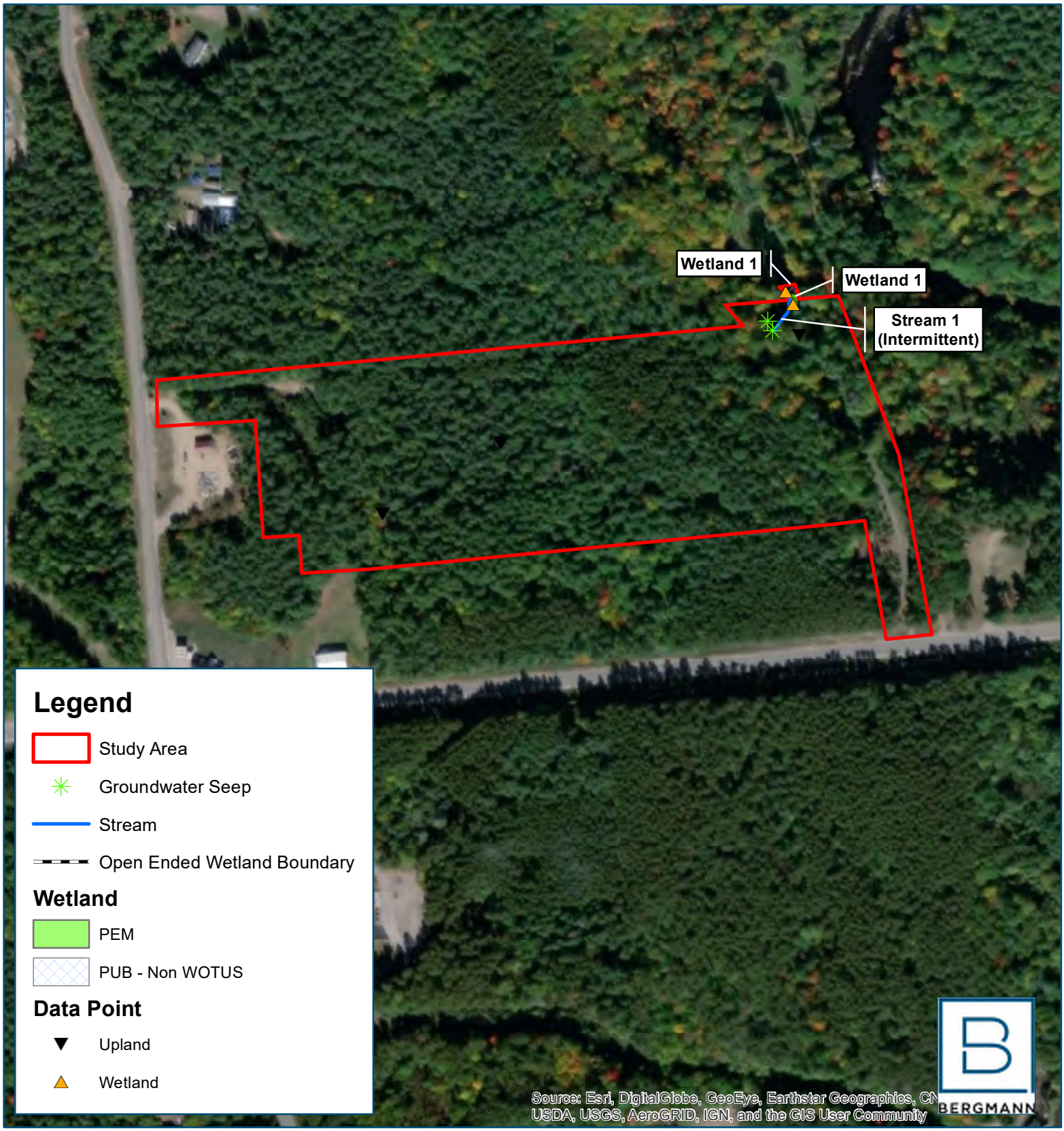
DELINEATAED RESOURCES MAP

Fig. 7

300 Feet

N

Town of Malone, Franklin County, New York



ATTACHMENT B

NRCS Custom Soil Resource Report for
Franklin County, New York

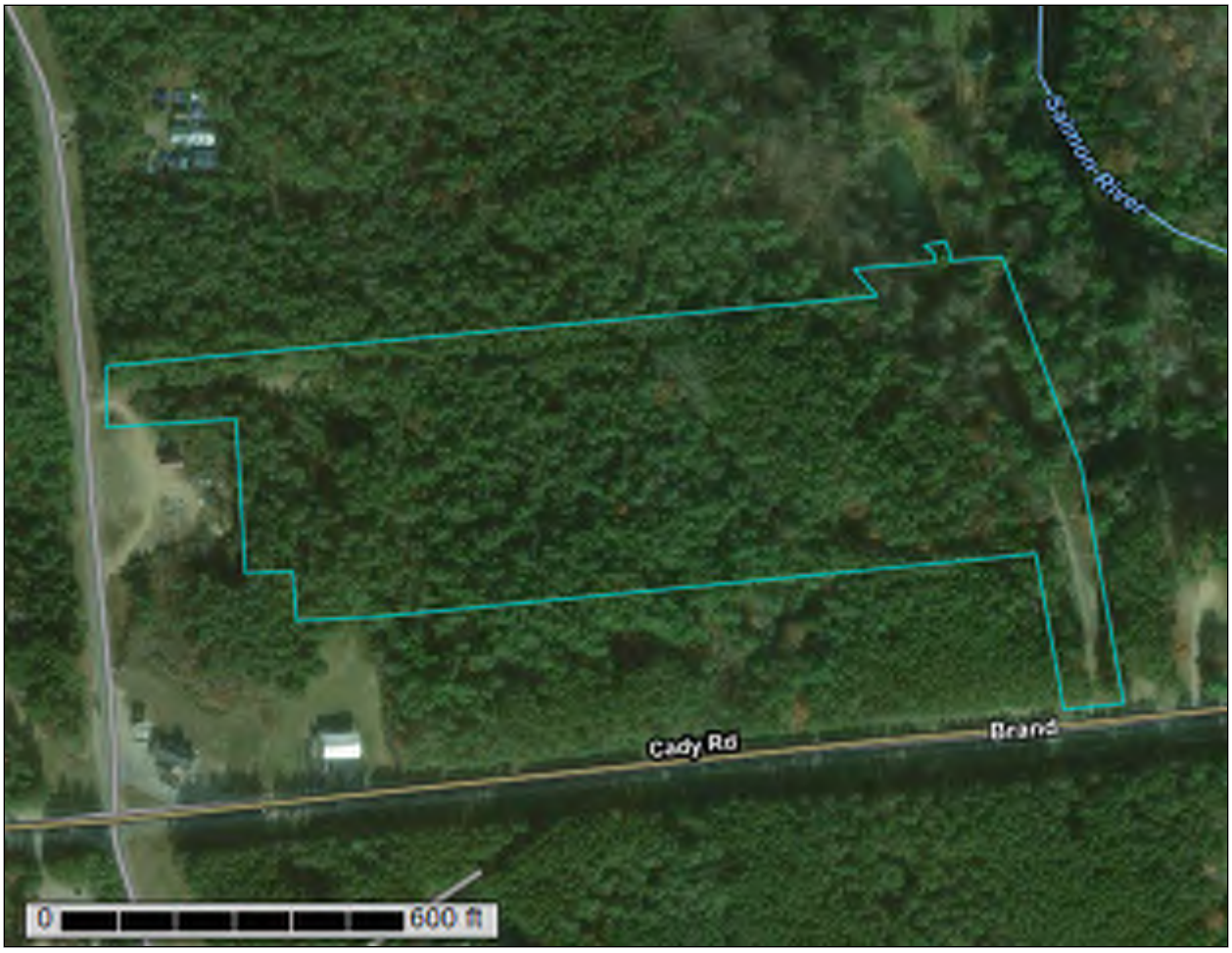
United States Department of Agriculture

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 Franklin County, New York



November 20, 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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Contents

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: 1:2,980 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

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 1:24,000.

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: Franklin County, New York
Survey Area Data: Version 4, Jun 11, 2020

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

Date(s) aerial images were photographed: Aug 10, 2014—Nov 11, 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
Abd	Adams and Colton soils, 8 to 25 percent slopes, severely eroded	5.5	32.4%
Cab	Colton and Constable gravelly loamy sands, 3 to 8 percent slopes	7.5	44.2%
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	1.0	5.8%
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	0.9	5.2%
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	2.1	12.5%
Totals for Area of Interest		**17.1**	**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.

Franklin County, New York

Abd—Adams and Colton soils, 8 to 25 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: bmbp
Elevation: 10 to 2,200 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Adams and similar soils: 45 percent
Colton and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adams

Setting

Landform: Deltas, kame terraces, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciofluvial or deltaic deposits derived mainly from crystalline rock and/or sandstone

Typical profile

H1 - 0 to 22 inches: loamy sand
H2 - 22 to 60 inches: sand

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F142XA005NY - Acidic Dry Outwash Frigid
Hydric soil rating: No

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

H1 - 0 to 11 inches: gravelly loamy sand
H2 - 11 to 27 inches: gravelly loamy sand
H3 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Minor Components

Wallace

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

Constable

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

Croghan

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

Cab—Colton and Constable gravelly loamy sands, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bmc3
Elevation: 10 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Colton and similar soils: 40 percent
Constable and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: gravelly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Description of Constable

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: Sandy and gravelly glaciofluvial deposits derived mainly from acid sandstone or igneous rock

Typical profile

O - 0 to 3 inches: moderately decomposed plant material

H1 - 3 to 9 inches: loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 8 to 20 inches to ortstein
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Ecological site: F142XA004NY - Acidic Shallow Dry Outwash Frigid
Hydric soil rating: No

Minor Components

Duane

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

Croghan

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

Wallace

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

Fahey

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

Adams

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

Ccd—Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: bmc6
Elevation: 10 to 2,000 feet

Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

Colton and similar soils: 40 percent
Constable and similar soils: 35 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Colton

Setting

Landform: Outwash plains, kame terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits of predominantly granitic rock, with lesser amounts of sandstone and schist

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: cobbly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: F143XY601ME - Dry Sand
Hydric soil rating: No

Description of Constable

Setting

Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy and gravelly glaciofluvial deposits derived mainly from acid sandstone or igneous rock

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 9 inches: gravelly cobbly loamy sand
H2 - 9 to 11 inches: gravelly loamy sand
H3 - 11 to 27 inches: gravelly loamy sand
H4 - 27 to 60 inches: stratified sand to gravel

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 8 to 20 inches to ortstein
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F142XA004NY - Acidic Shallow Dry Outwash Frigid
Hydric soil rating: No

Minor Components

Adams

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

Croghan

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

Duane

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

Trout river

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

Wallace

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

Nab—Nicholville fine sandy loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: bmdt

Elevation: 200 to 1,490 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Nicholville

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits having a high content of silt and very fine sand

Typical profile

O - 0 to 2 inches: moderately decomposed plant material
H1 - 2 to 5 inches: fine sandy loam
H2 - 5 to 17 inches: fine sandy loam
H3 - 17 to 26 inches: fine sandy loam
H4 - 26 to 60 inches: stratified fine sand to very fine sand to silt

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.3 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

Wallington

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

Croghan

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

Unnamed soils

Percent of map unit: 5 percent

Salmon

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

Worth

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

Sce—Salmon stony very fine sandy loam over till, 20 to 45 percent slopes

Map Unit Setting

National map unit symbol: bmfn
Elevation: 800 to 2,000 feet
Mean annual precipitation: 35 to 40 inches
Mean annual air temperature: 41 to 45 degrees F
Frost-free period: 95 to 135 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Salmon, Till Substratum

Setting

Landform: Lake plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Glaciolacustrine or eolian deposits, dominated by silt and very fine sand

Typical profile

O - 0 to 3 inches: moderately decomposed plant material
H1 - 3 to 5 inches: loamy very fine sand
H2 - 5 to 33 inches: very fine sandy loam
H3 - 33 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 20 to 45 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 19 to 40 inches
Frequency of flooding: None

Frequency of ponding: None
Available water capacity: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Nicholville

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

Worth

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

Empeyville

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

Wallington

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

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations 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 interpretation.

Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

References:

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

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

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

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Custom Soil Resource Report
Map—Hydric Rating by Map Unit

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Lines

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Rating Points

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- 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 1:24,000.

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: Franklin County, New York
Survey Area Data: Version 4, Jun 11, 2020

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

Date(s) aerial images were photographed: Aug 10, 2014—Nov 11, 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—Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Abd	Adams and Colton soils, 8 to 25 percent slopes, severely eroded	0	5.5	32.4%
Cab	Colton and Constable gravelly loamy sands, 3 to 8 percent slopes	0	7.5	44.2%
Ccd	Colton and Constable gravelly and cobbly loamy sands, 15 to 25 percent slopes	0	1.0	5.8%
Nab	Nicholville fine sandy loam, 2 to 6 percent slopes	0	0.9	5.2%
Sce	Salmon stony very fine sandy loam over till, 20 to 45 percent slopes	0	2.1	12.5%
Totals for Area of Interest			**17.1**	**100.0%**

Rating Options—Hydric Rating by Map Unit

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

References

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

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

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

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

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

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

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

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

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

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

ATTACHMENT C

IPaC Official Species List & NYSDEC ERM Results

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: November 20, 2020
Consultation Code: 05E1NY00-2021-SLI-0530
Event Code: 05E1NY00-2021-E-01592
Project Name: Malone Solar Project

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: 05E1NY00-2021-SLI-0530

Event Code: 05E1NY00-2021-E-01592

Project Name: Malone Solar Project

Project Type: ** OTHER **

Project Description: Development of a +/- 5.00 MW solar farm.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/44.87702103420704N74.31562413294199W

Counties: Franklin, NY

Endangered Species Act Species

There is a total of 0 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.

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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.

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Environmental Resource Mapper

The coordinates of the point you clicked on are:

UTM 18	**Easting:**	554039.5770566261	**Northing:**	4969492.54073729
Longitude/Latitude	**Longitude:**	-74.31581819165342	**Latitude:**	44.87681161183947

The approximate address of the point you clicked on is:
Town of Malone, New York

County: Franklin
Town: Malone
USGS Quad: CONSTABLE, NY-QUE

DEC Region

Region 5:
(Eastern Adirondacks/Lake Champlain) Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington counties. For more information visit **http://www.dec.ny.gov/about/631.html**.

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another

data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

ATTACHMENT D

Representative Study Area Photographs

Photo 1: Wetland 1 (PEM). Facing west.

Photo 2: Wetland 1 (PEM). Facing north.

Photo 3: Wetland 1 (PUB). Facing north.

Photo 4: Wetland 1 (PUB). Facing east.

Photo 5: Stream 1 (intermittent) upstream. Facing southwest.

Photo 6: Stream 1 (intermittent) downstream. Facing northeast.

Photo 7: Groundwater seep. Facing west.

Photo 8: Groundwater seep. Facing west.

Photo 9: Representative upland habitat. Facing east.

Photo 10: Representative upland habitat. Facing north.

ATTACHMENT E

USACE Wetland Determination Data Forms

&

Linear Waters of the U.S. Field Classification Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: W001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Toe of Slope - Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.878013 Long: -74.313722 Datum: NAD 83

Soil Map Unit Name: NaB - Nicholville fine sandy loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Emergent wetland representative to Wetland 1. Located within the northeastern corner of the Study Area.
Adjacent to Stream 1.

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)
- ____ 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)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): 0

Water Table Present? Yes ____ No X Depth (inches): ____

Saturation Present? Yes X No ____ Depth (inches): 0

(includes capillary fringe)

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary and secondary wetland hydrology indicators present.
Wetland receives hydrology from Stream 1.

VEGETATION – Use scientific names of plants. Sampling Point: W001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Tsuga canadensis*	5	Yes	FACU
2. *Acer rubrum*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Onoclea sensibilis*	40	Yes	FACW
2. *Solidago rugosa*	30	Yes	FAC
3. *Juncus effusus*	15	No	OBL
4. *Phalaris arundinacea*	10	No	FACW
5. *Epilobium coloratum*	10	No	OBL
6. *Osmunda regalis*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	50	x 2 =	100
FAC species	35	x 3 =	105
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	120 (A)		255 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	90	7.5YR 3/4	10	C	M	Loamy/Clayey	Prominent redox concentrations
6-16	10YR 5/2	70	10YR 2/1	20	D	M	Sandy	
			7.5YR 4/6	10	C	M		Prominent redox concentrations

[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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Meets A11, S5 & F6.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: W001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.878094 Long: -74.31379 Datum: NAD 83

Soil Map Unit Name: NaB - Nicholville fine sandy loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**	
Hydric Soil Present?	Yes N/A	No ____	**within a Wetland?**	**Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Pond representative to Wetland 1. Located within the northeastern corner of the Study Area.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X 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)
- ____ 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)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	3-4'
Water Table Present?	Yes X	No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary and secondary wetland hydrology indicators present.
Pond receives hydrology from Stream 1 and Wetland 1.

VEGETATION – Use scientific names of plants. Sampling Point: W001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
Herb Stratum (Plot size: 05')			
1. *Phragmites australis*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5 =Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	5 (A)		10 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland fringe

SOIL

Sampling Point: W001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Inundated at time of survey.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: UPL001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.877816 Long: -74.313669 Datum: NAD 83

Soil Map Unit Name: NaB - Nicholville fine sandy loam, 2 to 6 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**	
Hydric Soil Present?	Yes X	No ____	**within a Wetland?**	**Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:	

Remarks: (Explain alternative procedures here or in a separate report.)

Forested habitat.
Representative upland habitat, located in the northeastern portion of the Study Area.

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 X	Depth (inches): ____	
Water Table Present?	Yes ____ No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____ No X	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No pimary or secondary wetland hydrology indicators present.

VEGETATION – Use scientific names of plants. Sampling Point: UPL001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharum*	30	Yes	FACU
2. *Pinus strobus*	15	Yes	FACU
3. *Tsuga canadensis*	15	Yes	FACU
4. *Ostrya virginiana*	10	No	FACU
5. *Fagus grandifolia*	10	No	FACU
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Osmunda claytoniana*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	90 (A)		350 (B)

Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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.)

Heavily browsed understory

SOIL

Sampling Point: UPL001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/2	90	10YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
8-16	10YR 4/1	85	10YR 3/6	15	C	M	Sandy	Prominent redox concentrations

[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)
- X 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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Meets A11 & F6.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: STP001

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Slight slope Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.877153 Long: -74.316314 Datum: NAD 83

Soil Map Unit Name: CaB - Colton and Constable gravelly loamy sands, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

Forested habitat.
Located centrally within the Study Area.

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 X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No pimary or secondary wetland hydrology indicators present.

VEGETATION – Use scientific names of plants. Sampling Point: STP001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus sylvestris*	55	Yes	UPL
2. *Pinus strobus*	20	Yes	FACU
3. *Quercus rubra*	5	No	FACU
4.			
5.			
6.			
7.			
	80	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Fagus grandifolia*	15	Yes	FACU
2. *Pinus strobus*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Absent*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	50	x 4 =	200
UPL species	55	x 5 =	275
Column Totals:	105 (A)		475 (B)

Prevalence Index = B/A = 4.52

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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.)

Heavily browsed understory

SOIL

Sampling Point: STP001

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Sandy	
3-10	10YR 3/6	100					Sandy	
10-20	10YR 4/6	100					Sandy	

[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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Malone Solar Project City/County: Malone / Franklin Co. Sampling Date: 11-11-2020

Applicant/Owner: Yellow 5 LLC State: NY Sampling Point: STP002

Investigator(s): S. Parsons & R. Zack Section, Township, Range: No PLSS

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 142 Lat: 44.876706 Long: -74.317364 Datum: NAD 83

Soil Map Unit Name: Abd - Adams and Colton soils, 8 to 25 percent slopes, severely eroded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X , Soil X , or Hydrology X 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**		
Hydric Soil Present?	Yes ____	No X	**within a Wetland?**	**Yes** ____	**No** X
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID:		

Remarks: (Explain alternative procedures here or in a separate report.)

Forested habitat.
Located within the southwestern portion of the Study Area.

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)
- X 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)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____	
Water Table Present?	Yes ____	No X	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____	**Wetland Hydrology Present?** **Yes** X **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary and secondary wetland hydrology indicators present.

VEGETATION – Use scientific names of plants. Sampling Point: STP002

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	35	Yes	FAC
2. *Pinus sylvestris*	20	Yes	UPL
3.			
4.			
5.			
6.			
7.			
	55	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Pinus strobus*	15	Yes	FACU
2. *Fagus grandifolia*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	20	=Total Cover	
Herb Stratum (Plot size: 05')			
1. *Osmunda claytoniana*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	5	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. *Absent*			
2.			
3.			
4.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	20	x 4 =	80
UPL species	20	x 5 =	100
Column Totals:	80 (A)		300 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - 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 or equal to 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.)

Heavily browsed understory

SOIL

Sampling Point: STP002

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/2	100					Loamy/Clayey	
2-16	10YR 3/4	100					Sandy	

[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)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ 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)
- ___ Marl (F10) (**LRR K, L**)

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**)
- ___ 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 (F21)
- ___ 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: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to reflect the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Linear Waters of the U.S. Field Classification Form

Whenever an ephemeral stream, intermittent stream, or perennial stream is identified on a project site, use this form to document field observations in support of the field interpreted stream classification.

Stream Feature: Stream 1 **Watershed:** Salmon Watershed (HUC 04150307)

Field Observations (check all that apply and describe if applicable):

☑ Surface water flow within a defined channel SW - NE

☑ Presence of Ordinary High Water Mark
(If OHWM is present, place a stake to mark its location) OHWM W=1' OHWM D=1"

☐ Water seeping from banks (or ice along banks in winter)

☐ Channel has a floodplain or observable bankfull bench

☐ Presence of fish or macroinvertebrates N/A

☐ Primarily erosive features

☑ Recent sediment deposits or accumulations in channel

☐ Algae growing on bed materials

☑ Rooted plants growing in channel bed

☐ Hydric soils in sides of channel

Provide a detailed description for each (use additional space in remarks section if necessary):

Antecendent weather conditions 66°F 100% cloud cover, wind ssw 11mph, slight rain

Position of channel within the drainage basin (high, middle, low)? low

Gradient of the channel (steep, moderately sloping, flat)? moderately sloping

Channel morphology (linear/meandering)? linear

Width of channel? Approximately 1' Height of bank? Approximately 5"

Interpreted water table position above or below defined channel? below

Bed materials (provide description of bed materials and indicate if different from surrounding ground surface):
leaf litter, sand, gravel

Topographic map designation? ☐ Intermittent ☐ Perennial ☑ Not Mapped

Describe off-site conditions:

Is there development upgradient of channel? N/A

Any artificial structures (i.e. culvert, detention basin) regulating flow?
N/A

Remarks:

Groundwater seep provides flow to Stream 1. Drains into a PUB outside of the Study Area. UNT to Salmon River.

Based on observations, characterize the stream type (check one):

Ephemeral Stream ☐ Intermittent Stream ☑ Perennial Stream ☐

Project Name: Malone Solar Project Date of Field Review: November 11, 2020

Project Number: 14859.09 Field Reviewer: S. Parsons / R. Zack

Attachment F - CESIR Study

For
Cipriani Energy Group
2,000 KVA Solar Inverter Generator System
176 Bare-Hill Road. Malone, NY 12953

Interconnection to National Grid
NY Central Division
Northern Region
Malone District
Malone 895 Substation
13.2 kV Feeder 89551

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the analysis results of the Niagara Mohawk Power Corporation, d/b/a National Grid ("National Grid" or the "Company"), interconnection study based on the proposed interconnection and design submittal from the Interconnection Customer in accordance with the Company ESB 750 series bulletins. The intent of this report is to assess this project's feasibility, determine its impact to the existing electric power system (EPS), determine interconnection scope and installation requirements, and determine costs associated with interconnecting the Interconnection Customer's generation to the Company's Electric Power System (EPS). This Coordinated Electric System Impact Review (CESIR) study; according to the NYSSIR Section I.C Step 6; identifies the scope, schedule, and costs specific to this Interconnection Customer's installation requirements.

2.0 EXECUTIVE SUMMARY

The total estimated planning grade cost of the work associated with the interconnection of the Interconnection Customer is $756,453.

The interconnection was found to be feasible with modifications to the existing Company EPS and operating conditions, which are described in detail in the body of this Study.

The ability to generate is contingent on this facility being served by the interconnecting circuit during normal Utility operating conditions. Therefore, if the interconnecting circuit is out of service, or if abnormal Utility operating conditions of the area EPS are in effect National Grid reserves the right to disengage the facility.

No future increase in generation output beyond that which specified herein for this interconnection has been studied. Any increase in system size and/or design change is subject to a new study and costs associated shall be borne by the Interconnection Customer. An increase in system size may also forfeit the Interconnection Customer's existing queue position.

3.0 COMPANY EPS PARAMETERS

Substation	Malone 895
Transformer Name	T.B. NO.3
Transformer Peak Load (MVA)	15.01
Contingency Condition Load, N-1 Criteria (MVA) (as applicable)	4.73
Day Time Light Load (MVA)	8.46
Generation: Total, Connected, Queued Ahead (MVA)	11.04, 0.62, 8.42
Contingency Condition Generation: Total, Connected, Queued Ahead (MVA)	10.5, 0.08, 8.42
Supply Voltage (kV)	115/13.2
Transformer Maximum Nameplate Rating	25 MVA
Distribution Bus Voltage Regulation	Yes
Transmission GFOV Status	Not Installed
Bus Tie	N/A
Number of Feeders Served from this Bus	3

Connecting Feeder/Line	89551
Peak Load on feeder (MVA)	5.09
Day Time Light Load on Feeder (MVA)	2.8
Feeder Primary Voltage at POI (kV)	13.2
Line Phasing at POI	3 Phase
Circuit Distance from POI to Substation (Miles)	4.3
Distance to nearest 3-phase, (Miles)	N/A
Line Regulation	No
Line/Source Grounding Configuration at POI	Effective
Generation: Total, Connected, Queued Ahead (MVA)	2.0, 0, 0

System Fault Characteristics without Interconnection Customer DG at POI	
Interconnection Customer POI Location	P17, Bare Hill Road
I 3-phase (3LLL)	1,818 Amps
I Line to Ground (3I0)	1,212 Amps
Z1 (100 MVA base)	0.7561 + j 2.2968 PU
Z0 (100 MVA base)	2.1126 + j 5.6707 PU

4.0 INTERCONNECTION CUSTOMER SITE

The Interconnection Customer is proposing a new primary service connection with Account No. 4042454002.

This location is presently served by the Company's 13.2 kV radial distribution feeder 89551 from Malone substation.

The proposed generating system consists of:

- Sixteen (16) 125KVA SCH125KTL-Do/US-600 inverters with a generation total of 2,000 kVA.
- One (1) 2000 kVA, 600V/13.2kV wye-grounded/wye-grounded step up transformers Z=5.75% X/R=6
- One (1) 134 kVA Zig Zag Grounding Transformer Z=4.1% X/R 4.
- Blade Switch
- Fuse
- Primary Utility Meter
- Gang Operated Generator Loadbreak Switch

The proposed system configuration is not acceptable.

5.0 SYSTEM IMPACT ANALYSIS

Category	Criteria	Limit	Result
Voltage	Overvoltage	< 105% (ANSI C84.1)	**Pass**
With the addition of the subject generator the maximum voltage as modeled on the Feeder is 103.9% of nominal.			
Voltage	Undervoltage	> 95% (ANSI C84.1)	**Pass**
With the addition of the subject generator the minimum voltage as modeled on the Feeder is 98.1% of nominal.			
Voltage	Substation Regulation for Reverse Power	<100% minimum load criteria	**Fail**
The total generation on Feeders [89551, 89552, 89553] is 11.04 MVA. The total minimum load on these Feeders is 8.46 MVA. Therefore, the generation to load ratio is 130%. *The following system upgrades are required:* ***Controller for the transformer LTC shall be upgraded to Bi-directional control co-generation capability.***			
Voltage	Feeder Regulation for Reverse Power	<100% Minimum load to generation ratio	**n/a**
There is no voltage regulator between the station and generator system.			
Voltage	Fluctuation	<3% steady state from proposed generation on feeder.	**Pass**
The greatest voltage fluctuation on the feeder occurs at P.36 Bare Hill Road. The resulting fluctuation at the feeder location is 1.4% due to the proposed generation.			
Voltage	Flicker	Screen H Flicker	**Pass**
The Pst for the location with the greatest voltage fluctuation is 0.089 and the emissions limit is 0.35.			
Equipment Ratings	Thermal (continuous current)	<100% thermal limits	**Pass**
The subject generator's full output current is 87.5 A. The total full output current of all DER downstream of [Overhead Conductor at Fort Covington St.] is 87.5 A. The [Overhead Conductor at Fort Covington St.] thermal capabilities are 330A.			
Equipment Ratings	Withstand (fault current)	<90% withstand limits	**Pass**
The additional fault current contribution from the generation does not contribute to interrupting ratings in excess of existing EPS equipment.			
Protection	Unintentional Islanding	Unintentional Islanding Document & Company Guidelines	**Fail**
The subject generator is a ***2.0 MW*** PV generation system. The proposed generation system exceeds the Company's criteria for islanding a distributed resource, therefore unintentional islanding is a concern. *Therefore, the following system upgrades are required*: ***National Grid Protection and Control package (e.g. the PCC Recloser)***			
Protection	Protective device coordination	Company Guidelines	**Fail**
The DG Interconnection Customer has proposed a fuse for use as primary service protection. This protective device is ***not shown in the proper location on the submitted line diagrams***. This device needs to be shown upstream of the utility metering to provide adequate service protection. This			

proposed fuse is adequate with respect to coordination and it is the responsibility of the DG Interconnection Customer to ensure it is thermally viable for use at the site.

The customer shall submit formal fuse curves and specifications for review and approval by National Grid to ensure proper coordination, correct fuse type, curves, etc. if the project moves forward.

Protection	Fault Sensitivity	Rated capabilities of EPS equipment	**Fail**

Of the currently active protectives devices (line reclosers, Station breaker relays) on this portion of the system, Malone Feeder 51 Ground Overcurrent settings were impacted negatively by the addition of this Interconnection. *Therefore, the following system upgrades are required*:

Install New Line Recloser (SEL-651R with 6IVS and Deadline Sensing) at Pole 14.

New settings will be issued for this device.

Protection	Ground Fault Detection	Reduction of Reach	**Pass**

The DG Interconnection Customer has proposed one (1) ***134 kVA*** (High-Side Connected – 13.2 kV) zig-zag grounding transformers with ***Z*** (***%) = 4.10*** or ***X/R = 4.00*** values.

This unit satisfies the requirements for effective grounding and provides current limiting in order to satisfactorily comply with National Grid standards. This transformer has an equivalent ohmic impedance of ***53.31 Ω*** when connected on the 13.2 kV side of the customer GSU as proposed.

The Interconnection Customer will contribute approximately ***117 A*** of 3I0 current to remote bolted line to ground faults and ***217 A*** to faults at the PCC.

Overvoltage - Transmission System Fault	Overvoltage - Transmission System Fault	Company 3V0 criteria	**Fail**

The interconnection of distributed generation facilities to National Grid distribution substations can result in conditions whereby line-to-ground faults on the transmission system could go undetected. This scenario was analyzed for the proposed interconnection to determine if the addition of the subject generator meets the Company's criteria for requiring transmission system line-to-ground fault protection.

The existing station protection schemes were reviewed, and analysis performed, and it has been determined that the addition of this DG Interconnection triggers the requirement for transmission system ground fault protection. *Therefore, the following system upgrades are required*:

A $3V_0$ protection scheme is required to mitigate the transmission system line-to-ground fault condition.

Protection	Overvoltage - Distribution System Fault	< 125 % voltage rise	**Pass**

With subject generator interconnected the maximum modeled voltage rise on the unfaulted phases of the system is ***115.9%***.

Protection	Effective Grounding	R0/X1 $\leq$ 1 and X0/X1 $\leq$ 3	**Pass**

With subject generator interconnected the maximum modeled ***R0/X1*** is ***0.8517 PU*** and the maximum modelled ***X0/X1*** is ***2.2977 PU***.

SCADA	Required EMS Visibility for Generation Sources	Monitoring & Control Requirements	**Fail**
The ***2.00 MW*** subject generator triggers the requirement for SCADA reporting to the Utility. *This requirement is covered by the following:* • ***National Grid Protection and Control package (e.g. the PCC Recloser)***			

6.0 MITIGATIONS FOR SYSTEM IMPACT ANALYSIS FAILURES

Detail below is intended to provide sufficient information and clarity to give the Interconnection Customer an understanding to the relationship of costs and scope associated with the DER interconnection and the system modifications due to the DER impact. Where scope items are identified, associated labor, equipment rentals and indirect project support functions (such as engineering and project management) are intended and implied.

Upgrade Required	Option 1	Option 2	Failures Addressed
3V0 Substation Upgrade	$567,231	n/a	Overvoltage – Transmission System Fault
LTC Bi-directional Control Co-generation Capability	Included in 3V0 Cost	n/a	Substation Regulation for Reverse Power
National Grid Protection and Control Package	103,920	n/a	Unintentional Islanding/ Required EMS Visibility for Generation Sources
New Recloser Installation	$67,302	n/a	Fault Sensitivity

Additional details on the scope of each option can be found below:

Option 1:

The Substation upgrades required to facilitate the proposed installation include the following:

- Construction of 3V0 protection at Malone station will been required.
  - 115 kV CCVTs with supporting structures, relaying with supporting devices, and cabling with conduit.
  - LTC bi-directional control co-generation capability.
  - This project can qualify for cost-sharing with other project in queue.

The Distribution upgrades required to facilitate the proposed installation include the following:

- National Grid protection and control package.
  - 13.2 kV recloser, switch, pole, and associated hardware.
  - SCADA Integration.
    - Equipment integrated into PCC Recloser.
- Installation of a new recloser.
  - Recloser shall be capable of voltage supervised reclose.

- The location is P14 Maple St.
- 13.2 kV recloser, switch, and associated hardware.

7.0 CONCEPTUAL COST ESTIMATE

The following items are a good faith estimate for the scope and work required to interconnect the project estimated under rates and schedules in effect at the time of this study in accordance with the most recent version of the New York State Standardized Interconnection Requirements ("SIR").

National Grid Work Segment	Planning Grade Cost Estimate not including Tax Liability				Capital portion for calculating tax liability	Tax Liability Applied to Capital	Customer Cost Totals
Description of Scope	**Material**	**Labor**	**Overheads**	**Pre-Tax Total**	**Capital Costs**	**Rate**	**Total**
Distribution System Modifications						**14.03%**	
National Grid Protection and Control Package *(Recloser, Switches, and Poles)*	$ 37,478	$ 16,566	$ 37,415	**$ 91,459**	*$ 88,816*	$ 12,461	**$ 103,920**
Install New Recloser.	$ 30,117	$ 7,297	$ 22,528	**$ 59,941**	*$ 52,465*	$ 7,361	**$ 67,302**
Substation Modifications						**14.03%**	
3V0 Substation Upgrade (*EPC with CCVTs, protection relays and test switches, relay panel*)	$ 221,110	$ 103,490	$ 183,400	**$ 508,000**	*$ 422,175*	*$ 59,231*	**$ 567,231**
Non-System Costs						**0%**	
Customer Documentation Review, Field Verification and Witness Testing		$ 12,000	$ 6,000	**$ 18,000**	$ -	0	**$ 18,000**
Total Project Costs:	**$ 288,704**	**$ 139,353**	**$ 249,343**	**$ 677,400**	***$ 563,456***	***$ 79,053***	**$ 756,453**

1. These estimated costs are based upon the results of this study and are subject to change. All costs anticipated to be incurred by the Company are listed.
2. The Company will reconcile actual charges upon project completion and the Interconnection Customer will be responsible for all final charges, which may be higher or lower than estimated according to the SIR I.C step 11.
3. This estimate does not include the following:
   - additional interconnection study costs, or study rework
   - additional application fees,
   - applicable surcharges,
   - property taxes,
   - overall project sales tax,
   - future operation and maintenance costs,
   - adverse field conditions such as weather and Interconnection Customer equipment obstructions,
   - extended construction hours to minimize outage time or Company's public duty to serve,
   - the cost of any temporary construction service, or
   - any required permits.
4. Cost adders estimated for overtime would be based on 1.5 and 2 times labor rates if required for work beyond normal business hours. Per Diems are also extra costs potentially incurred for overtime labor.

Attachment G - SHPO No Effect letter

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

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

December 01, 2020

Stephanie Parsons
Natural Resource Scientist
Bergmann
280 East Broad Street
Suite 200
Rochester, NY 14604

Re: USACE
Yellow 5 LLC Malone Solar Farm Project/2 MW/3.25 of 49.6 Acres
Brand Rd and Bare Hill Rd, Town of Malone, Franklin County, NY
20PR07602

Dear Stephanie Parsons:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include 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 National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the opinion of the New York SHPO that no historic properties, including archaeological and/or historic resources, will be affected by this undertaking.

If 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 State Historic Preservation Officer
Division for Historic Preservation

Attachment H – FEAF

Full Environmental Assessment Form Part 1

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: Malone Solar Project		
Project Location (describe, and attach a general location map): The proposed project is located at 176 Bare Hill Road in the Town of Malone, Franklin County, New York (44.877356, -74.316233).		
Brief Description of Proposed Action (include purpose or need): The proposed Malone Solar Project consists of a 8.6± acre solar farm (2.0 MW). The project will involve the installation of ground mounted photovoltaic panels as well as the associated access road, electric utility upgrades, and perimeter fencing fro the solar farm.		
Name of Applicant/Sponsor: Yellow 17 LLC c/o Chris Stroud	Telephone: (518) 390-4004 E-Mail: c.stroud@solrealgroup.com	
Address: 125 Wolf Road, Suite 312		
City/PO: Colonie	State: NY	Zip Code: 12205
Project Contact (if not same as sponsor; give name and title/role): Bergmann c/o Eric Redding, PE	Telephone: (518) 556-3631 E-Mail: eredding@bergmannpc.com	
Address: 2 Winners Circle, Suite 102		
City/PO: Albany	State: NY	Zip Code: 12205
Property Owner (if not same as sponsor): Kristopher Pirie	Telephone: N/A E-Mail: N/A	
Address: 21 Washington Street		
City/PO: Malone	State: NY	Zip Code: 12953

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 approves, site plan review, zoning permit and special use permit applications	
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Zoning Code Officer and Planning Board will refer comments and recommendations to Town Board	
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☐Yes ☑No	National Grid - Utility Connection	
e. County agencies ☐Yes ☑No		
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	SHPO -No effect; NYSERDA -Utility Connection NYSDEC SPDES General Permit GP-0-20-001	
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
A portion of the proposed project is located in a Planned Development District (PD)

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?
Countryside (C) and Planned Development (PD)

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? Requesting Use Variance

C.4. Existing community services.

a. In what school district is the project site located? Malone

b. What police or other public protection forces serve the project site?
Franklin County Sheriff

c. Which fire protection and emergency medical services serve the project site?
Malone Callfiremen Fire and Rescue

d. What parks serve the project site?
Malone Village Memorial Park, Trout River State 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? ±49.6 acres
b. Total acreage to be physically disturbed? ±0.32 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? ±49.6 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: 8 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 N/A

ii. Dimensions (in feet) of largest proposed structure: N/A height; N/A width; and N/A length

iii. Approximate extent of building space to be heated or cooled: N/A 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 acres (impervious surface)

_____ Square feet or ±49.6 acres (parcel size)

ii. Describe types of new point sources. Limited use pervious gravel driveway

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)?

Stormwater runoff will be directed to stormwater management features on site.

- 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: 8:00 AM to 6:00 PM
- Saturday: 8:00 to 6:00 PM
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: N/A
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

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:

Noise levels will increase during construction due to construction equipment during the hours of 8:00 - 6:00 PM Monday - Saturday. No significant impact with respect to noise is anticipated during operations. Work will conform to local noise ordinance.

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: 0.1 tons per month (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: Waste will consist of office waste and cardboard items from deliveries. Most of the waste will be recyclable.
- Operation: N/A

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

- Construction: A refuse container will remain on site during construction and be emptied by a licensed hauler as needed.
- 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	0.4±	0.2±	-0.2
• Forested	46.4±	36.6±	-9.8
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	2.4±	12.2±	+9.8
• Agricultural (includes active orchards, field, greenhouse etc.)	0	0	0
• Surface water features (lakes, ponds, streams, rivers, etc.)	0.3±	0.3±	0
• Wetlands (freshwater or tidal)	0.1±	0.1±	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: Limited Use Pervious Gravel Driveway	0	0.2±	+0.2

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? 6.56 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:
Colton and Constable gravelly loamy sands, 3 to 8% slopes (Cab) 44.3 %
Adams and Colton soils, 8 to 25%, severely eroded (Abd) 34.5 %
Salmon stony very fine sandy loam over till, 20 to 45% slopes (Sce) 12.9 %

d. What is the average depth to the water table on the project site? Average: 4.77 feet

e. Drainage status of project site soils:
☑ Well Drained: 95.5 % of site
☑ Moderately Well Drained: 4.4 % of site
☐ Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes:
☑ 0-10%: 48.7 % of site
☐ 10-15%: _____ % of site
☑ 15% or greater: 51.2 % 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 910-111 Classification C(T)
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name Federal Waters, Federal Waters, Federal Waters,... 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: Principal Aquifer

m. Identify the predominant wildlife species that occupy or use the project site:

Grey Squirrel	Rabbit	Eastern Chipmunk
White-tailed deer	Raccoon	Migratory birds

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: _____

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 28.08 acres (property)

ii. Source(s) of soil rating(s): NRCS Franklin County Soil Survey

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: Adirondack Park

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

iii. Distance between project and resource: 4.9 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 Bergmann c/o Eric Redding, PE as Agent Date 8/26/21

Signature Eric Redding Title Discipline Leader

PRINT FORM

EAF Mapper Summary Report

Monday, July 12, 2021 9:11 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]	Yes
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]	910-111
E.2.h.iv [Surface Water Features - Stream Classification]	C(T)
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.j. [100 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.

E.2.k. [500 Year Floodplain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.2.l. [Aquifers]	Yes
E.2.l. [Aquifer Names]	Principal Aquifer
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]	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

Attachment I – Malone LWRP Section H: Summary of Accordance with Policy Standards

Malone LWRP Section H: Summary of Accordance with Policy Standards

Policy 1. Foster a pattern of development in the waterfront area that enhances community character, preserves open space, makes efficient use of infrastructure, makes beneficial use of a waterfront location, and minimizes adverse effects of development.

Policy 1.1 Concentrate development and redevelopment in or adjacent to downtown Malone.

Policy 1.2 Ensure that development or uses take appropriate advantage of their waterfront location.

Policy 1.3 Protect stable residential areas from deterioration and incompatible uses.

Policy 1.4 Maintain and enhance natural areas, recreation, open space and agricultural lands.

Policy 1.5 Minimize adverse impacts of new development and redevelopment.

Consistency with Policy 1: The Malone Community Solar Project (Project) distinguishes the Malone community as one concerned with, not only improving local conditions, but those of the broader population as well. A community that chooses to incorporate a community solar project within its infrastructure is choosing to support clean energy and reduce energy waste. Solar power is one of the cleanest power sources available, and distributive generation ensures that the energy created by the solar facilities is used locally rather than transmitting solar over distances where losses occur. When combined with the locally produced hydropower, this community solar project will allow the Village Core to be branded as a sustainable energy community. The Project complies with Policy 1.1 given that the Project consists of non-permanent infrastructure that will have minimal environmental effects on the Property site and no such impacts to the Salmon River and surrounding watershed.

The location of the Project on Bare Hill Road (directly on the boundary of the Waterfront Revitalization Program Area) supports Policy 1.2 by locating the Project far from the viewshed area of the waterfront area. The nature of the Project benefits the waterfront area by minimizing long-term industrial traffic that would inconvenience those looking to access the waterfront area. When the solar project is installed, the location will require very little maintenance. Unlike other potential uses for the land, the solar project will avoid the type of commercial activity that would otherwise be detrimental to the waterfront's attraction. Policy 1.3 is inapplicable to the Project as no residential areas are located within the near vicinity of the Project.

The Project complies with Policy 1.4 as the Project will not affect the viewshed of the Salmon River from any of the specific public parks or other recreational areas noted in the Town and Village of Malone Local Waterfront Revitalization Program (LWRP). The Project site is vacant, private land and not used for public recreational activities. Furthermore, the Project complies with all appliable Town of Malone codes, including those involving setbacks. The Project setbacks preserve a broad perimeter characterized by natural, open spaces. Lastly, the nature of the Project (non-permanent, minimally invasive solar panels and associated infrastructure) complies with Policy 1.5. Unlike permanent, commercial uses of the Project site, the Project will not introduce any significant noise or traffic to the Project area or create any air or water pollution related to the construction and operation of the Project.

Malone LWRP Section H: Summary of Accordance with Policy Standards

Policy 2. Preserve historic resources of the waterfront area.

Policy 2.1 Maximize preservation and retention of historic resources.

Policy 2.2 Preserve and protect archaeological resources.

Policy 2.3 Protect and enhance resources that are significant to the waterfront culture.

Consistency with Policy 2: The Project complies with Policy 2.1 as the Project does not include the construction of any permanent structures that will affect Town historic resources. In compliance with Policy 2.2, a site survey and cultural resource investigation was conducted for the Project site and the State Historic Preservation Office (SHPO) has reviewed the Project and determined that, "No historic properties, including archaeological and/or historic resources will be affected by this undertaking." The Project is well hidden and far from the historic architecture in the Village Core. Policy 2.3 is inapplicable to the Project as the Project site does not contain public access to any dam or hydropower sites.

Policy 3. Enhance visual quality and protect scenic resources throughout the waterfront area.

Policy 3.1 Protect and improve visual quality throughout the Salmon River viewshed area.

Consistency with Policy 3: In support of Policy 3.1, the Project will be screened from view by the existing vegetation on the Project site as well as additional to be installed plantings. The heavily forested buffer between the to be fenced area of the solar array and the surrounding properties will enhance the visual quality of the surrounding area and protect scenic resources throughout the waterfront area by helping to keep the waterfront's outlying areas from becoming a visual distraction. The Project makes the land productive while remaining visually unobtrusive, and assures the community that, for at least 25 years, the development of the property will retain these characteristics.

Policy 4. Minimize loss of life, structures and natural resources from flooding and erosion.

Policy 4.1 Minimizes losses of human life and structures from flooding and erosion hazards.

Policy 4.2 Preserve and restore natural and manmade protective features.

Policy 4.3 Ensure that expenditure of public funds for flooding and erosion control projects results in a public benefit.

Consistency with Policy 4: This Project has a developed, comprehensive Stormwater Pollution Prevention Plan (SWPPP) and satisfied State and federal permitting requirements to ensure that the Project is safe for the environment and the community in support of Policy 4.1. SWPPP measures have been thoroughly implemented in the Project's civil designs, and practices during construction will abide by the regulations that are set in place to prevent erosion and flood in order to keep the site and its surroundings safe for living creatures and structures. The Project site is not located within a designated floodway or within the 100-year or 500-year floodplain and will comply with Chapters 21A and 24 of the Village of Malone Code, to the extent applicable. Policy 4.2 is not applicable to the Project as the construction and operation of the Project will not require interference with or alteration of any shorelines or river processes. Policy 4.3 is not applicable to the Project as construction and operation of the Project does not contemplate the expenditure of public funds.

Malone LWRP Section H: Summary of Accordance with Policy Standards

Policy 5. Protect and improve water quality and supply.

Policy 5.1 Prohibit direct or indirect discharges, which would cause or contribute to contravention of water quality standards.

Policy 5.2 Protect and enhance the quality of waterfront area waters.

Policy 5.3 Limit the potential for adverse impacts of watershed development on water quality.

Consistency with Policy 5: Government authorities advocate for developments like the solar project being proposed because they are designed to work in harmony with nature. As such, they adhere to more rigorous design, construction, and operational standards than what is required of other development projects. In support of Policy 5.1, water runoff on the Project site will be managed according to a highly regulated SWPPP and is not expected to be a source of pollution to the Salmon River. Any stormwater associated with construction of the Project will be maintained on site in compliance with Policy 5.3 and will not impact water quality of the Salmon River. The Project, by nature, requires very little water to sustain operational standards and the elements of operation common to other development projects that threaten water supplies are not included in the design of this or similar scale solar projects. Likewise, in compliance with Policy 5.2, the construction and operation of the Project will not involve any disturbance to the Salmon River, nor will the Project involve excavation or disposal of dredged river material. Unlike alternative development projects, this solar project will require small, intermittent amounts of water and daily operation will not involve pollutants that can be transmitted by water.

Policy 6. Protect and restore the quality and function of the ecosystem.

Policy 6.1 Protect and restore ecological quality.

Policy 6.2 Protect Fish Populations and Habitats

Policy 6.3 Protect and restore freshwater wetlands and sensitive habitats.

Consistency with Policy 6: The Project complies with and supports Policy 6.1, as the Project will not irreversibly alter the Project site (as discussed more below) or permanently alter any ecological habitats or processes. In addition, additional plantings installed on the Project site intended to serve as screening of the Project will not include invasive plant species.

Government bodies endorse projects such as this proposed solar project because they help to satisfy the need for energy production that does not pollute the environment or contribute to warming climate conditions. The introduction of this project will supply the Waterfront Restoration Area with electrical power that does not require the burning of fossil fuels to produce. Since it is produced and used locally, the power supplied to the Waterfront Restoration Area reduces losses caused by long distance transmission. Furthermore, government bodies require wide ranging, thorough measures to protect the natural environment and its inhabitants. As discussed more below, the Project will be subject to a SWPPP to appropriately manage any stormwater created or increased by the construction of the Project. In compliance with Policy 6.2, the Project contemplates only minimal land disturbance in the form of inserting the racking infrastructure to house the Project's solar panels, and as no endangered or sensitive habitats have been identified on the Project site, the Project will not physically alter or destroy such

habitats. The Project complies with and supports Policy 6.3, as while there are two small wetland areas near the Project site, the construction, operation and decommissioning of the Project will not encroach upon or otherwise affect these areas.

Policy 7. Protect and improve air quality in the waterfront area.

Policy 7.1 Control or abate existing and prevent new air pollution.

Consistency with Policy 7: The Project complies with Policy 7.1, as this Project protects and improves air quality by not producing and introducing harmful elements to the air while allowing oxygen producing vegetation to flourish on the property. When the Project reaches maturity, it will be decommissioned and the land will be restored to preexisting, natural conditions. As noted in the submitted Environmental Assessment Form (EAF), operation of the Project will not include sources of air emissions and will not result in the release of air pollutants.

Policy 8. Minimize environmental degradation in the waterfront area from solid waste and hazardous substances and wastes.

Policy 8.1 Manage solid waste to protect public health and control pollution.

Policy 8.2 Protect the environmental from degradation due to toxic pollutants and substances hazardous to the environmental and public health.

Policy 8.3 Prevent and remediate discharge of petroleum products.

Consistency with Policy 8: The Phase 1 Environmental Site Assessment (ESA), the State Environmental Quality Review (SEQR), and the SWPPP, among other measures, work together to ensure that hazardous conditions are prevented from being introduced by the Project. The Phase 1 ESA assesses the property's former use to confirm that no hazardous conditions are present before developing the project. The SEQR requires state, regional, and local government agencies to conduct a coordinated study to evaluate potential environmental impacts (including economic and social factors) as a measure to prevent negative impacts from being presented by the project. The SWPPP manages water to, among other purposes, prevent the spread of any potential contaminants that may potentially be transported by water. The Project complies with Policy 8.2, as this Project does not create any hazardous waste during operation, and all potentially hazardous substances are thoroughly controlled during construction as required by the DEC and other agencies.

The Project supports Policy 8.1 as the Project does not contemplate the generation of solid wastes, other than general refuse and other materials during construction, which will be promptly and appropriately removed from the Project site. Policy 8.3 is inapplicable to the Project as the operation of the Project does not contemplate the use of petroleum or other oil materials.

Policy 9. Provide for public access to, and recreational use of the waterway, public lands, and public resources of the waterfront area.

Policy 9.1 Promote appropriate and adequate physical public access and recreation throughout the waterfront area.

Policy 9.2 Provide public visual access from public lands to waterfront lands and waters or open space at all sites where physically practical.

Policy 9.3 Assure public access to public trust lands and navigable waters.

Consistency with Policy 9: Generally, Policy 9 is inapplicable to the Project, as the Project site consists solely of private land and does not currently serve as public access to the Salmon River waterfront for public waterfront recreational activities. In addition, the Project site is not located within an area identified by the LWRP as a revitalization priority area. In compliance with Policy 9.2, the Project will not affect or decrease visual access to the Salmon River, as there is significant vegetative screening on and beyond the Project site such that it is not anticipated that recreational users of the Salmon River will be able to view the Project from the river.

When this Project is constructed, it provides for one of the most passive methods of productively using land available. Human access is rarely required aside from occasional maintenance activities. The lack of human activity at the site ensures that traffic introduced by the need for access to the site will be much lower than most alternative land uses. The lack of site traffic frees the roadways for travelers to access the Waterfront on public lands.

Policy 10. Protect water-dependent uses and promote the siting of new water-dependent uses in suitable locations.

Policy 10.1 Protect water-dependent uses.

Policy 10.2 Minimize adverse impacts of new and expanding water-dependent uses, provide for their safe operation and maintain regionally important ones.

Consistency with Policy 10: This Project complies with Policy 10 as it protects and promotes water dependent uses through its character as a passive land-use enterprise. The Project does not require direct access to or use water to construct, operate or decommission the Project. This Project will not present obstructions or distractions that would interfere with current water dependent uses or deter the introduction of future water-dependent uses. Likewise, Policy 10.2 is inapplicable to the Project as the Project will not require any waterfront access, nor will it affect water circulation or fish spawning grounds within the Salmon River.

Policy 11. Promote sustainable use of living freshwater resources.

Policy 11.1 Ensure the long-term maintenance and health of living freshwater resources.

Policy 11.2 Provide for recreational use of freshwater resources.

Consistency with Policy 11: Policy 11.1 is not applicable to the Project, as the construction, operation and future decommissioning of the Project will not interfere with the population or diversity of wildlife in and around the Salmon River, nor will it interfere with any population or habitat maintenance restoration efforts, as the Project is sited at a distance from the Salmon River and does not include the use any freshwater resources. Policy 11.2 is likewise inapplicable to the Project, as the Project will not interfere with public access to and recreational use of the Salmon River nor any fishery conservation plans. Introducing sustainable energy production within the Waterfront Revitalization Area will help form a local identity as a sustainable community. The use of locally provided sustainable, solar energy will help characterize the community as one that is moving into the future to sustain what is valuable about its present and past. Clean energy use is associated with clean living and responsible use of natural resources. This theme will extend to the Salmon River and freshwater resources.

Policy 12. Protect agricultural lands.

Policy 12.1 Protect existing agriculture and agricultural lands from conversion to other land uses.

Policy 12.2 Minimize adverse impacts on agriculture from unavoidable conversion of agricultural land.

Consistency with Policy 12: Unlike alternative development or land use options, use of the Project site for a community scale solar energy system does not contemplate the construction of permanent structures or foundations and will not irreversibly change the use of the Project site or onsite soil or ground water resources in compliance with Policy 12.1. This Project is designed with nature's restoration in mind when the Project is decommissioned, and the Project will not permanently convert agricultural land. A plan to decommission the site and restore the land to its initial natural state is submitted as a part of the permitting process, and the fulfillment of this plan's deliverables is secured by a decommissioning bond to fund the restoration. This Project involves the land's temporary use to host racking systems that direct the solar panels toward the sun. Permanent structures are not introduced and activities with the potential to damage the land do not take place, and after the life of the Project the land may be utilized for agricultural purposes in the spirit of Policy 12.2, should the landowner so desire. A productive enterprise that makes more responsible, sustainable use of the land would be difficult to find.

Policy 13. Promote appropriate use and development of energy and mineral resources.

Policy 13.1 Conserve energy resources.

Policy 13.2 Promote alternative energy sources that are self-sustaining, including solar and wind powered energy generation.

Policy 13.3 Ensure maximum efficiency and minimum adverse environmental impact when siting major energy generating facilities.

Policy 13.4 Minimize adverse impacts from fuel storage facilities.

Consistency with Policy 13: Sustainability is a primary theme associated with the Waterfront Revitalization Area's development. There are few, if any, energy sources more sustainable than the sun. Thus, the Project is consistent with Policy 13.2, and does not cause any of the concerns identified in Policy 13.2 regarding the visual, noise or wildlife impacts that can often be associated with large wind turbine renewable energy projects. The Project will not cause visual disruption to recreational users of the Salmon River, as the Project is set back from waterfront resources and will be screened by fencing and additional landscaping. Nor will the Project cause an increase in noise post-construction, as solar energy systems create only minimal noise during sunlight hours. Combining locally produced and consumed solar energy with locally produced hydroelectricity provides strong evidence that the community is concerned with sustainable energy. Local solar energy production is, therefore, thematically appropriate. Furthermore, the Waterfront Revitalization Area is a community-oriented project. Incorporating the production of sustainable energy that is used by the local community furthers the compatible nature of this solar project. Development of sustainable, community-oriented energy is an appropriate use of land that borders the boundary of the Waterfront Revitalization Area. The Project

will be sited on the Project site at such a distance and will comply with all required setbacks from the Little Salmon River so as not to adversely affect any natural and economic waterfront resources during construction, operation, or decommissioning of the Project (see Site Plan Set Ex-FA I). The Project does not contemplate the use of fuel storage facilities or the production or storage of petroleum, and thus Policy 13.4 is inapplicable.

Attachment J – Photographic Simulations

Existing

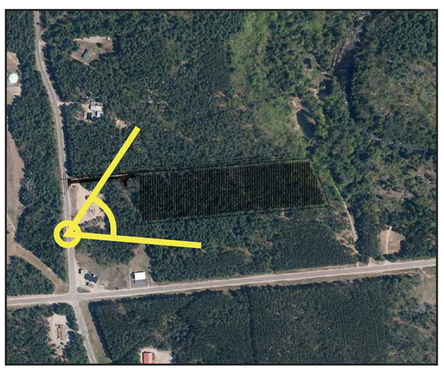
Proposed

Location 1

Bare Hill Road, Looking South East

Existing

Proposed



Location 2

Bare Hill Road, Looking North East

Existing

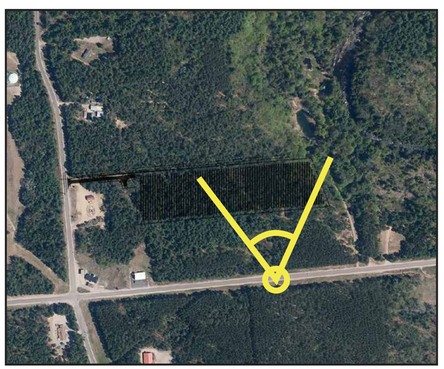
Proposed

Location 3

Cady Road, Looking North

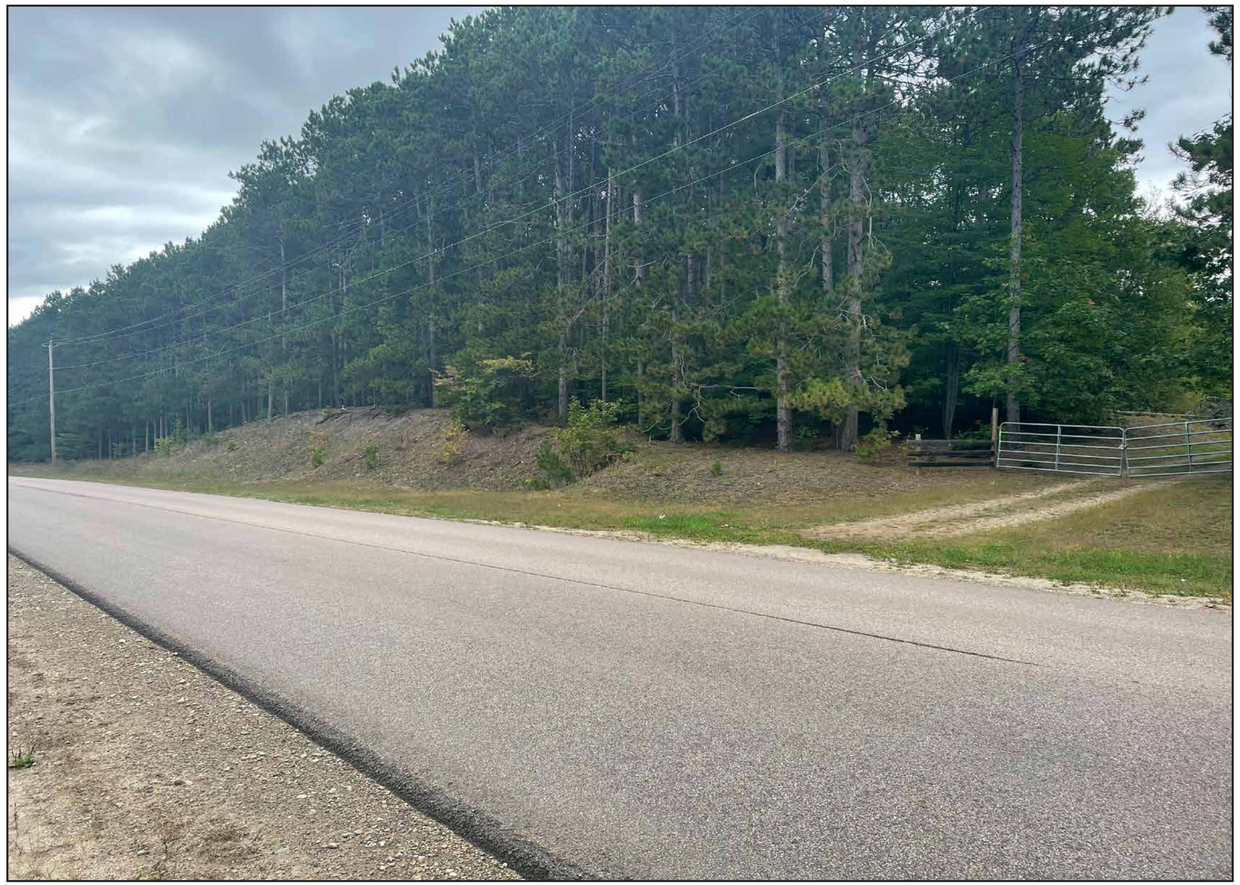
Existing

Proposed

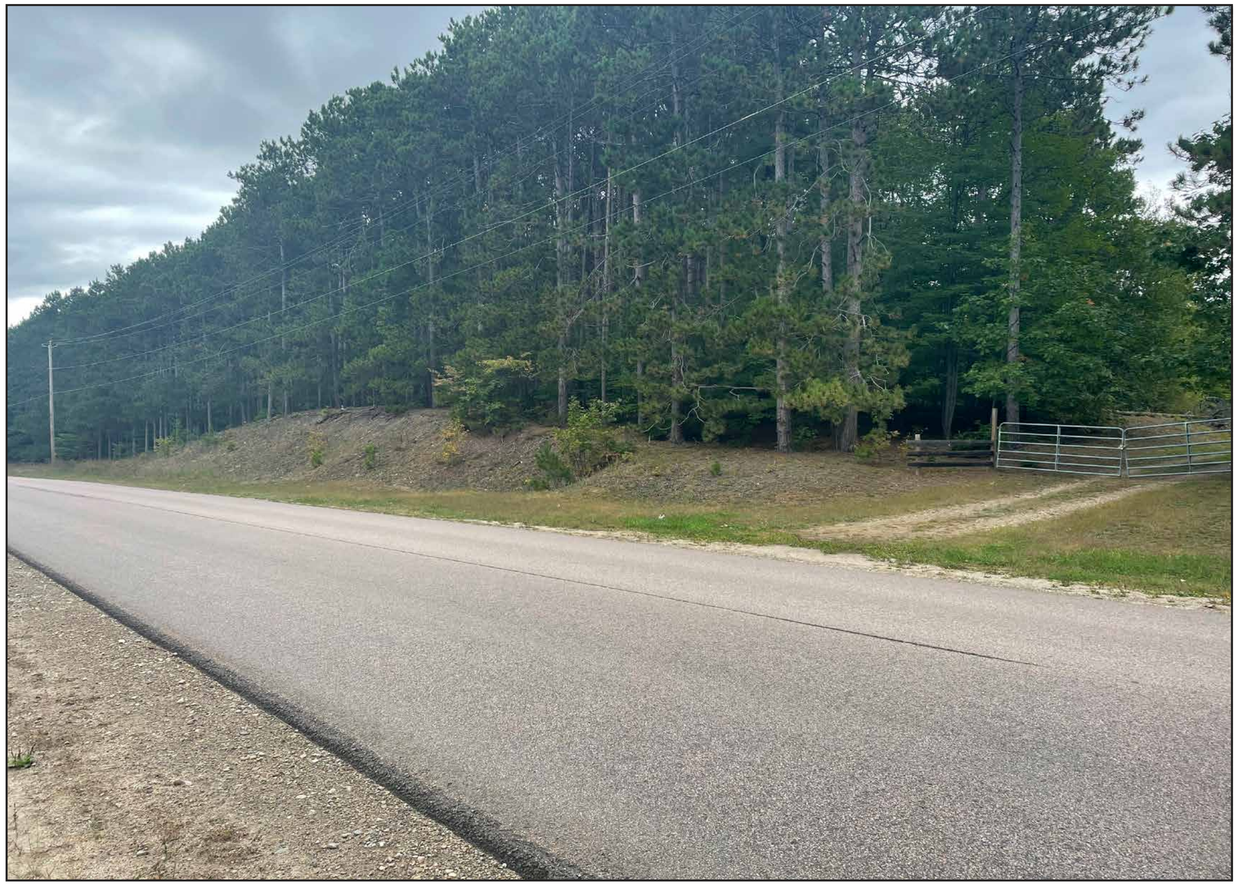


Location 4

Cady Road, Looking North



Existing



Proposed

Location 5

Cady Road, Looking North West

Attachment K – Panel Specification Sheet and Anti-Reflective Glass Declaration

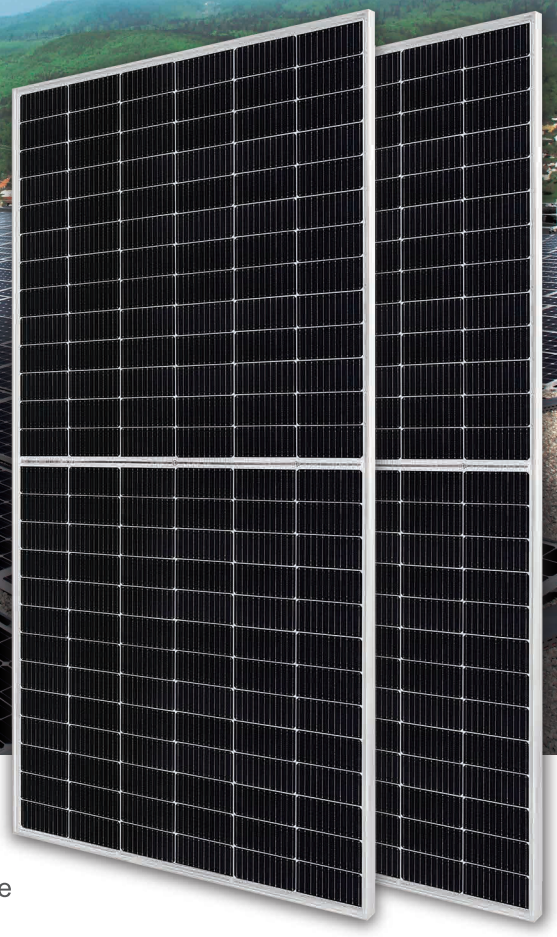
Harvest the Sunshine

DEEP BLUE 3.0

Mono

605W MBB Bifacial Mono PERC Half-cell Double Glass Module

JAM78D30 580-605/MB Series



Introduction

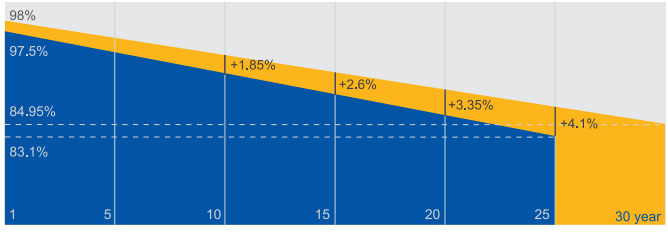
Assembled with 11BB bifacial PERCIUM cells and half-cell configuration, these double glass modules have the capability of converting the incident light from the rear side together with the front side into electricity, providing higher output power, lower temperature coefficient, less shading loss, as well as enhanced tolerance for mechanical loading.

- Higher output power
- More reliable, more stable power generation
- Less shading effect
- Lower temperature coefficient

Superior Warranty

- 12-year product warranty
- 30-year linear power output warranty

0.45% Annual Degradation Over 30 years



- Bifacial double glass module linear power warranty
- Standard module linear power warranty

Comprehensive Certificates

- IEC 61215, IEC 61730,UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC 62941: 2019 Terrestrial photovoltaic (PV) modules - Quality system for PV module manufacturing

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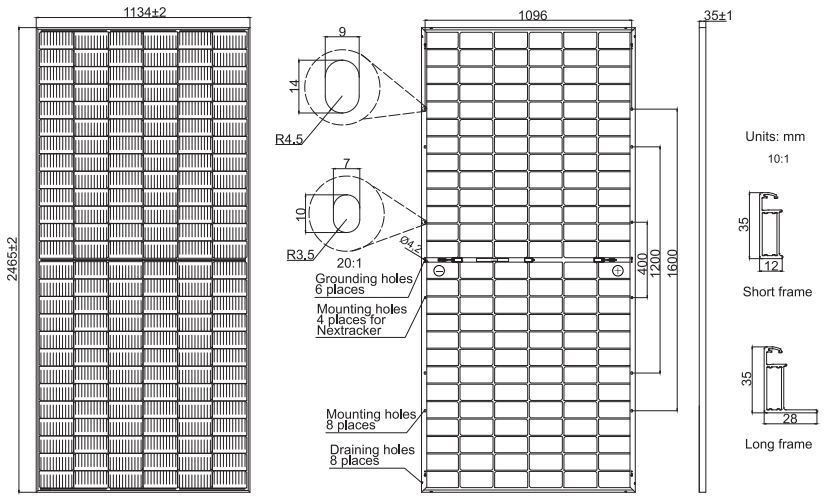
Specifications subject to technical changes and tests.
JA Solar reserves the right of final interpretation.

JA SOLAR

JAM78D30 580-605/MB Series

MECHANICAL DIAGRAMS



Remark: customized frame color and cable length available upon request

SPECIFICATIONS

Cell	Mono
Weight	34.6kg
Dimensions	2465±2mm×1134±2mm×35±1mm
Cable Cross Section Size	4mm² (IEC), 12 AWG(UL)
No. of cells	156(6×26)
Junction Box	IP68, 3 diodes
Connector	QC 4.10-351/ QC 4.10-35
Cable Length (Including Connector)	Portrait:200mm(+)/300mm(-); Landscape:1500mm(+)/1500mm(-)
Front Glass/Back Glass	2.0mm/2.0mm
Packaging Configuration	31pcs/Pallet, 496pcs/40HQ Container

ELECTRICAL PARAMETERS AT STC

TYPE	JAM78D30 -580/MB	JAM78D30 -585/MB	JAM78D30 -590/MB	JAM78D30 -595/MB	JAM78D30 -600/MB	JAM78D30 -605/MB
Rated Maximum Power(Pmax) [W]	580	585	590	595	600	605
Open Circuit Voltage(Voc) [V]	53.11	53.20	53.30	53.40	53.50	53.61
Maximum Power Voltage(Vmp) [V]	44.35	44.56	44.80	45.05	45.30	45.53
Short Circuit Current(Isc) [A]	13.84	13.88	13.93	13.98	14.03	14.08
Maximum Power Current(Imp) [A]	13.08	13.13	13.17	13.21	13.25	13.29
Module Efficiency [%]	20.7	20.9	21.1	21.3	21.5	21.6
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α_Isc)	+0.045%/°C					
Temperature Coefficient of Voc(β_Voc)	-0.275%/°C					
Temperature Coefficient of Pmax(γ_Pmp)	-0.350%/°C					
STC	Irradiance 1000W/m², cell temperature 25°C, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

ELECTRICAL CHARACTERISTICS WITH 10% SOLAR IRRADIATION RATIO

TYPE	JAM78D30 -580/MB	JAM78D30 -585/MB	JAM78D30 -590/MB	JAM78D30 -595/MB	JAM78D30 -600/MB	JAM78D30 -605/MB
Rated Max Power(Pmax) [W]	621	626	631	637	642	647
Open Circuit Voltage(Voc) [V]	53.16	53.25	53.35	53.45	53.55	53.66
Max Power Voltage(Vmp) [V]	44.34	44.55	44.80	45.04	45.28	45.52
Short Circuit Current(Isc) [A]	14.81	14.85	14.91	14.96	15.01	15.07
Max Power Current(Imp) [A]	14.00	14.05	14.09	14.13	14.18	14.22
Irradiation Ratio(rear/front)	10%					

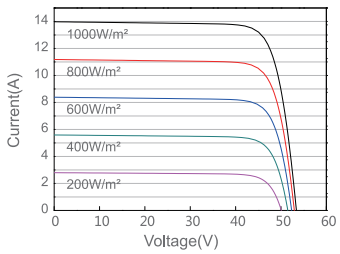
*For Nextracker installations, maximum static load please take compatibility approve letter between JA Solar and Nextracker for reference.
**Bifaciality=Pmax,rear/Rated Pmax,front

OPERATING CONDITIONS

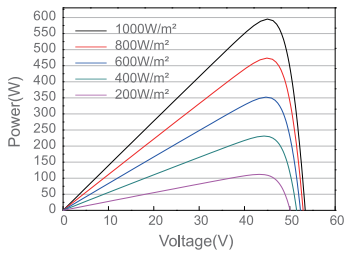
Maximum System Voltage	1500V DC
Operating Temperature	-40°C~+85°C
Maximum Series Fuse Rating	30A
Maximum Static Load,Front* Maximum Static Load,Back*	5400Pa(112 lb/ft²) 2400Pa(50 lb/ft²)
NOCT	45±2°C
Bifaciality**	70%±10%
Fire Performance	UL Type 29

CHARACTERISTICS

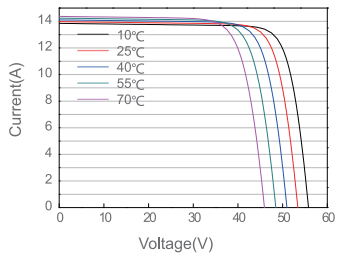
Current-Voltage Curve JAM78D30-595/MB



Power-Voltage Curve JAM78D30-595/MB



Current-Voltage Curve JAM78D30-595/MB



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Declaration of antireflection glass

JA Solar as the PV module manufacturer hereby declares that all the JA Solar modules recently manufactured (starting from 2014) have on the front side a tempered and high-transmission glass covered by anti-reflection coating to reduce light reflection and hence absorb more solar energy and generate more electric current.

All JA Solar customers are encouraged to consult with JA Solar technical support staff with any further question they may have.

Yours faithfully,

Shanghai JA Solar PV Technology Co., Ltd.
Global Customer Service Department
March 18th, 2020

12. APPENDICES

Appendices included with this document are listed below:

Appendix 1 – Comment Log & Associated Responses

Appendix 1 – Comment Log & Associated Responses