CYPRESS CREEK RENEWABLES

INDEPENDENT SOLAR, LLC
3 MW COMMUNITY SOLAR FACILITY

Prepared by: Independent Solar, LLC
Town of Marlborough Special Use Permit & Site Plan Review Application
July 10, 2020

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MARLBOROUGH SPECIAL USE PERMIT APPLICATION
Independent Solar, LLC 3 MW Solar Energy Facility

Submitted by Independent Solar, LLC
3402 Pico Blvd
Santa Monica, California 90405

COMPANY SUMMARY

Independent Solar, LLC is a limited liability company that is owned by Cypress Creek Renewables, LLC (CCR). CCR is driven by the belief that solar makes our world safer and cleaner while also creating good jobs and contributing to our country's energy independence. CCR is recognized as an industry leader in providing clean, affordable energy throughout the U.S. Our team members specialize in the design, build, and ownership of a range of solar projects, and the company has invested over $2.3 billion into solar energy production since 2014. CCR is committed to providing positive benefits to the communities we serve and we hope to be an asset to your community.

Independent Solar, LLC, the Applicant, has prepared this application for a 3 MW Solar Energy Facility in Marlborough, New York. This application was prepared according to the requirements detailed in Section 155-32.2 of Article VI of the Town of Marlborough zoning law. Independent Solar, LLC respectfully submits information, exhibits, and materials, which are hereby incorporated into and made part of the Application below in order to comply with Marlborough Special Use Permit Approval Criteria.

PROJECT SUMMARY

Independent Solar, LLC proposes to develop a 3 MW Solar Energy Facility on a roughly thirty (30) acre tract of land located at 206 Milton Turnpike and owned by Organic Valley LLC (Robert Titanic). The project site is located north of Milton Turnpike at the intersection with Clarks Ln, consisting of a portion of parcel 95.4-3-7.210, and with access through 95.4-3-7.110.

The project will contain rows of Photovoltaic (PV) cell panels mounted on posts set in the ground, along with a battery energy storage system. The anticipated power output of the project annually will be enough to power approximately 800 single-family homes per year, and the project will deliver that power onto the grid under the Community Distributed Generation (CDG) Program as established by the NY State Public Service Commission (PSC) in July 2015.

Under the CDG program, Cypress Creek would allocate the solar energy generated by Independent Solar directly to Central Hudson Gas & Electric customers. These customers would receive credits against their Central Hudson bills and pay Cypress Creek separately for the clean, solar energy. For each kilowatt-hour (kWh) they receive from Cypress Creek, residential customers would offset one kilowatt-hour of their bill from Central Hudson. This system – known as net metering – was previously only available to customers with solar panels at their home or business. Community solar expands the benefits of net metering to any customer interested in subscribing to a project. Subscribing to a community solar project like the one proposed in Marlborough is completely voluntary. Independent Solar plans to offer energy from the Marlborough project to customers at prices at or below the current standard utility

rate offered by Central Hudson. Through such contracts, customers would be able to reduce their electric bills and lock in rates for several years to come.

Cypress Creek Renewables has contracted environmental consultants to perform field investigations, literature reviews, and agency consultations to identify and assess existing environmental conditions at the project site. Information derived from the environmental diligence is used by CCR to avoid and minimize effects to environmental resources during the design process, and supporting information is presented in the Full Environmental Assessment Form (FEAF) included with this submittal (Exhibit F). Full compliance with federal, state and local regulations will ensure Independent Solar will not result in adverse impacts to environmental resources.

CCR is a proud partner of each town that we work with, and we look forward to a continued relationship with the Town of Marlborough.

PROJECT BENEFITS

Allowing the property to develop as a solar energy facility provides many benefits, including:

- **The creation of locally generated, clean energy resources in Marlborough**
  - Independent Solar will produce enough electricity to power approx. 800 homes annually, and will provide Central Hudson customers the ability to source renewable power for their homes without the need to invest in individual systems.
- **A source of consistent, annual income for the land owner.**
  - This is especially helpful when the landowner's occupation provides variable income, as is often the case year-to-year for farmers.
- **An economic investment and increased tax revenue for Marlborough.**
  - Independent Solar expects to invest approximately $6,300,000 into the project. Through this investment, Marlborough can expect: spending of over $3,500,000 in the local economy; approximately 10 full-time equivalent (FTE) local construction and installation jobs; and additional tax revenue over the lifetime of the project. Independent Solar plans to enter into a payment in lieu of taxes (PILOT) agreement with the relevant property tax authorities for an amount to be determined.
- **Contribution to renewable energy goals outlined in the Town of Marlborough Comprehensive Plan and by the State of New York.**
  - Independent Solar will provide $54,000 per year in economic value[1] to the State of New York and Marlborough by offsetting 1,400 tons of CO2 annually. This project is being developed in accordance with the New York State Energy plan, which calls for 100% renewable power by 2040, and NYSERDA's Community Distributed Generation (CDG) or Community Solar program.
- **Design that allows for continued agricultural use on the remainder of the property**

[1]Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (May 2013, Revised August 2016)

- The Independent Solar project is designed so that agricultural production may continue on the approximately 15-20 acres of high-quality soils on the property not being utilized by the project. Vegetative maintenance methods at the project will be harmonious with a potential adjacent organic farming use.

APPLICATION FOR SPECIAL USE PERMIT

The following Application and supporting documents address the Town of Marlborough Special Use Permit application criteria for solar energy systems.

Once applicable permits have been obtained through the Town of Marlborough, Independent Solar, LLC will construct, own, operate and maintain the solar energy facility. The project will be a low-impact development requiring little to no local municipal services. The attached application illustrates that this project will not negatively impact public safety or general welfare, nor will it affect the comfort and convenience of the public in the Town of Marlborough or of the immediate neighborhood.

Independent Solar, LLC respectfully requests approval of a Special Use Permit Application to construct a 3 MW Solar Energy Facility. We thank you for your consideration and look forward to working together to bring the benefits of this solar energy facility to the Town of Marlborough. Please let me know if I can provide additional information or assistance.

With kind regards,

Paul Irby
310-862-0371
paul.irby@ccrenew.com
Cypress Creek Renewables

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Special Use Permit APPROVAL CRITERIA

SECTION 155-32 – SPECIAL USE PERMIT

E. General consideration for special use permits. In permitting any special use, the Planning Board shall take into consideration the public health, safety and general welfare and the comfort and convenience of the public in general in the Town and of the immediate neighborhood in particular. The Planning board may require modifications to development proposals, submission of alternative design and layout proposals and may attach reasonable conditions and safeguards to eliminate or minimize potential impacts as a precondition of its approval. The Planning Board, after public notice and hearing, may approve the issuance of a permit, provided that it shall find that all of the following conditions and standards have been met:

(1) Traffic access. All proposed traffic access shall be adequate but not excessive in number, adequate in width, grade and alignment and visibility, and sufficiently separated from street intersections and other places of public assembly and shall meet other similar safety considerations.

The project will utilize the existing access driveway at 206 Milton Turnpike, at the intersection with Clarks Ln. Any improvements made will fully comply with Ulster County Department of Public Works and Town of Marlborough specifications for commercial access driveways.

(2) Parking. Parking areas will be of adequate size for the particular use, and the entrance and exit drives shall be laid out so as to achieve maximum safety.

No parking areas are planned. All access drives will be designed so as to ensure safety for project and emergency personnel.

(3) Landscaping and screening. All parking and service areas shall be reasonably screened from the view of adjacent residential lots and streets, and the general landscaping of the site shall be in character. [Amended 5-9-2011 by L.L. No. 3-2011]

Independent Solar proposes the included landscaping plans (Exhibit D) that adhere to the Town's zoning ordinance, utilizing a native meadow seed mixture for landscaping within the project area and a row of evergreen trees along the east side of the northern array area to shield the project from view from the Hudson River valley to

the east. The illustrated vegetative buffers incorporated into these plans represent commercially reasonable attempts to minimize visual impacts from key vantage points, although full screening of the project from view will be impossible due to the uphill topographical positioning of the site.

(4) Character and appearance. The character and appearance of the proposed use, buildings, structures, outdoor signs and lighting shall be the character of the surrounding neighborhood and that of the Town of Marlborough. [Amended 5-9-2011 by L.L. No. 3-2011]

The project fits the mixed agricultural, commercial, and residential character of the surrounding neighborhood, and the installment of the project will help the Town meet its long-term development goals as outlined in Section G of the Town of Marlborough Comprehensive Plan. No outdoor lighting will be installed at the project site.

(5) Historic and natural resources. The proposed use shall be designed and shall be carried out in a manner that protects historic and natural environmental features on the site and in adjacent areas. [Amended 5-9-2011 by L.L. No. 3-2011]

Extensive environmental diligence on the project site has been completed by Independent Solar, including consultation with the US Army Core of Engineers (USACE), the US Fish and Wildlife Service (USFWS), the NY State Department of Environmental Conservation (NYSDEC), and the NY State Historic Preservation Office (SHPO). Impacts to protected historic and natural environmental features, including wetlands and endangered species habitat, have been avoided to ensure the preservation of these resources.

(6) Level of service. The level of services required to support the proposed activity or use is or will be available to meet the needs of the proposed activity or use. This consideration shall include the suitability of water supply and sanitary sewage facilities and protection from pollution of surface water or groundwater. [Amended 5-9-2011 by L.L. No. 3-2011]

CCR has submitted Emergency Response Plans (Exhibit J) for the project and will provide training to the Fire Department on emergency response procedures for solar facilities, if requested. CCR has provided a fire break surrounding the project site, and a KNOX Box will be installed at each security gate to allow for easy access in the case of an emergency.

(7) In or adjacent to a residence district. In addition to the above criteria, in the case of any use located in or directly adjacent to a residence district:

(a) The location and size of such use, the nature and intensity of operations involved in or conducted in connection therewith, the size of the site in relation to the use, its site layout and its relation to existing and future access streets shall be such that both pedestrian and vehicular traffic to and from the use and the assembly of persons in connection therewith will not be hazardous or inconvenient to or incongruous with said residence district or conflict with the normal traffic of the neighborhood.

Information on traffic impacts is included below in Section 2.8: Traffic Safety. No significant traffic impacts are anticipated. Pedestrian traffic will be prohibited within the project area.

(8) The use of best management practices in the protection of streams, steep slopes, wetlands, floodplains and other natural features.

As demonstrated in the site plan (Exhibit D), the project is designed to avoid all impacts to streams, wetlands, floodplains, and other natural features identified through environmental diligence. The array has been specifically designed to avoid the steep slope areas on site to the greatest degree possible.

F. Additional safeguards and conditions. The Planning Board shall impose additional conditions and safeguards upon the special permit as may be reasonably necessary to assure continuing conformance to all applicable standards and requirements, including reasonable assurance that these conditions and safeguards can be responsibly monitored and enforced.

Acknowledged and confirmed.

G. Environmental consideration. The proposed use shall be subject to review pursuant to the New York State Environmental Quality Review Act (SEQR). [Amended 5-9-2011 by L.L. No. 3-2011]

Acknowledged. The SEQR Letter of Intent and Full Environmental Assessment Form is submitted in Exhibit F of this application.

H. Performance bonds. The applicant will be required to post performance bonds pursuant to this chapter in amounts and duration to ensure that all public improvements as per the approved final site plan can be completed. [Amended 5-9-2011 by L.L. No. 3-2011]

Acknowledged. Independent Solar will post a performance bond of the applicable amount.

I. The Planning Board may require that an as-built certified survey be provided to the Town Code Enforcement Officer and/or the Planning Board Secretary to be filed with the official record. [Added 5-9-2011 by L.L. No. 3-201116]

Acknowledged. The as-built survey can be provided to the Town upon request.

J. **Existing violations. No permit shall be issued for a special use for a property upon which there is an existing violation of this chapter or other land use regulations of the Town of Marlborough, and the Planning Board may withhold or suspend review pending remedy of the violation(s).**

There are no known existing violations of Marlborough land use regulations for the subject property.

K. **Waiver. The terms and conditions of a special permit may be modified by application to the Planning Board in the same manner as an application for a new special permit. In the event that the modification sought is deemed insubstantial by the Planning Board, it may waive one or more of the requirements of this section.**

Acknowledged.

L. **Expiration of special permits. A special permit shall be void if construction is not started within one year and completed within two years of the date of the final site plan approval, except that such special permit approval may be renewed by the Planning Board at its discretion. Each of these respective periods of expiration may be extended in the Planning Board's discretion for up to two additional periods of one year each. [Amended 5-9-2011 by L.L. No. 3-2011]**

Acknowledged.

M. **Revocation of special permits. Special permits may be revoked by the Building Department / Code Enforcement Officers in the event of substantial deviation from approved special permit conditions, and the use allowed by special permit shall terminate immediately.**

Acknowledged.

N. **If the Planning Board indicates that all applicable requirements have been met and approves the special use permit, it shall approve issuance of the permit for which application has been made, including such conditions and safeguards to the permit as have been required. The Building Department/Code Enforcement Officers shall not issue the permit for which the application has been made until the provisions of § 155-32 have been met.**

Acknowledged.

O. **Required referral. Prior to taking action on the site plan, the Town Planning Board shall refer the project's site plan to the Ulster County Planning Board for advisory review and a report in accordance with §§ 239-1 and 239-m of the General Municipal Law. [Amended 5-9-2011 by L.L. No. 3-2011]**

Acknowledged and confirmed. An introductory gateway meeting was held with the Ulster County Planning Board on March 10, 2020, and feedback was incorporated into the current project design.

SECTION 155-32.2 – SOLAR ENERGY

In addition to the general criteria set forth in Section V, Part A, above, the following additional criteria shall apply to this application:

D. General requirements.

(1) All solar energy system installations shall be performed by a qualified solar installer.

Cypress Creek Renewables is recognized as a qualified solar installer by NYSERDA, and has a strong track record of developing projects in New York and throughout the United States.

(2) A solar energy system connected to the utility grid shall provide written proof from the local utility company acknowledging the solar energy facility will be interconnected to the utility grid. Any connection to the public utility grid must be inspected by the appropriate public utility.

Please refer to the Interconnection Agreement between Independent Solar, LLC and Central Hudson Gas and Electric provided in Exhibit K, fully executed on April 7, 2020.

(3) Solar energy systems shall meet New York's Uniform Fire Prevention and Building Code and National Electrical Code standards.

Acknowledged and confirmed. All equipment shall be designed to meet New York's Uniform Fire Prevention and Building Code and National Electrical Code standards.

(4) Every solar energy system shall be depicted on a plan showing the location of the major components of the solar system and other equipment located on a roof or a legal accessory structure. This plan should represent the relative location of all components at the site, including, but not limited to, location of array, existing electrical service location, utility meter, inverter location, system orientation and tilt angle. This plan shall show access and pathways that are compliant with New York State Fire Code, if applicable.

Please refer to the site plan provided in Exhibit D.

(5) Specification sheets for all manufactured components shall be required.

Manufacturer specification sheets are provided in Exhibit N.

(6) All diagrams and plans must include the following:

Please refer to the site plan provided in Exhibit D, which includes all of the requested information.

(a) Project address, section, block and lot number of the property;

(b) Owner's name, address and phone numberName, address and phone number of the person preparing the plans; and

(c) System capacity in kW-DC.

(7) Prior to operation of the solar energy system, proof that electrical connections have been inspected and approved by an appropriate electrical inspection person or agency, as determined by the Town of Marlborough, must be provided.

Acknowledged and confirmed.

(8) Safety.

Please refer to information on facility safety provided in Section 2.7 of this application, and the Emergency Response Plan provided in Exhibit J.

(a) Solar energy systems shall be maintained in good working order.

Acknowledged and confirmed.

(b) All solar energy systems shall be designed and located in order to prevent reflective glare from impacting roadways and contiguous properties.

Panels are treated with an anti-reflective coating. A glare analysis is included in Exhibit L. The glare analysis was prepared using the Solar Glare Hazard Analysis Tool (SGHAT) which determines when and where solar glare can occur throughout the year from a user-specified PV array as viewed from user-prescribed observation points. The observation points were selected based upon proximity to public right of ways, adjacent properties, and notable sites within the viewshed. The tool is routinely utilized by the Federal Aviation Authority (FAA) to assess whether or not proposed solar facilities present a risk of glare. As illustrated in the analysis, the proposed site does not exceed FAA criteria, meaning no further study is recommended.

(c) If solar storage batteries are included as part of the solar collector system, they must be placed in a secure container or enclosure meeting the requirements of the New York State Building Code when in use and, when no longer used, shall be disposed of in accordance with the laws and regulations of the Town of Marlborough and other applicable laws and regulations.

The civil site plan in Exhibit D outlines the containment measures for the onsite battery storage system that fully comply with the New York State Building Code. The Decommissioning Plan included in Exhibit I

demonstrates the methods that will be used to dispose of the battery storage system, complying with all applicable laws and regulations.

(d) Information required in Subsection D(4) must be provided to the Fire Department that is obligated to respond to a call from that location.

Acknowledged and confirmed.

I. Standards for large-scale solar systems as a special use

(1) Large-scale solar energy systems are permitted through the issuance of a special use permit within the R-AG-1 and Industrial Zoning Districts, subject to the requirements set forth in this section, including site plan approval.

The proposed project is located in the R-AG-1 district.

(2) Special use permit application requirements. For a special permit application, the site plan application is to be used as supplemented by the following provisions:

(a) If the property of the proposed project is to be leased, legal consent between all parties, specifying the use(s) of the land for the duration of the project, including easements and other agreements, shall be submitted.

The lease agreement between Independent Solar, LLC and Robert Titanic, and Letter of Agent Statement are provided in Exhibit B.

(b) Blueprints showing the layout of the solar energy system signed by a professional engineer or registered architect shall be required.

The site plan is provided in Exhibit D, stamped by Michael J. Finan, Licensed Professional Engineer.

(c) The equipment specification sheets shall be documented and submitted for all photovoltaic panels, significant components, mounting systems, and inverters that are to be installed.

Equipment specification sheets are provided in Exhibit N of this submittal.

(3) Special use permit standards.

(a) Height and setback. The height of the large-scale energy systems shall not exceed 15 feet when oriented at maximum tilt. Setback requirements shall be as stated for the underlying zoning district,

except all inverters shall be set back the lesser of 100 feet or until the electromagnetic field (EMF) meets background level, as determined by the World Health Organization (WHO).

As demonstrated in the site plan provided in Exhibit D, the proposed project complies with all setback distances for the R-AG-1 district. The inverter pad is located approximately 500-ft from the nearest external property line. The panels shall not exceed 15-ft in height.

(b) Area of use. The area of use for a large-scale solar energy system shall be a maximum of 20 acres.

Confirmed – The solar area shall be below 20-acres. As demonstrated in Exhibit D, the proposed solar area is 14.9 acres.

(c) Lot coverage. The lot on which a large-scale solar energy system is located in the R-AG-1 District shall be granted an additional 30% of bonus lot coverage from that permitted in the Schedule of District Regulations, and a lot in the Industrial Zoning District shall be granted an additional 10% of bonus lot coverage from that permitted in the Schedule of District Regulations. The surface area covered by solar panels shall be included in the total lot coverage.

Confirmed – Lot coverage at the Independent Solar project shall not exceed the 50% allowed. The proposed solar area of 14.9 acres results in 19% coverage of the 78 acre lot.

(d) All solar production facilities shall be designed and located in order to prevent reflective glare onto roadways or adjacent structures.

A glare analysis is included in Exhibit L. The glare analysis was prepared using the Solar Glare Hazard Analysis Tool (SGHAT) which determines when and where solar glare can occur throughout the year from a user-specified PV array as viewed from user-prescribed observation points. The observation points were selected at the adjacent roadways and structures. As demonstrated, the proposed project will not produce glare to adjacent uses. Additionally, all panels will be treated with an anti-reflective coating to minimize glare.

(e) A minimum twenty-five-foot perimeter buffer, except for the area of roadway access, which may be partially or totally within the perimeter lot line setback, consisting of natural and undisturbed vegetation, supplemented with evergreen plantings, as may be required by the Planning Board, shall be provided around all mechanical equipment and solar panel arrays to provide screening from adjacent properties and Town, county and state roads.

As demonstrated in Exhibit D, a 25-ft landscaping buffer has been placed around the perimeter of the project. Evergreen plantings are planned along the eastern side of the northern array area to reduce viewshed impacts to the Hudson River valley to the east. Existing trees and the natural topography of the site largely shield the project from view to the north and west. Due to the upsloping topography of the site, screening methods would likely be ineffective in eliminating viewshed impacts to the residential structures and Milton Tpke south of the site, although alternative screening measures can be explored at the request of the Town. A viewshed analysis is included in Exhibit M of this submission, and visual renderings of the project from various vantage points can be furnished upon request.

(f) A land grading and vegetation clearing plan shall be prepared. Clear-cutting of all trees in a single contiguous area shall be limited to the area of the equipment compound plus the area of an emergency access roadway and the area required for solar access.

A grading plan is included in Exhibit D of this submittal. No tree clearing is proposed.

(g) Noninvasive ground cover under and between the rows of solar panels shall be low-maintenance, drought-resistant, and non-fertilizer-dependent.

Confirmed. Please refer to the landscaping plan included in Exhibit D. A meadow mix consisting of native grasses will be planted in the panel area and landscaping buffer. This seed mix was specifically selected to be low-maintenance, drought resistant, and non-fertilizer dependent.

(h) Debris, materials and/or mulch generated by site clearing or construction shall not be stockpiled on site.

As demonstrated in the Erosion and Sediment Control Plan in Exhibit D, two temporary soil stockpiles will be established to store soil during the grading process, but both will be removed at the completion of construction.

(i) All local stormwater regulations shall be complied with. The applicant shall comply with the State Pollutant Discharge Elimination System guidelines. If determined to be required, an SWPPP (stormwater pollution prevention plan) shall be prepared, and a stormwater, erosion, and slope analysis of the land shall be required to be assessed by a New York State licensed professional engineer for the site and any road used to access the site.

An SWPPP has been prepared by Langan Engineering, and is provided in Exhibit E. All local stormwater regulations shall be complied with.

(j) All large-scale solar energy systems shall be enclosed by fencing to prevent unauthorized access. Warning signs with the owner's contact information

shall be placed on the entrance and perimeter of the fencing. The type of fencing shall be determined by the Town of Marlborough Planning Board. The fencing and the system may be further screened by any landscaping needed to avoid adverse aesthetic impacts.

As demonstrated in Exhibit D, the site will be fully enclosed by a chain link fence and locked gate, with warning signs posted at the entrance and around the perimeter.

(k) Signs. A sign no greater than two square feet indicating the name of the facility owner(s) and a twenty-four-hour emergency telephone number shall be posted. In addition, "No Trespassing" or other warning signs may be posted. All signage shall be maintained in legible condition and contain accurate information. A clearly visible warning sign concerning voltage shall be placed at the base of all pad-mounted transformers and substations. No signage of any kind shall be allowed to be attached to solar panels or support structures, except any required safety warnings.

Acknowledged and confirmed – All signage shall adhere to these requirements.

(l) Property operation and maintenance plan. Such plan shall describe continuing photovoltaic maintenance and property upkeep, such as mowing and trimming.

Please refer to the Operations and Maintenance Plan provided in Exhibit P.

(m) A decommissioning plan, as detailed in § 155-32.2J, shall be prepared. Compliance with this plan shall be made a condition of the issuance of a special use permit under this section.

Please refer to the draft Decommissioning Plan provided in Exhibit I.

J. Decommissioning plan for solar energy system, large scale, and solar energy system, subdivision use.

The draft decommissioning plan and estimate is provided in Exhibit I of this submittal. A detailed decommissioning plan with cost estimate signed by a professional engineer will be submitted once the design of the project is finalized. Independent Solar proposes that the full decommissioning plan and estimate be stipulated as a condition of approval by the Town of Marlborough.

(1) Any use which requires approval by the Planning Board shall include a decommissioning plan approved by the Planning Board.

(2) The decommissioning plan shall specify that after the solar energy system will no longer be used, it shall be removed by the applicant or any subsequent owner and shall include a signed statement from the party responsible for

completing the decommissioning plan acknowledging such responsibility.

(3) The plan shall demonstrate how the removal of all infrastructure and the remediation of soil and vegetation shall be conducted to return the parcel to its original state prior to construction.

(4) The plan shall state disposal of all solid and hazardous waste shall be in accordance with local, state, and federal waste disposal regulations.

(5) The plan shall include an expected timeline for execution.

(6) The plan shall include a cost estimate detailing the projected cost of executing the decommissioning plan prepared by a professional engineer or contractor. Cost estimations shall take into account inflation.

(7) Removal of solar energy systems must be completed in accordance with the decommissioning plan. If the solar energy system is not decommissioned after being considered abandoned, the Town may, after providing the last known owner of record prior written notice, by first-class mail, of no less than 20 days, remove the system and restore the property and impose a lien on the property to cover these costs to the Town. The decommissioning plan shall grant the Town a limited license to access the property for the purpose of removing the solar energy system after the notice requirements of this subsection have been satisfied.

1. APPLICANT INFORMATION

1.1 APPLICANT ADDRESS AND CONTACT

Company:

Cypress Creek Renewables

3402 Ocean Park Blvd

Santa Monica, California 90405

Contact:

Paul Irby

Phone: 310-862-0371

Email: paul.irby@ccrenew.com

1.2 BACKGROUND ON CYPRESS CREEK RENEWABLES, LLC AND INDEPENDENT SOLAR, LLC

Cypress Creek Renewables believes solar energy makes the world, safer, cleaner, and better. Our team solves problems to successfully develop, build, and operate solar facilities across the United States. With more than 5.9 gigawatts of solar energy deployed in eighteen states and $3 billion invested in solar energy production since 2014, CCR is one of the country's leading solar companies and was recognized by Solar Power World magazine as the No. 1 Solar Developer in the U.S. for 2017 and 2018. For more information about CCR, please visit https://ccrenew.com.

An overview of our current operational and development portfolio is illustrated below in Figure 1: Cypress Creek Renewables Portfolio Overview.

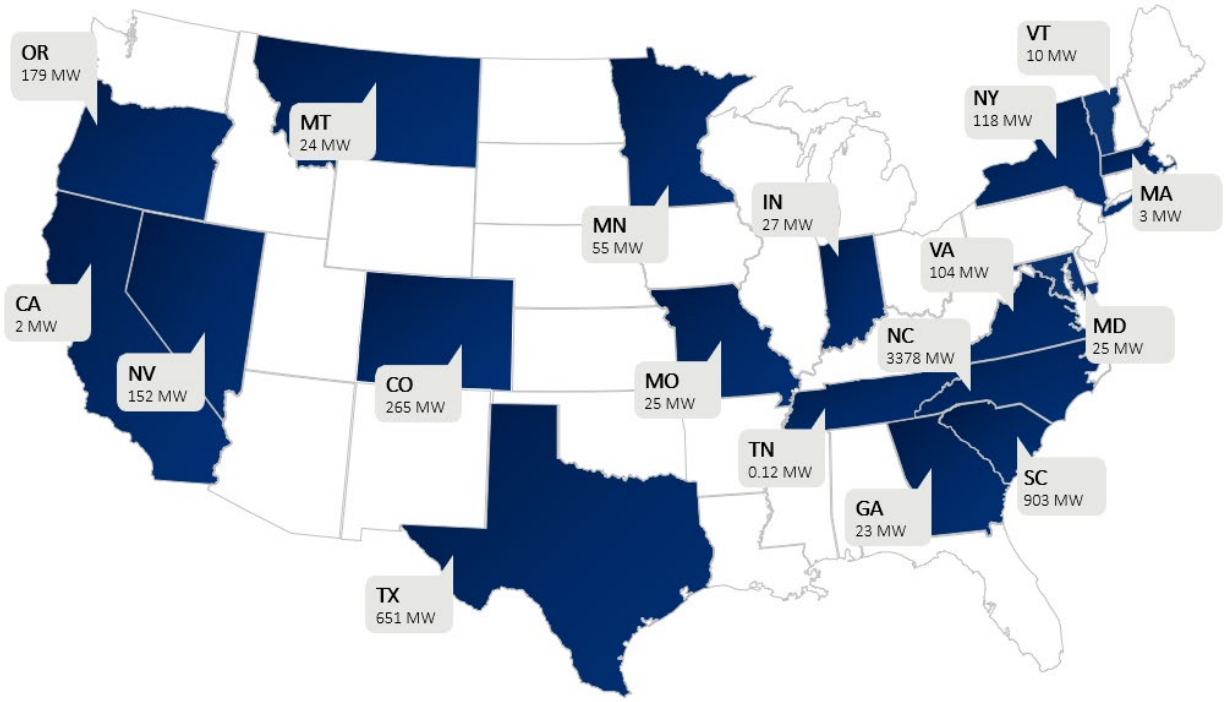

FIGURE 1: CYPRESS CREEK RENEWABLES PORTFOLIO OVERVIEW

CCR is also one of the leading developers in New York State. To date, 33 Cypress Creek projects, totaling 118 megawatts (DC), are in operation or have been successfully developed in the state of New York. These projects represent a total investment of about $170,000,000.

According to the National Renewable Energy Laboratory's Jobs and Economic Development Index (JEDI) Model, the construction and installation of these projects has resulted in an estimated $92,000,000 of spending in the local economy and the creation of around 200 local full-time-equivalent jobs and roughly 1,100 total jobs when all indirect and induced impacts are included. Wages paid to construction personnel over this time will total around $13,000,000.

Over the operational lifetime of these projects we expect an estimated $760,000 of annual investment into the local economy related to on-site labor, materials, and services. This does not include property tax rev3neue that will be paid to local taxing jurisdictions.

Altogether, the clean, renewable electricity generated by these projects can power an estimated 15,000 homes or 940,000 40-watt lightbulbs every year, offsetting more than 40,000 tons of carbon dioxide from being emitted into the atmosphere annually. This is equivalent to 7,500 medium-sized cars being taken off the road or the carbon sequestration achieved by 2,200,000 trees each year.

According to the US EPA's Social Cost of Carbon, this environmental benefit provides an economic benefit equivalent to $1,500,000 each year to the state of New York in the form of avoided cost of damages associated with climate change.

CCR team members have a wealth of experience in the solar industry and work to develop, build, and operate solar facilities across the United States. We are committed to strong partnerships with utility companies, financial institutions, and the communities that host our solar energy facilities. As a national leader in solar energy, and a partner with many communities in New York already, Cypress Creek is the right partner for the Marlborough community.

1.3 PROJECT FINANCES

1.3.1 Project Costs and Financing Structure

Independent Solar, LLC expects to invest approximately $6,300,000 into the project. These costs are based on build cost assumptions and include all construction, material, labor, and professional service-related expenditures. Cypress Creek Renewables operating capital, in combination with tax equity and debt partners, will provide the financial backing for the project.

1.3.2 Economic Development

The solar industry is one of the fastest growing and most robust emerging industries nationwide. The solar industry was the largest employer in the Electrical Power Generation sector in the US in 2016, providing 374,000 jobs.[2] Since 2010, employment in the solar industry has grown 168% and since 2012 has grown nine times faster than employment in the general US economy. In New

[2] US Department of Energy, January 2017. 2017 US Energy and Employment Report. <https://www.energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report_0.pdf> Accessed on February 2, 2017.

York specifically, the industry grew 10% in 2019 alone, now employing approximately 10,740 workers.[3]

Based on estimates by the National Renewable Energy Laboratory, the construction and installation period of Independent Solar will result in the creation of approximately 10 full-time equivalent (FTE) local construction and installation jobs, provided qualified, local labor is available.[4] Cypress Creek Renewables hires and works with qualified, local subcontractors wherever possible. In addition, the project will inject over $3,500,000 of direct spending into the local economy, which includes expenditures on parts and labor, goods and services, fuel and lodging, dining and other consumer resources. During the ongoing operational life of the project, local investment is expected to exceed $29,000 annually.

The project will also generate additional tax revenue for the Town of Marlborough, without putting an additional demand on local municipal services. Taxes on the infrastructure and the land of Independent Solar will provide Marlborough a valuable funding source for public improvements, educational investment, economic development, and other initiatives for the next thirty-five (35) to forty (40) years.

2. PROJECT DESCRIPTION AND ANALYSIS

2.1 PROJECT PURPOSE AND NEED

Solar energy is a vital part of our nation's economy and energy mix. Conventional sources of electricity such as coal, gas, and nuclear energy are expensive, finite resources that require significant environmental disruption and public safety risk to maintain and extract. Solar energy is a clean, cheap, and unlimited resource with little environmental impact. Technological advancements have made solar energy cost competitive with power generated by fossil fuels and with proven storage technologies, we are now able to keep the lights on even when the sun isn't shining.

New York has identified the advancement of renewable energy and energy efficiency as a state-wide goal. The Climate Leadership and Community Protection Act, adopted by the New York State Legislature in May 2019, stipulates that 70% of energy generation in New York State will be sourced from renewable energy sources by 2030. This mandate requires at least 13,000 MWs of utility-scale solar and onshore wind projects, like Independent Solar, to be placed in-service by 2030.

Independent Solar, and similar solar energy facilities, are essential to achieving the sustainability goals of Marlborough and the State of New York. Each 3 MW solar energy facility that can be placed in New York can offset an estimated 1,400 tons of carbon dioxide annually, the equivalent

[3] *The Solar Foundation, State Solar Jobs Census: https://www.thesolarfoundation.org/solar-jobs-census/states/*

[4] National Renewable Energy Laboratory, January 2017. Jobs and Economic Development Impact Models. <https://www.nrel.gov/analysis/jedi/results.html> Accessed on December 28, 2017.

of 270 cars off the road[5]. According to the U.S. EPA's Social Cost of Carbon[6], this environmental benefit provides an economic benefit equivalent to $54,000 per year to the State of New York.

2.2 PROJECT OVERVIEW

Independent Solar is proposing a 3 MW Solar Energy + Storage facility in the Town of Marlborough. The project will be located at 206 Milton Turnpike. The project will be placed on a roughly 30-acre portion of 95.4-3-7.210, with access using the existing driveway in parcel 95.4-3-7.110 that leads to Milton Turnpike at the intersection with Clarks Ln. The property is zoned R-AG-1 and will require both a Site Plan and Special Use Permit Approval.

Independent Solar will contain rows of Photovoltaic (PV) cell panels, also referred to as modules, mounted on posts set in the ground. These rows of PV panels are referred to as "solar arrays." Solar components will comply with the current edition of the National Electric Code, be UL listed (or equivalent), and designed with an anti-reflective coating. The solar panels will be supported by a metal racking system no more than twelve (12) feet in height. The anticipated power output of the project is approximately 6,500,000 kilowatt-hours (kWh) annually, enough to power approximately 700-800 single-family homes per year.

[5] US EPA (2015). eGRID, U.S. annual national emission factor, year 2012 data. U.S. Environmental Protection Agency, Washington, DC.

[6] Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (May 2013, Revised August 2016)

FIGURE 2 JEFFERSON: 3 MW SOLAR ENERGY FACILITY IN WATERTOWN, NEW YORK

The project will not require manned labor on-site, nor will it require sewer, water, or other services. The project will be completely enclosed by a 6-foot-tall fence with three strands of barbed wire, as required by the National Electric Code. Wildlife friendly fencing with a gap at the bottom allowing small species to pass through the project area will be utilized, at the request of the Ulster County planning board.

Independent Solar will not negatively impact the public health, safety, and general welfare, nor the comfort and convenience of the public in general, or the residents of the town or of the immediate neighborhood in particular. In fact, the project will be a benefit to the Town of Marlborough both in economic development as well as in helping the County achieve sustainability goals.

Please see Exhibit N—Equipment Technical Memo for further information on panel materials, audibility, glare, soil protection, dust and weed control and wildlife protection.

2.3 SOLAR ENERGY OVERVIEW

2.3.1 SOLAR ENERGY TECHNOLOGY

The conversion of sunlight into electric energy is not a new concept—solar technologies have been around since the 1970s. CCR is focused on utility-scale solar developments. Our projects are designed, built, and operated to the same rigorous standards as your current energy provider, complying with state and local codes and standards.

2.3.2 Solar Energy Facility Equipment

Solar facilities are simple constructions that employ the following basic equipment:

- Solar PV panels
- Inverters
- Transformers
- Wires and conductor cables
- Structural racking system for PV modules
- Perimeter fencing
- Lithium-ion batteries

The solar PV panels function as a solid state, inert crystal, most similar to a pane of solid glass. The panels do not erode and do not produce any emissions. The sealed PV panels do not leach metals into the environment and are recycled at the end of their lifecycle.

Cypress Creek Renewables typically mounts the solar arrays in one of two ways: on a fixed tilt (panels are stationery) or on a tracking system (panels slowly follow the sun throughout the day). Structural frames, also referred to as racks, are driven into the ground with steel beams on which PV panels are mounted. The inverters and transformers, which receive the power from the solar panels, are mounted on top of small concrete pads. Most sites require minimal grading, and an entire facility can often be installed with minimal soil disturbance.

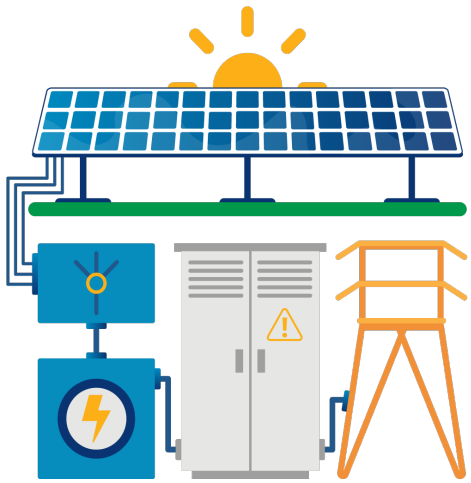

FIGURE 3: SOLAR ENERGY PRODUCTION

Solar electricity production includes the following six components:

1. *Electrical Power Generation* – Sunlight strikes the PV panel cells, which convert photons of light into electrons, producing low-voltage, Direct Current (DC) electricity.

2. *Combination box* – The low-voltage, DC electricity is fed through cables from each PV panel to a combiner box.

3. *Inverter* – The low-voltage, DC electricity is fed through cables from the combiner box to an inverter, where it is converted to low-voltage, Alternating Current (AC) electricity.

4. *Transformer* – The transformer steps up the low-voltage, AC electricity to the appropriate voltage so that it can be fed into the electrical transmission system.

5. *Utility Transmission* – Electricity is sent through the electrical transmission lines to utility distribution systems for delivery to ratepayers.

6. *Battery storage* – Power is stored in lithium-ion batteries using the same technology as smart phones or hardware tools, just at a larger scale.

Please see Exhibit N – Equipment Technical Memo for further information on materials.

2.3.3 Site Access

Solar energy facilities are low-impact developments that can often utilize existing right-of-way (ROW) infrastructure for site access, minimizing the need for new disturbance for the construction and maintenance of the project.

2.3.4 Interconnection With the grid

New solar generating facilities improve local infrastructure and modernize an outdated grid, enabling future energy growth and increasing resilience to power outages.

The existing electrical distribution system in New York is owned and operated by the local utility. In order for a developer of a solar generating facility to inject power into the distribution grid, they must first work with the utility to ensure that the additional proposed generation will be safely and reliably handled by the existing utility infrastructure. The utility conducts studies to model the additional generation on their distribution grid and identifies what infrastructure upgrades are required to plug the proposed generating facility into the grid. The developer of the solar generating facility is then required to pay for the utility to upgrade their infrastructure so that it can adequately support the new generation.

This process results in an improved and upgraded electrical distribution system with the following primary benefits:

- modernization of an outdated grid;
- improved capability to support future load and generation growth;
- increased resilience to power outages through a more updated and distributed grid; and
- cost savings for customers who are normally charged through their utility bills for infrastructure upgrades.

2.4 MARLBOROUGH PROJECT SITE DESCRIPTION AND SITING

2.4.1 Site Selection Process

CCR uses a spatial and data-driven approach to select potential solar energy facility sites. When deciding whether to execute a lease option for solar development, CCR evaluates land based on the following criteria, among others:

- Proximity to relevant infrastructure, including electrical substations, existing three phase lines, and access roads;
- Lack of wetlands and other protected landforms;
- Slope of land and direction of this slope; and
- Lack of threatened or endangered species.

CCR was able to engage the landowner in their interest in solar development and execute a lease. During the initial development stages, we further analyzed the site against a number of diligence criteria, which verified that the screening process had been effective in selecting an ideal site for a solar energy facility. CCR has been working in close partnership with the landowner, Robert Titanic, throughout the due diligence and design process to reach a configuration that is ideal for his continued multi-purpose use of the property.

Please see Exhibit D – Civil Site Plans for exact site location.

2.4.2 Surrounding Terrain

The Independent Solar site is an ideal site for a solar energy facility, considering its access to the existing utility grid, lack of environmental constraints, south-facing slope and harmonious surrounding land uses.

2.5 CONSTRUCTION ACTIVITIES

2.5.1 Construction Sequence

While each site is unique, Independent Solar will use standard construction and operation procedures used for our other solar energy facilities in the United States. The construction of Independent Solar is expected to take approximately 12 to 16 weeks.

As required by New York State Department of Environmental Conservation (NYSDEC), the limit of soil disturbance for all construction activities will be phased to five acres, unless otherwise authorized or waived by NYSDEC.

The construction and commission of Independent Solar will follow the general sequence shown in Figure 4: Construction sequence below:

The utility's engineering, procurement and construction of the interconnection facilities will take 6 to 18 months total and will be complete just before the construction of the solar farm itself. Construction of the solar farm itself will take approximately 12 to 16 weeks. After the construction sequences detailed above are completed, the solar farm will go through 2 to 3 weeks of commissioning before reaching commercial operation.

2.5.2 Construction Materials

The PV panels do not erode, and do not produce any emissions.[7] There are no chemicals, fluids, or materials that are capable of entering the environment from the PV panels.

The only hazardous material that will be used during the construction of Independent Solar is fuel for machinery; all other construction materials are non-hazardous. Independent Solar and its subcontractors will follow all appropriate protocol related to the use and storage of fuel. A sufficient quantity of spill containment and clean up materials shall be readily available at each equipment storage area such that any spill which may occur can be cleaned up immediately. There shall be a drip pan placed at the fueling station so that no fuel can reach the ground. This area shall be inspected daily for spillage and any fuel spillage shall be properly disposed of and a receipt of proper disposal shall be required. Twenty-pound fire extinguishers shall be mounted within 25 feet of, and at each end of, the fuel storage area to ensure adequate protection in the event of a fire

Independent Solar and its subcontractors shall maintain the site in a clean, neat and safe condition. As the work progresses, materials, tools, waste materials, rubbish and debris will be removed accordingly. Independent Solar and its subcontractors will incur all costs of clean-up.

[7] Electric Power Research Institute and California Energy Commission, August 2003. Potential Health and Environmental Impacts Associated with the Manufacture and Use of Photovoltaic Cells. <http://www.energy.ca.gov/reports/500-04-053.PDF> Accessed on February 3, 2017.

2.6 OPERATION AND MAINTENANCE

2.6.1 Equipment Maintenance

Once constructed, the project will require very little maintenance. There will be no need to build additional transportation infrastructure or complete public improvements to accommodate traffic as all of our projects are remotely monitored. Electrical engineers will service electrical equipment, primarily the inverters and transformers, on average once per month. Solar PV panels have a very low failure rate (approximately one in 10,000 per year) and are warrantied for twenty-five (25) years.

Independent Solar will conduct an annual performance audit and inspection to assess the quality of equipment. Some years, we will expect to identify areas within the array area in need of replacement or repair. Module replacement rarely occurs outside of these annual performance inspections and we would expect to perform module replacement less than 10 times over the initial 25-year term. Solar panels are easily replaced from inventory stores and financing to change-out the array at warranty's end has been built into our cost models. Maintenance will likely create 5-9 visits to the site on average per year. Independent Solar does not anticipate the need for further equipment maintenance than the above.

Please see Exhibit P – Operations and Maintenance Scope of Services for further detail on the maintenance schedule that Cypress Creek Renewables utilizes on all solar energy facilities that we maintain.

2.6.2 Vegetation Maintenance

Independent Solar is committed to landscaping best practices that stabilize the soil to add strength and durability for the long-term success of the project and the health of the land. Sustainable management practices and the promotion of healthy biodiversity within local ecosystems are a priority for Independent Solar.

We will work to employ techniques that are most appropriate for the local environment based on the following factors:

- Runoff prevention
- Carbon sequestration
- Pollination and other insect services
- Air quality concerns
- Invasive species resistance
- Viable wildflower areas
- Rate of fescue growth

The landscape manager for Independent Solar will make it a priority to minimize the use of mechanical mowing and herbicides. We anticipate mowing will occur at the Independent Solar site at maximum six (6) times a year. In rare circumstances where herbicides are deemed necessary, an effort will be made to minimize use and only apply bio-degradable, EPA-registered, organic solutions that are non-toxic to pets and wildlife. Independent Solar will not use pesticides.

2.6.3 DECOMMISSIONING OF SITE

Independent Solar guarantees that Independent Solar shall be removed, at the expense of the operator, in the unlikely event that the system ceases power production or the land lease expires or is terminated. Independent Solar is contractually obligated through the lease we sign with the Landowner to decommission the project if and when the need arises. We also submit a standard Decommissioning Plan (Exhibit I) for all projects, which specifies the conditions upon which decommissioning activities commence and the clear steps that are taken to decommission the property. We can amend that Plan to better integrate Town requirements.

In addition to the certainty provided by the lease agreement and Decommissioning Plan, another element that ensures decommissioning is the value of the equipment used to develop Independent Solar. If decommissioning becomes necessary, there will be great incentive to promptly remove all materials for sale and re-use. A standard decommissioning cost estimate is included as an Exhibit to this application, and that estimate shows that the salvage value of materials (racking, panels, inverters, etc.) far outweighs the cost to decommission.

Please see Exhibit I —Decommissioning Plan for more information.

2.7 SOLAR ENERGY FACILITY SAFETY

Independent Solar will be a safe facility that will not impact the well-being of local residents or Marlborough in general. Solar energy facilities provide safe and reliable sources of power, using simple and proven technologies. Further, CCR sources panels from Tier 1 rated manufacturers, the highest rating in the Bloomberg New Energy Finance ranking system.[8]

The project will be constructed according to all required building and electrical codes and safety measures. Site plans will be approved by all applicable local authorities, and regularly visited throughout construction as required by the town or by New York State Building Code. Energized system components, such as inverters, will be commissioned by the manufacturers' technicians. The project will employ required lock-out measures and safety warnings. A perimeter security fence will prevent trespassing and vandalism. Access codes to the gate will be provided to the Police Department, Fire Department, and emergency service providers. Vehicular access to the site is adequate for the use proposed and for emergency services, as indicated in Exhibit D – Civil Site Plans.

The regular vegetation control methods prevent buildup of debris that could otherwise pose risk of fire material, thus Independent Solar will pose no increased risk of fires to the surrounding areas.

Please see Exhibit J—Emergency Response Plan.

2.8 TRAFFIC SAFETY

[8] Bloomberg New Energy Finance, November 2016. BNEF PV Module Maker Tiering System. <https://data.bloomberglp.com/bnef/sites/4/2012/12/bnef_2012-12-03_PVModuleTiering.pdf> Accessed on February 1, 2017.

With no more than one to four vehicle visits per quarter on average, the project will not be a significant traffic generator and will not cause undue harm to the surrounding road networks, to local responders, or to the New York Department of Transportation. By contrast, American households generate an average of ~6 vehicle trips per day (over 500/quarter).[9]

A temporary rise in vehicle traffic during the 12 to 16-week construction period is anticipated. However, given the limited number of vehicles visiting the site over the construction period, traffic patterns are not anticipated to be impacted. During the construction period, approximately 2-15 personal cars and 1-10 trucks will visit the site per day.

Upon completion of the facility installation, no more than four (4) vehicles are anticipated to visit the site on a quarterly basis. In sum, no significant traffic impacts are anticipated.

2.9 AGENCY COORDINATION

Independent Solar will continue to coordinate with all necessary Federal, State, and County agencies and other entities throughout the planning process for Independent Solar. Independent Solar is prepared to work with the County should the Application trigger a County review per New York State General Municipal Law 239m.

This proposal will trigger a State Environmental Quality Review Act (SEQRA) review. Independent Solar has contracted an environmental consulting firm to perform field investigations, literature reviews, and agency consultations to assess existing environmental conditions at the project site. Information derived from these investigations will be used by Independent Solar to avoid and minimize impacts to environmental resources during the design process.

Please see Exhibit F – SEQR Letter of Intent and FEAF – for further information on SEQR concurrences.

2.10 BENEFITS OF THE PROJECT

Independent Solar presents many benefits to Marlborough, the State of New York, and Central Hudson Gas & Electric customers. There are few, if any, costs associated with the project. Benefits are summarized below:

- Direct local investment of over $4,530,000;
- Increased tax revenue for the Town of Marlborough;
- Contribution to fulfillment of the State of New York Renewable Energy Standard;
- Additional income provided to Landowner through lease payments;
- Local spending for project construction materials and other goods and services;
- Economic growth for Marlborough and the State of New York as a result of local spending for project construction and other goods and services;
- Generation of renewable, sustainable energy for the State of New York;

[9] U.S. Department of Transportation . Summary of Travel Trends; 2009 National Household Travel Survey. 2009 <http://nhts.ornl.gov/2009/pub/stt.pdf>

- Diversified electrical mix in the grid

1. Exhibits

EXHIBIT A. PLANNING BOARD APPLICATION FORM

DocuSign Envelope ID: 359D5A03-7679-402D-9496-C7D82AB82521

(Rev. 1/10/19 cb)

Town of Marlborough
Planning Board Application

Application For: ***(Check One)***

Subdivision _____ ***Site Plan*** ___X___ ***Lot Line Revision*** _____

Application Number:

Date of Submission:

Name of Project: Independent Solar, LLC

Location of Project: 206 Milton Turnpike, Milton, NY 12547

Tax Section Block and Lot: 95.4-3-7.210

Zoning District: R-AG-1

Number of Acres: 29.6 Sq. Footage of Building: 65,340 (impervious area)

Description of Project **(include number of lots/units & bedrooms)**:

Independent Solar, LLC is a proposed 3,000 kWac community solar + energy storage facility utilizing approximately 29.6 acres of parcel 95.4-3-7.210, with site access from the existing driveway at 206 Milton Turnpike. The project will be comprised of approximately 12,000 ground-mounted photovoltaic modules.

EMAIL: Paul. Irby@ccrenew.com

Name of Property Owner: Robert Titanic

Address of Property Owner: 206 Milton Turnpike, Milton, NY 12547

Telephone Number of Property Owner: 914-490-8458

Name of Applicant: Independent Solar, LLC (Paul Irby)

Address of Applicant: 3402 Pico Blvd, Santa Monica, CA 90405

Telephone Number of Applicant: 310-862-0371

DocuSign Envelope ID: 359D5A03-7679-402D-9496-C7D82AB82521

Name of Surveyor: Lawson Surveying & Mapping

Address of Surveyor: 2959 County Route 8, Oneonta, NY 13820

Telephone Number of Surveyor: 607-432-3300

Name of Engineer: Langan Engineering

Address of Engineer: 1 N Broadway Suite 910, White Plains, NY 10601

Telephone Number of Engineer 914-323-7400

Name of Attorney: Doug Warden

Address of Attorney: 94 White Plains Rd, Tarrytown, NY 10591

Telephone Number of Attorney: 914-333-0700

Reason For Application: Special use permit approval and site plan review required for large scale solar installations, as outlined in Section 155-32.2 of the Town of Marlborough zoning ordinance.

Description of Proposal:

Independent Solar, LLC is requesting site plan approval and issuance of a Special Use Permit for the proposed 3,000 kWac community solar facility at 206 Milton Turnpike. Construction of the project is planned for 2021, with the project placed in service with Central Hudson Gas & Electric by the end of 2021. The Independent Solar project will provide renewable electricity to approximately 800 local CHG&E homes annually.

Applicant's Name

DocuSign Envelope ID: 359D5A03-7679-402D-9496-C7D82AB82521

CHECKLIST FOR MAJOR/MINOR SUBDIVISION, SITE PLAN and/or LOT LINE REVISION

I. The following items shall be submitted for a COMPLETED Planning Board Application Form.

1. X — Completed Application
2. X — Environmental Assessment Form (*May be obtained from Planning Board*)
3 X — Letter of Agent Statement
4. X — Application Fee *(Separate check from escrow fee)*
5. X — Escrow Fee *(Separate check from application fee)*
6. X — Copy of deed
7. X — Completed checklist *(Automatic rejection of application without checklist)*
8. X — Agricultural Data Statement *(if applicable)*
9. X — Provide twelve (12) copies of all maps, plans, reports and a PDF computer file on CD of all documentation submitted. Plan sets must be correlated packages.

II. The following checklist items shall be incorporated on the Subdivision Plat, Site Plan, or Lot Line Revision prior to consideration of being placed on the Planning Board Agenda. Non-Submittal of the checklist will result in application rejection.

1. X — Name and address of applicant
2. X — Name and address of owner *(if different)*
3. N/A — Subdivision name and location
4. X — Tax Map Data *(Section-Block-Lot)*
5. X — Location map at a scale of 1” = 2,000
6. X — Zoning table showing what is required in the particular zone and what applicant is proposing.
7. X — Show zoning boundary if any portion of proposed subdivision or site is within or adjacent to a different zone
8. X — Date of plat preparation and/or plat revisions (no plat, preparation date and revision dates shown on site plans)
9. X — Scale the plat is drawn to (Max 1” = 100’) (no plat, site plans are drawing 1"=100')
10. X — North Arrow

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11. X — Surveyor's Certification (provided on ALTA survey)

12. X — Surveyor's seal and signature (provided on ALTA survey)

13. X — Name, SBL and acreage of adjoining owners

14. N/A — NYSDEC Wetland and 100 foot buffer zone with an appropriate Certification block regarding DEC requirements.

15. N/A — Flood plain boundaries

16. X — Federal Wetland Boundary

17. X — Metes and bounds of all lots

18. N/A — Name and width of adjacent streets, include dedication parcels. The road boundary is to be a minimum of 25 feet from the centerline of the paved street.

19. X — Show existing or proposed easements *(note restrictions)* (provided on ALTA survey)

20. N/A — Right of way width and Rights of Access and utility placement.

21. N/A — Road profile and typical section including existing proposed grades, vertical curve data, utilities, drainage and other improvements.

22. X — Lot area acreage. For lots under 2 acres, list in square feet & acres.

23. N/A — Number of lots including residual lot.

24. X — Show any existing waterways, wetlands, ponds, lakes, streams, drainage courses within 200 feet of parcel boundaries.

25. N/A — A note stating a road maintenance agreement is to be filed in the County Clerk's Office for private roads.

26. X — Applicable note pertaining to owners review and concurrence.

27. N/A — Show any public improvements, i.e. drainage systems, water lines, sewer lines, etc.

28. N/A — Show all existing houses, accessory structures, wells and septic systems on and within 200 feet of the parcel to be subdivided.

29. X — 2 Foot Contours

30. X — Indicate any reference to a previous subdivision, i.e., filed map number, data and previous lot number. (provided on ALTA survey)

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31. N/A — If a private road, Town Board approval of name required, and notes on the plan that no Town services will be provided and a street sign *(per Town specs)* is to be furnished and installed.

32. X — The amount of grading expected or known to be required to bring the site to readiness.

33. X — Estimated or known cubic yards of material to be excavated.

34. X — Estimated or known cubic yards of fill required.

35. X — The amount of grading expected or known to be required to bring the site to readiness.

36. N/A — Type and amount of site preparation which falls within the 100 foot buffer strip of wetlands and within the Critical Environmental Area. Please explain in square feet or cubic yards.

37. N/A — Amount of site preparation within a 100-year flood plain or any water course on the site. Please explain in square feet or cubic yards.

38. X — Planning Board approval block 4” x 2”

39. X — Special district boundaries, agricultural, school, fire, water, sewer, etc.

40. TBD — Sight distance of all intersections and driveways.

41. X — Ridgeline and steep slope notation.

42. X — Agricultural setbacks.

43. X — After final approval is given by the Planning Board, the Building dept. needs to be contacted for further guidance.

The plat for the proposed subdivision, site plan, or lot line revision has been prepared in accordance with this checklist.

Stamp

By: Michael Finan, PE, LEED-AP
Licensed Professional

07/07/2020
Date

DocuSign Envelope ID: 359D5A03-7679-402D-9496-C7D82AB82521

Legal Notices for Public Hearing

Public Hearings will be held only on the first (1st) Monday of the Month.

Procedure for Notice:

1. Planning Board will schedule Public Hearing during a regularly scheduled meeting, after approval for such is granted.

2. Applicant is to obtain surrounding property owner names and addresses from Assessor's Office.

3. Applicant is to send Public Notice Letter, obtained from Planning Board Office, via Certified Mail with Return Receipt to property owners no less than 10 days prior to Public Hearing.

4. Planning Board Office will send notification to the town's official newspaper.

5. All Certified Mail with Return Receipt receipts and a copy of the Assessor's listing of names and addresses must be submitted at Public Hearing.

Any questions regarding procedures may be answered at 845-795-5243.

DocuSign Envelope ID: 359D5A03-7679-402D-9496-C7D82AB82521

Ethics Code

TOWN OF MARLBOROUGH NOTICE OF DISCLOSURE OF INTEREST

In accordance with the Town of Marlborough Code of Ethics, Article 13-3 (E) and Public Officers Law § 209, the following disclosure notice ("notice") must be completed and signed by any individual, including any officer or employee of the Town of Marlborough, who has an application, petition or request submitted for a variance, amendment, change of zoning, approval of a plat, special use permit, site plan, subdivision, exemption from a plat or official map, license or permit, pursuant to the provisions of the zoning and planning regulations of the Town of Marlborough before any Town of Marlborough Board, Agency or Department ("decision-making authority"), in which a Town officer or employee has an interest in the subject of the application. The purpose of the disclosure notice is to identify and disclose any potential or actual conflict of interest for the Town employee or officer, which may compromise his/her ability to make decisions solely in the public interest. Please refer to the Town of Marlborough Code of Ethics for further information.

Under the Town of Marlborough Code of Ethics an interest is defined as: a participation, connection or involvement of any sort whether direct or indirect, pecuniary or non-pecuniary, personal or professional, which may result in a benefit. For the purposes of the Town of Marlborough Code of Ethics, the "interests" of a Town officer or employee shall be deemed to include the "interest" of:

A. An immediate family member. Immediate family member is defined as: grand parents, parents, spouse, significant other, children, grand children, brother, sister, dependent, or any household member of a Town officer, Town Board member or employee.

B. Any person other than a bank, trust company or other lending institution with whom he/she has a substantial debtor-creditor or other financial relationship.

C. Any person by whom he/she is employed or of which he/she is an officer, director or member having a controlling interest in any business or enterprise in which the Town employee or officer holds stock or has any other profit-bearing or beneficial relationship.

D. An officer or employee shall also be deemed to have an interest in a matter if he/she or any person described in A through C above is a party to an agreement, expressed or implied, with any applicant before any Board of the Town, whereby he/she may receive any payment or other benefit whether or not for services rendered, dependent or contingent upon the favorable approval of any such application, petition or request by any Town body.

This notice must be completed and included with the application, petition or request to the appropriate Town of Marlborough Board, Agency or Department.

I, Gerald A. Leone, Jr. , residing at 863 Victor Road, Victor, NY 14564, make the following statements about interests in the real property which is the subject of this application, petition or request for a special use permit and site plan approval, before the Planning Board of The Town of Marlborough.
PART I: Except as otherwise set forth in Part II below:

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PART II: If any of the statements under A through D above is <u>not</u> true, please explain and set forth the name and the relationship to the applicant and subject property of any Town employee or officer involved:

_____

_____

_____

_____

_____

_____

_____

_____

_____

PART III: This completed notice is to be submitted to the Board, Agency or Department that is authorized to review and render a decision on the application, petition or request. Further, the submittal must be made prior to any review of the application, petition or request. This notice shall be made part of that decision-making authority's official record, disclosing the exact nature of the conflict in detail. If there is an actual or potential conflict, the Town officer or employee shall abstain from voting or otherwise acting on the application, petition or request so as to avoid an actual conflict.

ANY QUESTIONS REGARDING THIS DISCLOSURE NOTICE OR THE CODE OF ETHICS ARE TO BE DIRECTED TO THE TOWN SUPERVISOR AT (845) 795-2220.

PLEASE TAKE NOTICE.....A KNOWINGLY FALSE STATEMENT IS PUNISHABLE UNDER <u>N.Y. GEN. MUN. LAW ' 809</u> AS A MISDEMEANOR.

Signed: _____

Date: 7/8/20

ACKNOWLEDGMENT

State of New York
County of: Monroe

On 7/8/2020, before me personally appeared Gerald A. Leone, Jr., 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 this 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

LORI STID
NOTARY PUBLIC, STATE OF NEW YORK
QUALIFIED IN MONROE COUNTY
MY COMM. EXPIRES 12/31/2021

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Planning Board Fees

(All Applications Subject To Escrow Fees)

Application Fees:

Residential Subdivision – Single Family or Town House	$750.00, plus $150.00 per Lot or Unit
Residential Site Plan – Multi Family Apartments or Condos	$750.00, plus $100.00 Per Unit
Commercial Subdivision	$600.00, plus $200.00 per Lot or Unit
Commercial Site Plan	$1,000.00, plus $10.00 per 1,000 sf of Building
All Other Site Plan Reviews	$550.00
Lot Line Revision	$600.00
Recreation Fees *(Residential Subdivisions & Site Plans – Excludes parent parcel)*	$2,000.00 per Lot or Unit
Recreation Fees Adult Multiple Dwelling Affordable Housing (*50 and over)*	$500.00 per Unit

Escrow Deposit: ***(To be replenished to 75% of original escrow when level drops to 25% remaining in account.***

Residential Subdivision – Single Family or Town House	$750.00, plus $150.00 per Lot or Unit
Residential Site Plan – Multi Family Apartments or Condos	$750.00, plus $100.00 per Unit
Commercial Subdivision	$600.00 per Lot (up to 4 lots,) then $200.00 per Lot Thereafter
Commercial Site Plan	$1,000.00 Minimum
All Other Site Plans	$750.00 Minimum
Lot Line Revision	$600.00 Minimum

Engineer Inspection Fees (All Town Road Installation Inspections)

Improvements as approved by Town Engineer	5% of the estimated cost to construct

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Disclaimer

The applicant is advised that the Town of Marlborough Town Code, which contains the Town's Zoning Regulations, is subject to amendment. Submission of an application to the Planning Board does not grant the applicant any right to continued review under the code's current standards and requirements. It is possible that the applicant will be required to meet changed standards or new code requirements made while the application is pending.

An approval by the Planning Board does not constitute permission, nor grant any right to connect to or use municipal services such as sewer or water. It is the applicant's responsibility to apply for and obtain Town of Marlborough and other agency approvals not within this Board's authority to grant.

AFTER FINAL APPROVAL IS GIVEN BY THE PLANNING BOARD, THE BUILDING DEPT. MUST BE CONTACTED FOR FURTHER GUIDANCE.

The Town of Marlborough Town Board sets forth the schedule of fees for applications to the Planning Board. The signing of this application indicates your acknowledgment of responsibility for payment of these fees to the Planning Board for review of this application including, but not limited to, fees for professional services (Planners/Consultants, Engineers, Attorneys,) public hearings and site inspections. Applicant's submissions and re-submissions that are not complete will not be considered by the Planning Board or placed upon its agenda unless all outstanding fees have been paid.

The undersigned applies for subdivision, site plan, or lot line approval as described above under the rules and procedures of the Town of Marlborough, New York as duly authorized by the Town Board of Marlborough, New York.

The undersigned also acknowledges receipt of the "Disclaimer" above.

Applicant's Name(Print): Matthew Bowers

Applicant's Signature: DocuSigned by: Matthew Bowers 5500B9F2F51946F...

Date: 7/8/2020

Application will not be accepted if not signed and filled out completely

Letter of Agent

I (We), Organic Valley, LLC - Robert A. TItanic Jr. am (are) the owner(s) of a parcel of land located on 206 Milton Tpke., Milton, NY 12547 in the Town of Marlborough, Tax Map Designation: Section 95.4 Block 3 Lot 7.210.

I (We) hereby authorize Cypress Creek Renewables - Paul Irby to act as my (our) agent to represent my (our) interest in applying to the Town of Marlborough Planning Board for a 20 Ac Lot Subdivision Site Plan or Lot Line Revision Application. (circle one)

Signature — Date: 7/9/2020

Signature — Date:

State Of New York}
County Of Dutchess } SS:

On the 9th day of July in the year 2020 before me, the undersigned, a Notary Public in and for said State, personally appeared

Robert A. Titanic Jr., 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, 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

ANDREW PIMENTEL
Notary Public - State of New York
NO. 01PI6382223
Qualified in Orange County
My Commission Expires Oct 22, 2022

EXHIBIT B. LEASE AGREEMENT

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GROUND LEASE AGREEMENT

BASIC LEASE TERMS SUMMARY

Effective Date	The date that this Lease has been fully executed by both Landlord and Tenant as reflected on the signature page(s).
Landlord	Organic Valley LLC, a New York limited liability company
Tenant	Cypress Creek Land Holdings, LLC, a Delaware limited liability company
Land	Up to 71 acres, plus or minus, of the real property located along Mahoney Road, in the Town of Marlborough, Ulster County (the "**County**"), New York, Tax ID Number 095.004-0003-007.110-000, 095.004-0003-007.210-000, 095.004-0003-007.220-000as approximately depicted on Exhibit A attached hereto.
Initial Diligence Period (Section 3)	365 days.
Initial Diligence Period Fee (Section 3)	[redacted].
Extended Diligence Periods (Section 3)	One (1) additional 365-day period after the expiration of the Initial Diligence Period ("**First Extended Diligence Period**"); plus one (1) additional 365 day period after the expiration of the First Extended Diligence Period ("**Second Extended Diligence Period**").
Extended Diligence Period Fees (Section 3)	[redacted] for the First Extended Diligence Period; [redacted] for the Second Extended Diligence Period.
Initial Term (Section 4)	246 calendar months.
Renewal Terms (Section 4)	Four (4) successive renewal terms of five (5) years each.
Rent (Section 7)	The greater of (i) [redacted] per Acre (prorated for any fractional Acre) per year, subject to the terms of Section 2 or (ii) the "Minimum Rent" amount set forth in Section 7(f).
Rent Escalation Date (Section 7)	The First (1st) anniversary of the first Rent Payment Date (as defined in Section 7(a))
Rent Escalation Percentage (Section 7)	[redacted]

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Intended Use (Section 11)	The construction and operation of a solar photovoltaic power array (the "**System**") for the generation and distribution of electric power.
Landlord's Notice Address (Section 19)	Organic Valley, LLC Robert Titanic 206 Milton Turnpike Milton, NY 12547 [redacted]
Tenant's Notice Address (Section 19)	c/o Cypress Creek Renewables, LLC 3250 Ocean Park Blvd, Suite 355 Santa Monica, CA 90405 Attn: Asset Management Department Phone: 310-581-6299 Email: assetmanagement@ccrenew.com

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GROUND LEASE AGREEMENT

THIS GROUND LEASE AGREEMENT (this "**Lease**") is made and entered into by and between Landlord and Tenant, effective as of the Effective Date.

NOW THEREFORE, in consideration of the amounts to be paid to Landlord by Tenant and the other mutual covenants promises and covenants set forth herein, the receipt and sufficiency of which is hereby conclusively established, Landlord and Tenant hereby agree as follows:

1. **Basic Lease Terms Summary.** References in the body of this Lease to a portion of the Basic Lease Terms Summary (e.g., the defined terms in the left-hand column of the Basic Lease Terms Summary) shall be deemed and construed to incorporate all the terms provided under each such referenced portion of the Basic Lease Terms Summary. References in the Basic Lease Terms Summary to a portion of the body of this Lease (e.g., Section references in the left-hand column of the Basic Lease Terms Summary) shall be deemed and construed to incorporate all the terms provided under each such referenced portion of the body of the Lease. Notwithstanding anything set forth above, if there is any inconsistency between the Basic Lease Terms Summary and another portion of this Lease, the terms of the Basic Lease Terms Summary shall control.

2. **Leased Premises**.

(a) Landlord hereby agrees to lease the Premises (as defined in Section 2(b) below) to Tenant, and Tenant hereby agrees to lease the Premises from Landlord, upon the terms and subject to the conditions set forth herein.

(b) The "**Premises**" as used herein shall be an area comprised of all or part of the Land (such area to be determined in accordance with this Section 2), together with all personal property, improvements and fixtures located on the Land and all other appurtenances, tenements, hereditaments, rights and easements pertaining to the Land. Landlord acknowledges and agrees that the exact size, shape and location of the area of the Land that will comprise the Premises (the "**Lease Boundary Line**") has not yet been determined, and any maps or depictions which Tenant has shown or will show to Landlord (including, without limitation, Exhibit A attached hereto) are approximations only and are subject to change. During the Diligence Period (as defined in Section 3(b) below), Tenant shall assess the Land to determine the most suitable location for the System, and Tenant shall establish the final Lease Boundary Line in accordance with Section 2(c) below. Until the final Lease Boundary Line is established, any reference to the Premises herein shall be deemed to include the entirety of the Land.

(c) Within thirty (30) days following the Construction Commencement Date (as defined in Section 4(a) below), Tenant shall obtain and deliver to Landlord an ALTA survey (the "**Survey**"), which shall set forth and conclusively establish (1) the metes and bounds legal description of the Lease Boundary Line, and (2) the net acreage (the "**Acreage**", and each such acre, an "**Acre**") of the Premises, being the total Acreage located within the Lease Boundary Line. The parties agree that (A) the Lease Boundary Line and Acreage set forth in the Survey shall be incorporated into this Lease as if fully set forth herein without amendment to this Lease, and (B)

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the Acreage set forth in the Survey shall be the Acreage used for purposes of computing Rent. Landlord acknowledges and agrees that the final Acreage of the Premises as established by the Survey may be less than the approximate acreage of the Land set forth in the Basic Lease Terms Summary, which would have the effect of reducing the Rent payable under this Lease. If requested by Tenant, Landlord shall provide written consent to the foregoing or an amendment to this Lease expressly incorporating the Survey into this Lease as provided in this Section 2(c).

3. **Diligence Period**.

(a) The Initial Diligence Period shall commence on the Effective Date. Within thirty (30) days after the Effective Date, Tenant shall pay to Landlord the Initial Diligence Period Fee. Landlord and Tenant acknowledge and agree that the Initial Diligence Period Fee (and the Extended Diligence Period Fee, if applicable) have been bargained for and agreed to as consideration for the Diligence Period (as defined below), Tenant's right to terminate this Lease pursuant to Section 3(f), and for Landlord's execution and delivery of this Lease. Such consideration is in addition to and independent of all other consideration provided in this Lease, and is nonrefundable in all events. If the Rent Commencement Date (as defined in Section 6(a)) occurs prior to the end of the Initial Diligence Period, any unamortized portion of the Diligence Period Fee shall be applied against the initial Rent payment. This Section 3(a) shall survive termination of the Lease.

(b) Tenant may elect to extend the Initial Diligence Period by the Extended Diligence Periods by providing written notice to Landlord prior to the expiration of the Initial Diligence Period or the First Extended Diligence Period (as applicable), and paying to Landlord the applicable Extended Diligence Period Fee within thirty (30) days after the expiration of the Initial Diligence Period or the First Extended Diligence Period (as applicable). If Tenant does not elect to exercise a Extended Diligence Period, the applicable Extended Diligence Period Fee shall not be payable to Landlord. If Tenant has exercised an Extended Diligence Period and the Rent Commencement Date (as defined in Section 6(a)) occurs prior to the end of such Extended Diligence Period, any unamortized portion of the applicable Extended Diligence Period Fee shall be applied against the initial Rent payment. The Initial Diligence Period and the Extended Diligence Periods, if exercised, shall be collectively referred to as the "**Diligence Period**".

(c) During the Diligence Period, Tenant (and its agents, representatives, consultants and affiliates) shall be permitted access to the Premises at reasonable times and upon reasonable notice to Landlord, for purposes of conducting (at Tenant's expense) any and all investigations or testing of the Premises as Tenant may deem necessary, appropriate or convenient, including without limitation, the surveying or investigation of environmental, soils, biological, cultural, historical, boundary or geotechnical matters. Tenant is hereby authorized to undertake direct discussions and/or negotiations with any governmental entity or other agency, body or organization that has jurisdiction over the Premises (including, without limitation, any city, county state or federal agency) in regards to the Premises and the Intended Use.

(d) Landlord shall provide to Tenant any of the following in Landlord's possession or control, within five (5) days following the Effective Date: (1) any notice of violation of any law or regulation, including zoning laws applicable to the Premises, (2) any "Phase I" and

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other environmental assessment reports regarding the Premises, (3) Landlord's most recent survey and title insurance policy relating to the Premises, (4) any governmental permits, licenses or approvals for the Premises, (5) tax bills, contracts and agreements relating to the Premises, and (6) any other surveys, physical condition reports, notices regarding zoning or government action with respect to the Premises.

(e) Landlord acknowledges that Tenant may obtain, at Tenant's expense, a title insurance policy insuring Tenant's leasehold interest in the Premises. Landlord agrees to reasonably assist Tenant in obtaining such title policy by supplying any information reasonably requested by the title insurance company in connection with issuing such title policy.

(f) During the Diligence Period, Tenant may terminate the Lease, for any reason or no reason, exercisable upon written notice from Tenant to Landlord of its election to terminate delivered on or before the expiration of the Diligence Period (as may be extended pursuant to Section 3(b) above), in which event Landlord and Tenant shall have no further rights or obligations under this Lease except as otherwise expressly provided in this Lease.

4. **Lease Term**.

(a) The Initial Term shall commence on the date that Tenant begins construction of the System on the Premises as confirmed by written notice from Tenant to Landlord (the "**Construction Commencement Date**") and shall continue for the entire Initial Term unless modified or earlier terminated pursuant to the terms hereof. If the Initial Term does not commence on the first day of a month, then the Initial Term shall not end until the last day of the last month of the Initial Term.

(b) Tenant shall have the option to extend the Initial Term for the Renewal Terms by providing Landlord with written notice no later than sixty (60) days prior to the expiration of the Initial Term (or the preceding Renewal Term, as applicable). If Tenant fails to timely give such notice, Tenant's right to exercise such Renewal Term shall nevertheless continue until thirty (30) days after Landlord has given Tenant written notice of Tenant's failure to exercise such Renewal Term (in which event Tenant may exercise such Renewal Term at any time until the expiration of such thirty (30) day period). The parties intend to avoid forfeiture of Tenant's rights to extend the term of this Lease under any of the Renewal Terms because of Tenant's inadvertent failure to give timely notice. The Renewal Terms shall be subject to all the terms and provisions of this Lease. The Initial Term and any Renewal Terms, if exercised, shall be collectively referred to as the "**Term**".

5. **Termination of Lease**.

(a) Tenant shall have the right to terminate this Lease as to all or any part of the Premises as follows: (i) pursuant to the failure of any condition described in Section 5(b) below, or (ii) after the expiration of the Diligence Period but prior to the construction and commercial operation of the System, upon Tenant's determination, in Tenant's sole and absolute discretion, that it would not be commercially reasonable to proceed with the construction and operation of the

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System; *provided,* that if Tenant so terminates pursuant to this clause (ii) after the occurrence of the Rent Commencement Date, then such termination shall be effective as of the date that Tenant pays to Landlord a termination fee equal to the unpaid balance of the total Rent that would otherwise be due for the first twelve months following the Rent Commencement Date. If this Lease is terminated as to only a portion of the Premises, this Lease shall remain in effect as to the remainder of the Premises.

(b) Tenant's obligation to pay Rent and continue this Lease is at all times expressly subject to satisfaction of each of the following conditions: (i) Tenant's obtaining and maintaining all necessary or required approvals from state, federal and local authorities, (ii) Tenant's obtaining and maintaining any agreement that is necessary for the operation of the System and the sale and delivery of the electricity generated by it, including without limitation an interconnection agreement and power purchase agreement with the applicable utility company, and (iii) Tenant's ability to continuously operate the System and utilize the Premises for the Intended Use. If any of the foregoing conditions are not satisfied at any time following the Effective Date, Tenant shall have the right to terminate this Lease upon written notice to Landlord.

6. **Rent Commencement**.

(a) Tenant's obligation to pay Rent shall commence on the earlier of: (i) the expiration of the Diligence Period (as may be extended pursuant to Section 3(b) above) or (ii) the Construction Commencement Date (the earlier of such dates, the "**Rent Commencement Date**"). For the avoidance of doubt, the Construction Commencement Date shall not be deemed to have occurred as a result of (and the Rent Commencement Date shall not be triggered by): (1) Tenant's due diligence activities on the Premises (including, without limitation, any surveying, soil or environmental testing or similar work) or (2) any work performed by or on behalf of the servicing utility company. Upon the occurrence of the Rent Commencement Date, Tenant shall send a written notice to Landlord confirming the occurrence of the Rent Commencement Date.

(b) Landlord shall furnish Tenant with a signed, completed form W-9 within twenty (20) business days following the Effective Date and thereafter within ten (10) days of any event causing a change in any of the information set forth in the previously-delivered W-9, including any transfer or assignment of the Landlord's interest in the Lease. Tenant shall be entitled to delay delivery of Rent or any other payment due under this Lease, including the Initial Diligence Period Fee, until it receives such W-9.

7. **Rent; Payment Schedule; Rent Escalation**.

(a) Rent shall be payable in advance in semi-annual installments due on each January 15 and July 15 during the Term (each, a "**Rent Payment Date**"); provided, that the first installment of Rent shall be due on the Rent Commencement Date and shall be prorated, on a daily basis, for the period between the Rent Commencement Date and the first Rent Payment Date. If Tenant elects to terminate this Lease prior to the Rent Commencement Date in accordance with the terms of this Lease, no Rent shall be due or payable.

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(b) Beginning on the Rent Escalation Date, and for each anniversary thereafter, the annual Rent shall increase over the annual Rent payable for the immediately preceding year by the Rent Escalation Percentage.

(c) If any overdue installment of rent is not received by Landlord within ten (10) days after Landlord provides Tenant written notice of the delinquency, Tenant will pay a late fee to Landlord in the amount of five percent (5%) of the unpaid delinquent rent amount, and Tenant shall pay interest of 1.5% per month on the unpaid balance due from the date of Landlord's notice until the principle and the interest is paid in full.

(d) If the Rent Commencement Date occurs prior to the establishment of the Lease Boundary Line pursuant to Section 2 above, then the Rent payable on and after the Rent Commencement Date until the date that the Lease Boundary Line is established (such period, the "**Interim Rent Period**") shall be computed based on the approximate acreage of the Land set forth in the Basic Lease Terms Summary above. Once the Lease Boundary Line is established, the Rent payable on and after such date shall be computed based on the final Acreage set forth in the Survey (and the Rent shall be increased or decreased accordingly). If the Rent is increased as a result of an increase in the final Acreage as set forth in the Survey, Tenant shall make a one-time payment to Landlord on the next Rent Payment Date equal to the difference between (i) the amount of Rent which would have been payable during the Interim Rent Period if computed based on the final Acreage set forth in the Survey, *minus* (ii) the amount of Rent actually paid during the Interim Rent Period. If the Rent is decreased as a result of a decrease in the final Acreage as set forth in the Survey, Tenant shall deduct from the next Rent payment owing to Landlord an amount equal to the difference between (i) the amount of Rent actually paid during the Interim Rent Period, *minus* (ii) the amount of Rent which would have been payable during the Interim Rent Period if computed based on the final Acreage set forth in the Survey.

(e) For purposes of clarification only, Tenant and Landlord acknowledge and agree that Rent shall be determined in accordance with this Section 7 during the entire Term of the Lease, including any Renewal Term.

(f) "Minimum Rent" shall be [redacted] per year unless the System has a nameplate capacity of 3 MW_{AC} or more, in which event Minimum Rent shall be [redacted] per year.

8. **Utilities; Maintenance**. During the Term, (a) Tenant shall arrange and pay for all public utility services used on the Premises by Tenant, and (b) Tenant shall be responsible for the repair and maintenance of the entire Premises, including any portion of the Premises located outside of the proposed fenced area.

9. **Crops**. Prior to the Rent Commencement Date, Landlord may plant farm crops or enter into a lease for the planting of farm crops on the Premises (so long as any such lease does not have a term longer than one (1) year); provided, that Landlord shall provide Tenant with written notice thereof prior to the planting of such crops, or commencement of planting activities such as fertilizing, or execution of any such farm lease, which notice shall include the estimated date(s)

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for planting and harvesting such crops. Following receipt of such notice, Tenant may, in Tenant's sole and absolute discretion, elect to (i) delay the Rent Commencement Date until the earlier of the date that any crops actually planted on the Premises are harvested or one year following the date of such notice, or (ii) commence construction of the System and pay the owner of any crops actually planted an amount equal to the fair market value of the portion of any crop or agricultural input such as herbicides or fertilizer that cannot reasonably be harvested and sold solely as a result of the construction of the System. Even if farm crops are planted on the Premises prior to the Rent Commencement Date, Tenant shall nevertheless have the right to enter onto the Premises to extract soil samples, perform geotechnical tests, and conduct such other tests, studies, inspections and analyses on the Premises as Tenant deems necessary, useful or appropriate.

10. **Tenant's Property**.

(a) The System and its constituent parts, together with any and all improvements or other features constructed on, or personal property installed or placed on the Premises by or for Tenant, including without limitation, machinery, fixtures, trade fixtures, equipment, racking, inverters, cables, solar panels and other personal property (collectively, "**Tenant's Property**") are personal property within the meaning of Article 9 of the UCC (as defined in Section 46 below) regardless of the manner of attachment to the Premises. Tenant's Property is and shall at all times during the Term be deemed to be the property of Tenant (subject to any Transfer in accordance with Section 26(a)), to be removed at Tenant's expense upon the expiration or earlier termination of the Term in accordance with Section 13. The creation, attachment and perfection of security interests in Tenant's Property shall be governed exclusively by Article 9 of the UCC. For the avoidance of doubt and without limiting the foregoing, Landlord hereby waives all rights to levy, distraint, possession or landlord's lien against Tenant's Property, if any, and shall not cause the creation of, or attachment to, Tenant's Property of any liens (including mechanics' and judgment liens) or other encumbrances. For the avoidance of doubt, Landlord is not responsible for payment of any Taxes assessed on Tenant's Property.

(b) The parties hereto acknowledge that the Premises consist of land only and do not include Tenant's Property. Any claim to a lien or encumbrance upon the Premises, arising from any act or omission of Landlord, shall accrue only against the real estate owned by Landlord, and not against Tenant's Property, and shall be subject to this Lease. If any such lien or encumbrance shall be filed against Tenant's Property as a result of Landlord's actions, Landlord shall, without cost or expense to Tenant, promptly and within a reasonable time cause such lien or encumbrance to be discharged of record by payment, statutory lien release bond, court order or otherwise as provided by law. Landlord shall not permit any sale, foreclosure or forfeiture of the Premises by reason of nonpayment of a lien caused by Landlord or anyone claiming by or through Landlord. Landlord shall immediately notify Tenant of, and send Tenant a copy of, any notice Landlord receives claiming that Landlord is late or in default regarding any obligation Landlord has to pay money to any lender or third party holding a mortgage or other lien affecting the Premises.

11. **Use and Occupancy**. Tenant shall use the Premises for the Intended Use (including all lawful uses that are incidental to, or not inconsistent with the Intended Use) and/or

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any other lawful use.

12. **Alterations and Construction Rights**. Tenant may, at its expense and without the consent of Landlord, remove and/or alter any existing improvements on the Premises, and make any alterations, additions, improvements and changes to the Premises that Tenant deems reasonably necessary in the operation of its business and the Intended Use, including, without limitation, installation of the System, fencing, security devices and/or signage, and excavating, grading, leveling or otherwise modifying the Land; provided, that such alterations, additions, improvements and changes are made in compliance with applicable laws. Landlord shall sign and deliver all applications and other documents, and shall take all such other actions, as are reasonably requested by Tenant in connection with obtaining any re-zonings, variances or other approvals as Tenant shall deem necessary or desirable in connection with the operation of the Premises.

13. **End of Term**. Within one hundred twenty (120) days after the expiration or earlier termination of the Term, Tenant shall completely remove all of Tenant's Property and vacate the Premises. The removal of Tenant's Property shall be completed in a manner that does not unreasonably and adversely affect the suitability of the Premises to be used for the same purposes existing as of the Effective Date, and Tenant shall leave the Premises free of any conditions created by Tenant which present a current unreasonable risk of harm to Landlord or members of the public. For the avoidance of doubt, Tenant shall have no obligation to restore any improvements demolished and removed from the Premises as permitted under Section 12 and shall not be required to replant any trees or farm crops removed in connection with the construction of the System. If Tenant fails to vacate the Premises in accordance with this Section 13, Landlord shall be entitled to holdover rent in the amount equal to one hundred twenty-five percent (125%) of Rent for the final year of the Term, prorated on a daily basis, for each day that Tenant fails to so vacate the Premises. Any such holdover shall be construed as a tenancy from month-to-month.

14. **Taxes**.

(a) During the Term, Tenant shall pay Tenant's Portion (calculated in accordance with this Section 14(a)) of the Tax Bill, applicable to each tax year or part thereof which falls within the Term. Landlord shall provide Tenant with copies of all invoices, bills and notices (collectively, "**Tax Bills**") regarding all real estate and ad valorem taxes and assessments imposed or levied on the Premises by any applicable government taxing authority (each, a "**Tax**", and collectively, "**Taxes**"), within thirty (30) days of Landlord's receipt of any such Tax Bill. Landlord shall remit payment directly to the taxing authority for the entire amount of any Tax Bill and, within thirty (30) days after Landlord notifies Tenant that such payment has been made, Tenant shall reimburse Landlord for the portion of the Tax Bill allocable to the Premises (such portion, "**Tenant's Portion**"), which portion shall bear the same relationship to the total Tax Bill as the Premises bears to the larger tax parcel. Once the Lease Boundary Line is established, the parties shall confirm Tenant's Portion in a written confirmation. Without limiting the foregoing, Tenant shall have the right, but not the obligation, at any time during the Term to pay the entire Tax Bill on Landlord's behalf and deduct any amounts not attributable to Tenant's Portion from future installment payments of Rent.

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(b) Without limiting Section 14(a), if Tenant's use of the Premises results in the revocation of a classification of the Premises as "agricultural land", "forestry land" or similar classification, thereby triggering liability for "rollback" taxes, Tenant shall pay Tenant's Portion of such rollback tax liability, together with any related interest or penalties, other than interest and/or penalties arising from Landlord's failure to timely provide Tenant with a copy of such Tax Bill.

(c) Upon Tenant's reasonable request, Landlord shall take such reasonable actions and do such things as necessary or desirable to facilitate any action by Tenant to contest any Tax Bill or the assessed value of the property on which they are levied, or to otherwise seek the abatement of Taxes applicable to the Premises, or to seek the separate assessment of the Premises as a distinct tax parcel if the Premises are included within a larger tax parcel. Tenant shall have the right, but not the obligation to pursue any such action.

(d) Notwithstanding anything contained in this Lease, (1) Tenant shall not be under any obligation to pay any part of any franchise, excise, estate, inheritance, income or similar tax which is or may become payable by Landlord or which may be imposed against Landlord or against the Rent payable under this Lease or upon the income or profits of Landlord by reason of any law now in force or later enacted, and (2) in the event the Premises are re-assessed for tax purposes because of transfer of ownership of the Land during the Term of this Lease, Tenant shall not be responsible for payment of any increase in taxes, charges and assessments attributable to such re-assessment, which increase shall be the sole responsibility of Landlord.

15. **Fire or Other Casualty**. If during the Term, all or part of the Premises or Tenant's Property are damaged by fire, wind, flood, earthquake or other casualty, with the result that, in Tenant's sole and absolute discretion, it would not be commercially or economically reasonable or desirable to repair and restore the Premises and/or Tenant's Property, as applicable, then Tenant may terminate this Lease by providing Landlord with written notice of the same and vacating the Premises in compliance with Section 13 hereof. Tenant, or its successor in interest, shall be entitled to 100% of any proceeds from casualty insurance policies maintained by Tenant.

16. **Condemnation**.

(a) If all or part of the Premises and/or Tenant's Property shall be subject to condemnation, the exercise of the power of eminent domain, or other governmental taking (the foregoing, collectively, a "**Taking**") with the result that, in Tenant's sole and absolute discretion, the unaffected portion of the Premises is insufficient or otherwise unsuitable for Tenant's continued use of the Property for the Intended Use or such other use as existed at the time of the Taking (a "**Total Taking**"), then Tenant may terminate this Lease by providing Landlord with written notice of the Total Taking, the Lease shall terminate effective as of the date set forth in such notice, and Tenant shall vacate the Premises in accordance with Section 13.

(b) If all or part of the Premises and/or Tenant's Property shall be subject to a Taking that, in Tenant's sole and absolute discretion, does not constitute a Total Taking (a "**Partial Taking**") then (i) concurrently with such Taking this Lease shall terminate with respect to the

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affected portion of the Premises, which Tenant shall vacate in accordance with Section 13, (ii) this Lease shall continue in full force and effect with respect to the unaffected portion of the Premises and (iii) the Acreage shall be reduced for each Acre (or portion thereof) subject to the Taking, and the Rent shall be reduced accordingly. For purposes of clarification only, Tenant shall be entitled to remove Tenant's Property from any portion of the Premises that is subject to a Taking.

(c) Tenant shall have the right but not the obligation to participate in any proceedings with respect to a Taking; in such event Landlord shall cooperate with Tenant to facilitate such participation. Neither Landlord nor Tenant shall enter voluntarily into any binding agreement or settlement related to a Taking without the prior consent of the other party, which consent shall not be unreasonably withheld, conditioned or delayed.

(d) The proceeds of any Taking shall be apportioned as between Landlord and Tenant as follows: Landlord shall receive an amount equal to the fair market value of the Land subject to the Taking and calculated with reference to the value of the Land for agricultural use, but not the improvements constructed or placed by Tenant thereon, and Tenant shall receive such amounts as are necessary to compensate Tenant for the loss of use of the Premises so Taken, including any improvements constructed or placed by Tenant on the Land, and the loss or interruption of Tenant's business and the cost of any restoration or repair necessitated by such Taking, including consequential losses. If after giving effect to the foregoing there remain any un-apportioned proceeds, they will be equitably apportioned as between Landlord and Tenant. Notwithstanding the foregoing, however, in the event Tenant exercises its right to terminate this Lease under this Section 16, then Tenant shall first receive all condemnation proceeds until Tenant has received an amount equal to the appraised value of the System prior to the Taking.

17. **Default; Remedies**. The failure by a party hereto to perform its obligations under this Lease, if not remedied within thirty (30) calendar days of written notice of such failure from the other party, or if such failure is not capable of being remedied within thirty (30) days, remedial action is not commenced and diligently pursued within such thirty (30) day period, shall constitute a default hereunder (a "**Default**"). Following an event of Default, the non-defaulting party may pursue any available remedies at law or in equity, subject to Section 27(b). Notwithstanding the foregoing, the non-defaulting party shall take commercially reasonable measures to mitigate damages resulting from such Default. Tenant may, in its sole and absolute discretion, elect to cure a Default on the part of Landlord, in which case Tenant shall be entitled to offset future payments of Rent or other amounts due to Landlord hereunder together with the reasonable and documented out-of-pocket expenses incurred by Tenant in pursuing to cure such Default.

18. **Indemnifications**. Landlord shall indemnify, defend and hold Tenant harmless for, from and against any and all damages or claims caused by Landlord's negligence or willful misconduct, or Landlord's breach of this Lease, that Tenant may be compelled to pay or defend in connection with this Lease or Tenant's use of the Premises, except to the extent such damages or claims are directly attributable to the actions or omissions of Tenant or any of Tenant's agents or employees. Tenant agrees to indemnify, defend and hold Landlord harmless for, from and against any and all damages or claims caused by Tenant's negligence or willful misconduct, or Tenant's breach of this Lease, that Landlord may be compelled to pay or defend in connection with this

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Lease or Tenant's use of the Premises, except to the extent such damages or claims are directly attributable to the actions or omissions of Landlord or any of Landlord's agents or employees.

19. **Notices**. All notices, elections, demands, requests, and other communications hereunder shall be in writing, signed by the party making the same and shall be sent by certified or registered United States mail, postage prepaid, or by national overnight courier service which provides tracking and acknowledgement of receipts or by email transmission, addressed to the party to be served at the address indicated in the Basic Lease Terms Summary above or at such other address as may hereafter be designated in writing by either party hereto, or by any other method if actually received. The time and date on which mail is postmarked shall be the time and date on which such communication is deemed to have been given.

20. **Easements**. Landlord hereby grants to Tenant during the Term of this Lease (a) an easement for light, solar energy resources, access (including vehicular and pedestrian ingress and egress) and utility access over, under and across all property owned by Landlord which is adjacent to or in the vicinity of the Premises as reasonably necessary for Tenant's conduct of the Intended Use on the Premises and to access the Premises, (b) an easement for any and all encroachments of Tenant's Property onto Landlord's adjacent property, and (c) an easement over, under and across the Landlord's adjacent property for audio, visual, view, light, flicker, noise, vibration and any other effects attributable to the Intended Use of the Premises. Without limiting the foregoing, Landlord agrees to execute and deliver any separate easement agreements for the benefit of Tenant and the Premises as Tenant or the utility to which the System is interconnected (the "**Utility**") may reasonably request to facilitate the construction, operation and removal of the System, or otherwise in connection with Tenant's use of the Premises during the Term (collectively, the "**Easements**"). Landlord and Tenant (and the Utility, as applicable) shall in good faith establish the location and terms of such Easements within twenty (20) days of the request therefor, and any such Easements shall be confirmed in writing, signed by the parties and recorded in the County records against the Land and/or any property adjacent to or in the vicinity of the Premises and shall run with the Lease and inure to the benefit of Tenant (or the Utility, as applicable) and its transferees, successors and assigns hereunder, including any Additional Notice Party.

21. **Non-Disturbance Agreement**. Upon Tenant's request, Landlord shall execute, and shall use commercially reasonable efforts to cause any current beneficiaries of any mortgages/deeds of trust, or any other parties with rights in, or interests secured by Landlord's interest in, the Land or any other property owned by Landlord which is subject to an easement benefiting Tenant (collectively, "**Landlord's Land**"), to enter into an agreement with Tenant confirming that such party subordinates its rights or interests in Landlord's Land to this Lease, or solely with respect to current beneficiaries of any mortgages/deeds of trust or other parties with a security interest in Landlord's Land, that such party will not disturb or extinguish Tenant's interest in Landlord's Land and in this Lease. Such agreement shall be in form and substance reasonably agreeable to Tenant and any Additional Notice Party (defined in Section 27). If Tenant and Landlord are unable to obtain such agreements from any third party holding an interest in Landlord's Land, Tenant shall be entitled (but not obligated) to make payments or performance in fulfillment of Landlord's obligations to such third party and may offset the amount of such payments or performance from amounts due Landlord under this Lease; provided, that if such

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obligations cannot be satisfied by the payment of money or performance by Tenant, Tenant shall have the right to immediately terminate this Lease.

22. **Landlord's Representations and Warranties**.

(a) Landlord hereby represents and warrants to Tenant that: (a) Landlord owns the Land in fee simple, and has all requisite right, power and authority to enter into this Lease, without the consent or joinder of any party not joining in the execution hereof (including spouses); (b) the execution of this Lease will not constitute a violation of nor be in conflict with nor constitute a default under any term or provision of any agreement or instrument to which Landlord is a party or by which the Premises or any part thereof is bound; (c) no hazardous or toxic substances have been released or manufactured, or are present on the Premises in amounts in excess of the lawful limit absent a permit, and no underground storage tanks (whether or not abandoned) exist on or under the Premises; (d) Landlord has not received any notice of any pending or threatened Taking, zoning change or legal, regulatory or other noncompliance relating to the Premises, or of any possible widening of the streets abutting the Premises; (e) Landlord has not received any notice of proposed curtailment of utility services to the Premises; (f) the Premises are free from any recorded or unrecorded use or occupancy restrictions or declarations of restrictive covenants, and there are no existing liens, mortgages, or deeds of trust encumbering all or any part of the Premises; (g) there are no service or maintenance contracts affecting the Premises; (h) there are no delinquent or outstanding Taxes, liens or other impositions levied or assessed against the Premises or any larger parcel of property of which the Premises is a part; (i) except for this Lease, there are no leases, options to purchase, license agreements or other third party rights to use or possess the Premises, whether written or oral, recorded or unrecorded; (j) Landlord is not in the hands of a receiver nor is an application for such a receiver pending, nor has Landlord made an assignment for the benefit of creditors, nor filed, or had filed against it, any petition in bankruptcy nor is Landlord a defendant in any ongoing or pending litigation proceedings; (k) if Landlord is a limited partnership, trust, limited liability company, corporation or other business entity, Landlord is in good standing under the laws of the state of its incorporation and the state in which the Premises are located, and the undersigned representatives of Landlord have full power and authority to execute and deliver this Lease; (l) if Landlord is one or more natural persons, except for the spouse identified on the signature page to this Lease, such natural persons are unmarried, (m) there is no underground septic system or leach field located upon the Land; (n) there are no wells, dry wells, exploration wells or monitoring wells on the Land; (o) no person or entity has buried any refuse, construction materials, garbage or any other matter of any kind or nature below the surface of the Land, (p) the Land does not support or affect any endangered species and is not within an area that is subject to any "environmentally sensitive" or "non-disturbance" designation under any law or zoning ordinance, and (q) no portion of the Land includes any archeological site, burial site, artifact or other condition of archeological, tribal or historical significance.

(b) The provisions of this Section 22 will survive the termination or expiration of this Lease. All of Landlord's representations and warranties contained in this Lease shall be true as of the Effective Date and shall be subject to any state of facts arising during the Term of this Lease without the direct or indirect, active or passive, involvement of Landlord.

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23. **Insurance**. During the Term, Tenant shall maintain insurance on the terms set forth below, at Tenant's cost and expense:

(a) Commercial general liability insurance covering Tenant and System operations, written on "occurrence" policy forms, including coverage for premises/operations, products/completed operations, broad form property damage, blanket contractual liability, wild fire liability and personal injury, with no exclusions for explosion, collapse and underground perils, or fire, with coverage limits of no less than $1,000,000 for injuries or death to one or more persons or damage to property resulting from any one occurrence, a $2,000,000 general aggregate, and a products and completed operations liability aggregate limit of not less than $2,000,000. The commercial general liability policy shall also include a severability of interest clause with no exclusions or limitations on cross liability.

(b) Automobile liability insurance covering Tenant, including coverage for owned, leased, non-owned and hired automobiles for both bodily injury and property damage in accordance with statutory legal requirements, with combined single limits of no less than $1,000,000 per accident with respect to bodily injury, property damage or death. To the extent Tenant does not own any automobiles, contingent liability for hired, leased and non-owned automobiles may be obtained through endorsement to the general liability policy required in Section 23(a) above.

(c) Workers' compensation insurance in accordance with statutory requirements at any time in which Tenant has employees, including coverage for employer's liability with a limit of not less than $1,000,000 and such other forms of insurance which Tenant is required by applicable law to provide for loss resulting from injury, sickness, disability or death of each of their employees.

(d) Umbrella or excess liability insurance with limits of not less than $5,000,000 per occurrence and annual aggregate (inclusive of the coverage requirements and limits in Sections 23(a), (b) and (c)) covering Tenant and System operations, and with a term concurrent with that of the commercial general liability insurance and automobile liability insurance required in Sections 23(a) and (b) above. The umbrella or excess liability insurance shall include as insured all persons or entities that are named as additional insureds under Tenant's commercial general liability insurance.

(e) All liability policies required in Sections 23(a), (b), (c) and (d) above that are maintained by the Tenant or on behalf of the Tenant shall expressly provide that all provisions thereof, except the limits of liability (which shall be applicable to all insureds as a group) shall operate in the same manner as if there were a separate policy covering each such insured and shall not contain an exclusion for cross liability.

(f) Landlord shall be named as additional insureds under the commercial general liability insurance and umbrella/follow form excess insurance required above by issuance of ISO form CG 20 10 11 85 or ISO form CG 20 26 11 85 or both ISO form CG 20 10 10 01 and CG 20 37 10 01 additional insured endorsements, or equivalents acceptable to Landlord, all as

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directed by Landlord.

(g) Insurance coverage limits included in this Lease in no way serve as a limitation of Tenant's insurance carrier(s)' legal liability.

(h) Upon Landlord's request, Tenant will promptly furnish Landlord with certificates of insurance evidencing the insurance required to be maintained under this Section 23.

24. **Landlord Covenants**. From and after the Effective Date until the expiration or earlier termination of the Term:

(a) Landlord shall not, without the prior written consent of Tenant, (i) institute or consent to any rezoning of the Premises; (ii) further encumber or suffer to exist the further encumbrance or Transfer of the Premises (except as caused by or on behalf of Tenant) except in accordance with Section 26 of this Lease; (iii) cause or permit any activities or conditions that would impair operation of the System (including, without limitation, by erecting or permitting to be erected any cell towers, water towers, billboards, silos, trees or any other natural or man-made structures to be placed, constructed, or to otherwise exist on any property owned or controlled by Landlord that may diminish the quantity of sunlight that otherwise would reach the Premises or that may cause shade or shadows upon the Premises or any portion thereof, and Landlord shall not emit or permit the emission of suspended particulate matter, smoke, fog or steam or other air-borne impediments to insolation on the Premises, or burn or permit the burning of garbage, plant, shrub, and yard trimmings or other vegetation that could adversely affect insolation levels on the Premises), and, upon written notice from Tenant, Landlord shall promptly remove any existing uses or improvements on any property adjacent to or in the vicinity of the Premises which Tenant reasonably determines will impair Tenant's use of the Premises; (iv) cause or permit the violation of any applicable laws, rules, regulations or ordinances applicable to the Premises; or (v) commence (or have commenced against it) any voluntary or involuntarily proceedings in bankruptcy, insolvency or similar proceedings with respect to Landlord.

(b) Landlord shall promptly give Tenant a copy of any notice of any kind received by Landlord regarding the Premises or any Taxes.

(c) Landlord shall comply with and perform all of its covenants, agreements and obligations to third parties, including, but not limited to, payment of government property taxes and assessments (to the extent required under this Lease), and payment and performance of any mortgage or other financing obligations owed to lenders, which affect or relate to the Premises.

25. **Memorandum of Lease**. This Lease shall not be recorded; however, within five (5) days following Tenant's request, Landlord and Tenant shall execute a memorandum of this Lease in recordable form, setting forth the following provisions of this Lease, including, without limitation: (a) all information required by law, (b) restrictions on Transfers, (c) any unexercised Renewal Term options, (d) rights of first offer or of first refusal of Tenant with respect to the Land, (e) Tenant's Exclusivity Right as set forth in Section 41, (f) the easement rights granted to Tenant hereunder, and (g) such other provisions of this Lease as the parties may mutually agree to

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incorporate therein. Tenant shall cause the memorandum of lease to be recorded in the County records against the Land and any other property of Landlord (if applicable).

26. **Assignments; Transfers**. This Lease shall be binding upon and inure to the benefit of the parties hereto and their legal representatives, successors and assigns, subject to the following terms and conditions:

(a) Tenant may assign this Lease, in whole or in part, or sublet the Premises, or any part thereof, without Landlord's prior consent; provided that Tenant shall notify Landlord within a reasonable time after such Transfer. If Tenant assigns its entire interest in this Lease to a party that expressly assumes in writing all obligations of Tenant under this Lease arising after the effective date of the assignment, Tenant shall be released or discharged from all of its covenants and obligations under this Lease, except such obligations as shall have accrued prior to the effective date of any such assignment or transfer, and Landlord agrees to look solely to Tenant's assignee for performance of such obligations.

(b) Landlord shall give Tenant at least thirty (30) days' prior notice of any Transfer (as defined in Section 27 below) by Landlord of its interest in the Land or in this Lease. In addition, any such Transfer shall be expressly subject to this Lease, and Landlord shall not transfer the fee interest in the Premises unless the assignee assumes all of Landlord's obligations under this Lease, any easements granted to Tenant (as applicable) and any consents granted to Tenant's lenders. For example, but without limiting the foregoing, the Lease shall remain prior in interest to any mortgage entered into by Landlord after the Effective Date. For Transfers pursuant to the death or disability of Landlord, Landlord's executor or successor in interest should endeavor to provide notice of such Transfer (or proceedings that will result in such a Transfer) to Tenant as promptly as possible under the circumstances. Landlord shall notify Tenant of the closing of such Transfer, and if applicable, the name and contact information of the successor to Landlord's interest hereunder and payment instructions for future payments of Rent and other amounts due under the Lease; provided, that Landlord shall indemnify Tenant for, from and against losses arising from Tenant's payment of Rent or other amounts as so directed.

27. **Third Party Protections**. Tenant may pledge, sell, grant and/or assign, sublease, mortgage and otherwise transfer (each, a "Transfer") this Lease or Tenant's leasehold interest in the Premises, in whole or in part, without Landlord's prior consent, in connection with the financing or re-financing of Tenant's Property. If Tenant shall notify Landlord in writing of the existence of, and contact information for, any third party (including, without limitation, any tax-credit equity providers) with a security interest or other interest in the Lease, whether via a collateral Transfer, mortgage, deed of trust, or otherwise (any such third party, an "**Additional Notice Party**"), then the following provisions shall apply until such time as Landlord shall receive written confirmation that such Additional Notice Party's interests in this Lease, the System or the Premises are released:

(a) Without limiting Section 31, no assignment, amendment, election to terminate or other modification of this Lease shall be effective unless approved by the Additional Notice Party in writing. In the event Tenant acquires fee ownership of the Land, or in the event of

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Tenant's voluntary surrender of the leasehold estate, there shall be no merger of the leasehold estate created by this Lease with the fee without the prior written consent of the Additional Notice Party, which consent may be granted, conditioned or withheld in the Additional Notice Party's sole and absolute discretion.

(b) If any event of Default by Tenant remains uncured following the applicable cure period under Section 17, Landlord shall send written notice of such uncured Default to each Additional Notice Party at the address provided therefor, whereupon the Additional Notice Party shall have an additional thirty (30) days during which it may, in its sole and absolute discretion, cure such Default on Tenant's behalf. Landlord may not pursue any remedy for such Default unless it remains uncured following the expiration of such Additional Notice Party's thirty (30) day cure period. No notice shall be effective against an Additional Notice Party unless and until actually received by such Additional Notice Party.

(c) Neither the bankruptcy nor the insolvency of Tenant shall be grounds for terminating this Lease as long as the Rent and all other obligations of Tenant hereunder are paid or performed by or on behalf of Tenant or the Additional Notice Party in accordance with the terms of this Lease.

(d) Subject to Section 27(b), if this Lease is terminated pursuant to a Tenant Default, Landlord shall enter into a new lease with Additional Notice Party or its nominee on the same terms as set forth herein, and for a term equal to the then-unelapsed portion of this Lease, with an option to extend for any then-remaining Renewal Term(s). Such new lease shall be effective as of the date of termination of this Lease. If more than one Additional Notice Party makes a request for a new lease pursuant hereto, the new lease shall be delivered to the Additional Notice Party with a security interest in this Lease which is prior in lien, and the request of any Additional Notice Party without a security interest in this Lease or whose lien is subordinate shall be void and of no further force or effect.

(e) If this Lease is terminated pursuant to a rejection in bankruptcy or other similar proceeding with respect to Landlord, then Landlord, or its successor in interest to the Land, if any, shall enter into a new lease with Tenant on substantially the same terms as this Lease and for the then otherwise unexpired portion of the Term. Such new lease shall be effective as of the date of termination of this Lease.

(f) An Additional Notice Party shall have the right, subject to the terms and conditions of this Lease: (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 Tenant's Property, the leasehold estate or any portion thereof and to perform all obligations to be performed by Tenant hereunder, 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 the acquisition of the encumbered leasehold estate or subleasehold estate by a third party who acquires the same by or subsequent to foreclosure or assignment in lieu of foreclosure. During any period of possession of the Premises by an Additional Notice Party (or a receiver requested by such

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Additional Notice Party) and/or during the pendency of any foreclosure proceedings instituted by an Additional Notice Party, the Additional Notice Party shall pay or cause to be paid all other monetary charges payable by Tenant hereunder 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 leasehold estate by the Additional Notice Party 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 and subject to the provisions of this Section 27(f), this Lease shall continue in full force and effect and the Additional Notice Party or party acquiring title to Tenant's leasehold estate shall, within thirty (30) days, commence the cure of all defaults hereunder and thereafter diligently process such cure to completion.

(g) Subject to the terms and conditions hereof, Landlord hereby waives any lien, security interest, or claim of any nature that Landlord now has or may hereafter have by statute, rule, regulation, common law, agreement or otherwise, in and to Tenant's Property and other of Tenant's property that is or may be from time to time hereafter located at the Premises and/or the Landlord's adjacent property, if any, and to which Tenant at any time has granted or will grant a security interest to an Additional Notice Party (all such property and the records relating thereto shall be hereafter called the "**Collateral**"). Landlord recognizes and acknowledges that any claim or claims ("**Claims**") that an Additional Notice Party has or may have against such Collateral by virtue of any lien or security interest are superior to any lien, security interest, or claim of any nature that Landlord now has or may hereafter have to such Collateral by statute, rule, regulation, common law, agreement or otherwise. The waiver provided for herein shall be effective until the discharge of the Claims. Landlord further agrees to notify any purchaser of the Premises and/or the Landlord's adjacent property and any subsequent mortgagee or other encumbrance holder of the existence of the foregoing waiver of Landlord's lien rights, which shall be binding upon the executors, administrators, successors and transferees of Landlord, and shall inure to the benefit of the successors and assigns of any Additional Notice Party. Landlord hereby irrevocably agrees and consents to refrain from taking any action to bar, restrain or otherwise prevent an Additional Notice Party from the Premises for the purpose of inspecting the Collateral.

(h) Landlord agrees to execute and deliver such documents and instruments, including, without limitation, an amendment to this Lease, an amendment to any recorded memorandum of lease or a subordination agreement, as may be reasonably requested by an Additional Notice Party or in furtherance of a Transfer related to the financing or re-financing of the System, to allow such Additional Notice Party reasonable means to protect or preserve the System or its collateral interest in the Lease; provided, that Landlord shall not be required to amend this Lease in any way that would extend the Term, decrease the Rent or otherwise in any material respect adversely affect any rights of Landlord. Each party shall bear its own expenses, including legal expenses, in connection with any request for the execution and delivery of additional documents and instruments in accordance with this Section 27(h).

28. **Estoppel**. Upon the request of either party (or any Additional Notice Party), the non-requesting party shall deliver to the requesting party a certificate setting forth the material terms of the Lease, the existence of any Default under the Lease, the date through which Rent has been paid and any amounts on deposit with Landlord, the current Rent rate, and such other

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reasonable terms requested by the requesting party. The failure by the non-requesting party to respond to such request within fifteen (15) days shall constitute an event of Default, and in addition, shall result in the deemed acceptance, approval and confirmation of the truth of the matters set forth in the certificate sent with the original request.

29. **Brokerage Commission**. Except as pursuant to a separate agreement between Tenant and Tenant's broker, if any, Landlord and Tenant each represent and warrant to the other that they have not dealt with any real estate agent or broker in connection with this transaction. Landlord and Tenant each hereby indemnify and save the other harmless for, from and against all losses, costs and expenses incurred by reason of a breach of such representation and warranty.

30. **Governing Law**. This Lease shall be construed and enforced in accordance with the laws of the state in which the Land is located, and any disputes arising from or relating to this Lease shall be construed, governed and interpreted and regulated under the laws of such state.

31. **Interpretation; Amendment**. The terms of this Lease shall not be amended, restated, changed or otherwise modified except in a writing signed by Landlord, Tenant and any Additional Notice Party. If any term or provision of this Lease shall to any extent be invalid or unenforceable, the remainder of this Lease shall not be affected thereby and each other term and provision of this Lease shall be valid and enforced to the fullest extent permitted by law.

32. **Integration; Anti-Merger**. This instrument, including the attached Exhibits, contains the complete agreement of the parties regarding the subject matter of this Lease, and there are no oral or written conditions, terms, understandings or other agreements pertaining thereto which have not been incorporated herein. This instrument creates only the relationship of landlord and tenant between the parties as to the Premises; and nothing in this Lease shall in any way be construed to impose upon either party any obligations or restrictions not expressly set forth in this Lease. This Lease shall continue until the expiration or termination of the Lease and Term, and shall not be extinguished by operation of law pursuant to the acquisition by a single party of the interests in both Tenant and Landlord hereunder.

33. **Exclusive Control; Quiet Enjoyment**. Tenant shall have exclusive control, possession, occupancy, use and management of the Premises on and after the Rent Commencement Date, subject to any easements or security instruments existing on the Effective Date, or as caused by Tenant, and Landlord shall warrant and defend Tenant's right to quietly hold and enjoy the Premises. Tenant, and its agents, guests, subtenants and designees, and any Additional Notice Party, shall have access to the Premises at all times after the Rent Commencement Date, and neither Landlord nor any agent of Landlord shall, without a Tenant representative, enter upon any portion of the Premises except as specifically permitted hereunder. For the avoidance of doubt, this Lease does not convey any subsurface oil, gas, mineral, liquid or other subsurface rights (collectively, "**Mineral Rights**") to Tenant; provided, however, that Landlord shall not engage in, and shall not permit, any activity, including, without limitation, the extraction of minerals, oil, gas, liquid or other substances, if such activity could result, in Tenant's sole and absolute discretion, in a failure of subsurface support for the Premises or otherwise impair or adversely affect Tenant's Property or Tenant's use of the Premises. The foregoing sentence shall be a covenant running with

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the Land binding upon any party owning any interest in, or rights to develop or use such Mineral Rights. To the best knowledge of Landlord, Landlord is the sole owner of the Mineral Rights and Landlord holds good, indefeasible and insurable title to the Mineral Rights.

34. **Waiver**. The waiver by any party of any instance of a breach of any covenant or agreement herein shall not be deemed to constitute waiver of any subsequent breach of the same or any other covenant or agreement under this Lease.

35. **Nonrecourse**. The performance of this Lease by Landlord and Tenant shall be secured by their respective interests in the Premises. Except for such interests in the Premises, neither Landlord's, nor Tenant's property or assets (including without limitation Tenant's Property), shall be subject to levy, execution or any other enforcement procedure in connection with the satisfaction of liability under this Lease.

36. **Consents; Further Assurances**. Each party shall execute and deliver such further documents and perform such other acts, as may be reasonably necessary to achieve the parties' intent in entering into this Lease. The parties further agree that, to the extent the consent or approval of either of them is required, requested or appropriate under this Lease, such consent or approval shall not be unreasonably or unduly withheld, delayed, or conditioned, and except as may otherwise be expressly provided for herein, each party shall bear its own costs and expenses, including legal costs, in connection with such consent or approval.

37. **Counterparts**. This Lease may be executed in any number of counterparts, each of which shall be deemed an original once executed and delivered. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a ".pdf" format data file, such signature shall create a valid and binding obligation of the party executing with the same force and effect as if such facsimile were an original thereof.

38. **Survival**. Upon the expiration or earlier termination of this Lease in accordance with its terms, this Lease shall cease to have force and effect, unless the context requires otherwise to achieve the parties' intent with respect thereto.

39. **First Refusal to Lease.** Without limiting Tenant's rights to renew or extend the Term as set forth in this Lease, Landlord hereby grants to Tenant a right of first refusal to lease the Premises for a term commencing at the expiration or termination of this Lease, as extended, and/or any premises owned by Landlord located adjacent to the Premises, only upon the terms and conditions as contained in any valid, acceptable, bona fide lease offer Landlord or any subsequent Landlord may receive prior to the cancellation or termination of this Lease, as extended. Tenant shall have twenty (20) days after receipt from Landlord of written notice of such offer, with a certified full written statement of such offer and copy of the proposed lease (the "**Proposed Lease**"), within which time to exercise its option to lease and accept any such lease terms. Landlord agrees to promptly notify Tenant of receipt of any such acceptable offer to lease. Tenant shall exercise such right of first refusal by delivery of notice to Landlord accepting such offer. Thereafter, Tenant shall be deemed to have extended this Lease upon the economic terms of the Proposed Lease (i.e. rent, payment of taxes and expenses, options to extend, etc.). Tenant and

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Landlord shall be bound by all of the economic terms of the Proposed Lease. Landlord and Tenant shall enter into an amendment of this Lease extending the Term and incorporating the other economic terms of the Proposed Lease. Notwithstanding Tenant's failure to exercise such right of first refusal on a single occasion, such right of first refusal shall be a continuing right throughout the balance of the Term and Landlord shall be obligated to submit any future offers to Tenant.

40. **First Refusal to Purchase**. Without limiting Tenant's rights to renew or extend the Term as set forth in this Lease, Landlord hereby grants to Tenant a right of first refusal to purchase the Premises, or any land of which the Premises is a part, upon the same terms and conditions as contained in any bona fide purchase offer Landlord, or its successors and assigns, may receive prior to the cancellation or termination of this Lease, as extended. Tenant shall have twenty (20) days after receipt from Landlord of written notice of such offer, with a certified full written statement of such offer and copy of the proposed sale agreement ("**Proposed Sale Agreement**") within which time to exercise its option to purchase and accept any such proposed sale terms. Tenant shall exercise such option of first refusal by delivery of notice to Landlord accepting such offer. If Tenant exercises its option, Landlord and Tenant shall enter into a commercially reasonable sale agreement ("**Sale Agreement**") upon the economic terms of the Proposed Sale Agreement; provided, however, irrespective of the terms of the Proposed Sale Agreement, the Sale Agreement shall provide that (a) Landlord shall deliver to Tenant a current commitment for an owners title insurance policy issued by a title company acceptable to Tenant committing to insure Tenant in the amount of the purchase price and showing title to be good and marketable fee simple, free and clear of all liens, reservations, easements encumbrances, restrictions of record and encroachments, except such matters approved by Tenant as part of a the Sale Agreement, (b) transfer of title by Landlord to Tenant shall be effected by warranty deed conveying such title, (c) Landlord shall satisfy and remove from title at closing any and all monetary encumbrances, including any mortgage or trust deed, and (d) Tenant shall have no obligations for payment of any brokerage fee in connection with the purchase and if any such payment is due to any party it shall be paid by Landlord. Notwithstanding Tenant's failure to exercise such right of first refusal on a single occasion, such right of first refusal shall be a continuing right throughout the balance of the Term and Landlord shall be obligated to submit any future offers to Tenant.

41. **Exclusivity**. Landlord covenants that it will not (i) use or lease or permit any tenant to use or lease or (ii) permit any occupant or subtenant or assignee of a tenant or occupant to use any other property in which Landlord has an interest and which is located within a radius of one (1) mile of the Premises, for the purpose of conducting a business that is engaged in the solar power generation business and/or a use similar to the Intended Use ("**Tenant's Exclusivity Right**").

42. **Confidentiality**. Landlord agrees to hold all confidential information of Tenant, including, without limitation, the terms of this Lease, in strict confidence, and will not disclose same to any person, other than as required by applicable law, rule, or regulation. Landlord acknowledges and stipulates that Tenant may suffer irreparable harm in the event of a breach of this confidentiality agreement, for which Tenant has no adequate remedy at law. Therefore, in addition to all other remedies available pursuant to the terms of this Lease or at law, Tenant shall

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have the right to obtain immediate injunctive or other equitable relief upon a breach of this confidentiality agreement by Landlord, without the necessity of giving any notice of such default or opportunity to cure the same.

43. **Attorneys' Fees**. In the event of any dispute under this Lease, the party against whom any final judgment is entered agrees to pay the prevailing party all reasonable costs, charges, and expenses, including attorneys' fees, expended or incurred in connection therewith.

44. **Tax Credits**. If under applicable law the holder of a leasehold interest in the nature of that held by Tenant or Tenant's assignee 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 Lease or replace it with a different instrument so as to convert Tenant's interest in the Premises to a substantially similar interest that makes Tenant eligible for such tax credit, benefit or incentive.

45. **Marketing**. Following the Construction Commencement Date and continuing until the expiration or earlier termination of this Lease, Landlord gives and grants to Tenant and Tenant's affiliates, and each of their respective licensees, agents, representatives, employees, successors and assigns (collectively, the "**Licensed Parties**"), the right and license to photograph, publish and use photographs (whether still or moving) of the Premises in all media and types of advertising and promotion by the Licensed Parties. Landlord agrees that all images of the Premises used and taken by the Licensed Parties are owned by the Licensed Parties and that the Licensed Parties may obtain copyright in material containing same. If Landlord should receive any print, negative or other copy thereof, Landlord shall not authorize its use by anyone else. Landlord agrees that no advertisement, promotion or other material utilizing or containing the Premises need be submitted to Landlord for approval and the Licensed Parties shall be without liability to Landlord for any distortion or illusionary effect resulting from the publication of the Premises. Landlord represents and warrants that the license granted hereunder (a) does not and will not violate or infringe upon the rights of any third party and entity; and (b) does not in any way conflict with any existing commitment on Landlord's part. Nothing herein shall constitute any obligation on the Licensed Parties to make use of any of the rights set forth in this Section 45.

46. **State Specific Provisions**. In the event of any inconsistencies between the terms and conditions of this Section 46 and the other terms and conditions of this Lease, the terms and conditions of this Section 46 shall control and be binding:

[*end of text*]

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IN WITNESS WHEREOF, the parties hereto have duly executed this Lease as of the later of the dates indicated below.

LANDLORD:

ORGANIC VALLEY LLC, a New York limited liability company

By: DocuSigned by: Robert A. Titanic Jr. – Owner Organic Valley LL
C2E8E01A2A0A446...

Printed Name: Robert Titanic, Jr.

Title: Land Owner

Date: 1/7/2019

DocuSign Envelope ID: EA9739C1-EDC8-4805-91D6-06275677D930

TENANT:

CYPRESS CREEK LAND HOLDINGS, LLC, a Delaware limited liability company

DocuSigned by:
By: Evan Riley
E1A914985F34495...
Evan Riley

Printed Name: _____

Title: Authorized Person

Date: 1/9/2019

DocuSign Envelope ID: EA9739C1-EDC8-4805-91D6-06275677D930

Exhibit A

Depiction of the Land

EXHIBIT C. PROPERTY DEED

Standard N.Y.B.T.U. Form 8007
Bargain & sale deed, with covenant against grantor's acts - Ind. or Corp.

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT - THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY

THIS INDENTURE, made the 12th day of December, 2002

BETWEEN WILLIAM C. PALADINO, JR. and DIANE PALADINO, residing at 349 Australian Avenue #4, Palm Beach, FL 33480,

party of the first part,

and ROBERT A. TITANIC, JR., residing at 487 South Avenue, Unit 1, Beacon, NY 12508,

party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten ($10.00) Dollars, lawful money of the United States, and other good and valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Marlborough, County of Ulster and State of New York being further described in the Schedule "A" attached hereto and made a part hereof.

Being the same premises as conveyed by Milton Farms, Inc. to William C. Paladino, Jr. by deed dated December 2, 1986 and recorded January 7, 1987 in Liber 1679 page 212 in the office of the Ulster County Clerk and further conveyed by William C. Paladino, Jr. to William C. Paladino, Jr. and Diane Paladino by deed dated October 24, 1997 and recorded November 6, 1997 in Liber 2733 page 214 in the office of the Ulster County Clerk.

SCHEDULE A
Description

PARCEL I:

ALL that certain plot, piece or parcel of land situate, lying and being in the Town of Marlborough, County of Ulster and State of New York being designated as lot number one on a map entitled, "Final Map prepared for William Paladino, Jr." filed in the Ulster County Clerk's Office on 28th of April, 1992 as Map Number 9292, being bounded and described as follows:

BEGINNING at the southwesterly corner of lot two in the northerly bounds of County Route 10 as shown on the above described subdivision map;

THENCE along said lot two the following five courses;

1. North 30 degrees 37 minutes 35 seconds East a distance of 359.08 feet
2. North 33 degrees 03 minutes 42 seconds East a distance of 300.00 feet
3. North 56 degrees 56 minutes 18 seconds West a distance of 50.00 feet
4. North 33 degrees 03 minutes 42 seconds East a distance of 528.82 feet and
5. North 59 degrees 17 minutes 09 seconds West a distance of 612.85 feet to the West line of land of Joseph and Hetty Conner (L. 1288 P. 822);

THENCE along said lands of Connor in part along a stone wall the following three courses;

1. South 26 degrees 57 minutes 26 seconds West a distance of 565.76 feet
2. South 00 degrees 42 minutes 34 seconds East a distance of 20.50 feet, and
3. South 27 degrees 27 minutes 26 seconds West a distance of 508.50 feet to the aforementioned County Route 10 bounds;

THENCE along said road bounds the following three courses;

1. South 53 degrees 19 minutes 54 seconds East a distance of 94.82 feet
2. South 51 degrees 12 minutes 35 seconds East a distance of 161.05 feet, and
3. South 48 degrees 18 minutes 02 seconds East a distance of 27.41 feet to the southwesterly corner of land of Thomas and Antoinette Currie (L. 1204 P. 1012) marked by a found iron pin;

THENCE along said land the following three courses;

1. North 36 degrees 12 minutes 10 seconds East a distance of 313.15 feet to a found iron rod
2. South 55 degrees 15 minutes 20 seconds East a distance of 192.07 feet to a found iron pipe and
3. South 30 degrees 37 minutes 35 seconds West a distance of 349.71 feet to the aforementioned Road bounds;

THENCE along said Road bounds South 47 degrees 35 minutes 27 seconds East a distance of 51.08 feet to the point of BEGINNING.

SUBJECT TO a Right of Way fifty feet in width running northerly from the above mentioned County Route 10 westerly of and adjacent to the common boundary between Lot number one and Lot number two as shown on the abovementioned filed map being bounded and described as follows:

BEGINNING at the intersection of the northerly highway bounds County Route 10 with a westerly line of the above described 65.19 acre lot and runs thence along lot number two as shown on the above referenced filed map number 9292 the following two courses;

1. North 30 degrees 37 minutes 35 seconds East a distance of 359.08 feet, and
2. North 33 degrees 03 minutes 42 seconds East a distance of 300.00 feet to the northern terminus of said Right of Way.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting and above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been incumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first to the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first party has duly executed this deed the day and year first above written.

IN PRESENCE OF:

William C Paladino Jr by Jeffrey Paladino as his attorney in fact.

William C. Paladino, Jr. by Jeffrey Paladino his attorney in fact

Diane Paladino by Jeffrey Paladino by Jeffrey Paladino

Diane Paladino, by Jeffrey Paladino her attorney in fact

STATE OF NEW YORK,
COUNTY OF ss:

On the 12th day of December, 2002, before me, the undersigned, personally appeared Jeffrey Paladino, 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 individuals(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

RICHARD J. OLSON
Notary Public, State of New York
No.4838959
Qualified in Dutchess County
Commission Expires
4/30/03

STATE OF NEW YORK, COUNTY OF ss:

On the _____ day of _____ ,2002 , before me, the undersigned, 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 individuals(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

Bargain and Sale Deed
With Covenant Against Grantor's Acts

Title No.

WILLIAM C. PALADINO, JR.and DIANE PALADINO

TO

ROBERT A. TITANIC, JR.

SECTION
BLOCK
LOT
COUNTY OR TOWN

RETURN BY MAIL TO:

Alan Axelrod, Esq.
356 Meadow Avenue
Newburgh, NY 12550

Standard N.Y.B.T.U. Form 8007
Bargain & sale deed, with covenant against grantor's acts - Ind. or Corp.

VACANT LAND

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT - THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY

THIS INDENTURE, made the 19th day of December, 2002

BETWEEN WILLIAM C. PALADINO, JR. and DIANE PALADINO, residing at 349 Australian Avenue #4, Palm Beach, FL 33480,

party of the first part,

and ROBERT A. TITANIC, JR., residing at 487 South Avenue, Unit 1, Beacon, NY 12508,

party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten ($10.00) Dollars, lawful money of the United States, and other good and valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Marlborough, County of Ulster and State of New York being further described in the Schedule "A" attached hereto and made a part hereof.

Being the same premises as conveyed by Milton Farms, Inc. to William C. Paladino, Jr. by deed dated December 2, 1986 and recorded January 7, 1987 in Liber 1679 page 212 in the office of the Ulster County Clerk and further conveyed by William C. Paladino, Jr. to William C. Paladino, Jr. and Diane Paladino by deed dated October 24, 1997 and recorded November 6, 1997 in Liber 2733 page 214 in the office of the Ulster County Clerk.

SCHEDULE A
Description

ALL that piece or parcel of land situate, lying and being in the Town of Marlborough, County of Ulster and State of New York, being designated as lot number two on a map entitled "Final Map prepared for William Paladino, Jr." filed in the Ulster County Clerk's Office on 28 April 1992 as map number 9292, being bounded and described as follows:

BEGINNING at the southwest corner of land of Theresa and Robert Corso (L. 1405 p. 788) in the northerly bounds of County Route 10 and runs thence along said road bounds North 59 degrees 46 minutes 31 seconds West a distance of 60.63 feet to the southeasterly corner of land of Timothy and Tara Marquis marked by a found iron rod;

THENCE along said land the following three courses:

1. North 30 degrees 24 minutes 47 seconds East a distance of 131.35 feet;
2. North 54 degrees 34 minutes 13 seconds West a distance of 106.87 feet and
3. South 30 degrees 24 minutes 47 seconds West a distance of 134.67 feet to the aforementioned road bounds marked by a found iron rod;

THENCE along said road bounds North 51 degrees 12 minutes 46 seconds West a distance of 85.43 feet and North 47 degrees 35 minutes 27 seconds West a distance of 51.70 feet to the southerly corner of lot one as shown on the above described subdivision map;

THENCE along said lot one the following five courses:

1. North 30 degrees 37 minutes 35 seconds East a distance of 359.08
2. North 33 degrees 03 minutes 42 seconds East a distance of 300.00 feet
3. North 56 degrees 56 minutes 18 seconds West a distance of 50.00 feet
4. North 33 degrees 03 minutes 42 seconds East a distance of 528.82 feet and
5. North 59 degrees 17 minutes 09 seconds West a distance of 612.85 feet to the west line of land of Joseph and Hetty Conner (L 1288 p. 822);

THENCE along said land of Conner in part along a stone wall the following six courses:

1. North 26 degrees 57 minutes 26 seconds East a distance of 370.24 feet
2. North 04 degrees 37 minutes 26 seconds East a distance of 26.00 feet
3. North 27 degrees 52 minutes 26 seconds East a distance of 800.00 feet
4. North 21 degrees 47 minutes 26 seconds East a distance of 300.00 feet
5. North 09 degrees 43 minutes 14 seconds East a distance of 298.11 feet to the East end of a stone wall and
6. along said stone wall North 49 degrees 43 minutes 38 seconds West a distance of 82.00 feet to a stone intersection the East line of land of Allstate Apple Exchange, Inc. (L. 1240 p. 599);

THENCE along said land in part along land of Ida Wahl (L. 1689 p. 125) and in part along said stone wall the following two courses:

1. North 25 degrees 00 minutes 43 seconds East a distance of 47.00 feet and
2. North 27 degrees 00 minutes 43 seconds East a distance of 572.36 feet to the South bounds of the Town Highway known as Mahoney Road;

THENCE along said road bounds the following eight courses:

1. South 48 degrees 30 minutes 15 seconds East a distance of 87.40 feet
2. South 50 degrees 00 minutes 03 seconds East a distance of 84.32 feet
3. South 49 degrees 37 minutes 57 seconds East a distance of 124.53 feet
4. South 48 degrees 42 minutes 35 seconds East a distance of 121.68 feet

5. South 47 degrees 08 minutes 49 seconds East a distance of 92.12 feet
6. South 46 degrees 02 minutes 39 seconds East a distance of 50.35 feet
7. South 37 degrees 39 minutes 06 seconds East a distance of 44.39 feet and
8. South 23 degrees 54 minutes 07 seconds East a distance of 48.67 feet to the westerly line of Peter E. Colombo, et al (L. 803 p. 239);

THENCE along said land the following seven courses:

1. South 19 degrees 14 minutes 37 seconds West a distance of 538.89 feet
2. South 57 degrees 30 minutes 23 seconds East a distance of 50.00 feet
3. South 19 degrees 59 minutes 37 seconds West a distance of 338.00 feet to a point at the West end of stone wall
4. along said wall South 52 degrees 00 minutes 23 seconds East a distance of 55.00 feet to the end thereof
5. South 18 degrees 29 minutes 37 seconds West a distance of 415.00 feet
6. in part along a stone wall South 46 degrees 30 minutes 23 seconds East a distance of 684.00 feet and
7. South 56 degrees 15 minutes 23 seconds East a distance of 88.00 feet to the northwest corner of land of Geoffrey A. Dina (L. 1715 p. 326) at a stone wall corner;

THENCE along said stone wall, in part along said land and in part along land of Dean G. Langseder (L. 2401 p. 161) the following three courses:

1. South 38 degrees 26 minutes 22 seconds West a distance of 691.00 feet
2. South 37 degrees 28 minutes 07 seconds West a distance of 369.13 feet
3. South 36 degrees 56 minutes 27 seconds West a distance of 786.51 feet to the northeasterly corner of the above mentioned land of Corso;

THENCE along said land the following two courses:

1. North 62 degrees 41 minutes 40 seconds West a distance of 244.68 feet marked by a found iron pipe and
2. South 30 degrees 07 minutes 20 seconds West a distance of 188.37 feet to the point of BEGINNING.

Containing Sixty-five and nineteen hundredths (65.19) acres.

TOGETHER WITH a Right of Way for ingress and egress fifty feet in width running northerly form the above mentioned County Route 10 westerly of and adjacent to the common boundary between the above described 65.19 acre lot and lot number two as shown on the above mentioned filed map being bounded and described as follows:

BEGINNING at the intersection of the northerly highway bounds of County Route 10 with a westerly line of the above described 65.19 acre lot and runs thence along lot number two as shown on the above referenced filed map number 9292 the following two courses:

1. North 30 degrees 37 minutes 35 seconds East a distance of 359.08 feet and
2. South 33 degrees 03 minutes 42 seconds East a distance of 300.00 feet to the northern terminus of said Right of Way.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting and above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been incumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first to the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first party has duly executed this deed the day and year first above written.

IN PRESENCE OF:

William C Paladino by Jeffrey Paladino as attorney in fact.

William C. ~~Paladino~~, Jr., by Jeffrey Paladino his attorney in fact

Diane Paladino by Jeffrey Paladino as attorney in fact.

Diane Paladino, by Jeffrey Paladino her attorney in fact

STATE OF NEW YORK,
COUNTY OF ss:

On the 12th day of December, 2002, before me, the undersigned, personally appeared Jeffrey Paladino, 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 individuals(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

RICHARD J. OLSON
Notary Public, State of New York
No.4838959
Qualified in Dutchess County
Commission Expires
4/30/03

STATE OF NEW YORK, COUNTY OF ss:

On the _____day of_____ ,2002 , before me, the undersigned, 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 individuals(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public

Bargain and Sale Deed
With Covenant Against Grantor's Acts

Title No.

WILLIAM C. PALADINO, JR. and DIANE PALADINO

TO

ROBERT A. TITANIC, JR.

SECTION
BLOCK
LOT
COUNTY OR TOWN

RETURN BY MAIL TO:

Alan J. Axelrod, Esq.
356 Meadow Avenue
Newburgh, NY 12550

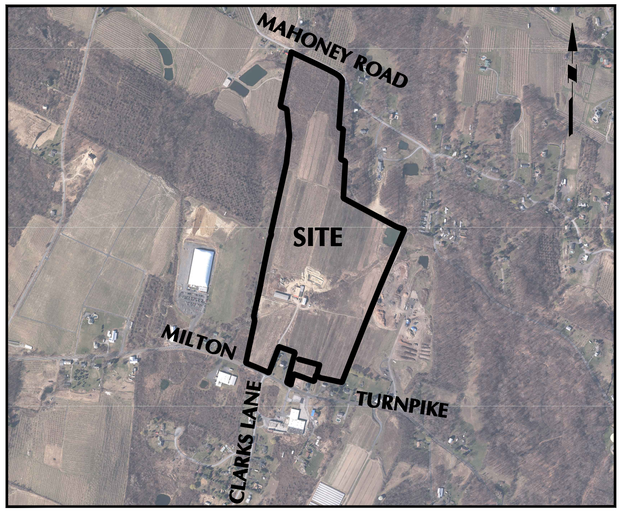
EXHIBIT D. CIVIL SITE PLANS

SITE PLAN APPROVAL DOCUMENTS

INDEPENDENT SOLAR, LLC

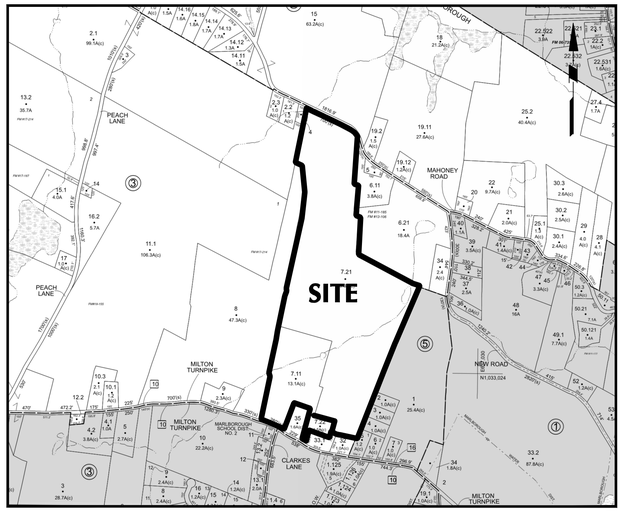
TOWN OF MARLBOROUGH

ULSTER COUNTY, NEW YORK



LOCATION MAP

1"=800'



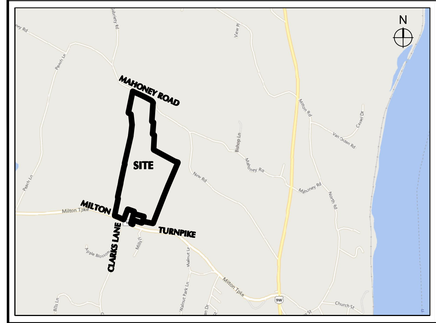
TAX MAP

1"=800'

DRAWING LIST	
DRAWING NO.	**DRAWING TITLE**
C-100	SITE COVER SHEET
C-150	EXISTING CONDITIONS & DEMOLITION PLAN
C-200	SITE LAYOUT & MATERIALS PLAN
C-300	GRADING & DRAINAGE PLAN
C-400	EROSION & SEDIMENT CONTROL PLAN
C-401	PHASING PLAN
C-500	SITE DETAILS (1 OF 2)
C-501	SITE DETAILS (2 OF 2)
L-100	LANDSCAPE PLANS
L-500	LANDSCAPE DETAILS

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

VICINITY MAP



SCALE 1" = 2000'

SITE DATA

PIN # –	PROPERTY OWNER –	SITE ADDRESS –
95.4–3–7.210 95.4–3–7.110	INDEPENDENT SOLAR, LLC	206 MILTON TURNPIKE MARLBOROUGH, NEW YORK
ZONING JURISDICTION –	ZONING –	ACRES –
TOWN OF MARLBOROUGH	RAG–1	78.0 ACRES
PROPOSED USE –	DISTURBED AREA	SOLAR AREA
4500 kW–dc LARGE SCALE SOLAR ENERGY SYSTEM	29.6 ACRES	14.9 ACRES
	SITE IMPERVIOUS AREA	PERCENT IMPERVIOUS COVERAGE
	1.5 ACRES	2.0%
PARCEL LINE SETBACKS	REQUIRED	DISTRICTS
MIN. FRONT YARD	50 FEET	MILTON FIRE DISTRICT
MIN. SIDE YARD (ONE)	35 FEET	MARLBORO SCHOOL DISTRICT
MIN. SIDE YARD (BOTH)	80 FEET	AG DISTRICT
MIN. REAR YARD	75 FEET	

APPLICANT

INDEPENDENT SOLAR, LLC
3402 PICO BOULEVARD
SANTA MONICA, CA 90405

TELEPHONE: 203–558–5602

CONTACT: NICK HAWVERMALE

CIVIL ENGINEER

LANGAN ENGINEERING, ENVIRONMENTAL, SURVEYING, LANDSCAPE ARCHITECTURE, AND GEOLOGY D.P.C.
1 NORTH BROADWAY
SUITE 910
WHITE PLAINS, NY 10601

TEL: 914–323–7400

CONTACT: CHRISTINA M. ZOLEZI, PE

SURVEYOR

LAWSON SURVEYING & MAPPING
2959 COUNTY ROUTE 8
ONEONTA, NY 13820

TEL: 607–432–3300

CONTACT: ROBERT J. LAWSON, L.S.

WETLAND CONSULTANT

TRC COMPANIES, INC.
10 MAXWELL DRIVE, SUITE 20000
CLIFTON PARK, NY 12065

TEL: 518–348–1190

TOWN OF MARLBOROUGH OWNER CONCURRENCES

THE UNDERSIGNED OWNER(S) OF THE PROPERTY SHOWN HEREIN CERTIFY THAT THEY ARE FAMILIAR WITH THIS MAP AND ITS NOTES AND CONTENTS AS STATED HEREON INCLUDING ALL CONDITIONS OF APPROVAL.

OWNER

DATE

TOWN OF MARLBOROUGH PLANNING BOARD APPROVAL

CYPRESS CREEK RENEWABLES
3402 PICO BLVD, SANTA MONICA, CA 90405

SEAL

STATE OF NEW YORK · MICHAEL J. FINN · LICENSED PROFESSIONAL ENGINEER · 081473

PERMIT SET – NOT RELEASED FOR CONSTRUCTION

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CONSULTANT

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Langan CT, Inc.
Langan Virginia LLC
Collectively known as Langan

REVISIONS		
NO.	DATE	DESCRIPTION
1.	03/30/20	GENERAL REVISIONS PER CLIENT
2.	07/09/20	PLANNING BOARD SUBMISSION

LANGAN NO. 190056901

PROJECT

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

SITE COVER SHEET

CS100

ADJOINING OWNERS

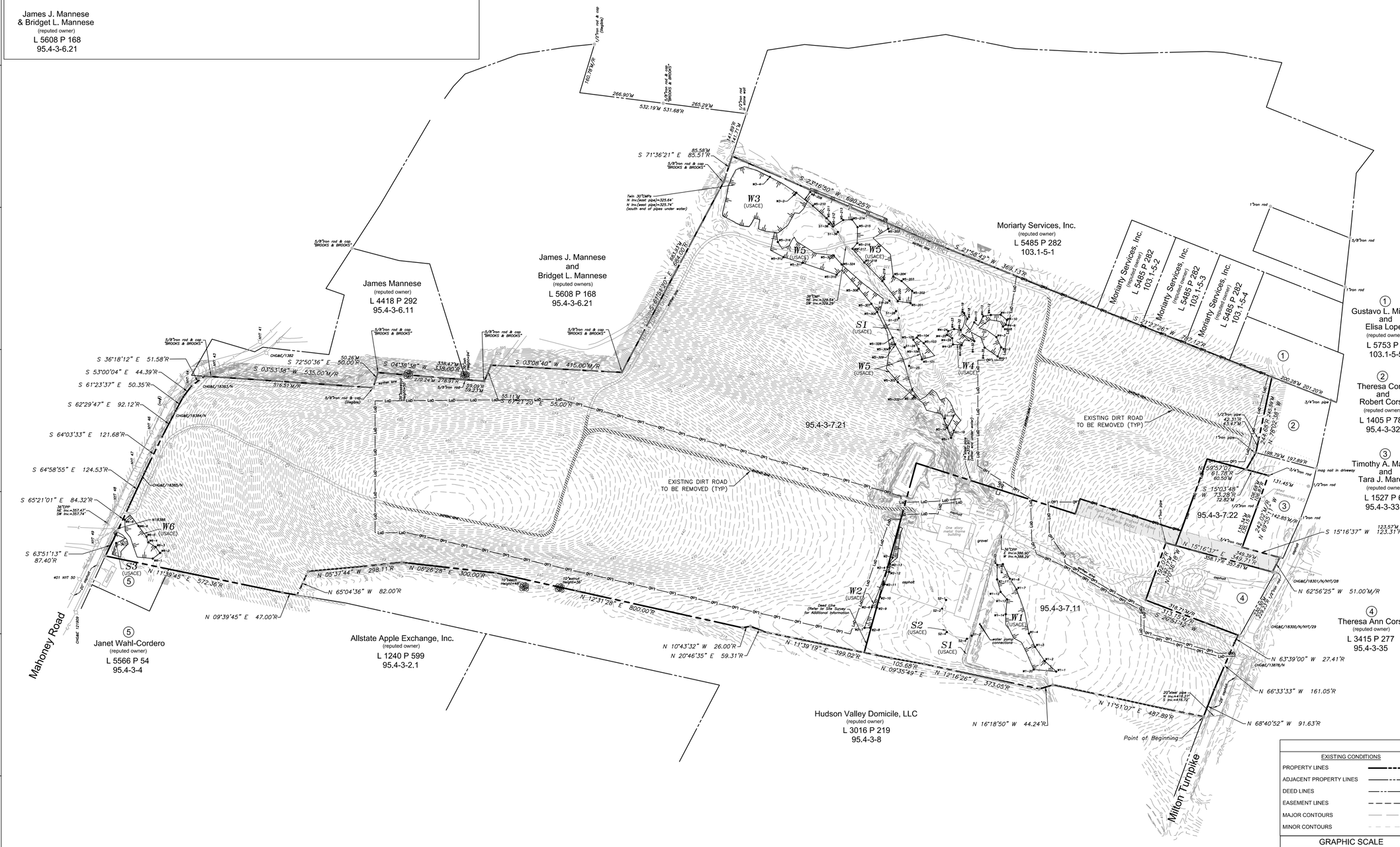
Moriarty Services, Inc. (reputed owner) L 5485 P 282 103.1-5-1	Moriarty Services, Inc. (reputed owner) L 5485 P 282 103.1-5-2	Moriarty Services, Inc. (reputed owner) L 5485 P 282 103.1-5-3	Moriarty Services, Inc. (reputed owner) L 5485 P 282 103.1-5-4
Gustavo L. Miranda & Elisa Lopez (reputed owner) L 5753 P 1 103.1-5-5	Theresa Corso & Robert Corso (reputed owner) L 1405 P 788 95.4-3-32	Timothy A. Marquis & Tara J. Marquis (reputed owner) L 1527 P 64 95.4-3-33.1	Theresa Ann Corso (reputed owner) L 3415 P 277 95.4-3-35
Hudson Valley Domicile, LLC (reputed owner) L 3016 P 219 95.4-3-8	Allstate Apple Exchange, Inc. (reputed owner) L 1240 P 599 95.4-3-2.1	Janet Wahl-Cordero (reputed owner) L 5566 P 54 95.4-3-4	James Mannese (reputed owner) L 4418 P 292 95.4-3-6.11
James J. Mannese & Bridget L. Mannese (reputed owner) L 5608 P 168 95.4-3-6.21			

GENERAL NOTES

1. SURVEY INFORMATION SHOWN IN THIS PLAN SET IS FROM A SURVEY ENTITLED "ALTA/NSPS LAND TITLE SURVEY OF PREMISES OF ORGANIC VALLEY, LLC" DATED JULY 29, 2019 BY LAWSON SURVEYING & MAPPING.
2. HORIZONTAL DATUM IS NEW YORK STATE EAST ZONE (3101) NAD 83 GPS DERIVED.
3. VERTICAL DATUM IS NAVD 88 GPS DERIVED.
4. A WETLAND AND WATERBODY DELINEATION PERFORMED APRIL 2019 BY TRC COMPANIES INC.

TREE REMOVAL NOTES

1. ALL TREES TO BE REMOVED WITHIN LIMITS OF DISTURBANCE.



LEGEND

EXISTING CONDITIONS		PROPOSED CONDITIONS	
PROPERTY LINES		LIMIT OF DISTURBANCE	LoD LoD
ADJACENT PROPERTY LINES		PATH TO BE REMOVED	
DEED LINES		ELECTRICAL, TELEPHONE & CABLE LINE	E/T/C
EASEMENT LINES		WETLAND	
MAJOR CONTOURS		EASTMENT HATCH	
MINOR CONTOURS			

GRAPHIC SCALE

150 0 75 150

SCALE: 1 INCH = 150 FEET

NORTH

N

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CYPRESS CREEK RENEWABLES
3402 PICO BLVD, SANTA MONICA, CA 90405

SEAL

STATE OF NEW YORK · MICHAEL J. FINN · 081473 · LICENSED PROFESSIONAL ENGINEER

PERMIT SET - NOT RELEASED FOR CONSTRUCTION

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CONSULTANT:

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Langan Engineering and Environmental Services, Inc.
Langan Real Estate Services, Inc.
Langan International, LLC
Collectively known as Langan

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LANGAN NO. 190056901

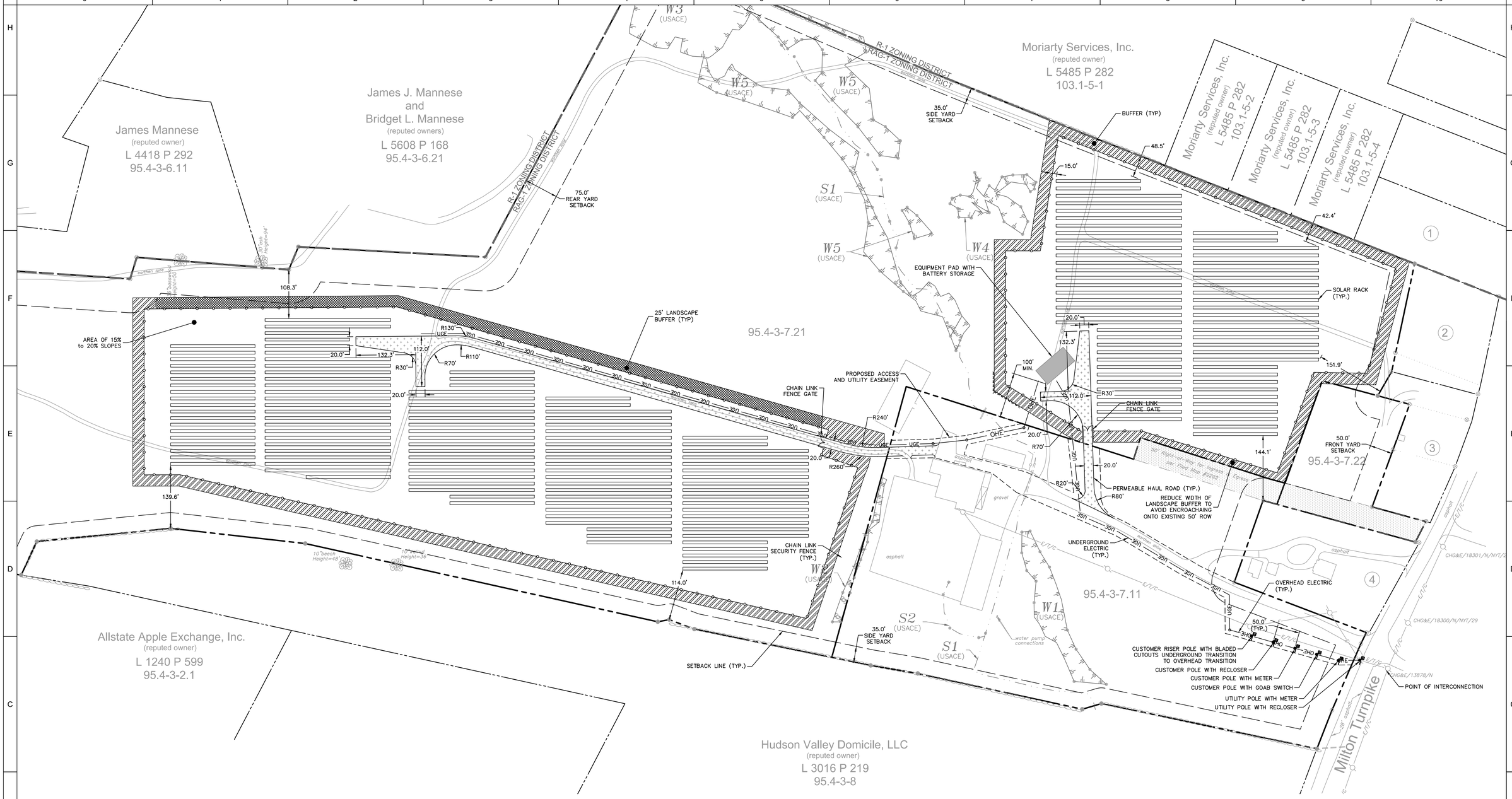
PROJECT

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

EXISTING CONDITIONS & DEMOLITION PLAN

C-150



ZONING COMPLIANCE TABLE

PROPERTY ADDRESS:	206 MILTON TURNPIKE
TAX PARCEL:	95.4-3-7.210 & 95.4-3-7.110
ZONING DISTRICT:	RAG-1
SITE USE:	LARGE SCALE SOLAR ENERGY SYSTEM

ITEM	REQUIRED/ PERMITTED	EXISTING	PROPOSED
MIN. LOT SIZE (1)	1 ACRE	78.0 ACRES	78.0 ACRES
MIN. FRONT YARD SETBACK (1)	50 FEET	--	151.9 FEET
MIN. SIDE YARD SETBACK (ONE) (1)	35 FEET	--	48.5 FEET
MIN. SIDE YARD SETBACK (BOTH) (1)	80 FEET		162.5 FEET
MIN. REAR YARD SETBACK (1)	75 FEET	--	108.3 FEET

NOTE:
1. REQUIREMENTS PER CHAPTER 155 ZONING.

UTILITY NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS IN A MANNER WHICH WILL NOT NEGATIVELY AFFECT ANY EXISTING USERS OF THESE UTILITIES.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY (WATER, SEWER, GAS, ELECTRIC, TELEPHONE AND CABLE) LOCATIONS, INVERTS AND CONDITIONS PRIOR TO CONSTRUCTION. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN ON THE DRAWINGS AND REQUIRING MODIFICATIONS TO THE SITE DESIGN SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE CONSTRUCTION. DIFFERING UTILITY CONDITIONS THAT ARE ENCOUNTERED BY THE CONTRACTOR, THAT REQUIRE MODIFICATION OF SITE DESIGN AND THAT ARE NOT BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CORRECT AT HIS SOLE COST.
3. THE LOCATION OF EXISTING ELECTRIC LINES ARE APPROXIMATE. THE CONTRACTOR MUST CONSULT THE LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION. ALL PROPOSED ELECTRICAL WORK, TRANSFORMER PADS, AND ASSOCIATED APPURTENANCES WILL BE IN CONFORMANCE WITH APPLICABLE LOCAL, COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.
4. MIN. DEPTH OF COVER OVER ELECTRIC SERVICES SHALL BE TWO (2) FT.

GENERAL SITE NOTES

1. THE CONTRACTOR SHALL FURNISH, INSTALL, TEST AND COMPLETE ALL WORK TO THE SATISFACTION OF THE ENGINEER AND OWNER IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS AND METHODS OF CONSTRUCTION; AS SUCH, THESE PLANS DO NOT COMPLETELY REPRESENT, NOR ARE THEY INTENDED TO REPRESENT, ALL SPECIFIC INSTRUCTIONS REQUIRED FOR SITEWORK CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO CONSTRUCT ALL IMPROVEMENTS DEPICTED ON THESE PLANS IN ACCORDANCE WITH ALL APPLICABLE RULES, REGULATIONS AND LAWS IN EFFECT AT THE TIME OF CONSTRUCTION.
2. THE CONTRACTOR SHALL ACCEPT THE SITE AS IS. THE CONTRACTOR SHALL ASSESS CONDITIONS, AND THE KIND, QUALITY AND QUANTITY OF WORK REQUIRED. THE OWNER AND ENGINEER MAKE NO GUARANTEE IN REGARD TO THE ACCURACY OF ANY INFORMATION THAT WAS OBTAINED DURING INVESTIGATIONS. THE CONTRACTOR SHALL: MAKE A THOROUGH SITE INSPECTION IN ORDER TO FIELD CHECK EXISTING SITE CONDITIONS; CORRELATE CONDITIONS WITH THE DRAWINGS; AND, RESOLVE ANY POSSIBLE CONSTRUCTION CONFLICTS WITH THE OWNER AND ENGINEER PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PERFORM ADDITIONAL TOPOGRAPHIC SURVEYS IF HE/SHE DEEMS NECESSARY, PROVIDED THEY ARE COORDINATED WITH THE OWNER. ANY CONDITIONS DETERMINED BY THE CONTRACTOR THAT DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS THAT ARE NOT BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO THE START OF WORK SHALL NOT BE CONSIDERED GROUNDS FOR ADDITIONAL PAYMENT OR CHANGES TO THE CONTRACT DURATION, OR ANY OTHER CLAIMS AGAINST THE OWNER OR OWNER'S ENGINEER.
3. THE CONTRACTOR SHALL, WHEN HE/SHE DEEMS NECESSARY, PROVIDE A WRITTEN REQUEST FOR INFORMATION (RFI) TO THE OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER PRIOR TO THE CONSTRUCTION OF ANY SPECIFIC SITEWORK ITEM. THE (RFI) SHALL BE IN A FORM ACCEPTABLE TO OWNER AND/OR OWNER'S DESIGNATED REPRESENTATIVE, AND ENGINEER AND SHALL ALLOW FOR A MINIMUM OF THREE WORK DAYS FOR A WRITTEN REPLY. RFIS SHALL BE NUMBERED CONSECUTIVELY BY DATE SUBMITTED. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITEWORK ITEMS CONSTRUCTED DIFFERENTLY THAN INTENDED OR AS DEPICTED ON THE PLANS.
4. INFORMATION RELATED TO ELEVATIONS AND PROPOSED UTILITIES (SUCH AS ROADWAY GRADES, INVERT ELEVATIONS, RIM ELEVATIONS, GRATE ELEVATIONS, BUILDING FINISHED FLOOR ELEVATIONS, ETC.) MAY BE FOUND IN MORE THAN ONE LOCATION IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL SUFFICIENTLY REVIEW ALL PLANS, PROFILES AND ANY OTHER INFORMATION IN THE CONTRACT DOCUMENTS FOR CONSISTENCY PRIOR TO BID. ANY INCONSISTENCIES OR DISCREPANCIES THAT ARE FOUND BY THE CONTRACTOR OR HIS ASSIGNS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER IN WRITING, IN THE FORMAT OF AN RFI PRIOR TO BID.
5. THERE ARE ADDITIONAL NOTES, SPECIFICATIONS AND REQUIREMENTS CONTAINED THROUGHOUT THE PLAN SET AS WELL AS REFERENCES TO SPECIFICATIONS FROM APPLICABLE GOVERNING AUTHORITIES AND INDUSTRY STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN, REVIEW AND ADHERE TO ALL THESE DOCUMENTS.
6. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT ALL CONSTRUCTION STAKEOUT FOR THIS PROJECT MUST BE COMPLETED FROM THE SITE SPECIFIC SURVEY CONTROL (HORIZONTAL AND VERTICAL) UPON WHICH THE DESIGN IS BASED. THE CONTRACTOR SHOULD NOT RELY ON OR RE-ESTABLISH SURVEY CONTROL BY GPS OR OTHER METHODS FOR USE IN CONSTRUCTION STAKEOUT OR ANY OTHER PURPOSE FOR THIS PROJECT. ANY DISCREPANCIES BETWEEN THE EXISTING HORIZONTAL OR VERTICAL DATA SHOWN ON THESE DRAWINGS AND THAT ENCOUNTERED IN THE FIELD MUST BE REPORTED TO THE DESIGN TEAM PRIOR TO CONSTRUCTION FOR RESOLUTION.

LEGEND

EXISTING CONDITIONS	PROPOSED CONDITIONS
PROPERTY LINES	LIMIT OF DISTURBANCE (LoD)
ADJACENT PROPERTY LINES	SECURITY FENCE
DEED LINES	ELECTRICAL (OVERHEAD) (OHE)
EASEMENT LINES	ELECTRICAL (UNDERGROUND) (UGE)
ELECTRICAL, TELEPHONE & CABLE LINE (E/T/C)	EQUIPMENT PAD
WETLAND	PERMEABLE HAUL ROAD
	SETBACK LINE

GRAPHIC SCALE: 100 0 50 100 — SCALE IN FEET

NORTH

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CYPRESS CREEK RENEWABLES
3402 PICO BLVD, SANTA MONICA, CA 90405

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STATE OF NEW YORK · MICHAEL J. FINN · 081473 · LICENSED PROFESSIONAL ENGINEER
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CONSULTANT
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Collectively known as Langan

NO.	DATE	REVISIONS DESCRIPTION
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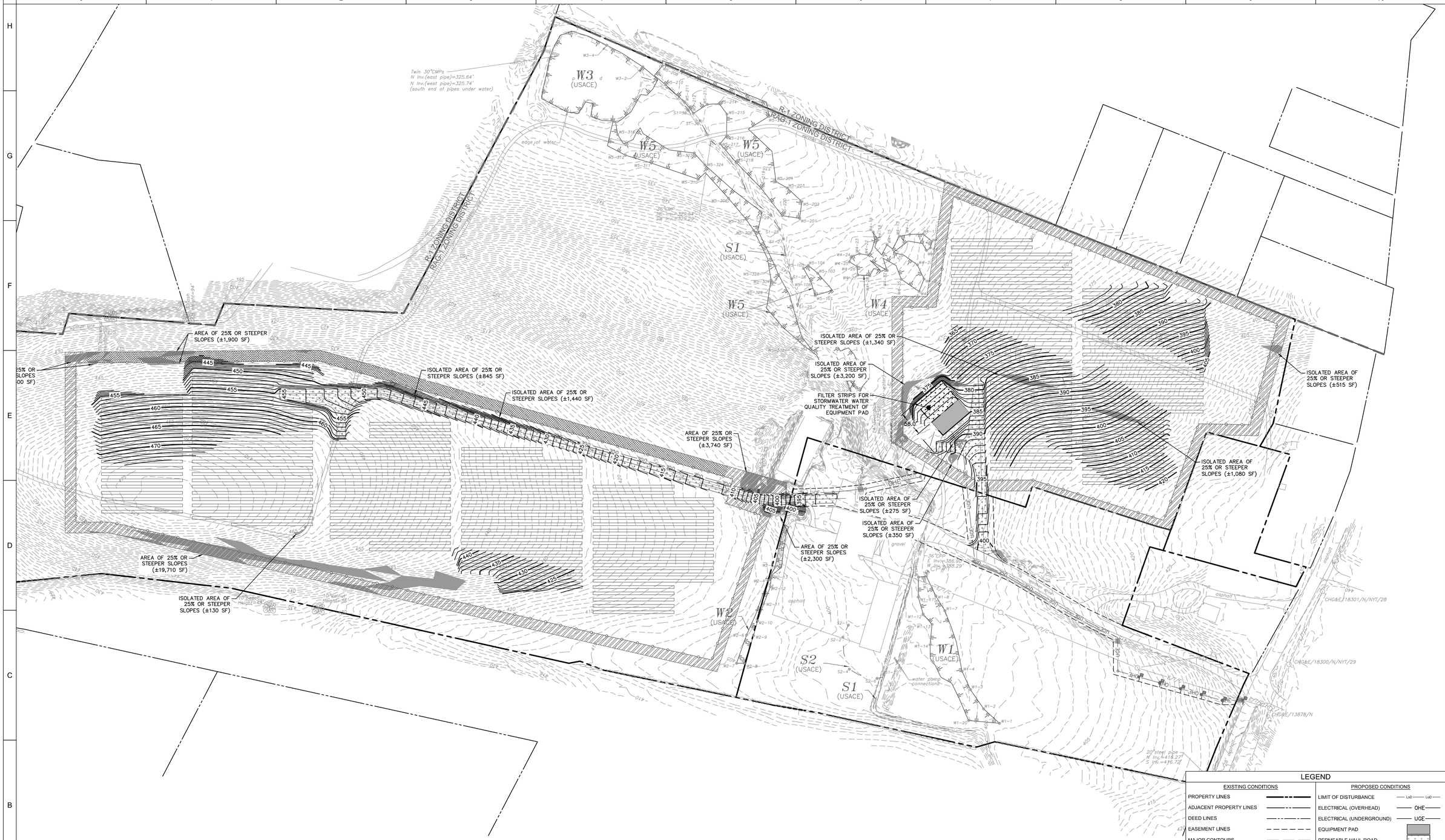
2.	07/09/20	PLANNING BOARD SUBMISSION

PROJECT
INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

SITE LAYOUT & MATERIALS PLAN

C-200



SLOPES TABLE				
NUMBER	MIN. SLOPE	MAX. SLOPE	AREA (SF)	COLOR
1	25.0%	Vertical	37,295	

APPROXIMATE EARTHWORK QUANTITIES

NORTH
- CUT: 2,830 CU. YD.
- FILL: 2,500 CU. YD.
- NET: 330 CU. YD.

SOUTH
- CUT: 4,330 CU. YD.
- FILL: 4,330 CU. YD.
- NET: 0 CU. YD.

NOTE: EARTHWORK BASED UPON COMPARING THE FINISHED GRADE ELEVATION TO THE EXISTING GRADES. ANALYSIS DOES NOT ACCOUNT FOR ANY COMPACTION OR EXPANSION OF MATERIAL, EQUIPMENT PADS AND OTHER SITE FEATURES.

LEGEND

EXISTING CONDITIONS	PROPOSED CONDITIONS
PROPERTY LINES	LIMIT OF DISTURBANCE
ADJACENT PROPERTY LINES	ELECTRICAL (OVERHEAD)
DEED LINES	ELECTRICAL (UNDERGROUND)
EASEMENT LINES	EQUIPMENT PAD
MAJOR CONTOURS	PERMEABLE HAUL ROAD
MINOR CONTOURS	MAJOR CONTOUR
ELECTRICAL, TELEPHONE & CABLE LINE	MINOR CONTOUR
WETLAND	

GRAPHIC SCALE

100 0 50 100

SCALE: 1 INCH = 100 FEET

NORTH

N

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CONSULTANT

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206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

GRADING & DRAINAGE PLAN

C-300

Filename: \\langan.com\data\WPW\data9\190056901\Project Data\CAD\01\SheetFiles\SPA\190056901-CG101-0101.dwg Date: 7/6/2020 Time: 17:17 User: czolezi Style Table: Langan.stb Layout: 4 C-300 - GRADING & DRAINAGE PLAN

LEGEND

EXISTING CONDITIONS	PROPOSED CONDITIONS
PROPERTY LINES	LIMIT OF DISTURBANCE
ADJACENT PROPERTY LINES	SECURITY FENCE
DEED LINES	EQUIPMENT PAD
EASEMENT LINES	PERMEABLE HAUL ROAD
MAJOR CONTOURS	MAJOR CONTOUR
MINOR CONTOURS	MINOR CONTOUR
ELECTRICAL, TELEPHONE & CABLE LINE	SILT FENCE
WETLAND	

GRAPHIC SCALE

100 0 50 100

SCALE: 1 INCH = 100 FEET

NORTH

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206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

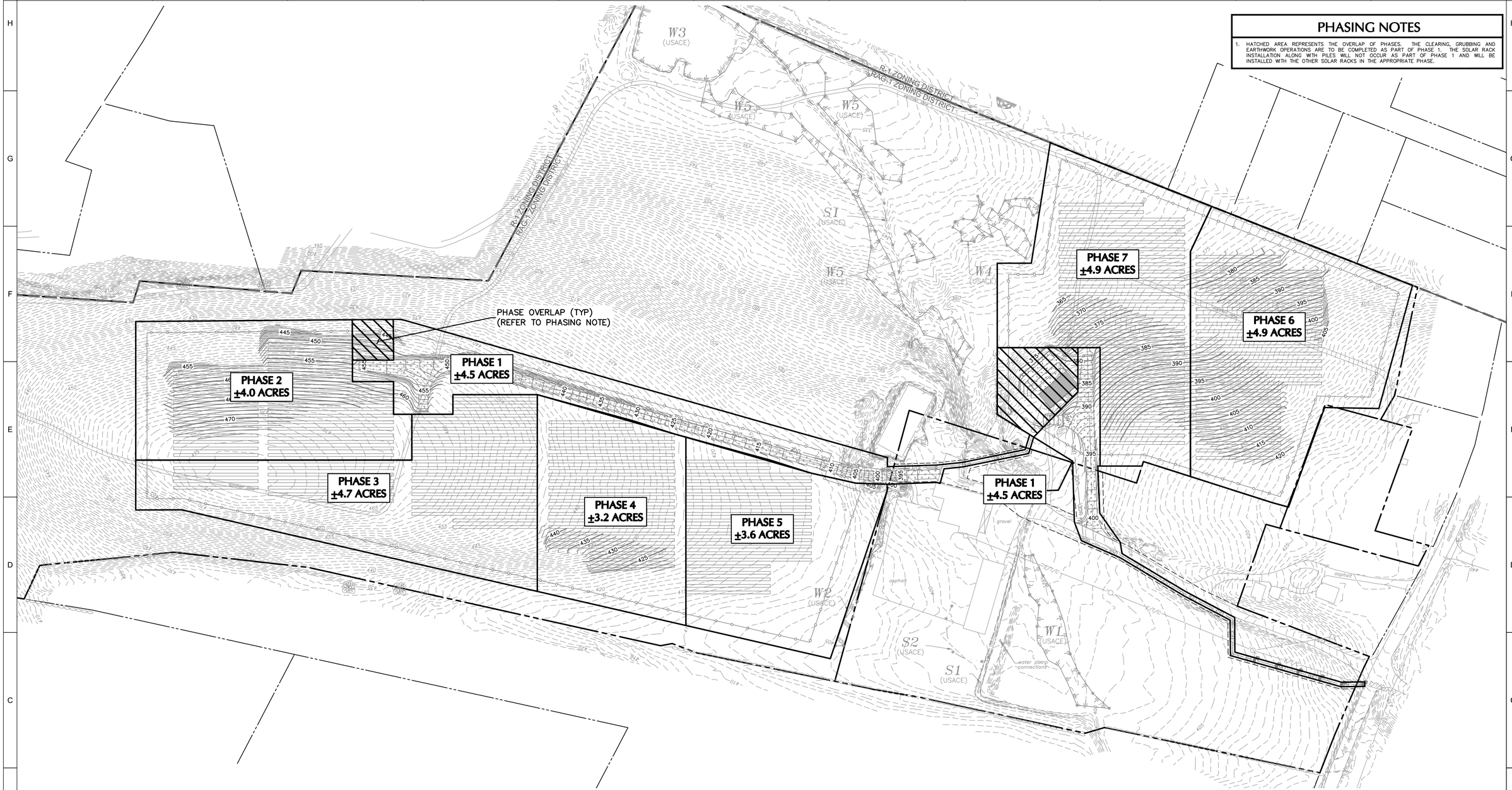
DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

EROSION & SEDIMENT CONTROL PLAN

C-400

PHASING NOTES

1. HATCHED AREA REPRESENTS THE OVERLAP OF PHASES. THE CLEARING, GRUBBING AND EARTHWORK OPERATIONS ARE TO BE COMPLETED AS PART OF PHASE 1. THE SOLAR RACK INSTALLATION ALONG WITH PILES WILL NOT OCCUR AS PART OF PHASE 1 AND WILL BE INSTALLED WITH THE OTHER SOLAR RACKS IN THE APPROPRIATE PHASE.



CONSTRUCTION SEQUENCE

PHASING AREA	CONSTRUCTION PHASE																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	CL ESC	RD TS																
2		CL ESC	GR TS						SOL TS									
3			CL ESC	GR TS						SOL TS								
4				CL ESC	GR TS						SOL TS							
5					CL ESC	GR TS						SOL TS						
6						CL ESC	GR TS						SOL TS					
7							CL ESC	GR TS						SOL TS				
FINAL															FNC SMP	RDF	RST	RM

CONSTRUCTION SEQUENCE KEY

CL	COMPLETE TREE REMOVAL AND STUMPING.
ESC	INSTALL EROSION AND SEDIMENT CONTROL PRACTICES.
FNC	INSTALL FENCE.
GR	SITE GRADING.
LD	REMOVE TEMPORARY LAYDOWN AREA. STABILIZE THE DISTURBED AREA.
RD	CONSTRUCT ACCESS ROAD, TEMPORARY LAYDOWN AREA, AND/OR INVERTER PADS.
RDF	COMPLETE SITE RESTORATION OVER PERMEABLE HAUL ROAD AND FINALIZE INSTALLATION.
RM	REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES. STABILZE THE DISTURBED AREA.
RST	COMPLETE SITE RESTORATION. APPLY SEED AND MULCH.
SMP	INSTALL GRASS FILTER STRIP.
SOL	INSTALL SOLAR PANELS.
TS	APPLY TEMPORARY SEED AND MULCH.

NOTE - PHASE AND DESCRIPTIONS ARE INTENDED TO PROVIDE A GENERAL DESCRIPTION OF GROUND DISTURBING ACTIVITIES. GROUND DISTURBANCES SUCH AS TRENCHING FOR CONDUIT AND OTHER ELECTRICAL EQUIPMENT INSTALLATION NEEDS MAY ALSO BE OCCURRING DURING ANY GIVEN PHASE. THE OVERALL DISTURBANCE WILL BE MONITORED BY THE QUALIFIED INSPECTOR TO ENSURE THE SITE DISTURBANCE REMAINS UNDER FIVE ACRES AT ANY GIVEN TIME.

LEGEND

EXISTING CONDITIONS	PROPOSED CONDITIONS
PROPERTY LINES	PHASE BOUNDARY
ADJACENT PROPERTY LINES	SECURITY FENCE
DEED LINES	EQUIPMENT PAD
EASEMENT LINES	PERMEABLE HAUL ROAD
MAJOR CONTOURS	MAJOR CONTOUR
MINOR CONTOURS	MINOR CONTOUR
ELECTRICAL, TELEPHONE & CABLE LINE	
WETLAND	

GRAPHIC SCALE

100 0 50 100

SCALE: 1 INCH = 100 FEET

NORTH

N

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

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CONSULTANT:

REVISIONS		
NO.	DATE	DESCRIPTION
1.	03/30/20	GENERAL REVISIONS PER CLIENT
2.	07/09/20	PLANNING BOARD SUBMISSION

LANGAN NO. 190056901

PROJECT

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

PHASING PLAN

C-401

Filename: \\langan.com\data\WPW\data9\190056901\Project Data\CAD\01\SheetFiles\SPA\190056901-CE101-0101.dwg Date: 7/6/2020 Time: 17:18 User: czolezi Style Table: Langan.stb Layout: 6 C-401 - PHASING PLAN

POLLUTION PREVENTION CONTROL NOTES

GOOD HOUSEKEEPING PRACTICES ARE DESIGNED TO MAINTAIN A CLEAN AND ORDERLY WORK ENVIRONMENT. GOOD HOUSEKEEPING MEASURES MUST BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROCESS BY THOSE PARTIES INVOLVED WITH THE DIRECT CARE AND DEVELOPMENT OF THE SITE. THE FOLLOWING MEASURES SHOULD BE IMPLEMENTED TO CONTROL THE POSSIBLE EXPOSURE OF HARMFUL SUBSTANCES AND MATERIALS TO STORMWATER RUNOFF:

1. MATERIAL RESULTING FROM THE CLEARING AND GRUBBING OPERATION MUST BE STOCKPILED AWAY FROM STORM DRAINAGE, WATER BODIES AND/OR WATERCOURSES AND SURROUNDED WITH ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES. SOIL STOCKPILE LOCATIONS MUST BE EXPOSED NO LONGER THAN 14 DAYS BEFORE SEEDING.
2. EQUIPMENT MAINTENANCE AREAS MUST BE PROTECTED FROM STORMWATER FLOWS AND MUST BE SUPPLIED WITH APPROPRIATE WASTE RECEPTACLES FOR SPENT CHEMICALS, SOLVENTS, OILS, GREASES, GASOLINE, AND ANY POLLUTANTS THAT MIGHT CONTAMINATE THE SURROUNDING HABITAT AND/OR WATER SUPPLY. EQUIPMENT WASH-DOWN ZONES MUST BE LOCATED WITHIN AREAS DRAINING TO SEDIMENT CONTROL DEVICES.
3. THE USE OF DETERGENTS FOR LARGE-SCALE (I.E., VEHICLES, BUILDINGS, PAVEMENT SURFACES, ETC.) WASHING IS PROHIBITED.
4. MATERIAL STORAGE LOCATIONS AND FACILITIES (I.E., COVERED STORAGE AREAS, STORAGE SHEDS, ETC.) MUST BE LOCATED ON-SITE AND MUST BE STORED ACCORDING TO THE MANUFACTURER'S STANDARDS IN A DEDICATED STAGING AREA. CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER TOXIC MATERIAL MUST BE STORED IN WATERPROOF CONTAINERS. RUNOFF CONTAINING SUCH MATERIALS MUST BE COLLECTED, REMOVED FROM THE SITE, TREATED AND DISPOSED AT AN APPROVED SOLID WASTE OR CHEMICAL DISPOSAL FACILITY.
5. HAZARDOUS SPILLS MUST BE IMMEDIATELY CONTAINED TO PREVENT SUCH POLLUTANTS FROM ENTERING THE SURROUNDING HABITAT AND/OR WATER SUPPLY. SPILL KITS MUST BE PROVIDED ON-SITE AND MUST BE DISPLAYED IN A PROMINENT LOCATION FOR EASE OF ACCESS AND USE. SPILLS GREATER THAN FIVE (5) GALLONS MUST BE REPORTED TO THE NYSDEC RESPONSE UNIT AT 1-800-457-7362. IN ADDITION, A RECORD OF THE INCIDENT(S) AND/OR NOTIFICATIONS MUST BE DOCUMENTED AND ATTACHED TO THE SWPPP.
6. PORTABLE SANITARY WASTE FACILITIES MUST BE PROVIDED ON-SITE FOR WORKERS AND MUST BE PROPERLY MAINTAINED.
7. DUMPSTERS AND/OR DEBRIS CONTAINERS MUST BE LOCATED ON-SITE AND MUST BE OF ADEQUATE SIZE TO MANAGE RESPECTIVE MATERIALS. REGULAR COLLECTION AND DISPOSAL OF WASTES MUST OCCUR AS REQUIRED.
8. TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE LOCATED A MINIMUM OF 50 FEET FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES. EACH FACILITY SHOULD BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING. A SIGN SHOULD BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE MUST BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT THE TEMPORARY CONCRETE WASHOUT FACILITIES MUST BE REMOVED AND DISPOSED OF. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES MUST BE BACKFILLED AND/OR REPAIRED, SEEDED, AND MULCHED FOR FINAL STABILIZATION.
9. NON-STORMWATER COMPONENTS OF SITE DISCHARGE MUST BE CLEAN WATER. WATER USED FOR CONSTRUCTION, WHICH DISCHARGES FROM THE SITE, MUST ORIGINATE FROM A PUBLIC WATER SUPPLY OR PRIVATE WELL APPROVED BY THE HEALTH DEPARTMENT. WATER USED FOR CONSTRUCTION THAT DOES NOT ORIGINATE FROM AN APPROVED PUBLIC SUPPLY MUST NOT DISCHARGE FROM THE SITE. IT CAN BE RETAINED IN THE PONDS UNTIL IT INFILTRATES AND EVAPORATES.

SOIL RESTORATION NOTES

SOIL RESTORATION MUST BE PERFORMED IN THE DISTURBED AREA. THE SOILS MUST BE RESTORED IN ACCORDANCE WITH THE FOLLOWING:

TYPE OF SOIL DISTURBANCE	SOIL RESTORATION REQUIREMENT
MINIMAL SOIL DISTURBANCE (E.G., CLEARING AND GRUBBING ACTIVITIES)	RESTORATION NOT REQUIRED
AREAS WHERE TOPSOIL IS STRIPPED ONLY (E.G., NO CHANGE IN GRADE)	AERATE AND APPLY 6" OF TOPSOIL*
AREAS OF CUT OR FILL	APPLY FULL SOIL RESTORATION*
HEAVY TRAFFIC AREAS ON-SITE (ESPECIALLY IN 5 FEET TO 25 FEET AROUND BUILDINGS, BUT NOT WITHIN A 5 FOOT PERIMETER AROUND FOUNDATION WALLS)	APPLY FULL SOIL RESTORATION AS INDICATED BELOW
AREAS WHERE RUNOFF REDUCTION OR INFILTRATION PRACTICES ARE APPLIED	RESTORATION CAN BE APPLIED TO ENHANCE RUNOFF REDUCTION BUT NOT REQUIRED
REDEVELOPMENT PROJECTS	SOIL RESTORATION IS REQUIRED ON REDEVELOPMENT PROJECTS IN AREAS WHERE EXISTING IMPERVIOUS AREA WILL BE CONVERTED TO PERVIOUS AREA.

FULL SOIL RESTORATION

BEFORE APPLYING FULL SOIL RESTORATION, ALL CONSTRUCTION ACTIVITY, INCLUDING CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE, SITE CLEANUP AND TRAFFICKING, SHOULD BE FINISHED AND THE SITE CLOSED TO FURTHER DISTURBANCE. FULL SOIL RESTORATION IS IMPLEMENTED IN A TWO-PHASE PROCESS:

1. DEEP RIP THE AFFECTED THICKNESS OF EXPOSED SUBSOIL MATERIAL, AGGRESSIVELY FRACTURING IT BEFORE THE PROTECTED TOPSOIL IS REAPPLIED ON THE SITE.
2. DECOMPACT, SIMULTANEOUSLY THROUGH THE RESTORED TOPSOIL LAYER AND UPPER HALF OF THE AFFECTED SUBSOIL.

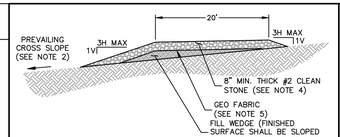
LOW SUBSOIL MOISTURE

THE DISTURBED SOILS ARE RETURNED TO ROUGH GRADE AND THE FOLLOWING IS APPLIED:

1. APPLY 3 INCHES OF COMPOST OVER THE SUBSOIL.
2. TILL COMPOST A MINIMUM OF 12 INCHES INTO THE SUBSOIL USING A CAT-MOUNTED RIPPER, TRACTOR-MOUNTED DISC, OR TILLER MIXING AND CIRCULATING AIR AND COMPOST INTO SUBSOILS.
3. ROCK-PICK UNTIL UPLIFTED STONE/ROCK MATERIALS OF 4 INCHES OR LARGER SIZE ARE CLEANED OFF THE SITE. ALL CONSTRUCTION/FOREIGN DEBRIS AND EXISTING ROOT MASSES SHALL BE REMOVED FROM PROPOSED PLANTING AREAS.
4. APPLY 6 INCHES OF TOPSOIL. NEWLY INSTALLED PLANTING SOILS SHALL BE MIXED WITH EXISTING SOILS WHERE THEY MEET IN ORDER TO CREATE A TRANSITIONAL GRADIENT TO ALLOW FOR PROPER DRAINAGE.
5. INSTALL PLANTS AND VEGETATION IN ACCORDANCE WITH THE LANDSCAPING PLAN.

EROSION AND SEDIMENT CONTROL NOTES

1. REFER TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) SPDES GENERAL PERMIT IN APPENDIX A OF THE STORMWATER POLLUTION PREVENTION PLAN FOR ADDITIONAL REQUIREMENTS.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IN ACCORDANCE WITH "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" LATEST EDITION.
3. BEFORE BEGINNING CONSTRUCTION, THE OWNER MUST SET UP A PRE-CONSTRUCTION MEETING WITH THE QUALIFIED PROFESSIONAL, QUALIFIED INSPECTOR, CONTRACTORS, AND SUBCONTRACTORS TO DISCUSS THE RESPONSIBILITIES RELATED TO THE STORMWATER POLLUTION PREVENTION PLAN IMPLEMENTATION.
4. THE CONTRACTOR AND SUBCONTRACTOR MUST IDENTIFY THE TRAINED INDIVIDUAL THAT WILL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL MEASURES DURING CONSTRUCTION.
5. BEFORE BEGINNING CONSTRUCTION, ALL EROSION AND SEDIMENT CONTROLS MUST BE INSTALLED IN ACCORDANCE WITH THE PLANS. SITE PREPARATION ACTIVITIES MUST BE PLANNED TO MINIMIZE THE SCOPE AND DURATION OF SOIL DISTURBANCE. EXISTING VEGETATION TO REMAIN MUST BE PROTECTED TO ENSURE OVER CLEARING DOES NOT OCCUR.
6. PERMANENT TRAFFIC CORRIDORS MUST BE ESTABLISHED AND "ROUTES OF CONVENIENCE" MUST BE AVOIDED. STABILIZED CONSTRUCTION ENTRANCES MUST BE INSTALLED AT THE LOCATIONS SHOWN ON THE PROJECT PLANS.
7. STOCKPILED TOPSOIL MUST BE ENCLOSED WITH SILT FENCE OR HAY BALES AND COVERED OR TEMPORARILY SEEDED. ALL GRASS SEED MUST CONTAIN AT LEAST 25% RAPID GERMINATING PERENNIAL RYE GRASS.
8. DAMAGE TO SURFACE WATERS RESULTING FROM EROSION AND SEDIMENTATION MUST BE MINIMIZED BY STABILIZING DISTURBED AREAS AND BY REMOVING SEDIMENT FROM CONSTRUCTION SITE DISCHARGES.
9. DUST MUST BE CONTROLLED BY SPRINKLING EXPOSED SOIL AREAS PERIODICALLY WITH WATER AS REQUIRED.
10. EROSIVE MATERIAL TEMPORARILY STOCKPILED ON SITE DURING CONSTRUCTION MUST BE LOCATED IN AN AREA AWAY FROM STORM DRAINAGE AND MUST BE PROPERLY PROTECTED BY A SILT FENCE BARRIER.
11. EARTHWORK ACTIVITIES MUST BE CONSISTENT WITH THE PHASING PLANS. THE EARTHWORK OPERATION AREAS MUST BE STABILIZED ON AN ONGOING BASIS WITH NO AREAS THAT ARE NOT CURRENTLY UNDER CONSTRUCTION LEFT WITHOUT AT LEAST TEMPORARY COVER FOR MORE THAN 14 DAYS.
12. EROSION AND SEDIMENT CONTROL INSPECTIONS:
    A. THE TRAINED INDIVIDUAL MUST INSPECT ALL EROSION AND SEDIMENT CONTROL MEASURES ON A DAILY BASIS TO ENSURE PROPER PERFORMANCE. ANY SEDIMENT BUILD-UP MUST BE CLEANED AND REMOVED. ALL DAMAGES TO EROSION AND SEDIMENT CONTROLS MUST BE REPAIRED AT THE END OF THE WORK DAY.
    B. THE QUALIFIED INSPECTOR MUST CONDUCT SITE INSPECTIONS EVERY 7 DAYS. ANY DEFICIENCIES NOTED IN THE REPORTS MUST BE CORRECTED IMMEDIATELY BY THE CONTRACTOR.
    C. IF SOIL DISTURBANCE ACTIVITIES ARE SUSPENDED FOR WINTER SHUTDOWN, TEMPORARY STABILIZATION MEASURES WILL BE APPLIED TO ALL DISTURBED AREAS. IF APPROVED BY THE NYSDEC OR MS4 MUNICIPALITY, THE FREQUENCY OF INSPECTIONS BY THE QUALIFIED INSPECTOR MAY BE REDUCED TO ONE INSPECTION EVERY 30 DAYS.
    D. IF AUTHORIZED BY THE NYSDEC OR MS4 MUNICIPALITY TO DISTURB MORE THAN 5 ACRES AT ONE TIME, THE QUALIFIED INSPECTOR MUST CONDUCT AT LEAST 2 SITE INSPECTIONS, SEPARATED BY 2 DAYS, EVERY 7 DAYS UNTIL SUCH TIME THAT LESS THAN 5 ACRES OF SOIL REMAIN EXPOSED.
13. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE REMOVED WHEN ALL DISTURBED AREAS HAVE UNDERGONE FINAL STABILIZATION, WHEN UPGRADE SURFACES ARE PROPERLY STABILIZED AND ALL STORMWATER MANAGEMENT SYSTEMS ARE IN PLACE AND OPERATIONAL. ALL AREAS DISTURBED BY THE REMOVAL OF THE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES MUST BE FILLED IN, TOPSOILED, SEEDED, AND MULCHED. FINAL STABILIZATION IS ACHIEVED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 80% IS ESTABLISHED, OR EQUIVALENT STABILIZATION MEASURES, SUCH AS PLACEMENT OF MULCH OR GEOTEXTILE, IS COMPLETED ON ALL AREAS NOT PAVED OR COVERED BY PERMANENT STRUCTURES.



NOTES:
1. THIS HAUL ROAD DETAIL IS LIMITED TO CONSTRUCTION AND OCCASIONAL MAINTENANCE TRAFFIC FOR RENEWABLE ENERGY PROJECTS IN NEW YORK STATE. EMERGENCY VEHICLES CAN ACCESS THE SITE VIA HAUL ROAD ON AN AS NEEDED BASIS.
2. DESIGN LIMITATIONS
   2.1. ESAL = 10,000
   2.2. CLEAN STONE SHALL BE MINIMUM 8 INCHES THICK.
   2.3. CROSS SLOPE SHALL NOT EXCEED 5%, RUNNING SLOPE SHALL NOT EXCEED 10%
3. CONSTRUCTION SPECIFICATION:
   3.1. IN AREAS OF NO EARTHWORK, THE ROAD SHALL BE INSTALLED ON UNCOMPACTED SURFACE GRADE. ALIGNMENT MAY BE MOWED BUT NOT GRUBBED. WHERE REQUIRED, A NATIVE SOIL FILL WEDGE, COMPACTED 80% MDD, MAY BE INSTALLED. FILL WEDGE SHALL BE SLOPED AT 2% MINIMUM TO SHED WATER.
   3.2. IN AREAS WITH BULK EARTHWORK, THE ROAD SHALL BE INSTALLED ON FINAL GRADE.
   3.3. THE HAUL ROAD SHALL NOT BE CONSTRUCTED ON NYSDOT SUBBASE MATERIAL OR EQUIVALENT.
4. THE HAUL ROAD SHALL BE CONSTRUCTED OF #2 (2 1") CLEAN STONE. STONE MAY BE DEPOSITED AND SPREAD BY A TRACKED VEHICLE.
5. GEOFABRIC SHALL BE MIFARI TENCATE RS 280I (OR APPROVED EQUAL)
6. CONSTRUCTION AND MAINTENANCE LIMITATIONS:
   6.1. THE #2 CLEAN STONE SHALL NOT BE COMPACTED WITH A VIBRATORY ROLLER, PLATE COMPACTOR, OR OTHER MEANS.
   6.2. TOP DRESS ONLY WITH #2 CLEAN STONE.
   6.3. DO NOT OIL OR WATER BIND, SEALCOAT, OR CHOKE STONE.
   6.4. DO NOT OVERLAY WITH CONCRETE, ASPHALT PAVEMENT, OR ANY MATERIAL THAT WILL CREATE AN IMPERVIOUS SURFACE.
7. REFER TO TECHNICAL PAPER PROVIDED IN STORMWATER POLLUTION PREVENTION PLAN FOR ADDITIONAL INFORMATION.

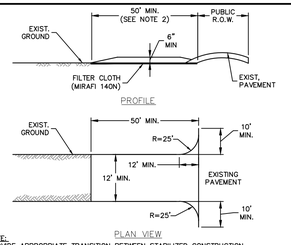
PERVIOUS HAUL ROAD CROSS SECTION

SCALE: NTS

NOTES:
1. SIGNS SHALL BE FASTENED TO THE ENTRANCE GATE.

STANDARD SIGNAGE

SCALE: NTS

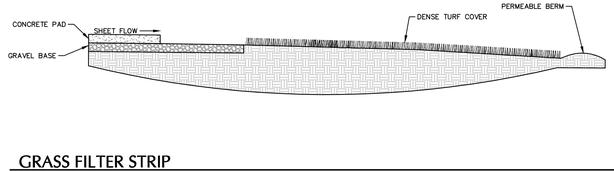


NOTE:
PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC R.O.W.

CONSTRUCTION SPECIFICATIONS
1. STONE SIZE - USE 3" STONE (NYSDOT ITEM #623.11 SIZE DESIGNATION #2, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - NOT LESS THAN 50-FEET (EXCEPT ON SINGLE FAMILY LOT, 30-FEET MINIMUM LENGTH WOULD APPLY.)
3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SIGHT.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTR. ENTRANCE

SCALE: NTS



GRASS FILTER STRIP

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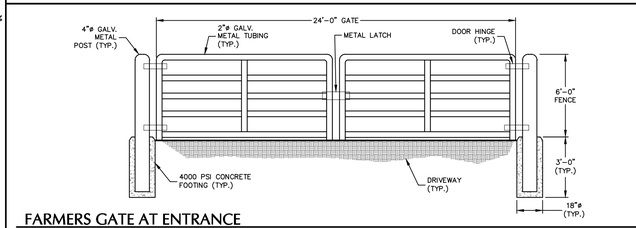

FARMERS GATE AT ENTRANCE

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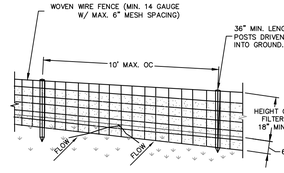
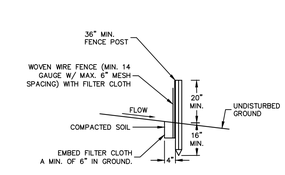


PERSPECTIVE VIEW



SECTION VIEW

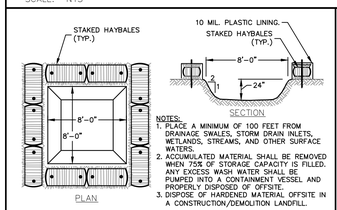
CONSTRUCTION SPECIFICATIONS:
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER "T" OR "U" TYPE, OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 14 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED.
4. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
5. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT THAT METS THE MINIMUM REQUIREMENTS SHOWN.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

DETAIL NOTES
1. INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL ("THE BLUE BOOK").
2. ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE, BUT AT LEAST 10 FEET FROM THE TOE OF A SLOPE STEEPER THAN 3H:1V, TO ALLOW FOR MAINTENANCE AND ROLL DOWN. THE AREA BEYOND THE FENCE MUST BE UNDISTURBED OR STABILIZED.
3. THE TYPE OF SILT FENCE SPECIFIED FOR EACH LOCATION ON THE PLAN SHALL NOT EXCEED THE MAXIMUM SLOPE LENGTH AND MAXIMUM FENCE LENGTH REQUIREMENTS SHOWN IN THE TABLE BELOW. IF A TYPE SILT FENCE IS NOT SPECIFIED ON THE PLANS, THE CRITERIA FOR STANDARD SILT FENCE CAN BE APPLIED.
4. SILT FENCE SHALL BE REMOVED AS SOON AS THE DISTURBED AREA HAS ACHIEVED FINAL STABILIZATION.

		SLOPE LENGTH/FENCE LENGTH (FT.)		
SLOPE	STEEPNESS	STANDARD	REINFORCED	SUPER
<2%	<50:1	300/1500	N/A	N/A
2-10%	50:1 TO 10:1	125/1000	250/2000	300/2500
10-20%	10:1 TO 5:1	100/750	150/1000	200/1000
20-33%	5:1 TO 3:1	60/500	80/750	100/1000
33-50%	3:1 TO 2:1	40/250	70/350	100/500
>50%	>2:1	20/125	30/175	50/250

SILT FENCE

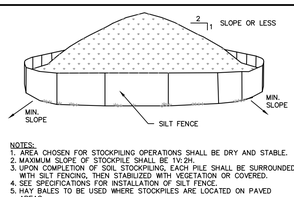
SCALE: NTS



NOTES:
1. PLACE A MINIMUM OF 100 FEET FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS, AND OTHER SURFACE WATERS.
2. ACCUMULATED MATERIAL SHALL BE REMOVED WHEN 75% OF STORAGE CAPACITY IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO A CONTAINMENT VESSEL AND PROPERLY DISPOSED OF OFFSITE.
3. DISPOSE OF HARDENED MATERIAL OFFSITE IN A CONSTRUCTION/DEMOLITION LANDFILL.

TEMPORARY CONCRETE WASH AREA

SCALE: NTS



NOTES:
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1V:2H.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH SILT FENCING, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS FOR INSTALLATION OF SILT FENCE.
5. HAY BALES TO BE USED WHERE STOCKPILES ARE LOCATED ON PAVED AREAS.

TEMPORARY STOCKPILE

SCALE: NTS

CYPRESS CREEK RENEWABLES
3402 PICO BLVD, SANTA MONICA, CA 90405

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Langan Treadwell Rollo, Inc.
Collectively known as Langan

NO.	DATE	REVISIONS DESCRIPTION
1.	03/30/20	GENERAL REVISIONS PER CLIENT
2.	07/09/20	PLANNING BOARD SUBMISSION

LANGAN NO. 190056901

PROJECT

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

SITE DETAILS (1 OF 2)

C-500

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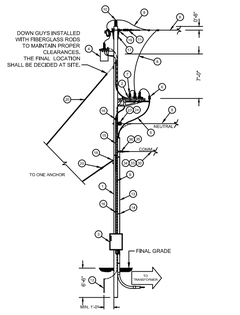
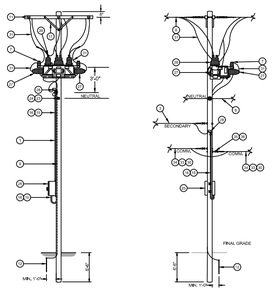
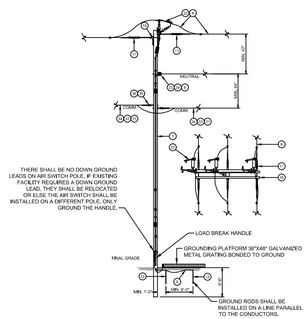
Filename: \\langan.com\data\WPW-data9\190056901\Project Data\CAD\01SheetFiles\SPA\190056901-CS501-0101.dwg Date: 7/6/2020 Time: 17:18 User: czolezi Style Table: Langan.stb Layout: 7 C-500 - SITE DETAILS (1 OF 2)



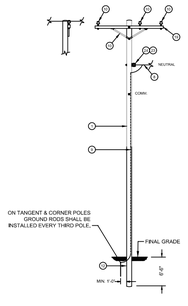
1 CUSTOMER RISER/RECLOSER POLE
SCALE:NTS



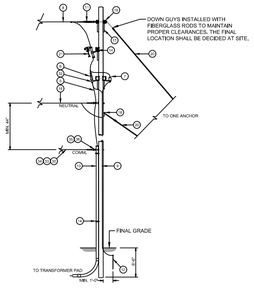
2 CUSTOMER REVENUE METER
SCALE:NTS



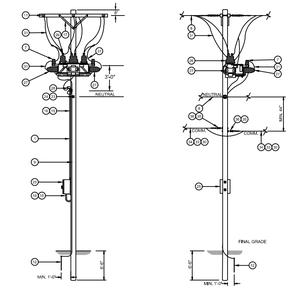
3 CUSTOMER LOAD BREAK SWITCH
SCALE:NTS



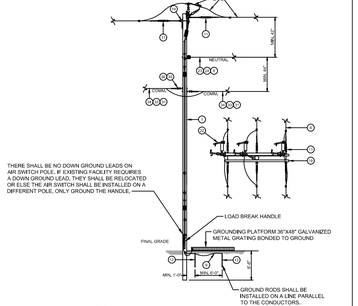
4 CUSTOMER TANGENT POLE
SCALE:NTS



N RISER POLE
SCALE:NTS



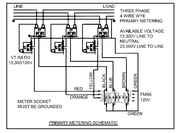
M METER POLE
SCALE:NTS



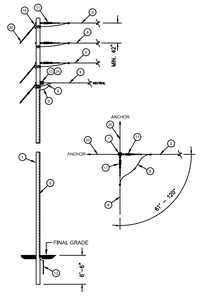
G GANG OPERATED AIR BREAK SWITCH POLE (GOAB)
SCALE:NTS

POLE LINE DETAIL MATERIAL LIST		
NO.	QTY.	DESCRIPTION
1	19U	WOODEN POLE, 40' HIGH, CLASS 2
2	1U	25KV RECLOSER, BBL, 125kV, 600A
3	1U	RECLOSER CONTROL PANEL
4	1U	TRANSFORMER, 2 kVA, 1PH, 13200/240-120V
5	TBD	CABLE, #1/0 AWG, 25KV, AL, SHIELDED & CONC. NEUTRAL
6	3U	CABLE TERMINATION, 25KV, OUTDOOR, COLD SHRINK
7	9U	15.5KV, MCOV DIST. CLASS ARRESTER
8	TBD	477 KCMIL ACC BARE CABLE
9	630 FT	#6 AWG SOLID COPPER BARE GROUND WIRE
10	42U	VERTICAL POST INSULATOR, 25KV, POLYMER
11	69U	25KV POLYMER DEAD END STRAIN INSULATOR
12	18U	5/8" X 8' COPPER CLAD GROUND ROD
13	10 FT	5" RMC CONDUIT, 90° ELBOW AND COUPLING
14	4U	5" CONDUIT CLAMP
15	60 FT	16" PVC CONDUIT AND COUPLING
16	10U	12" CONDUIT CLAMP
17	44U	FLAT WOODEN CROSSARM BRACE
18	TBD	PLATE/POLE EYE, 15000 LBS.
19	22U	3# X 4# X 10' WOODEN CROSSARM
20	TBD	STEEL GUY WIRE 3/8" + EHS (NIT)
21	4U	25KV CUTOUT 200A MAX.
22	1U	25KV LOAD BREAK SWITCH, HORIZONTAL, 600A
23	17U	SECONDARY RACK, 1 WIRE
24	17U	SPOOL INSULATOR, 600V, ANSI 53-2
25	1U	METERING SYSTEM 5'x5' A.F.G.
26	3U	CURRENT TRANSFORMER, 25KV, OUTDOOR
27	3U	VOLTAGE TRANSFORMER, 25KV, OUTDOOR
28	2U	WEATHERHEAD, 16" PVC
29	TBD	ANCHOR, 8" DIA. X 9" LENGTH
30	TBD	STEEL MESSENGER CABLE, 1/4"
31	50 FT	CU CABLE #1/0 AWG, XLPE INSULATED
32	1U	BRACKET FOR 15KV CABLE TERMINAL, 3PH.
33	TBD	LASHING WIRE
34	SEE COMM.	FIBER OPTIC CABLE
35	1U	EYE TYPE STRAND VISE CLAMP
36	1U	EYE BOLT, 5/8", GALV.,

PRIMARY AND GROUNDING SCHEMATIC	
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER



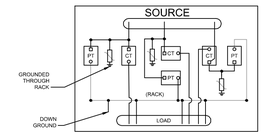
PRIMARY METERING SCHEMATIC



5 CUSTOMER CORNER ANGLE POLE
SCALE:NTS

POLE LINE DETAIL MATERIAL LIST		
NO.	QTY.	DESCRIPTION
1	4U	WOODEN POLE, 40' HIGH, CLASS 2
2	-	NOT USED
3	-	NOT USED
4	-	NOT USED
5	3000 FT X 3	CABLE, #1/0 AWG, 15KV, AL, SHIELDED & CONC. NEUTRAL
6	3U	CABLE TERMINATION, 15KV, OUTDOOR, COLD SHRINK
7	3U	7.6/8KV, MCOV DIST. CLASS ARRESTER
8	280 FT X 4	#1/0 AWG, #2 NEUTRAL, AAAC BARE CABLE
9	140 FT	#6 AWG SOLID COPPER BARE GROUND WIRE
10	1U	VERTICAL POST INSULATOR, 15KV, POLYMER
11	18U	15KV POLYMER DEAD END STRAIN INSULATOR
12	5U	5/8" X 8' COPPER CLAD GROUND ROD
13	10 FT	5" RMCCONDUIT, 90° ELBOW AND COUPLING
14	4U	5" CONDUIT CLAMP
15	60 FT	16" PVC CONDUIT AND COUPLING
16	10U	12" CONDUIT CLAMP
17	18U	FLAT WOODEN CROSSARM BRACE
18	2U	PLATE/POLE EYE, 15000 LBS.
19	10U	3# X 4# X 10' WOODEN CROSSARM
20	80 FT	STEEL GUY WIRE 3/8" + EHS (NIT)
21	3U	15KV CUTOUT, 200A MAX., FUSE HOLDER WITH (3) 140K
22	1U	15KV LOAD BREAK SWITCH, HORIZONTAL, 600A
23	4U	SECONDARY RACK, 1 WIRE
24	4U	SPOOL INSULATOR, 600V, ANSI 53-2
25	1U	METERING SYSTEM 5'x5' A.F.G.
26	3U	CURRENT TRANSFORMER, 15KV, OUTDOOR
27	3U	VOLTAGE TRANSFORMER, 15KV, OUTDOOR
28	3U	WEATHERHEAD, 16" PVC
29	1U	ANCHOR, 8" DIA. X 9" LENGTH
30	200 FT	STEEL MESSENGER CABLE, 1/4"
31	50 FT	CU CABLE #1/0 AWG, XLPE INSULATED
32	3U	BRACKET FOR 15KV CABLE TERMINAL, 1PH.
33	250 FT	LASHING WIRE
34	SEE COMM.	FIBER OPTIC CABLE
35	7U	EYE TYPE STRAND VISE CLAMP
36	7U	EYE BOLT, 5/8", GALV.,

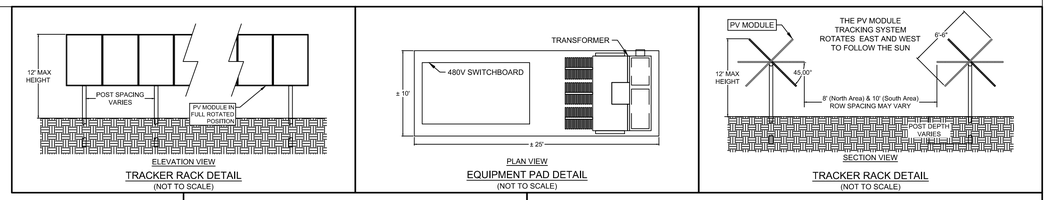
PRIMARY AND GROUNDING SCHEMATIC	
CT	CURRENT TRANSFORMER
PT	POTENTIAL TRANSFORMER
	POLARITY TERMINAL
	LIGHTNING ARRESTER

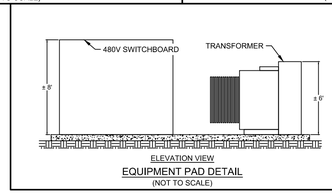


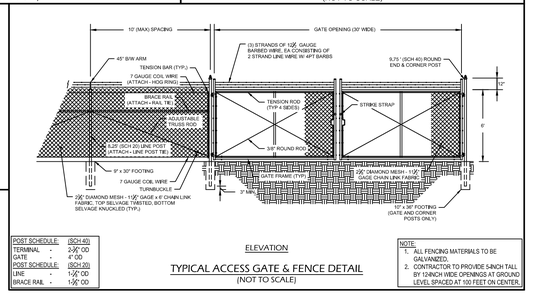
4 PRIMARY AND GROUNDING SCHEMATIC
SCALE:NTS

NOTES:

1. ALL POLES ARE SHOWN AS CONCEPTUAL AND ARE FOR DIAGRAMMATIC PURPOSES ONLY.
2. CONTRACTOR SHALL FURNISH AND INSTALL ALL MISCELLANEOUS CONNECTORS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM.
3. CONTRACTOR SHALL PROVIDE ALL POLE LINE AND MISCELLANEOUS HARDWARE FOR INSTALLING EQUIPMENT. ALL POLE LINE HARDWARE SHALL BE RATED FOR 10000 LBS. MINIMUM.
4. ALL EQUIPMENT AND MATERIALS SHALL BE LISTED FOR THE PURPOSE AND INSTALLED IN ACCORDANCE WITH THE CURRENT VERSION OF THE NEW YORK ELECTRICAL CODE AND NATIONAL ELECTRICAL SAFETY CODE.
5. COMMUNICATION SPACER CABLE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL NECESSARY MATERIAL, HARDWARE, EQUIPMENT, ETC, COMMON WITHIN THE INDUSTRY TO PROVIDE THE CUSTOMER WITH A COMPLETE AND OPERABLE SYSTEM AS INTENDED BY THESE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HELICAL ANCHORS WHERE DOWN GUYS ARE REQUIRED, GUY WIRE SHALL BE MINIMUM OF 3/8" STEEL.
8. ALL CONDUIT RISERS SHALL BE RIGID STEEL CONDUIT AND EXTEND ABOVE GRADE A MINIMUM OF 8 FEET, EXPOSED CONDUIT ENDS SHALL BE SEALED TO PREVENT INGRESS OF MOISTURE,
9. ALL UTILITY POLES SHALL CONFORM TO ANSI 05.1, AWPA C4, ANSI C2 AND ANY OTHER APPLICABLE CODES AND STANDARDS.
10. ALL DOWN GUYS SHALL BE 3/8" STEEL MINIMUM, ANCHORS SHALL BE GALVANIZED SQUARE SHAFT HELICAL WITH A MINIMUM DIAMETER OF 8 INCHES. INSTALLATION OF HELICAL ANCHORS SHALL BE BY EITHER ELECTRICAL OR HYDRAULIC ROTARY TYPE TORQUE MOTOR,
11. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND IN ACCORDANCE WITH THE CURRENT VERSION OF THE NEC AND ALL LOCAL APPLICABLE CODES AND STANDARDS.
12. LIGHTNING ARRESTERS INSTALLED ON RISER POLES SHALL BE RATED FOR RISER INSTALLATIONS.







NOTE:
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CYPRESS CREEK RENEWABLES
3402 PICO BLVD, SANTA MONICA, CA 90405

SEAL

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Langan Engineering and Environmental Services, Inc.
Langan NJ, Inc.
Collectively known as Langan

NO.	DATE	REVISIONS DESCRIPTION
1.	03/30/20	GENERAL REVISIONS PER CLIENT
2.	07/09/20	PLANNING BOARD SUBMISSION

LANGAN NO. 190056901

PROJECT

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

SITE DETAILS (2 OF 2)

C-501

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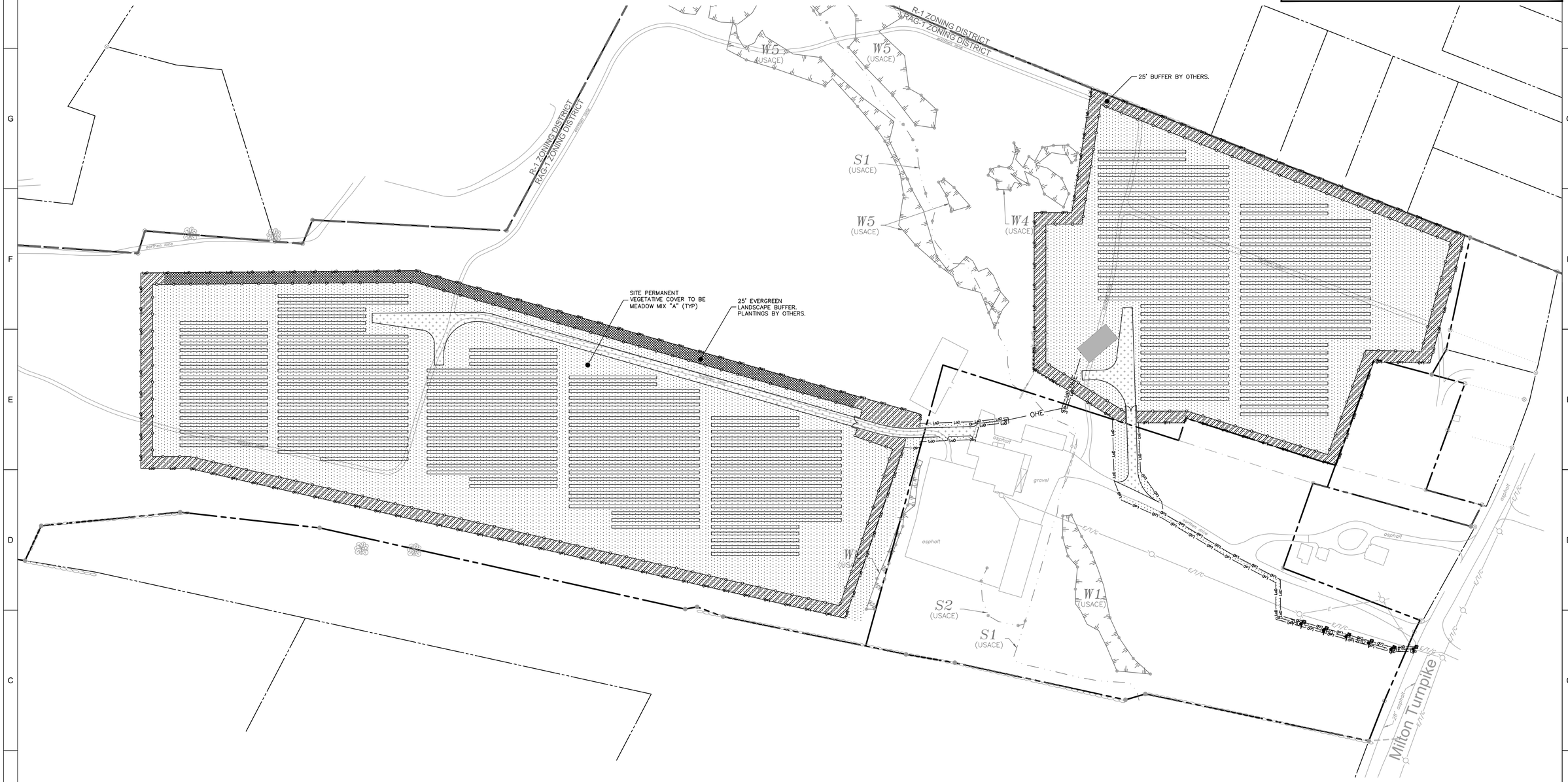
LANDSCAPE NOTES

1. NO HERBICIDES WILL BE USED IN OR NEAR THE FRESH WATER WETLANDS.



LEGEND

EXISTING CONDITIONS		PROPOSED CONDITIONS	
PROPERTY LINES		LIMIT OF DISTURBANCE	LoD LoD
ADJACENT PROPERTY LINES		SECURITY FENCE	
DEED LINES		EQUIPMENT PAD	
EASEMENT LINES		PERMEABLE HAUL ROAD	
ELECTRICAL, TELEPHONE & CABLE LINE	E/T/C	MEADOW MIX "A"	
WETLAND			

GRAPHIC SCALE

100 0 50 100

SCALE IN FEET

NORTH

N

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CYPRESS CREEK RENEWABLES
3402 PICO BLVD, SANTA MONICA, CA 90405

SEAL

MICHAEL SZUKA
LICENSED LANDSCAPE ARCHITECT
STATE OF NEW YORK

PERMIT DRAWING - NOT RELEASED FOR CONSTRUCTION

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CONSULTANT

LANGAN

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, P.C.
Langan CT, Inc.
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Collectively known as Langan

REVISIONS		
NO.	DATE	DESCRIPTION
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2.	07/09/20	PLANNING BOARD SUBMISSION

PROJECT

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

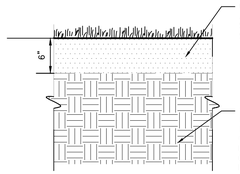
DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

LANDSCAPE PLANS

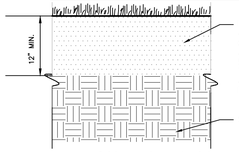
L-100

GENERAL NOTE:

DUE TO GENERAL CONSTRUCTION ACTIVITIES AND ADJACENT SITE COMPACTION REQUIREMENTS, SUBGRADE SOILS WITHIN PROPOSED PLANTING AREAS TEND TO BECOME HIGHLY COMPACTED. IN ORDER TO CREATE A HEALTHY GROWTH MEDIUM TO ALLOW PROPOSED PLANTINGS TO ESTABLISH A VIGOROUS ROOT MASS, THIS SUBGRADE SOIL MUST UNDERGO A RESTORATION PROCESS. IN ADDITION, IMPORTED OR AMENDED EXISTING SOILS SHALL BE MIXED WITH SUBGRADE SOILS WHERE THEY MEET IN ORDER TO CREATE A TRANSITIONAL GRADIENT TO ALLOW FOR PROPER DRAINAGE.



PLANTING SOIL WITHIN AREAS OF CUT OR RAISED GRADE



PLANTING SOIL WITHIN AREAS OF UNCHANGED GRADE

NOTES:

1. CONTRACTOR IS RESPONSIBLE TO SEND SAMPLES OF EXISTING SOILS INTENDED FOR USE IN PLANTING AREAS (1 PER 500 CY.) TO TESTING LABORATORY OR UNIVERSITY COOPERATIVE EXTENSION FOR TESTING. ALL TESTING COSTS ARE AT THE CONTRACTOR'S EXPENSE.
2. RECYCLED CRUSHED CONCRETE AND ASPHALT MILLINGS SHALL NOT BE PLACED WITHIN 2'-6" OF FINISH GRADE IN PROPOSED LANDSCAPE AREAS.
3. IMPORTED FILL SHALL CONTAIN NO CONTAMINATION IN EXCEEDENCE OF THE APPLICABLE STATE ENVIRONMENTAL STANDARDS AND MEET THE ENVIRONMENTAL REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF COMPLIANCE PRIOR TO DELIVERY OF ANY FILL TO THE SITE.
4. CONTRACTOR TO LIGHTLY COMPACT ALL PLACED PLANTING SOILS AND RAISE GRADES ACCORDINGLY TO ALLOW FOR FUTURE SETTLEMENT OF PLANTING SOILS (TYP.)
5. NO STONES, WOOD CHIPS, OR DEBRIS LARGER THAN 1/2" SHALL BE ACCEPTABLE WITHIN PLANTING AREAS.

1 PLANTING SOIL

GENERAL LANDSCAPE PLANTING NOTES

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION, PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.
2. ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A NATURAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.
3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.
4. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.
5. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.
6. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.
7. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER, AND THEN WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.
8. LANDSCAPE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.
9. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.
10. DELIVERY, STORAGE, AND HANDLING
    A. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.
    B. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY ARE TO BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP BALLED AND BURLAPPED STOCK DURING DELIVERY OR HANDLING.
    C. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOTBALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING. IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8 INCHES INTO THE PLANTING HOLE. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.
    D. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.
11. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.
12. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.
13. ALL PLANTINGS AND PLANTING AREAS SHALL BE PERMANENTLY MAINTAINED. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF TWO YEARS FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
14. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.
15. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-- HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.
16. THE BACKFILL MIXTURE AND SOIL MIXES TO BE INSTALLED PER THE SPECIFICATIONS.
17. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE AND SUBGRADE DRAINAGE OR PERCOLATION CHARACTERISTICS, WHETHER THE SUBGRADE SOILS ARE EXISTING TO REMAIN OR IMPORTED AND PLACED. CONTRACTOR TO ENSURE POSITIVE VERTICAL DRAINAGE THROUGHOUT PLANTED AREAS. DISCREPANCIES SHALL BE ADDRESSED WITH THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PURCHASING PLANT MATERIALS.
18. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.
19. MULCH SHALL BE A FIBROUS SHREDDED HARDWOOD MULCH. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.
20. ALL FENCE AND GUIDE RAIL INSTALLATIONS SHALL BE COMPLETED PRIOR TO COMMENCEMENT OF ANY LANDSCAPE PLANTING, LAWN AND GRASSES, OR IRRIGATION WORK.
21. FOR ANY DISCREPANCIES BETWEEN THE PLANT SCHEDULE AND PLANTING PLAN THE GRAPHIC QUANTITY SHOWN SHALL GOVERN.
22. PLANT MATERIALS SHALL NOT BE PLANTED UNTIL THE FINISHED GRADING HAS BEEN COMPLETED.
23. ALL PLANT INSTALLATIONS SHALL BE COMPLETED EITHER BETWEEN APRIL 1 – JUNE 15 OR AUGUST 15 – NOVEMBER 1, UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT. SEE LAWN SEEDING DATES IN SEEDING NOTES.
24. LANDSCAPE PUNCH LIST SITE VISITS TO BE PERFORMED BY THE PROJECT LANDSCAPE ARCHITECT, IF UNDER CONTRACT FOR SUCH WORK, WILL NOT BE SCHEDULED UNTIL CONFIRMATION IS RECEIVED THAT ALL PROPOSED LANDSCAPE ITEMS HAVE BEEN INSTALLED, OR DEFICIENCIES NOTED IN THE PRIOR PUNCH LIST REPORT HAVE BEEN CORRECTED. THE PUNCH LIST SITE VISIT WILL THEN BE PERFORMED WITHIN 10 BUSINESS DAYS.

LANDSCAPE MAINTENANCE NOTES

1. MAINTENANCE OPERATIONS BEFORE APPROVAL:
   A. PLANT CARE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS SATISFACTORILY INSTALLED AND SHALL CONTINUE THROUGHOUT THE LIFE OF THE CONTRACT UNTIL FINAL ACCEPTANCE OF THE PROJECT.
   B. CARE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS AS ORIGINALLY INSTALLED, WATERING WHEN NEEDED OR DIRECTED, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.
   C. CONTRACTOR SHALL REMOVE AND REPLACE ALL DEAD, DEFECTIVE AND/OR REJECTED PLANTS AS REQUIRED BEFORE FINAL ACCEPTANCE.
2. MAINTENANCE DURING CONSTRUCTION:
   A. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED, AND OTHERWISE MAINTAINED AND PROTECTED UNTIL PROVISIONAL ACCEPTANCE. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE AND POSITION, PLANTING SAUCER RESTORED AND DEAD MATERIAL REMOVED. STAKES AND WIRES SHALL BE TIGHTENED AND REPAIRED. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT.
   B. IF A SUBSTANTIAL NUMBER OF PLANTS ARE SICKLY OR DEAD AT THE TIME OF INSPECTION, ACCEPTANCE SHALL NOT BE GRANTED AND THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF ALL PLANTS SHALL BE EXTENDED UNTIL REPLACEMENTS ARE MADE OR EXISTING PLANTS ARE DEEMED ACCEPTABLE BY THE LANDSCAPE ARCHITECT.
   C. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST. THEY SHALL BE FURNISHED AND PLANTED AS SPECIFIED ABOVE. THE COST SHALL BE BORNE BY THE CONTRACTOR. REPLACEMENTS RESULTING FROM REMOVAL, LOSS, OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART, VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTAILMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE OWNER.
   D. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER INSPECTION AND PROVISIONAL ACCEPTANCE.
   E. AT THE END OF THE ESTABLISHMENT PERIOD, INSPECTION SHALL BE MADE AGAIN. ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR UNSATISFACTORY TO THE LANDSCAPE ARCHITECT OR OWNER SHALL BE REMOVED FROM THE SITE. THESE SHALL BE REPLACED DURING THE NORMAL PLANTING SEASON.

PLANTING SOIL SPECIFICATIONS

PLANTING SOIL SHOULD BE FRIABLE, FERTILE, WELL DRAINED, FREE OF DEBRIS, TOXINS, TRASH AND STONES OVER 1/2" DIA., IT SHOULD HAVE A HIGH ORGANIC CONTENT SUITABLE TO SUSTAIN HEALTHY PLANT GROWTH AND SHOULD LOOK AESTHETICALLY PLEASING HAVING NO NOXIOUS ODORS.

PLANTING SOIL:
CONTRACTOR SHALL TEST SOILS AND FURNISH SAMPLES UPON REQUEST. PACKAGED MATERIALS SHALL BE UNOPENED BAGS OR CONTAINERS, EACH BEARING A NAME, GUARANTEE, AND TRADEMARK OF THE PRODUCER, MATERIAL COMPOSITION, MANUFACTURER'S CERTIFIED ANALYSIS, AND THE WEIGHT OF THE MATERIALS. SOIL OR AMENDMENT MATERIALS SHALL BE STORED ON SITE TEMPORARILY IN STOCKPILES PRIOR TO PLACEMENT AND SHALL BE PROTECTED FROM INTRUSION OF CONTAMINANTS AND EROSION. AFTER MIXING, SOIL MATERIALS SHALL BE COVERED WITH A TARPAULIN UNTIL TIME OF ACTUAL USE.

THE FOLLOWING TESTING SHOULD BE PERFORMED AND RESULTS GIVEN TO THE LANDSCAPE ARCHITECT FOR APPROVAL BEFORE INSTALLATION:
a. PARTICLE SIZE ANALYSIS – LOAMY SAND: 70–85% SAND, 15–30% SILT AND CLAY
b. FERTILITY ANALYSIS: pH (5.5–6.5), SOLUBLE SALTS (0.25–0.60 MICRO–OHMS/CM), NITRATE, PHOSPHATE, POTASSIUM, CALCIUM AND MAGNESIUM
c. ORGANIC MATTER CONTENT: 7–10%
d. TOXIC SUBSTANCE ANALYSIS
e. MATERIAL DRAINAGE RATE: 60% PASSING IN 2 MINUTES, 40% RETAINED

ORGANIC MATTER AS A SOIL AMENDMENT: LEAF MOLD WITH 60–90% ORGANIC CONTENT BY WEIGHT. SHREDDED LEAF LITTER, COMPOSTED FOR A MINIMUM OF 1 YR. SHOULD BE FREE OF DEBRIS, STONES OVER 1/2", WOOD CHIPS OVER 1".

SOIL AMENDMENT FOR PLANT MATERIAL:
SOIL IN BEDS AND PLANTING ISLANDS OTHER THAN BACKFILL MATERIAL AND TOPSOIL, SHOULD BE FRIABLE, WELL DRAINED, AND FREE OF DEBRIS, INCLUDING STONES AND TRASH.
–AMENDMENTS FOR BACK FILL IN TREE AND SHRUB PITS:
   A. GROUND LIMESTONE (WITH A MIN. OF 88% OF CALCIUM AND MAGNESIUM CARBONATES) USED PENDING RESULTS OF SOIL ANALYSIS.
      – BRING pH LEVELS TO 5.5 MIN. TO 6.5 FOR NON–ERICACEOUS PLANTS
      – BRING pH LEVELS TO 4.5 MIN. TO 5.5 FOR ERICACEOUS PLANTS
   B. TERRA–SORB BY 'PLANT HEALTH CARE' 800–421–9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN PLANTER BACKFILL MIXTURE WITH TREES AND SHRUBS.
   C. MYCOR–ROOT SAVER BY 'PLANT HEALTH CARE' 800–421–9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN BACKFILL MIXTURE WITH TREES.
6. CLEAN SOIL FILL IN LANDSCAPE AREAS:
   LANDSCAPE FILL MATERIAL SHALL HAVE THE PHYSICAL PROPERTIES OF A SANDY LOAM WITH AN ORGANIC CONTENT OF LESS THAN 2% AND A PH BETWEEN 5 – 7.
7. SOIL CONDITIONING:
   CONTRACTOR TO PROVIDE SIX INCHES (6") MINIMUM DEPTH PLANTING SOIL LAYER IN LAWN AREAS, TWELVE INCHES (12") MINIMUM DEPTH PLANTING SOIL LAYER IN GROUNDCOVER AND PERENNIAL AREAS, EIGHTEEN INCHES (18") MINIMUM DEPTH PLANTING SOIL LAYER IN SHRUB AREAS, AND THIRTY–SIX INCHES (36") MINIMUM DEPTH PLANTING SOIL LAYER IN TREE PLANTING AREAS. PLANTING SOIL SHOULD BE SPREAD OVER A PREPARED SURFACE IN SIX INCH (6") LIFTS UNTIL FULL DEPTHS ARE ACHIEVED AS DESCRIBED ABOVE. PLANTING SOIL PRESENT AT THE SITE, IF ANY, MAY BE USED TO SUPPLEMENT TOTAL AMOUNT REQUIRED. CONTRACTOR TO FURNISH AN ANALYSIS OF ON–SITE PLANTING SOIL UTILIZED IN ALL PLANTING AREAS. ADJUST pH AND NUTRIENT LEVELS AS REQUIRED TO ENSURE AN ACCEPTABLE GROWING MEDIUM. LOWER pH USING ELEMENTAL SULFUR ONLY. PEAT MOSS OR COPPER SULFATE MAY NOT BE USED. GROUND LIMESTONE AS A SOIL AMENDMENT MATERIAL WILL ONLY BE USED PENDING RESULTS OF SOIL ANALYSIS. PROVIDE WITH MINIMUM 88% CALCIUM AND MAGNESIUM CARBONATES AND SHALL HAVE TOTAL 100% PASSING THE 10 MESH SIEVE, MINIMUM 90% PASSING 20 MESH SIEVE, AND MINIMUM 60% PASSING 100 MESH SIEVE. ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

   SOIL MODIFICATIONS (PENDING RESULTS OF SOIL ANALYSIS):
   THOROUGHLY TILL ORGANIC MATTER (LEAF COMPOST) INTO THE TOP 6 TO 12 IN. OF MOST PLANTING SOILS TO IMPROVE THE SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A pH HIGHER THAN 7.0. PEAT MOSS MAY NOT BE USED AS ORGANIC MATTER AMENDMENT.

   MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. IMPROVE DRAINAGE IN HEAVY SOILS BY PLANTING ON RAISED MOUNDS OR BEDS AND INCLUDING SUBSURFACE DRAINAGE LINES.

   MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

MEADOW SEEDING NOTES

1. SITE TO BE CLEARED WITHIN THE LIMITS OF DISTURBANCE. ALL EXISTING TREES, INCLUDING WOODY AND SHRUB VEGETATION, SHALL BE REMOVED. MEADOW SEED MIX "A" (SPECIFIED BELOW) WILL BE USED TO STABILIZE THE DISTURBED AREA WITHIN THE LIMITS OF DISTURBANCE.

2. SITE PERMANENT VEGETATIVE COVER (MEADOW MIX A) ERNST SEED MIX ERNMX–186 "ERNST SOLAR FARM SEED MIX"

35% FESTUCA RUBRA	CREEPING RED FESCUE
35% FESTUCA RUBRA SSP. COMMUTATA	CHEWINGS FESCUE
10% FESTUCA BREVIPILA, 'BEACON'	ARD FESCUE, 'BEACON'
10% FESTUCA OVINA VAR. DURIUSCULA, 'JETTY'	HARD FESCUE, 'JETTY'
5% POA PRATENSIS, 'BLUE ANGEL'	KENTUCKY BLUEGRASS, 'BLUE ANGEL'
5% POA PRATENSIS, 'VOLT'	KENTUCKY BLUEGRASS, 'VOLT'

NOTES:
1. SEED AT A RATE OF 260 LBS./ACRE OF 100% PURE LIVE SEED.
2. FOR SPRING SEEDING, APPLY A NURSE CROP OF OATS AT A RATE OF 30 LBS./ ACRE.
3. FOR FALL SEEDING, APPLY A NURSE CROP OF WINTER RYE AT A RATE OF 30 LBS./ ACRE.

MEADOW MIX 'A' ESTABLISHMENT WATERING AND MAINTENANCE SCHEDULE

THE FOLLOWING WATERING SCHEDULE COVERS ROUGHLY 8 WEEKS TO ESTABLISH A HEALTHY STAND OF GRASS FROM SEED. THE CONTRACTOR SHALL BE OBLIGATED TO ENSURE A HEALTHY STAND OF GRASS AT THE END OF THE MAINTENANCE/BOND PERIOD. ANY BARE OR DEAD AREAS IN THE LAWN SHALL BE PREPARED, RE-SEEDED AND RE-ESTABLISHED PRIOR TO THE END OF THE MAINTENANCE/BOND PERIOD AND TO THE SATISFACTION OF THE PROJECT LANDSCAPE ARCHITECT AND THE OWNER.

IMPORTANT ASPECTS TO ATTAINING AND SUSTAINING A HEALTHY STAND OF GRASS ARE THE INSTALLATION OF TOPSOIL, SEED BED PREPARATION, ATTAINING OPTIMAL pH FOR THE INTENDED PLANT SPECIES, FERTILIZING, MULCH COVERING, AND SUFFICIENT WATERING PER THESE NOTES AND/OR PROJECT SPECIFICATIONS.

1. ELIMINATE UNWANTED VEGETATION PRIOR TO SEEDING USING A BROAD–SPECTRUM NON–SELECTIVE HERBICIDE PER MANUFACTURER'S SPECIFICATIONS.
2. SEEDING SHALL BE DONE PREFERABLY IN THE FALL BETWEEN SEPTEMBER 1 TO OCTOBER 1, OTHERWISE SEED IN THE SPRING BETWEEN APRIL 1 AND JUNE 1.
3. IT IS RECOMMENDED THAT CONTRACTOR INSTALL SEED MIXTURE USING A NO–TILL TRUAX–TYPE DRILL WHERE APPLICABLE.
4. AFTER THE SEEDBED IS PREPARED, SEED IS INSTALLED, AND MULCH IS APPLIED, WATER LIGHTLY TO KEEP THE TOP 2 INCHES OF SOIL CONSISTENTLY MOIST, NOT SATURATED. AT NO TIME SHOULD WATER BE APPLIED TO THE POINT OF RUNOFF OR THE DISPLACEMENT OF SEED.
5. DEPENDING ON SOIL TEMPERATURES, IT MAY TAKE SEVERAL WEEKS FOR GERMINATION TO OCCUR. DIFFERENT SPECIES WITHIN THE MIX GERMINATE AT DIFFERENT TIMES AND THEREFORE CONTRACTOR SHOULD CONTINUE THE LIGHT WATERING, AS DESCRIBED ABOVE, UNTIL THERE IS AT LEAST 2 INCHES OF GROWTH THROUGHOUT.
6. AT THIS POINT, WATERING FREQUENCY MAY BE REDUCED TO EVERY 3 TO 5 DAYS. WATER SHALL BE APPLIED TO WET A 6 INCH MINIMUM SOIL DEPTH TO PROMOTE HEALTHY DEEP ROOTS.
7. MOW TO A HEIGHT OF NO LESS THAN 4 INCHES AFTER THE FESCUE SEED HEADS DEVELOP IN MID–SUMMER, IF A MORE MANICURED LOOK IS DESIRED. OTHERWISE, THE SEED HEADS SHOULD LAY DOWN BY LATE SUMMER. CONTINUE TO WATER TO A 6 INCH MINIMUM SOIL DEPTH AS NECESSARY PER WEATHER CONDITIONS, AND SOIL MOISTURE SENSORS IF APPLICABLE.
8. DURING THE FIRST 2–4 YEARS OF ESTABLISHMENT, AND AFTER ESTABLISHMENT DEPENDING ON THE LOOK DESIRED, ADDITIONAL MOWING TO NO LESS THAN 4 INCHES MAY BE REQUIRED, AS WELL AS SELECTIVE WEEDING WITH A BROADLEAF WEED–CONTROL HERBICIDE, OVER–SEEDING BARE SPOTS AND WATERING TO PROMOTE A THICK, UNIFORM DROUGHT–TOLERANT STAND OF GRASS.
9. AFTER YEARS OF ESTABLISHMENT, A LAYER OF THATCH (DEAD GRASS) MAY BUILD UP, AT THE SOIL SURFACE. A THATCH LAYER MAY MOTHER NEW GRASS FROM DEVELOPING, CAUSING DEAD AND BARE SPOTS. REMOVE THATCH FROM FESCUE LAWN WHEN A THATCH LAYER BECOMES VISIBLE UPON INSPECTION. DO NOT DE–THATCH TO A DEPTH THAT WILL DIG UP SOIL. RAKE AND REMOVE THATCH. ANY BARE OR THIN SPOTS SHOULD BE OVER–SEEDED AND WATERED PER THE NOTES HEREIN. DE–THATCH ONLY IN MID–SPRING AFTER THE GRASS HAS "GREENED UP" AND STARTED ACTIVE GROWTH. DE–THATCHING IN EARLY SPRING BEFORE THE GRASS BEGINS TO GROW AGAIN WILL ONLY ENCOURAGE WEEDS.
10. FERTILIZERS ARE NOT GENERALLY NEEDED OR RECOMMENDED FOR FESCUE LAWNS UNLESS SOIL TEST RESULTS SHOW A SIGNIFICANT LACK OF NUTRIENTS. USE ONLY SLOW–RELEASE FERTILIZERS WITH LITTLE TO NO NITROGEN IN APRIL OR SEPTEMBER.

LANDSCAPE BUFFER AREA

THE LANDSCAPE BUFFER AREA ALONG THE EASTERN SIDE OF THE NORTHERN ARRAY AREA SHALL BE A SINGLE ROW OF EVERGREEN TREES TO PROVIDE SCREENING FOR THE ADJACENT PROPERTY.

WARNING: IT IS A VIOLATION OF THE NYS EDUCATION LAW ARTICLE 145 FOR ANY PERSON, UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS ITEM IN ANY WAY.

CYPRESS CREEK RENEWABLES
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LANDSCAPE ARCHITECT
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STATE OF NEW YORK

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REVISIONS		
NO.	DATE	DESCRIPTION
1.	03/30/20	GENERAL REVISIONS PER CLIENT
2.	07/06/20	PLANNING BOARD SUBMISSION

LANGAN NO. 190056901

PROJECT
INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE,
MARLBOROUGH, NY 12547

DATE:	02/07/2020
DRAWN BY:	EK
CHECKED BY:	CZ

LANDSCAPE DETAILS

L-500

EXHIBIT E. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

STORMWATER POLLUTION PREVENTION PLAN

for

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Prepared For:

Independent Solar, LLC
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Prepared By:

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February 11, 2020

LANGAN

Project No.: 190056901

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

February 11, 2020

Preparer of the SWPPP

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 SPDES General Permit for Stormwater Discharges from Construction Activity. 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 or administrative proceedings.

Name: Michael Finan, PE, LEED-AP

Date: February 21, 2020

LANGAN

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1 Executive Summary

This Stormwater Pollution Prevention Plan (SWPPP) and accompanying project plans have been prepared in accordance with the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (General Permit) latest revision, the *New York State Stormwater Management Design Manual* (*Design Manual*) latest revision, and the *New York State Standards and Specifications for Erosion and Sediment Control* latest revision. The Applicant, Independent Solar, LLC is proposing to develop ±78.0 acre property at 206 Milton Turnpike, in the Town of Marlborough, Ulster County, New York. The project, Independent Solar, LLC, is a large-scale solar energy system that consists of solar racks, permeable haul road, perimeter fencing, and grass filer strip. Access to the site is provided by a 20-foot wide permeable haul road. The project will maintain existing drainage patterns as much as practical; therefore, no changes in hydrology are expected.

The pre- and post-development conditions were analyzed using the USDA Soil Conservation Service Publication Technical Release (TR-55) "Urban Hydrology for Small Watersheds", which provides procedures for estimating runoff and peak discharges in small watersheds. The analysis is based upon the watershed areas, land coverage, soil group types, curve numbers (CN), times of concentration (Tc), rainfall distribution type, and rainfall amount for the design storm events. The pre- and post-development peak discharge rates of runoff have been evaluated utilizing stormwater modeling software. An overall comparison of the pre- and post-development peak discharge rates for each of the design storms analyzed is provided in the table below.

Table 1-1: Overall Comparison of Pre- & Post-Development Peak Discharge Rates

Storm Event	Pre (cfs)	Post (cfs)	Diff (cfs)
1-year	81.66	73.16	-8.50
10-year	218.77	206.66	-12.11
25-year	302.19	289.15	-13.04
100-year	471.75	458.08	-13.67

The overall comparison of the pre- and post-development stormwater runoff peak discharge rates demonstrates no significant adverse impacts to the design points analyzed. In addition, the erosion control, sediment control, pollution-prevention, and stormwater management measures to be implemented during construction as outlined in this SWPPP and project drawings will minimize soil erosion and control sediment transport off site, and after construction will control the water quality and quantity of stormwater runoff.

2 Project Information

The Applicant is proposing to develop a property in the Town of Marlborough, Ulster County, New York (see Figure 1). Below is a summary of the project information:

Table 2-1: Project Summary

Project Name:	Independent Solar, LLC
Project Location:	206 Milton Turnpike Marlborough, New York
Property Tax ID No.:	Section 95.4, Block 3 Lot 7.21
Property Acreage:	78.0 acres
Municipality:	Town of Marlborough, which is an municipal separate storm sewer system (MS4)
Project Description:	Ground-mounted solar facility accessed by a permeable haul road and enclosed by a chain link fence.
Estimated Disturbed Area:	±78.0 acres, which does require coverage under the SPDES General Permit
Existing Site Conditions:	Woods (fair condition), grass (fair condition), impervious area (gravel, pavement, and buildings), pasture (farmland) and water. 1.5 acres of existing impervious area
Proposed Site Conditions:	Woods (fair condition), grass (fair condition), impervious area (gravel, pavement, building, and equipment pads), pasture (farmland), Meadow, permeable haul road (pervious) and water. 0.1 acres of proposed impervious area
Stormwater Management Practices:	Grass filter strips
Construction Duration:	From Spring 2021 to Spring 2022, including planned winter shutdowns.

Coverage under the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (General Permit) latest revision will be required (see Appendix A), since the project involves soil disturbance of 1 or more acres. The proposed project is also in a municipal separate storm sewer system (MS4); therefore, the Town of Marlborough will review and accept the SWPPP. The Notice of Intent (NOI) form and signed "MS4 SWPPP Acceptance" form will be submitted to the NYSDEC before construction begins to obtain coverage under the SPDES General Permit. The forms have been provided in Appendix B.

3 Site Conditions

3.1 Soils

The United States Department of Agriculture (USDA) Soil Conservation Service Soil Survey for Ulster County has been reviewed. The surficial soil conditions are shown in Figure 2 and are summarized in the table below.

Table 3-1: USDA Soil Data

Map Symbol	Description	Depth to Groundwater (ft)	Depth to Bedrock (in)	Hydrologic Soil Group
At	Atherton silt loam	0.0 – 0.5 (Nov-June)	>60	D
BgC	Bath gravelly silt loam 8% to 15% slopes	2.0 - 4.0 (Nov-Mar)	>60	C
BgD	Bath gravelly silt loam 15% to 25% slopes	2.0 - 4.0 (Nov-Mar)	>60	C
BnC	Bath-Nassau complex, 8% to 25% slopes	2.0 - 4.0 (Nov-Mar)	40	C
BOD	Bath-Nassau-Rock outcrop complex, hilly	2.0 - 4.0 (Nov-Mar)	40	C
Cd	Canandaigua silt loam, till substratum	0 – 1.0 (Nov – May)	>60	C
CgA	Castile gravelly silt loam, 0% to 3% slopes	1.5 – 2.0 (Mar-May)	>60	D
MdB	Mardin gravelly silt loam, 3% to 8% slopes	1.5 – 2.0 (Nov – Apr)	>60	D
MgB	Mardin-Nassau complex, 3% to 8% slopes	Varies[1]	Varies[2]	D
VoB	Volusia gravelly silt loam, 3% to 8% slopes	0.5 – 1.5 (Dec-May)	>60	D
VoC	Volusia gravelly silt loam, 8% to 15% slopes	0.5 – 1.5 (Dec-May)	>60	D

1. The depth to groundwater for the Mardin component is 1.5 feet to 2.0 feet (November to April) and Nassau component is greater than 6.0 feet.
2. The depth to bedrock for the Mardin component is 40 inches and Nassau component is 10 inches to 20 inches.

The Soil Conservation Service defines the hydrologic soil groups as follows:

- **Type A Soils**: Soils having a high infiltration rate and low runoff potential when thoroughly wet. These soils consist mainly of deep, well-drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

- **Type B Soils**: Soils having a moderate infiltration rate when thoroughly wet. These soils consist mainly of moderately deep to deep, moderately well to well-drained soils with moderately fine to moderately course textures. These soils have a moderate rate of water transmission.

- **Type C Soils**: Soils having a low infiltration rate when thoroughly wet. These soils consist mainly of soils with a layer that impedes downward movement of water, and soils with moderately fine to fine texture. These soils have a low rate of water transmission.

- **Type D Soils**: Soils having a very low infiltration rate and high runoff potential when thoroughly wet. These soils consist mainly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very low rate of water transmission.

3.2 Water Resources

A wetland and waterbody delineation was conducted on April 29 and 30, 2019. Six (6) wetlands were identified within the total property area. All six (6) wetlands are a potential USACE jurisdictional and are identified on the plans as wetlands W-1, W-2, W-3, W-4, W-5 and W-6. In addition to the six (6) wetlands, three (3) waterbodies were identified within the total property area. All of the streams, identified as streams S-1, S-2, and S-3 are under a potential USACE jurisdiction. Streams S-1 were classified by the NYSDEC as Class C waterbodies, respectively. Stream S-1, the Class C waterbody, is therefore under NYSDEC jurisdiction in addition to USACE jurisdiction. Stream S-1, the Class C waterbody, does not have a setback requirement because although it is classified by the NYSDEC, Class C waterbodies are not regulated by the NYSDEC.

Aquifer mapping was reviewed to determine whether the site is over a sole source, primary or principal aquifer. According to the Environmental Protection Agency "Sole Source Aquifers" map, the site is not over a sole-source aquifer. According to the NYSDEC "Primary and Principal Aquifers in New York State" map, the site is not over a primary aquifer or a principal aquifer.

3.3 Floodplains

The Flood Insurance Rate Map (FIRM) Community Panel Number 36111C0790E with an effective date of September 25, 2009 was reviewed. According to Panel 790 of 910, the property is within Zone X (see Figure 3). Zone X is defined as "areas determined to be outside the 0.2% annual chance floodplain."

3.4 Cultural Resources

According to the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Cultural Resource Information System (CRIS), the property is not within an archaeological sensitive area; not listed or eligible for listing on the state or national registers of historic places; and not adjacent to a place listed or eligible for listing on the state or national registers of historic places (see Figure 4).

4 Stormwater Management Plan

4.1 Process for Stormwater Site Planning and Practice Selection Compliance

4.1.1 Site Planning

Preservation of Natural Features and Conservation

Preservation of natural features includes techniques to identify and preserve natural areas that can be used to protect water, habitat and vegetative resources. Conservation includes designing elements of the development in a way that the site design takes advantage of a site's natural features, preserves sensitive areas and identifies constraints and opportunities to prevent or reduce negative effects of a development. An evaluation of the preservation of natural features and conservation planning practices is provided in the table below.

Table 4-1: Preservation of Natural Features and Conservation

Practice	Description	Application	Reason
Preservation of Undisturbed Areas	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	N/A	--
Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	N/A	--
Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	Yes	None
Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	Yes	None
Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	N/A	--
Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	Considered and Applied	--

Reduction of Impervious Cover

Reduction of impervious cover includes methods to reduce the amount of rooftops, parking lots, roadways, sidewalks, and other surfaces that do not allow rain to infiltrate into the soil. An evaluation of the reduction of impervious cover techniques is provided in the table below.

Table 4-2: Reduction of Impervious Cover

Practice	Description	Application	Reason
Roadway Reduction	Minimize roadway widths and lengths to reduce site impervious area	N/A	--
Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	N/A	--
Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	N/A	--
Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	N/A	--
Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	N/A	--
Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	N/A	--

Runoff Reduction Techniques

Green infrastructure techniques use the natural features of the site and promote runoff reduction through micromanaging runoff, promoting groundwater recharge, increasing losses through evapotranspiration, and emulating the existing hydrology. An evaluation of the runoff reduction practices is provided in the table below.

Table 4-3: Runoff-Reduction Practices

Practice	Description	Application	Reason
Conservation of Natural Areas	Retain the pre-development hydrologic and water quality characteristics of undisturbed natural areas, stream and wetland buffers by restoring and/or permanently conserving these areas on a site.	N/A	--
Sheet flow to Riparian Buffers or Filter Strips	Undisturbed natural areas such as forested conservation areas and stream buffers or vegetated filter strips and riparian buffers can be used to treat and control stormwater runoff from some areas of a development project.	Considered and Applied	--
Vegetated Open Swale	The natural drainage paths, or properly designed vegetated channels, can be used instead of constructing underground storm sewers or concrete open channels to increase time of concentration, reduce the peak discharge, and provide infiltration.	N/A	--
Tree Planting/Tree Box	Plant or conserve trees to reduce stormwater runoff, increase nutrient uptake, and provide bank stabilization. Trees can be used for applications	N/A	--

Practice	Description	Application	Reason
	such as landscaping, stormwater management practice areas, conservation areas and erosion and sediment control.		
Disconnection of Rooftop Runoff	Direct runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas to reduce runoff volumes and rates.	N/A	--
Stream Daylighting for Redevelopment Projects	Stream Daylight previously-culverted/piped streams to restore natural habitats, better attenuate runoff by increasing the storage size, promoting infiltration, and help reduce pollutant loads.	N/A	--
Rain Garden	Manage and treat small volumes of stormwater runoff using a conditioned planting soil bed and planting materials to filter runoff stored within a shallow depression.	N/A	--
Green Roof	Capture runoff by a layer of vegetation and soil installed on top of a conventional flat or sloped roof. The rooftop vegetation allows evaporation and evapotranspiration processes to reduce volume and discharge rate of runoff entering conveyance system.	N/A	--
Stormwater Planter	Small landscaped stormwater treatment devices that can be designed as infiltration or filtering practices. Stormwater planters use soil infiltration and biogeochemical processes to decrease stormwater quantity and improve water quality.	N/A	--
Rain Tank/Cistern	Capture and store stormwater runoff to be used for irrigation systems or filtered and reused for non-contact activities.	N/A	--
Porous Pavement	Pervious types of pavements that provide an alternative to conventional paved surfaces, designed to infiltrate rainfall through the surface, thereby reducing stormwater runoff from a site and providing some pollutant uptake in the underlying soils.	N/A	--

4.1.2 Water Quality Treatment Volume Determination

The total required water quality volume was determined by totaling the individual water quality volumes for each of the subcatchments that contributed to a stormwater management system and excluding the subcatchments that were diverted from the proposed development and stormwater management systems. The water quality volume was determined based on the methodology as described in the Design Manual. The total required water quality volume detailed design calculations are provided in Appendix E.

4.1.3 Runoff Reduction Volume Determination

In addition to the applied runoff reduction techniques discussed previously, standard stormwater management facilities with runoff reduction capacity were used to reduce the total water quality volume. After applying the runoff reduction volume techniques, the total required water quality volume was reduced 100 percent. Therefore, the total required water quality volume has been met. Detailed design calculations have been provided in Appendix E.

4.1.4 Standard Stormwater Management Practice Application

The total water quality volume has been 100% reduced through the application of runoff reduction practices; therefore, no additional standard stormwater management practices are required.

4.1.5 Volume and Peak Control Practice Application

The project was designed to minimize any changes to the hydrology that would result in an increase in the discharge rate. Since 100% of the runoff reduction has been reduced the channel protection volume requirement is being waived.

In addition, comparison of the peak discharge rates for pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the proposed development are less than or equal to the existing conditions. Detailed design calculations have been provided in Appendix E.

4.2 Hydrologic Analysis

4.2.1 Drainage Patterns

The site is located within the Basic Creek and Hudson River Watershed. Looking at the proposed lease portion of the property, in the existing conditions, stormwater runoff generally flows overland either southwest or southeast. There is a high point at the northwestern portion within the property. The stormwater runoff flows from the high point to the surrounding properties and the on-site wetlands. There is a ridge along the western property line which directs stormwater runoff to the on-site wetlands. For the purpose of this drainage analysis, we have analyzed the stormwater runoff leaving the site from two points. Most of runoff flowing east makes its way into stream, and leaves the site flowing east toward the pond through a twin 30" CMP and flows to the adjacent property's pond. Other runoff flowing northwest leaves the site through a 36" CPP culvert running underneath Mahoney Road.

In the proposed conditions, stormwater runoff outside the development will continue to flow overland in the same direction as in the existing conditions. Stormwater runoff within the development will follow the existing drainage patterns as much as possible.

4.2.2 Stormwater Modeling

The USDA Soil Conservation Service Publication Technical Release (TR-55) "Urban Hydrology for Small Watersheds" has been used to analyze the pre- and post-development rainfall runoff rates

and volumes. Watershed areas, curve numbers (CN), and times of concentration (T_C) were calculated for each contributing watershed. The curve number is a land-sensitive coefficient that dictates the relationship between total rainfall depth and direct storm runoff. Based on the land coverage and soil group types, the average CN has been determined for both the pervious and impervious area of each watershed for both the existing and proposed conditions.

The T_C is defined as the time for runoff to travel from the hydraulically most distant point in the watershed to a Design Point (DP). Values of the time of concentration were determined for both the pervious and impervious area of each watershed for both the existing and proposed conditions based on land cover and slope of the flow path using methods outlined in TR-55. As per TR-55, the minimum T_C used in 0.1 hours (for 6 minutes).

An overall watershed boundary was developed for the pre- and post-development conditions (see Figure 5 and Figure 6, respectively). The overall watershed was broken down into smaller watersheds, or subcatchments to allow for analysis of runoff conditions at several locations. Each of these locations is defined as a Design Point (DP) to compare the proposed development to the existing conditions. Descriptions of each of the selected design points are provided below:

- Design Point 1: Twin 30" CMP to the adjacent property's pond.
- Design Point 2: 36" CPP culvert underneath Mahoney Road.

Rainfall data used in the modeling and analysis was obtained from the isohyet maps provided in the *New York State Stormwater Management Design Manual* and the Northeast Regional Climate Center (NRCC). A Type III rainfall distribution was used to evaluate the pre- and post-development stormwater runoff conditions for the 1-, 10-, 25-, and 100-year 24-hour storm events. The rainfall data used in the stormwater management design and analysis is provided in the table below.

Table 4-4: Rainfall Data

Storm Event	24-Hour Rainfall
90th Percentile(1,2)	1.50 inches
1-year	2.61 inches
2-year(3)	3.16 inches
10-year	4.66 inches
25-year	5.83 inches
100-year	8.17 inches

1. The 90th percentile 24-hour rainfall value was taken from the *New York State Stormwater Management Design Manual*. The other 24-hour rainfall values are taken from NRCC.
2. The 90th percentile 24-hour rainfall amount was used to calculate the required total water quality volume.
3. The 2-year 24-hour rainfall amount was used to calculate the sheet flow component in the time of concentration.

The rainfall data used in the stormwater management design and analysis is provided in Appendix E. The results of the computer modeling used to analyze the pre- and post-development watershed conditions are provided in Appendix F and Appendix G, respectively.

4.2.3 Water Quality Control

Treatment of stormwater runoff is important because most runoff-related water quality contaminants are transported during the initial stages of storms. The water quality volumes have been determined based on the methodology described in the Design Manual. The total water quality volume is provided in the table below.

Table 4-5: Total Water Quality Volume

Subcatchment	Area (ac)	Impervious Area (ac)	WQ_v (cf)
101	0.07	0.07	362

Detailed design calculations have been provided in Appendix E.

4.2.4 Runoff Reduction Volume

Runoff reduction is achieved by infiltration, groundwater recharge, reuse, recycle, evaporation and evapotranspiration of 100 percent of the post-development water quality volumes to replicate pre-development hydrology by maintaining pre-construction infiltration, peak runoff flow, discharge volume, and minimizing concentrated flow by using runoff-control techniques to provide treatment in a distributed manner before runoff reaches the collection system. The runoff-reduction-volume techniques that were used to reduce the total required water quality volume are in the table below.

Table 4-6: Implemented Runoff Reduction Volume Techniques

Techniques/ Practices	RRv Reduction Method	Reduction Amount
Filter Strip	Area Reduction	100% of the WQv

After applying the above runoff-reduction techniques, the total required water quality volume was reduced 100 percent. Detailed design calculations have been provided in Appendix E.

4.2.5 Water Quantity Control

The project was designed to minimize any changes to the hydrology that would result in an increase in the discharge rate. Since 100% of the runoff reduction has been reduced the channel protection volume requirement is being waived.

A comparison of the pre- and post-development peak discharge rates is provided in the table below.

Table 4-7: Summary of Pre- & Post-Development Peak Discharge Rates

Storm Event	Design Point	Pre (cfs)	Post (cfs)	Diff (cfs)
1-year	1	71.70	63.20	-8.50
	2	9.96	9.96	0.00
10-year	1	187.87	175.76	-12.11
	2	30.90	30.90	0.00
25-year	1	258.07	245.03	-13.04
	2	44.12	44.12	0.00
100-year	1	400.28	386.61	-13.67
	2	71.47	71.47	0.00

Comparison of the peak discharge rates for pre- and post-development watershed conditions demonstrates that the peak rate of runoff from the proposed development will not be increased. The pre- and post-development stormwater models have been provided in Appendix F and Appendix G, respectively.

5 Erosion and Sediment Control Plan

This SWPPP and accompanying project plans identify erosion and sediment control measures to be implemented during and after construction to minimize erosion and sediment impacts. The erosion and sediment control measures have been designed in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control*, latest revision.

5.1 Construction Sequencing Schedule and Phasing

The project will be completed in phases and the general construction sequencing is provided on the accompanying project plans.

5.2 Erosion and Sediment Control Measures

Temporary erosion and sediment control measures to be used during construction generally include the following:

- **Stabilized Construction Access** - Before construction, the stabilized construction access shall be installed to reduce the tracking of sediment onto adjacent roadways. Construction traffic must enter and exit the site at the stabilized construction access. The stabilized construction access shall be maintained in good condition to control tracking of sediment onto rights-of-way or streets. When necessary, the placement of additional aggregate atop the filter fabric shall be done to maintain the minimum thickness. Sediments and soils spilled, dropped, or washed onto the public rights-of-way shall be removed immediately.

- **Dust Control** - Water trucks or other approved water source shall be used, as needed, during construction to reduce dust generated on the site. Dust control shall be provided by the general contractor to a degree acceptable to the owner/operator, and in compliance with the applicable local and state dust control requirements.

- **Temporary Soil Stockpile** - Materials, such as topsoil, shall be temporarily stockpiled (if necessary) on site during construction. Stockpiles shall be located away from storm drainage, water bodies or courses, and shall be properly protected from erosion in accordance with the NYSDEC standard detail.

- **Silt Fencing** - Before initiation of and during construction, silt fencing shall be established along the perimeter of areas to be disturbed as a result of the construction up gradient of water courses or adjacent properties. These barriers may extend into non-impact areas to adequately protect adjacent lands. Clearing and grubbing shall be performed only as necessary for the installation of the sediment control barrier. To maximize effectiveness of the silt fencing, daily inspections shall be performed by site personnel. Maintenance of the fence shall be performed as needed and when directed by the Qualified Inspector.

- **Temporary Seeding** - Within seven days after construction ceases on any particular area of the site, all disturbed areas where there shall be no construction for longer than 14 days shall be temporarily seeded and mulched to minimize erosion and sediment loss. Other stabilization methods maybe approved by the Qualified Inspector.

- **Dewatering** - Dewatering, if required, must not be discharged directly into wetlands, water courses, water bodies, and storm sewer systems without appropriate protection or authorizations. Proper methods and devices shall be used to the extent permitted by law, such as pumping water into temporary sediment basins, providing surge protection at the inlet and outlet of pumps, floating the intake of the pump, or other methods to minimize and retain the suspended solids.

Permanent erosion and sediment control measures to be used after construction generally include the following:

- **Establish Permanent Vegetation** - Disturbed areas not covered by impervious surfaces shall be seeded in accordance with the accompanying plans. The type of seed, mulch, and maintenance measures shall be followed. All areas at final grade shall be seeded and mulched within 14 days after completion of the major construction. All seeded areas shall be protected with mulch or hay. Final site stabilization is achieved when soil-disturbing activities have been completed and a uniform, perennial vegetative cover with a density of 80 percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on the disturbed unpaved areas and areas not covered by permanent structures.

Specific erosion and sediment control measures, inspection frequency, and remediation procedures are provided in the subsequent sections and on the accompanying project plans.

5.3 Pollution Prevention Controls

Good housekeeping practices are designed to maintain a clean and orderly work environment. Good housekeeping measures shall be maintained throughout the construction process by those parties involved with the direct care and development of the site. The following measures shall be implemented to control the possible exposure of harmful substances and materials to stormwater runoff:

1. Material resulting from the clearing and grubbing operation shall be stockpiled away from storm drainage, water bodies or watercourses and surrounded with adequate erosion and sediment control measures. Soil stockpile locations shall be exposed no longer than 14 days before seeding.

2. Equipment maintenance areas shall be protected from stormwater flows and shall be supplied with appropriate waste receptacles for spent chemicals, solvents, oils, greases, gasoline, and any pollutants that might contaminate the surrounding habitat or water supply. Equipment wash-down zones shall be within areas draining to sediment control devices.

3. The use of detergents for large-scale (e.g., vehicles, buildings, pavement surfaces) washing is prohibited.

4. Material storage locations and facilities (e.g., covered storage areas, storage sheds) shall be on-site and shall be stored according to the manufacturer's standards in a dedicated staging area. Chemicals, paints, solvents, fertilizers, and other toxic material shall be stored in waterproof containers. Runoff containing such materials shall be collected, removed from the site, treated and disposed of at an approved solid waste or chemical disposal facility.

5. Hazardous spills shall be immediately contained to prevent pollutants from entering the surrounding habitat or water supply. Spill Kits shall be provided on site and shall be displayed in a prominent location for ease of access and use. Spills greater than 5 gallons shall be reported to the NYSDEC Response Unit at 1-800-457-7362. In addition, a record of the incidents or notifications shall be documented and attached to the SWPPP.

6. Portable sanitary waste facilities shall be provided on site for workers and shall be properly maintained.

7. Dumpsters or debris containers shall be on site and shall be of adequate size to manage respective materials. Regular collection and disposal of wastes must occur as required.

8. Temporary concrete washout facilities shall be a minimum of 50 feet from storm drain inlets, open drainage facilities, and watercourses. Each facility should be away from construction traffic or access areas to prevent disturbance or tracking. A sign shall be installed adjacent to each washout facility to inform concrete equipment operators to use the proper facilities. When temporary concrete washout facilities are no longer required for the work, the hardened concrete shall be removed and disposed of. Materials used to construct the temporary concrete washout facilities shall be removed and disposed of. Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled or repaired, seeded, and mulched for final stabilization. Wastewater discharges from washout of concrete is prohibited.

9. Non-stormwater components of site discharge shall be clean water. Water used for construction, which discharges from the site, must originate from a public water supply or approved private well. Water used for construction that does not originate from an approved public supply must not discharge from the site.

10. Discharges from dewatering activities, including discharges from dewatering trenches and excavations, shall be managed by appropriate control measures.

11. Wastewater discharges from washout and cleanout of stucco, paint, form-release oils, curing compounds, and other construction materials is prohibited.

5.4 Soil Stabilization and Restoration

5.4.1 Stabilization

In areas where soil disturbance has temporarily or permanently ceased, the application of soil stabilization measures shall be initiated by the end of the next business day and completed within 14 days from the date the current soil disturbance ceased. The soil-stabilization measures shall be in conformance with the *New York State Standards and Specifications for Erosion and Sediment Control*, latest edition.

5.4.2 Restoration

Soil restoration shall be performed in the disturbed areas. The soils shall be restored in accordance with the table below.

Table 5-1: Soil Restoration

Type of Soil Disturbance	Soil Restoration Requirement
No Soil Disturbance (e.g., preservation of natural features)	Restoration not required.
Minimal Soil Disturbance (e.g., clearing and grubbing)	Restoration not required.
Areas where top soil is stripped only (e.g., no change in grade)	Aerate and apply 6 inches of topsoil.
Areas of cut or fill	Apply full soil restoration (see below).
Heavy traffic areas on site (especially in 5 to 25 feet around buildings, but not within a 5-foot perimeter around foundation walls)	Apply full soil restoration (see below).
Areas where runoff reduction or infiltration practices are applied	Restoration not required, but can be applied to enhance soil infiltration.

Full Soil Restoration

Before applying full soil restoration, all construction, including construction equipment and material storage, site cleanup and trafficking, should be finished and the site closed to further disturbance. Full soil restoration should be performed with a heavy-duty agricultural-grade deep ripper, deep angled-leg subsoiler, or equivalent machinery to achieve de-compaction.

Full soil restoration is implemented in a two-phase process:

1. Deep rip the affected thickness of exposed subsoil, aggressively fracturing it before the protected topsoil is reapplied on the site.

2. De-compact simultaneously through the restored topsoil layer and upper half of the affected subsoil.

Low to Moderate Subsoil Moisture

The disturbed soils are returned to rough grade and the following is applied:

1. Apply 3 inches of compost over the subsoil.

2. Till compost a minimum of 12 inches into the subsoil using a cat-mounted ripper, tractor-mounted disc, or tiller mixing and circulating air and compost into subsoils.

3. Rock-pick until uplifted stone and rock of 4 inches or larger size are cleaned off the site. All construction material and foreign debris and existing root masses shall be removed from proposed planting areas.

4. Apply 6 inches of topsoil. Newly installed planting soils shall be mixed with existing soils where they meet in order to create a transitional gradient to allow for proper drainage.

6 Stormwater Pollution Prevention Plan Implementation

6.1 Certification Statements

Before starting construction, the owner/operator, contractors, and subcontractors are required to sign the certification statements provided in Appendix C.

The owner/operator must sign a copy of the Owner's/Operator's certification before submitting the Notice of Intent. The owner/operator acknowledges that the SWPPP has been developed and will be implemented as the first element of construction and agrees to comply with the terms and conditions of the general permit for which the Notice of Intent is being submitted.

The owner/operator must identify the contractors and subcontractors that will be responsible for installing, constructing, repairing, replacing, inspecting, and maintaining the erosion and sediment control practices; and constructing the post-construction stormwater management practices included in the SWPPP. The contractors and subcontractors must identify at least one trained individual from their company who will be responsible for implementation of the SWPPP. This person will be known as the trained contractor. At least one trained contractor will be on site daily when soil disturbing activities are being performed. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has begun, they must also sign the certification statement and identify their responsibilities.

6.2 Pre-Construction Meeting

Before beginning construction, the owner/operator must set up a pre-construction meeting with the Town representative, qualified professional, qualified inspector, contractors, and subcontractors. The primary purpose of the pre-construction meeting is to discuss the responsibilities of each party as they relate to the implementation of the SWPPP and to clarify any questions.

6.3 Construction Site Log

The owner/operator must maintain a copy of the following, including but not limited to: General Permit, signed NOI, signed MS4 Acceptance form, NOI Acknowledgement Letter, SWPPP, signed certification statements, and inspections reports. The documents must be maintained in a secure location onsite. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

6.4 Construction Inspections and Maintenance

6.4.1 Contractor Maintenance Inspection Requirements

The trained contractor must inspect the erosion and sediment control practices and pollution-prevention measures to verify that they are being maintained in effective operating condition. The inspections will be conducted as follows:

- For construction sites where soil disturbance is on-going, the trained contractor must inspect the measures within the active work area daily. If deficiencies are identified, the contractor will begin implementing corrective actions within one business day and must complete the corrective actions by the end of the day.

- 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 must conduct the daily maintenance inspections as soil disturbance resumes.

- For construction sites where soil disturbance has 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 part of the project have been constructed in conformance with the SWPPP and are operational.

6.4.2 Qualified Inspector Inspection Requirements

The owner/operator must have a Qualified Inspector conduct site inspections to verify the stability and effectiveness of protective measures and practices employed during construction. The site inspections will be conducted as follows:

- For construction sites where soil disturbance is ongoing, the Qualified Inspector must conduct a site inspection at least once every seven days.

- 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 must conduct a site inspection at least once every 30 days. The owner/operator must notify the NYSDEC or MS4 in writing before reducing the frequency of the inspections.

- 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 are operational. The owner/operator must notify the NYSDEC or the MS4 in writing before the shutdown.

All erosion and sediment control inspections shall be performed in accordance with this SWPPP, accompanying project plans, latest revision of *New York State Standards and Specifications for Erosion and Sediment Control,* and procedures outlined in Appendix H of the latest revision of the *New York State Stormwater Management Design Manual*. Inspection reports must identify and document the maintenance of the erosion and sediment control measures. An example inspection report has been provided in Appendix D.

Specific maintenance components, schedule frequency, inspection parameters and remediation procedures are provided on the accompanying project plans. Any adjustments or modifications to the maintenance plan shall be noted in the inspection reports and submitted to the Town for approval.

7 Termination of Coverage

The owner/operator may terminate coverage when:

a. Total project completion has occurred.

b. A planned shutdown with partial project completion has occurred.

c. Property ownership changes or when there is a change in operational control over the construction plans and specifications; and the new owner/operator has obtained coverage under the SPDES General Permit.

d. Coverage under an alternative SPDES general permit or an individual SPDES permit has been obtained.

If a planned shutdown with partial project completion or total project completion has occurred, then the owner/operator must have the Qualified Inspector perform a final site inspection to ensure that the following have been met:

- **Planned Shutdown with Partial Project Completion** – all soil disturbance has 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 part of the project have been constructed in conformance with the SWPPP and are operational.

- **Total Project Completion** – all construction activity has been completed; 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 part of the project have been constructed in conformance with the SWPPP and are operational.

The completed NOT must be submitted to the NYSDEC to cancel coverage. A blank copy of the NOT has been provided in Appendix B.

8 Post-Construction Requirements

8.1 Record Retention

Following construction, the owner/operator must retain a copy of the signed NOI, signed MS4 SWPPP Acceptance, NOI Acknowledgement Letter, SWPPP, project plans, and any inspection reports that were prepared in conjunction with the General Permit for at least five years from the date that the NYSDEC receives a complete NOT.

8.2 Inspection and Maintenance

Post-construction inspections and maintenance will be performed by Independent Solar, LLC. Inspections and maintenance for the various site components and stormwater management facilities shall be performed in accordance with the accompanying project plans and this SWPPP. Detailed post-construction inspections and maintenance procedures are provided in Appendix I.

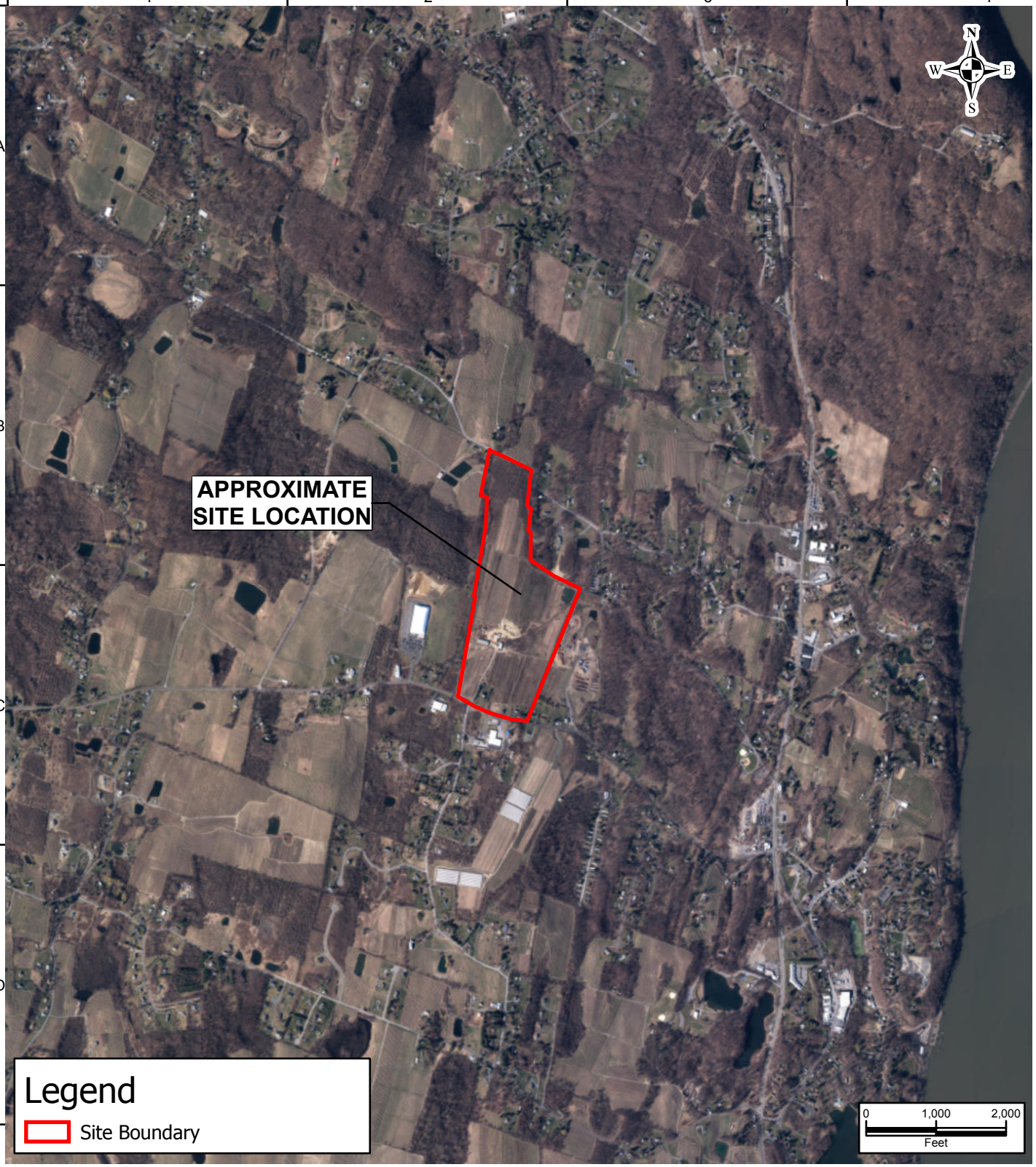
9 Conclusion

This Stormwater Pollution Prevention Plan has been developed in accordance with the requirements of the Town of Marlborough and the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) Phase II technical guidelines. This SWPPP identifies the erosion control, sediment control, pollution-prevention, and stormwater management measures to be implemented during construction to minimize soil erosion and control sediment transport off site, and after construction to control and treat stormwater runoff from the developed site.

In the opinion of the SWPPP preparer, the proposed project will not have adverse impacts if the measures for erosion control, sediment control, pollution prevention, and stormwater management measures are properly constructed and maintained in accordance with the requirements outlined herein and on the accompanying project plans.

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Figures



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Project
INDEPENDENT SOLAR, LLC
TOWN OF MARLBOROUGH
ULSTER COUNTY NEW YORK

Drawing Title
SITE LOCATION MAP

Project No.	190056901
Date	2/6/2020
Scale	1:2,000
Drawn By	Site Analyzer
Submission Date	02/06/2020

Figure **1**

SHEET 1 OF 1

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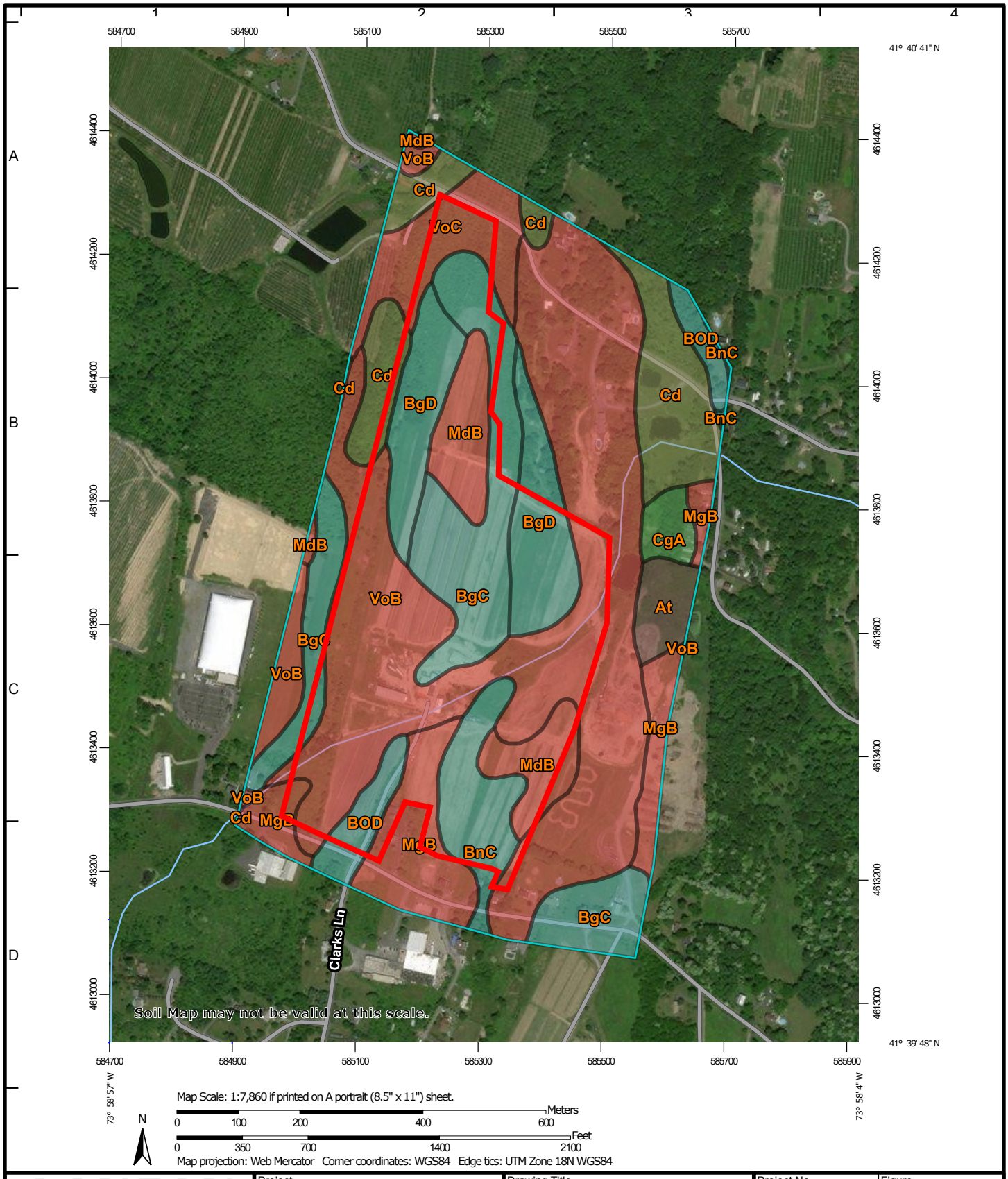

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Project
INDEPENDENT SOLAR, LLC
TOWN OF MARLBOROUGH
ULSTER COUNTY NEW YORK

Drawing Title
SOILS MAP

Project No.	190056901
Date	2/6/2020
Scale	1:2,000
Drawn By	Site Analyzer
Submission Date	02/06/2020

Figure **2**

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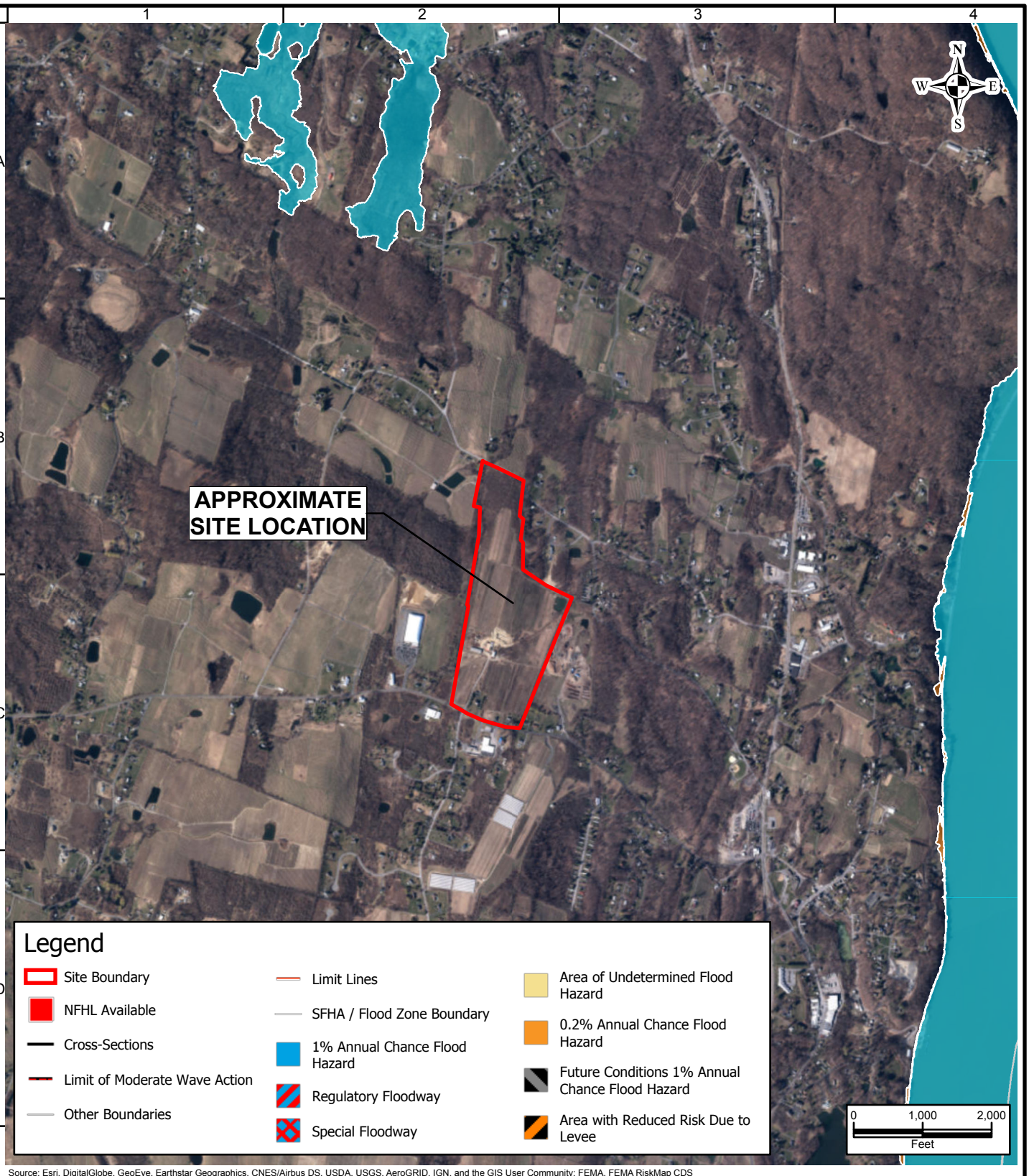

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Project	INDEPENDENT SOLAR, LLC TOWN OF MARLBOROUGH ULSTER COUNTY NEW YORK
Drawing Title	FLOOD INSURANCE RATE MAP
Project No.	190056901
Date	2/6/2020
Scale	1:2,000
Drawn By	Site Analyzer
Submission Date	02/06/2020
Figure	3
	SHEET 1 OF 1

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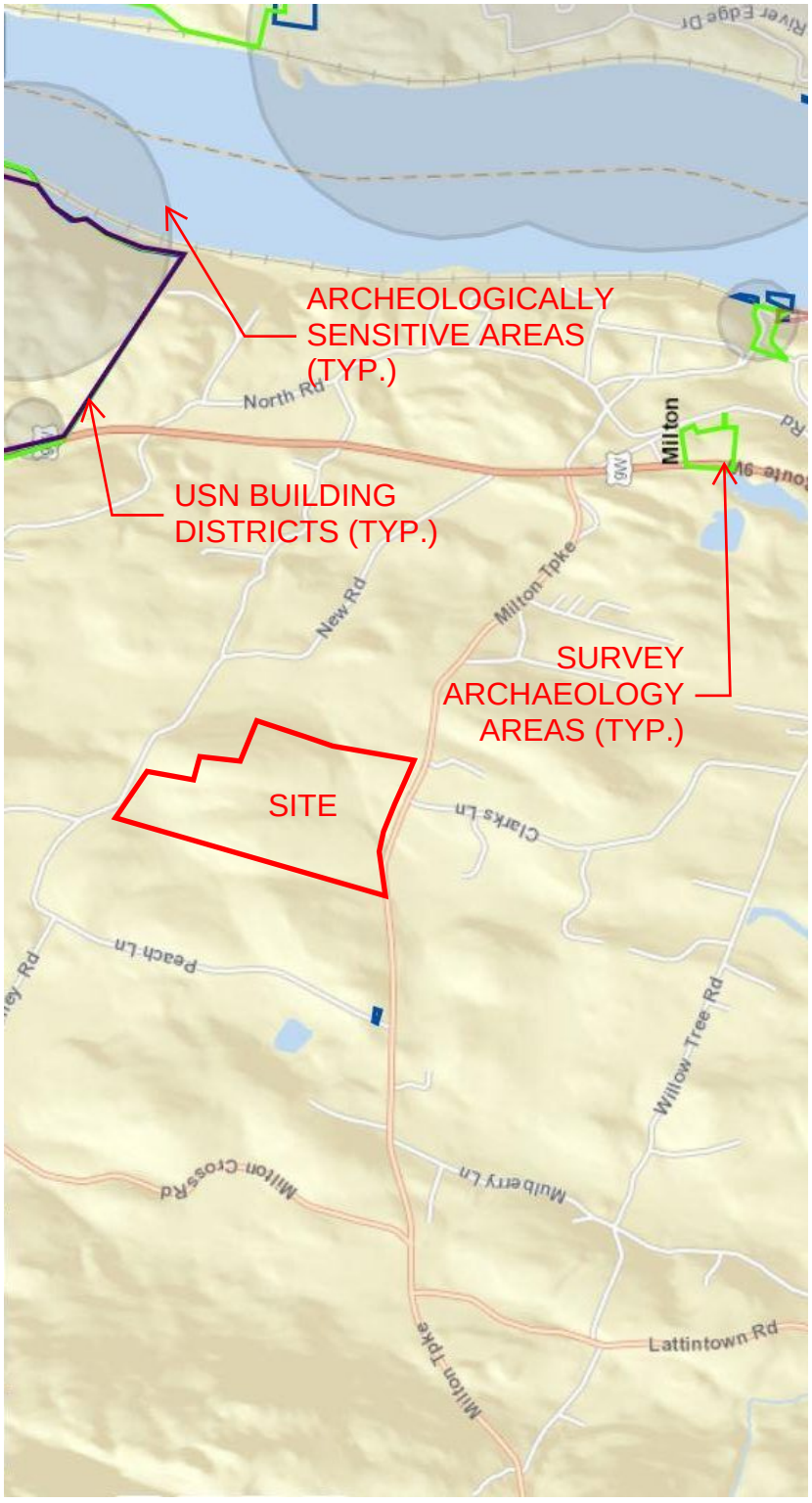

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ULSTER COUNTY NEW YORK

Drawing Title
CULTURAL RESOURCES

Project No.	190056901
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Drawn By	Site Analyzer
Submission Date	02/06/2020

Figure **4**

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Project
INDEPENDENT SOLAR, LLC
TOWN OF MARLBOROUGH
ULSTER COUNTY NEW YORK

Drawing Title
PRE-DEVELOPMENT WATERSHED MAP

Project No. 190056901
Date FEBRUARY 11, 2020
Drawn By EK
Checked By CZ

Drawing No. 5
Sheet 1 of 1

PROJECT NO. 190056901

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Project
INDEPENDENT SOLAR, LLC
TOWN OF MARLBOROUGH
ULSTER COUNTY NEW YORK

Drawing Title
POST-DEVELOPMENT WATERSHED MAP

Project No.	Drawing No.
190056901	6
Date: FEBRUARY 11, 2020	
Drawn By: EK	
Checked By: CZ	Sheet 1 of 1

Filename: \\langan.com\data\WPW\data9\190056901\Project Data\CADD\01\SheetFiles\Figure\190056901-CA104-0102.dwg Date: 2/10/2020 Time: 16:52 User: e.ingsbury Style Table: Langan.stb Layout: ARCHD-BL

LANGAN
PROJECT NO. 190056901

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix A

NYSDEC SPDES General Permit

LANGAN

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

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

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

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

PREFACE

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

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

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

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

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

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

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

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

B. Effluent Limitations Applicable to Discharges from Construction Activities

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

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

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

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

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

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

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

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

   (v) *Minimize* sediment *discharge*s from the site;

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

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

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

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

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

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

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

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

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

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

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

e. **Prohibited *Discharge*s.** 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

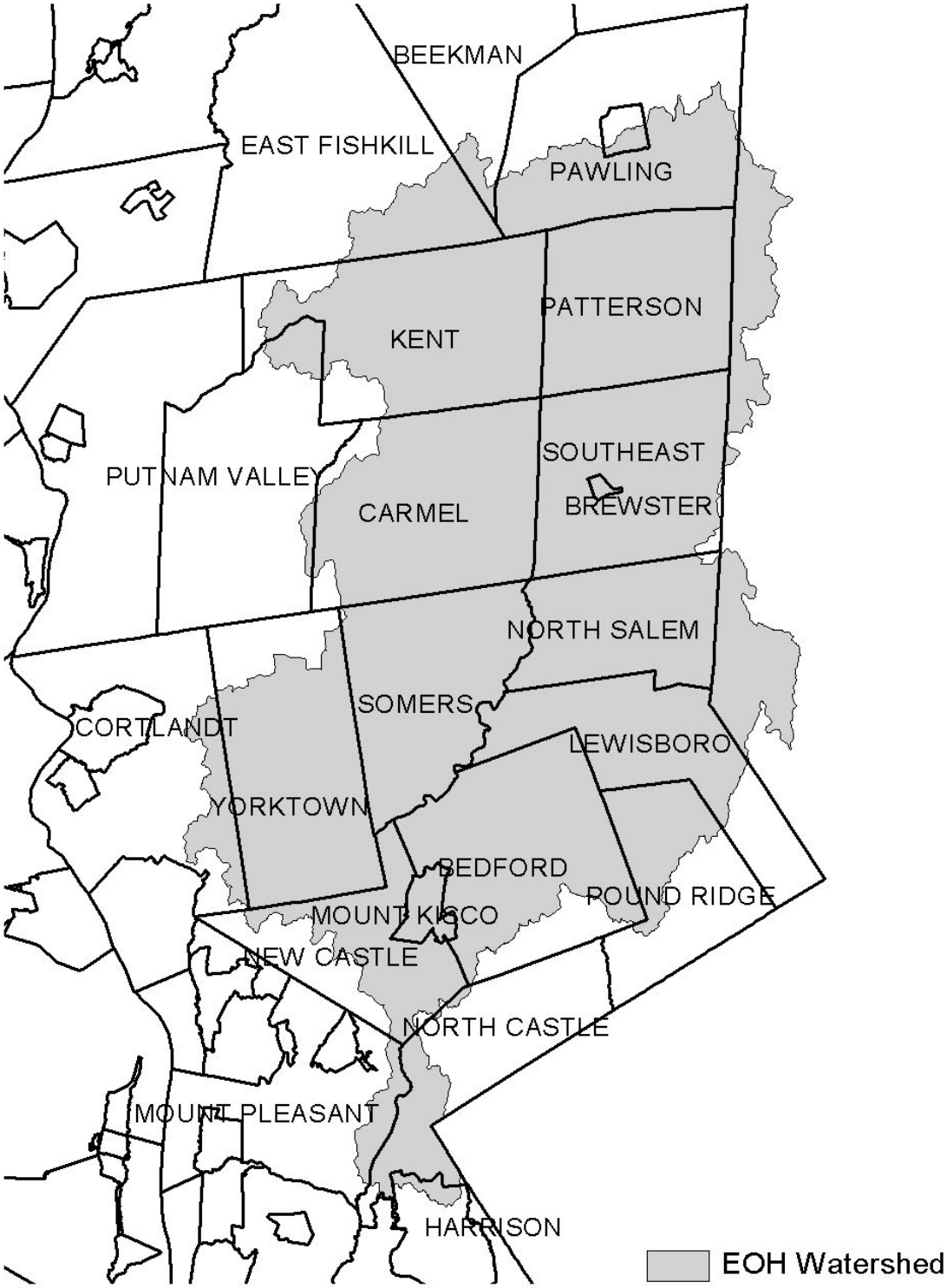


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

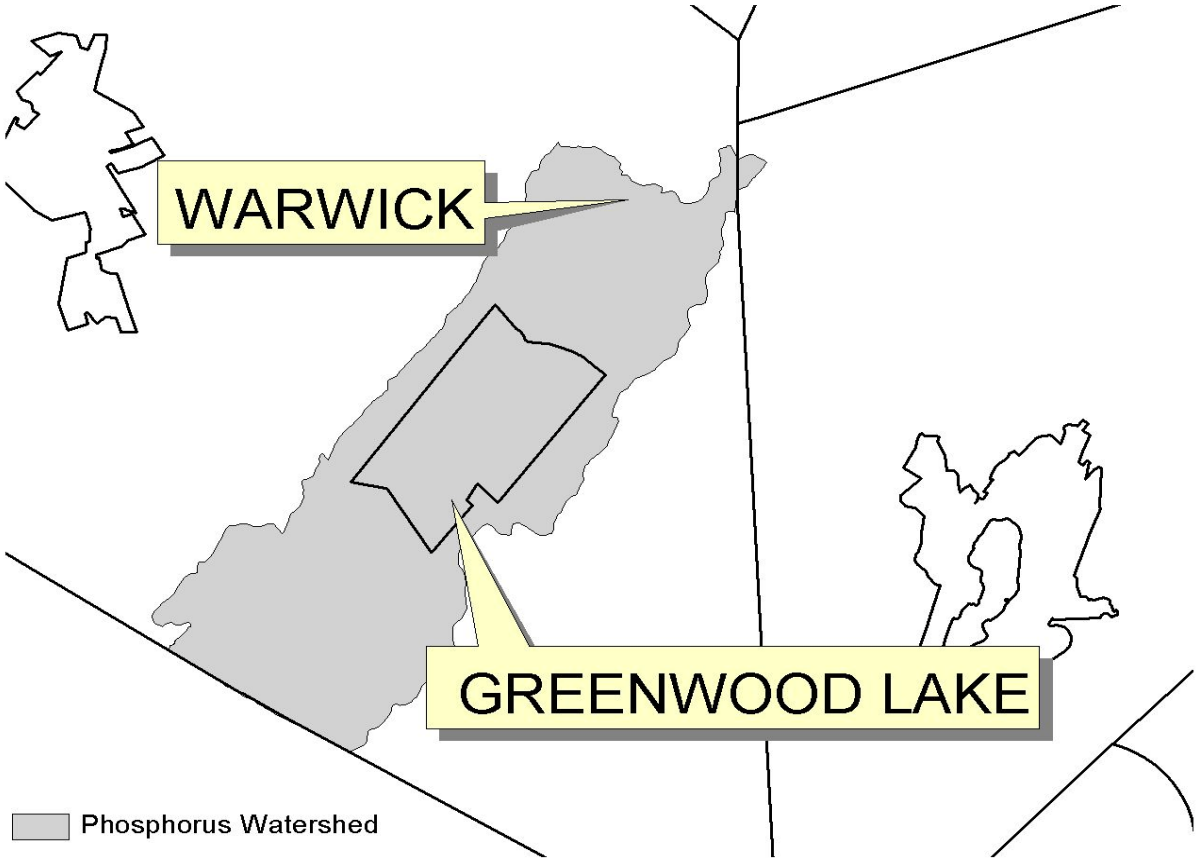


Figure 4 - Oscawana Lake Watershed

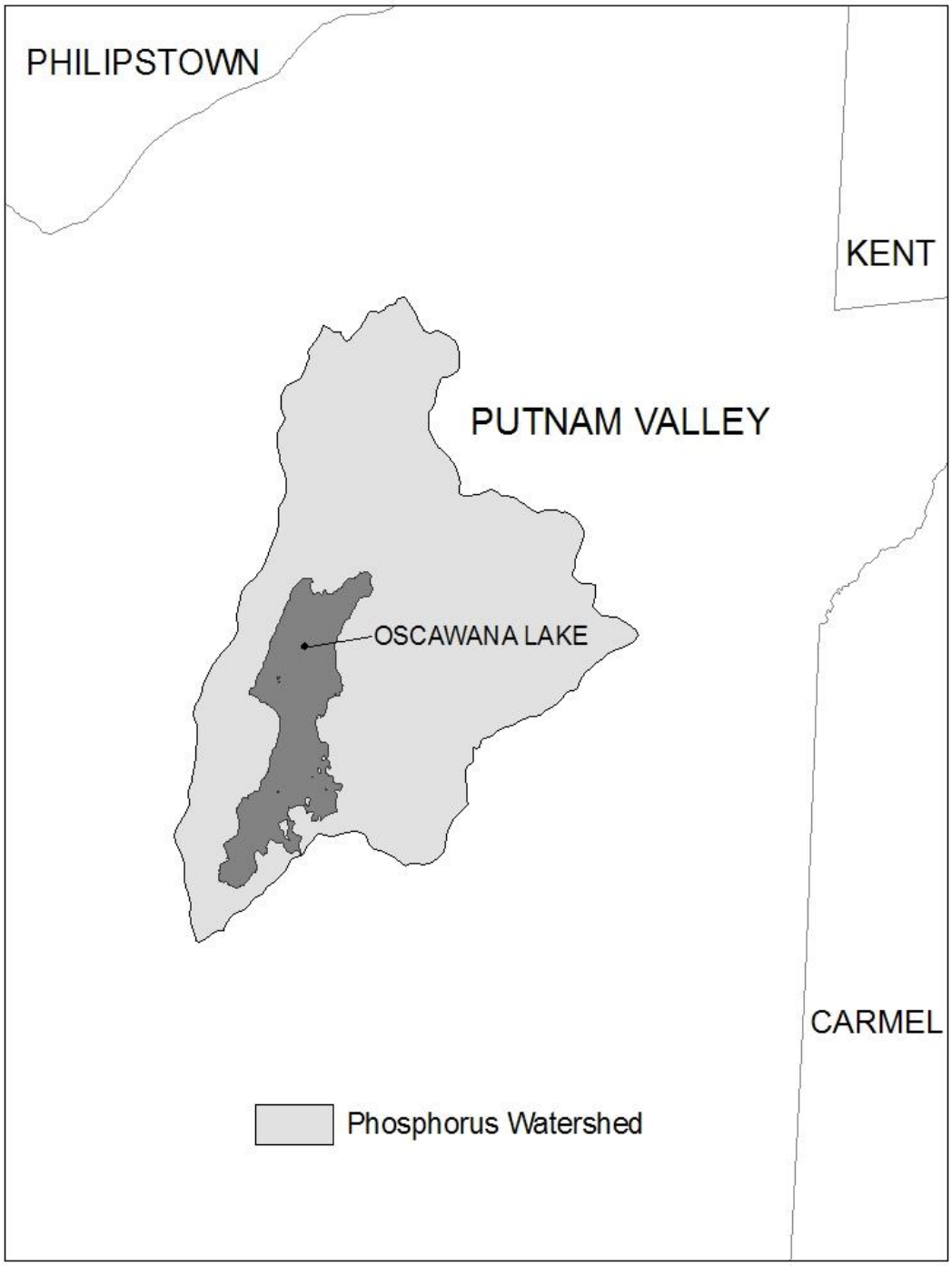
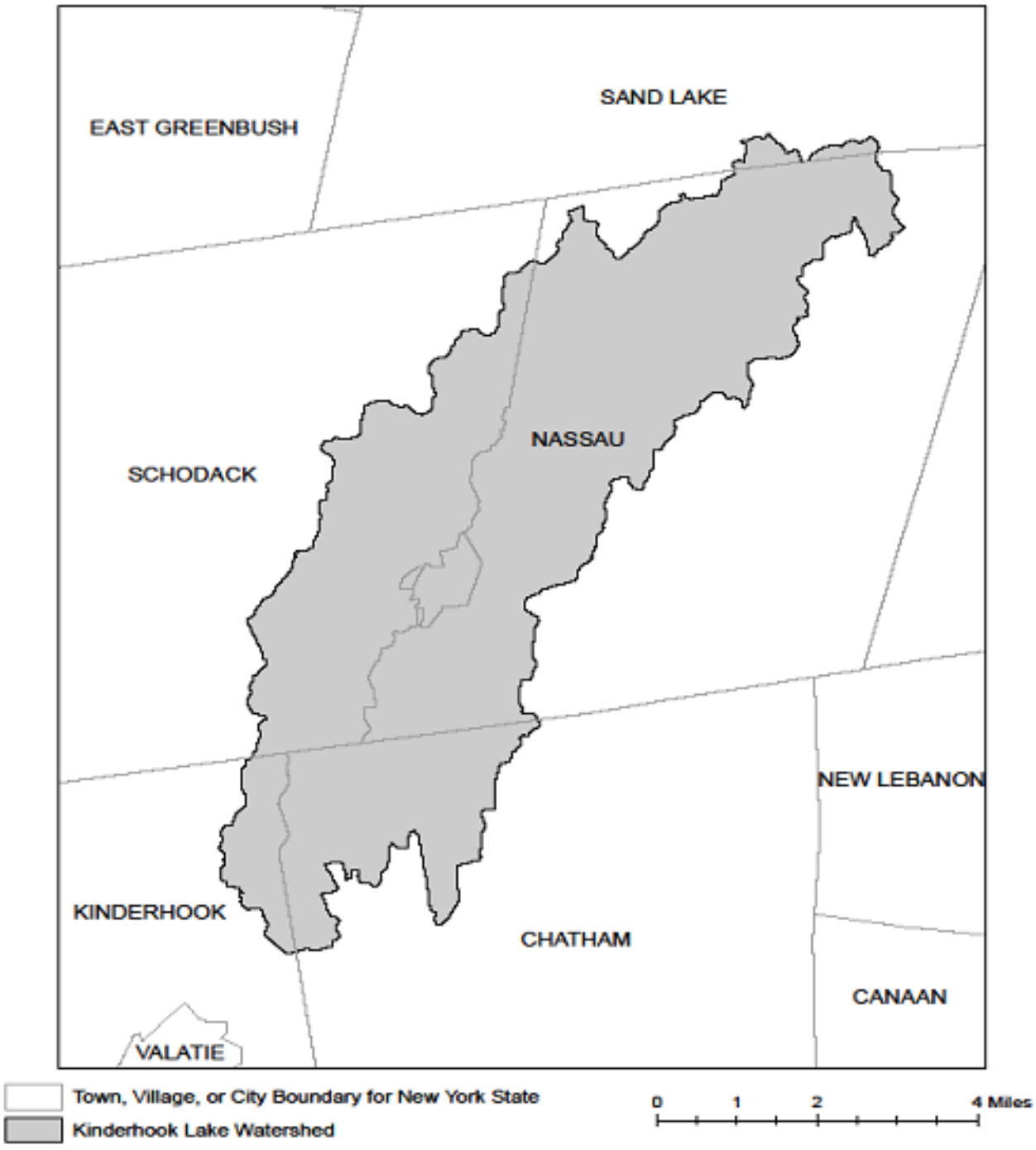


Figure 5 - Kinderhook Lake Watershed



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

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix B

NYSDEC SPDES General Permit Forms

LANGAN

0644089821

NOTICE OF INTENT

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

NYR _____ (for DEC use only)

Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

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

-IMPORTANT-

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR **MUST SIGN FORM**

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)
Independent Solar, LLC

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

Owner/Operator Contact Person First Name
Nick

Owner/Operator Mailing Address
3250 Ocean Park Blvd. Suite 355

City
Santa Monica

State
CA

Zip
90405 - ____

Phone (Owner/Operator)
203 - 558 - 5602

Fax (Owner/Operator)
___ - ___ - ____

Email (Owner/Operator)
nick.hawvermale@ccrenew.com

FED TAX ID
__ - _____ (not required for individuals)

Project Site Information

Project/Site Name
Independent Solar, LLC

Street Address (NOT P.O. BOX)
206 Milton Turnpike

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

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

State NY Zip 12547 - County Ulster DEC Region 3

Name of Nearest Cross Street
Clarks Lane

Distance to Nearest Cross Street (Feet)
0

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

Tax Map Numbers
Section-Block-Parcel
95.4-3-7.21

Tax Map Numbers

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

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

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

X Coordinates (Easting) 585203

Y Coordinates (Northing) 4613420

2. What is the nature of this construction project?

● **New Construction**

○ **Redevelopment with increase in impervious area**

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

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

Pre-Development Existing Land Use

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

Post-Development Future Land Use

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

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

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

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
78.0	29.6	0.0	0.1

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

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

A	B	C	D
0 %	0 %	40 %	60 %

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

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

Start Date	End Date
03/01/2021	03/01/2022

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

Name

Unnamed Stream

9a. Type of waterbody identified in Question 9?

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

9b. How was the wetland identified?

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

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

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

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

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

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

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

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

Town of Marlborough

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

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

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

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

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

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

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

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

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

SWPPP Preparer
Langan Engineering

Contact Name (Last, Space, First)
Finan, Michael, PE

Mailing Address
1 North Broadway, Suite 910

City
White Plains

State Zip
NY 10601-

Phone
914-323-7411

Fax
914-323-7400

Email
mfinan@langan.com

SWPPP Preparer Certification

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

First Name
Michael

MI

Last Name
Finan

Signature

Date
/ /

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

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

Temporary Structural

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

Biotechnical

- ○ Brush Matting
- ○ Wattling

Vegetative Measures

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

Permanent Structural

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

Other

Post-construction Stormwater Management Practice (SMP) Requirements

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

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

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

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

- ● All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ○ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

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

Total WQv Required

[ ][ ][ ].[0][0][8] **acre-feet**

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

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

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

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

	Total Contributing Area (acres)		Total Contributing Impervious Area (acres)
RR Techniques (Area Reduction)			
○ Conservation of Natural Areas (RR-1)		and/or	
● Sheetflow to Riparian Buffers/Filters Strips (RR-2)	0.07	and/or	0.07
○ Tree Planting/Tree Pit (RR-3)		and/or	
○ Disconnection of Rooftop Runoff (RR-4)		and/or	
RR Techniques (Volume Reduction)			
○ Vegetated Swale (RR-5)			
○ Rain Garden (RR-6)			
○ Stormwater Planter (RR-7)			
○ Rain Barrel/Cistern (RR-8)			
○ Porous Pavement (RR-9)			
○ Green Roof (RR-10)			
Standard SMPs with RRv Capacity			
○ Infiltration Trench (I-1)			
○ Infiltration Basin (I-2)			
○ Dry Well (I-3)			
○ Underground Infiltration System (I-4)			
○ Bioretention (F-5)			
○ Dry Swale (O-1)			
Standard SMPs			
○ Micropool Extended Detention (P-1)			
○ Wet Pond (P-2)			
○ Wet Extended Detention (P-3)			
○ Multiple Pond System (P-4)			
○ Pocket Pond (P-5)			
○ Surface Sand Filter (F-1)			
○ Underground Sand Filter (F-2)			
○ Perimeter Sand Filter (F-3)			
○ Organic Filter (F-4)			
○ Shallow Wetland (W-1)			
○ Extended Detention Wetland (W-2)			
○ Pond/Wetland System (W-3)			
○ Pocket Wetland (W-4)			
○ Wet Swale (O-2)			

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

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

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

Name [ ]

Manufacturer [ ]

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

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

Total RRv provided

[ ][ ][0].[0][0][8] **acre-feet**

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

● **Yes** ○ **No**

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

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

Minimum RRv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

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

○ **Yes** ○ **No**

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

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

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

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

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

WQv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

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

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

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

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

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

CPv Required

[ ][ ][ ].[ ][ ][ ] **acre-feet**

CPv Provided

[ ][ ][ ].[ ][ ][ ] **acre-feet**

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

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

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

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

Total Overbank Flood Control Criteria (Qp)

Pre-Development

2 1 8 . 7 7 [ ] **CFS**

Post-development

2 0 6 . 6 6 [ ] **CFS**

Total Extreme Flood Control Criteria (Qf)

Pre-Development

4 7 1 . 7 5 [ ] **CFS**

Post-development

4 5 8 . 0 8 [ ] **CFS**

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

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

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

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

Independent Solar, LLC

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

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

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

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

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

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

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

3547089826

Owner/Operator Certification

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

Print First Name

Nick

MI

Print Last Name

Hawvermale

Owner/Operator Signature

Date

/ /

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

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

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

I. Project Owner/Operator Information	
1. Owner/Operator Name:	Independent Solar, LLC
2. Contact Person:	Nick Hawvermale
3. Street Address:	3250 Ocean Park Blvd. Suite 355
4. City/State/Zip:	Santa Monica, CA 90405
II. Project Site Information	
5. Project/Site Name:	Independent Solar, LLC
6. Street Address:	206 Milton Turnpike
7. City/State/Zip:	Marlborough, NY 12547
III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information	
8. SWPPP Reviewed by:	
9. Title/Position:	
10. Date Final SWPPP Reviewed and Accepted:	
IV. Regulated MS4 Information	
11. Name of MS4:	
12. MS4 SPDES Permit Identification Number: NYR20A	
13. Contact Person:	
14. Street Address:	
15. City/State/Zip:	
16. Telephone Number:	

MS4 SWPPP Acceptance Form - continued

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

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

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

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

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

Independent Solar, LLC

Owner/Operator Information

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

Nick Hawvermale

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.

First name	MI	Last Name

Signature

Date

Revised: January 2020

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Owner/Operator Certification Form

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

Project/Site Name: Independent Solar, LLC

eNOI Submission Number: _____

eNOI Submitted by: ☐ **Owner/Operator** ☑ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

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

Owner/Operator First Name M.I. Last Name

_____

Signature

_____

Date

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)

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix C

Certification Statements

Owner's/Operator's Certification

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

Name (please print) _____

Title _____ **Date** _____

Address _____

Phone _____ **Email** _____

Signature _____

Contractor's Certification

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."

Contracting Firm Name _____

Address _____

Phone _____ **Fax** _____

Name (please print) _____

Title _____ **Date** _____

Signature _____

SWPPP Responsibilities _____

_____

_____

_____

Trained Individual Name (please print) _____

Title _____ **Date** _____

Signature _____

SWPPP Responsibilities _____

_____

_____

Note: All Contractors involved with Stormwater related activities shall sign a Contractor's Certification.

Subcontractor's Certification

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."

Subcontracting Firm Name _____

Address _____

Phone _____ **Fax** _____

Name (please print) _____

Title _____ **Date** _____

Signature _____

SWPPP Responsibilities _____

_____

_____

_____

Trained Individual Name (please print) _____

Title _____ **Date** _____

Signature _____

SWPPP Responsibilities _____

_____

_____

Note: All subcontractors involved with Stormwater related activities shall sign a Subcontractor's Certification.

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix D

Example Inspection Form

EXAMPLE EROSION CONTROL REPORT

PROJECT NO: _____ PROJECT NAME: _____ DATE: _____

MUNICIPALITY: _____ LOCATION: _____

CONTRACTOR: _____ OWNER: _____

DATE OF PREVIOUS INSPECTION: _____ INSPECTOR'S NAME: _____

DATE OF MOST RECENT STORM 0.5" OR GREATER: _____ DATE OF INSPECTION: _____

LAST RAIN EVENT: _____ DEPTH: _____

WEATHER: _____ TEMPERATURE: _____ °F

SPECIAL NOTES: _____

EROSION CONTROL CHECKLIST

ADDITIONAL ACTION REQUIRED BY PROJECT MANAGER OR PROJECT ENGINEER ☐ YES ☐ NO

PHOTOS OR SKETCHES ATTACHED ☐ ADDITIONAL REMARKS ATTACHED ☐

_____ _____

Inspector (print name) **Inspection Date**

_____ _____

Qualified Professional (print name) **Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

Maintaining Water Quality

Yes	No	NA	
☐	☐	☐	Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
☐	☐	☐	Is there residue from oil and floating substances, visible oil film, or globules of 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 properties?
☐	☐	☐	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 damns, 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 occuring.
☐	☐	☐	Sediment-laden runoff directed to sediment trapping structure.

4. Stone Check Dam

Yes	No	NA	
☐	☐	☐	Is channel stable? (flow is not eroding soil underneath or around the structure).
☐	☐	☐	Check is in good condition (rocks in place and no permanent pools behind the structure).
☐	☐	☐	Has accumulated sediment been removed?

5. Rock Outlet Protection

Yes	No	NA	
☐	☐	☐	Installed per plan.
☐	☐	☐	Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes	No	NA	
☐	☐	☐	Stockpiles are stabilized with vegetation and/or mulch.
☐	☐	☐	Sediment control is installed at the toe of the slope.

2. Revegetation

Yes	No	NA	
☐	☐	☐	Temporary seedings and mulch have been applied to idle areas.
☐	☐	☐	4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control Practices

1. 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 the 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.
☐	☐	☐	Place wire screen between No. 3 crushed stone and concrete blocks.
☐	☐	☐	Drainage area is 1 acre 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 is ____% 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 stablized with seed/mulch.
☐	☐	☐	Drainage structure is flushed and basin surface restored upon removal of sediment basin facility.

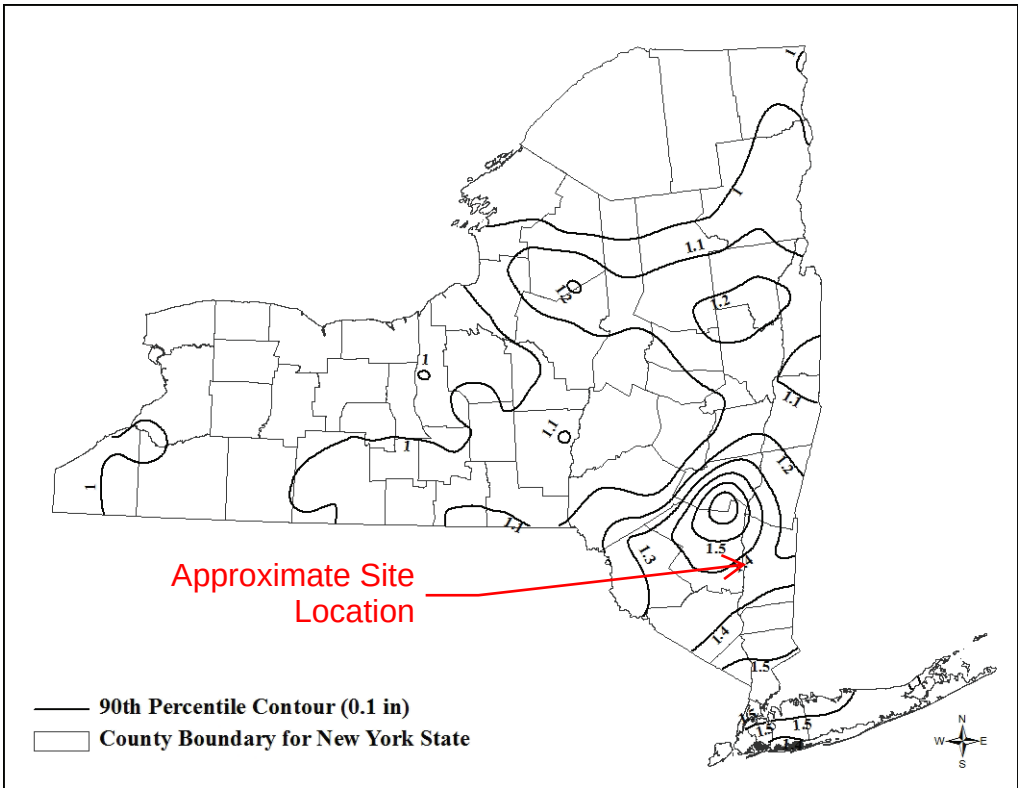
Sediment accumulation is ____% of design capacity.

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix E

Design Calculations

Figure 4.1: 90th Percentile Rainfall in New York State (NYSDEC, 2013)



Basis of Design for Water Quality

As a basis for design, the following assumptions may be made:

Measuring Impervious Cover: the measured area of a site plan that does not have permanent vegetative or permeable cover shall be considered total impervious cover. Impervious cover is defined as all impermeable surfaces and includes: paved and gravel road surfaces, paved and gravel parking lots, paved driveways, building structures, paved sidewalks, and miscellaneous impermeable structures such as patios, pools, and sheds. Where site size makes direct measurement of impervious cover impractical, the land use/impervious cover relationships presented in Table 4.2 can be used to initially estimate impervious cover. In site specific planning impervious cover must be calculated based the specific proposed impervious cover.

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New York
Location	
Longitude	73.975 degrees West
Latitude	41.669 degrees North
Elevation	0 feet
Date/Time	Wed, 05 Feb 2020 22:09:50 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.32	0.49	0.60	0.79	0.99	1.23	**1yr**	0.85	1.16	1.41	1.74	2.13	2.61	2.96	**1yr**	2.31	2.85	3.32	3.97	4.58	**1yr**
2yr	0.38	0.58	0.73	0.96	1.20	1.50	**2yr**	1.04	1.39	1.72	2.12	2.59	3.16	3.57	**2yr**	2.80	3.43	3.92	4.62	5.25	**2yr**
5yr	0.45	0.70	0.88	1.17	1.50	1.89	**5yr**	1.30	1.72	2.17	2.67	3.25	3.94	4.49	**5yr**	3.49	4.32	4.94	5.70	6.46	**5yr**
10yr	0.51	0.80	1.01	1.37	1.77	2.25	**10yr**	1.53	2.02	2.59	3.19	3.87	4.66	5.36	**10yr**	4.13	5.15	5.89	6.70	7.56	**10yr**
25yr	0.59	0.94	1.20	1.67	2.22	2.84	**25yr**	1.91	2.50	3.28	4.03	4.88	5.83	6.76	**25yr**	5.16	6.50	7.45	8.28	9.31	**25yr**
50yr	0.68	1.09	1.39	1.95	2.63	3.38	**50yr**	2.27	2.95	3.91	4.80	5.79	6.90	8.07	**50yr**	6.11	7.76	8.89	9.73	10.90	**50yr**
100yr	0.77	1.25	1.61	2.29	3.12	4.04	**100yr**	2.69	3.47	4.68	5.74	6.90	8.17	9.63	**100yr**	7.23	9.26	10.62	11.44	12.78	**100yr**
200yr	0.88	1.44	1.87	2.68	3.71	4.82	**200yr**	3.20	4.09	5.59	6.85	8.21	9.69	11.50	**200yr**	8.57	11.06	12.70	13.45	14.98	**200yr**
500yr	1.07	1.76	2.30	3.33	4.67	6.09	**500yr**	4.03	5.07	7.08	8.65	10.33	12.13	14.55	**500yr**	10.73	13.99	16.10	16.68	18.50	**500yr**

Lower Confidence Limits

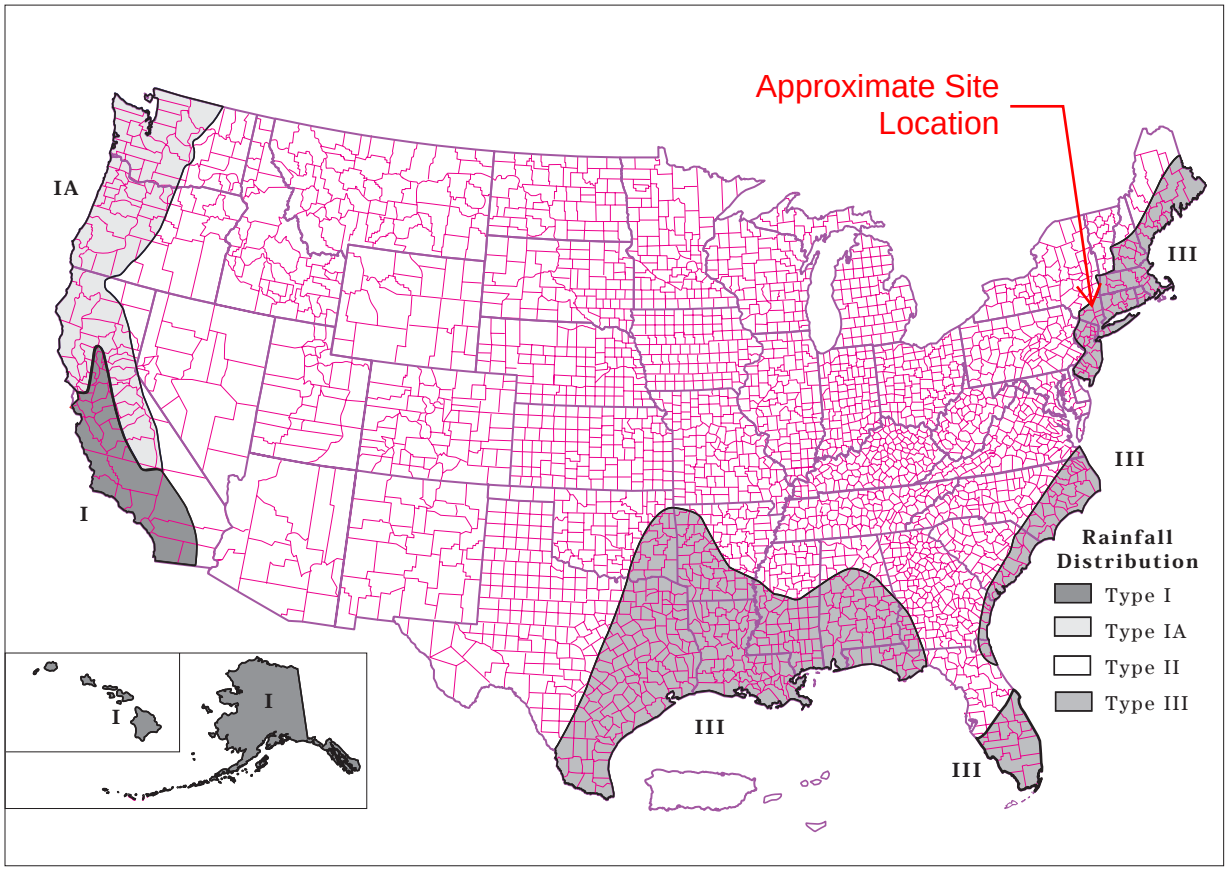
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.28	0.43	0.53	0.71	0.88	1.04	**1yr**	0.76	1.01	1.21	1.53	1.93	2.39	2.52	**1yr**	2.11	2.42	3.04	3.59	4.09	**1yr**
2yr	0.37	0.57	0.70	0.94	1.16	1.37	**2yr**	1.01	1.34	1.55	1.99	2.51	3.06	3.48	**2yr**	2.71	3.34	3.82	4.54	5.17	**2yr**
5yr	0.41	0.64	0.79	1.08	1.38	1.60	**5yr**	1.19	1.56	1.81	2.33	2.91	3.67	4.15	**5yr**	3.25	3.99	4.66	5.39	6.12	**5yr**
10yr	0.46	0.71	0.87	1.22	1.58	1.79	**10yr**	1.36	1.75	2.03	2.61	3.24	4.18	4.74	**10yr**	3.70	4.56	5.36	6.10	6.93	**10yr**
25yr	0.53	0.81	1.00	1.43	1.89	2.06	**25yr**	1.63	2.01	2.34	2.91	3.73	4.96	5.65	**25yr**	4.39	5.43	6.40	7.20	8.21	**25yr**
50yr	0.59	0.90	1.12	1.62	2.18	2.28	**50yr**	1.88	2.23	2.62	3.24	4.17	5.65	6.45	**50yr**	5.00	6.20	7.30	8.17	9.32	**50yr**
100yr	0.67	1.01	1.27	1.83	2.51	2.55	**100yr**	2.17	2.49	2.94	3.59	4.66	6.44	7.36	**100yr**	5.70	7.08	8.34	9.25	10.61	**100yr**
200yr	0.76	1.14	1.45	2.10	2.93	2.83	**200yr**	2.53	2.76	3.30	4.00	5.21	7.34	8.40	**200yr**	6.49	8.08	9.50	10.49	12.07	**200yr**
500yr	0.91	1.35	1.74	2.53	3.60	3.27	**500yr**	3.11	3.20	3.85	4.62	6.05	8.74	10.01	**500yr**	7.73	9.63	11.31	12.39	14.35	**500yr**

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.35	0.54	0.66	0.88	1.08	1.31	**1yr**	0.94	1.28	1.48	1.89	2.36	2.88	3.23	**1yr**	2.55	3.11	3.64	4.24	4.91	**1yr**
2yr	0.40	0.61	0.75	1.02	1.26	1.50	**2yr**	1.08	1.47	1.70	2.19	2.75	3.28	3.70	**2yr**	2.90	3.56	4.06	4.72	5.35	**2yr**
5yr	0.49	0.75	0.93	1.28	1.63	1.93	**5yr**	1.41	1.88	2.22	2.83	3.58	4.24	4.87	**5yr**	3.76	4.68	5.24	6.07	6.82	**5yr**
10yr	0.58	0.89	1.10	1.54	1.99	2.35	**10yr**	1.72	2.29	2.71	3.48	4.38	5.21	6.03	**10yr**	4.61	5.80	6.43	7.38	8.22	**10yr**
25yr	0.73	1.10	1.37	1.96	2.58	3.05	**25yr**	2.23	2.98	3.57	4.72	5.75	6.86	7.99	**25yr**	6.07	7.69	8.46	9.59	10.53	**25yr**
50yr	0.86	1.31	1.63	2.34	3.15	3.73	**50yr**	2.72	3.65	4.39	5.85	7.04	8.43	9.93	**50yr**	7.46	9.55	10.44	11.70	12.71	**50yr**
100yr	1.02	1.55	1.94	2.80	3.84	4.58	**100yr**	3.31	4.47	5.40	7.27	8.65	10.39	12.33	**100yr**	9.20	11.85	12.89	14.28	15.34	**100yr**
200yr	1.21	1.83	2.31	3.35	4.67	5.59	**200yr**	4.03	5.46	6.66	9.01	10.62	12.80	15.31	**200yr**	11.33	14.72	15.95	17.48	18.51	**200yr**
500yr	1.53	2.28	2.93	4.26	6.06	7.30	**500yr**	5.23	7.14	8.78	12.01	13.95	16.86	20.42	**500yr**	14.92	19.64	21.18	22.82	23.80	**500yr**

Powered by ACIS Northeast Regional Climate Center

Figure B-2 Approximate geographic boundaries for NRCS (SCS) rainfall distributions



Rainfall data sources

This section lists the most current 24-hour rainfall data published by the National Weather Service (NWS) for various parts of the country. Because NWS Technical Paper 40 (TP-40) is out of print, the 24-hour rainfall maps for areas east of the 105th meridian are included here as figures B-3 through B-8. For the area generally west of the 105th meridian, TP-40 has been superseded by NOAA Atlas 2, the Precipitation-Frequency Atlas of the Western United States, published by the National Ocean and Atmospheric Administration.

East of 105th meridian

Hershfield, D.M. 1961. Rainfall frequency atlas of the United States for durations from 30 minutes to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 40. Washington, DC. 155 p.

West of 105th meridian

Miller, J.F., R.H. Frederick, and R.J. Tracey. 1973. Precipitation-frequency atlas of the Western United States. Vol. I Montana; Vol. II, Wyoming; Vol III, Colorado; Vol. IV, New Mexico; Vol V, Idaho; Vol. VI, Utah; Vol. VII, Nevada; Vol. VIII, Arizona; Vol. IX, Washington; Vol. X, Oregon; Vol. XI, California. U.S. Dept. of Commerce, National Weather Service, NOAA Atlas 2. Silver Spring, MD.

Alaska

Miller, John F. 1963. Probable maximum precipitation and rainfall-frequency data for Alaska for areas to 400 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. of Commerce, Weather Bur. Tech. Pap. No. 47. Washington, DC. 69 p.

Hawaii

Weather Bureau. 1962. Rainfall-frequency atlas of the Hawaiian Islands for areas to 200 square miles, durations to 24 hours and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 43. Washington, DC. 60 p.

Puerto Rico and Virgin Islands

Weather Bureau. 1961. Generalized estimates of probable maximum precipitation and rainfall-frequency data for Puerto Rico and Virgin Islands for areas to 400 square miles, durations to 24 hours, and return periods from 1 to 100 years. U.S. Dept. Commerce, Weather Bur. Tech. Pap. No. 42. Washington, DC. 94 P.

Total Required Water Quality Volume Calculation Worksheet

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....							
Design Point(s):	DP1			*Manually enter the information below.*			
P=	1.40	*inch*					
Breakdown of Subcatchments							
Subcatchment Number	**Subcatchment Model Number**	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Description**
1	101	0.07	0.07	100%	0.95	338	Filter Strips
2							
3							
4							
5							
6							
7							
8							
9							
10							
Subtotal		0.07	0.07	100%	0.95	338	Subtotal 1
Total		**0.07**	**0.07**	**100%**	**0.95**	**338**	**Initial WQv**

Identify Runoff Reduction Techniques By Area			
Technique	**Total Contributing Area** *(Acre)*	**Contributing Impervious Area** *(Acre)*	**Notes**
Conservation of Natural Areas	0.00	0.00	*minimum 10,000 sf*
Riparian Buffers	0.00	0.00	*maximum contributing length 75 feet to*
Filter Strips	0.07	0.07	
Tree Planting	0.00	0.00	*Up to 100 sf directly connected*
Total	**0.07**	**0.07**	

Recalculate WQv after application of Area Reduction Techniques					
	Total Area *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Runoff Coefficient Rv**	**WQv** *(ft^3)*
Initial WQv	0.07	0.07	100%	0.95	338
Subtract Area	-0.07	-0.07	--	--	--
WQv adjusted after Area Reductions	**0.00**	**0.00**	0%	0.05	0
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	0.00	0.00	0%	0.05	**0**
WQv reduced by Area Reduction techniques					338

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Subcatchment Summary Table Worksheet

All Subcatchments							
Subcatchment	**Subcatchment Model**	**Total Area**	**Impervious Cover**	**Percent Impervious**	**Runoff Coefficient**	**WQv**	**Description**
		(Acres)	*(Acres)*	*%*	*Rv*	*(ft^3)*	
1	101	0.07	0.07	1.00	0.95	338	Filter Strips
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
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22							
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24							
25							
26							
27							
28							
29							
30							

Runoff Reduction Summary Table Worksheet

Runoff Reduction Volume and Treated Volumes						
Runoff Reduction Techniques/Standard SMPs			Total Contributing Area (acres)	Total Contributing Impervious Area (acres)	WQv Reduced (RRv) cf	WQv Treated cf
Area Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheet flow to Riparian Buffers	RR-2	0.00	0.00		
	Sheet flow to Filter Strips		0.07	0.07		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
Volume Reduction	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive)	RR-10	0.00	0.00	0	
	Green Roof (Extensive)		0.00	0.00	0	
Standard SMPs w/RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Bioretention	F-5	0.00	0.00	0	0
	Infiltration Bioretention		0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00		0
Standard SMPs	Micropool Extended Detention Pond	P-1	0.00	0.00		0
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention Pond	P-3	0.00	0.00		0
	Multiple Pond system	P-4	0.00	0.00		0
	Pocket Pond	P-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Organic Filter	F-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Wet Swale	O-2	0.00	0.00		0
Totals by Area Reduction →			0.07	0.07	338	
Totals by Volume Reduction →			0.00	0.00	0	
Totals by Standard SMP w/RRV →			0.00	0.00	0	0
Totals by Standard SMP →			0.00	0.00		0
Totals (Area + Volume + all SMPs) →			**0.07**	**0.07**	**338**	**0**

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Notice of Intent Questions Worksheet

#	NOI Question		Reported Value	
			cf	af
28	Total Water Quality Volume (WQv) Required		338	*0.008*
30	Total RRV Provided		338	*0.008*
31	Is RRv Provided ≥WQv Required?		Yes	
32	Minimum RRv		0	*0.000*
32a	Is RRv Provided ≥ Minimum RRv Required?	Yes	*Conditions Met*	
33a	Total WQv Treated		0	*0.000*
34	Sum of Volume Reduced & Treated		338	*0.008*
35	Is Sum RRv Provided and WQv Provided ≥WQv Required?	Yes	*Conditions Met*	
Apply Peak Flow Attenuation				
			af	af
36	Channel Protection	*Cpv*	*0.000*	*0.000*
			cfs	cfs
37	Overbank	*Qp*	*203.70*	*191.48*
37	Extreme Flood Control	*Qf*	*436.90*	*422.98*
	Are Quantity Control requirements met?	*yes*	*Plan Completed*	

Planning Worksheet

Practice	Description	Application
Preservation of Undisturbed Areas	Delineate and place into permanent conservation undisturbed forests, native vegetated areas, riparian corridors, wetlands, and natural terrain.	*N/A*
Preservation of Buffers	Define, delineate and preserve naturally vegetated buffers along perennial streams, rivers, shorelines and wetlands.	*N/A*
Reduction of Clearing and Grading	Limit clearing and grading to the minimum amount needed for roads, driveways, foundations, utilities and stormwater management facilities.	*Considered and Applied*
Locating Development in Less Sensitive Areas	Avoid sensitive resource areas such as floodplains, steep slopes, erodible soils, wetlands, mature forests and critical habitats by locating development to fit the terrain in areas that will create the least impact.	*Considered and Applied*
Open Space Design	Use clustering, conservation design or open space design to reduce impervious cover, preserve more open space and protect water resources.	*N/A*
Soil Restoration	Restore the original properties and porosity of the soil by deep till and amendment with compost to reduce the generation of runoff and enhance the runoff reduction performance of post construction practices.	*Considered and Applied*
Roadway Reduction	Minimize roadway widths and lengths to reduce site impervious area	*N/A*
Sidewalk Reduction	Minimize sidewalk lengths and widths to reduce site impervious area	*N/A*
Driveway Reduction	Minimize driveway lengths and widths to reduce site impervious area	*N/A*
Cul-de-sac Reduction	Minimize the number of cul-de-sacs and incorporate landscaped areas to reduce their impervious cover.	*N/A*
Building Footprint Reduction	Reduce the impervious footprint of residences and commercial buildings by using alternate or taller buildings while maintaining the same floor to area ratio.	*N/A*
Parking Reduction	Reduce imperviousness on parking lots by eliminating unneeded spaces, providing compact car spaces and efficient parking lanes, minimizing stall dimensions, using porous pavement surfaces in overflow parking areas, and using multi-storied parking decks where appropriate.	*N/A*

Filter Strips Worksheet

Design Point(s):	DP1

Enter Site Data For Drainage Area to be Treated by Practice								
Subcatchment Number	**Subcatchment Model Number**	**Total Area** *(Acres)*	**Impervious Area** *(Acres)*	**Percent Impervious** *%*	**Rv**	**WQv** *(ft^3)*	**Precipitation** *(in)*	**Description**
1	101	0.07	0.07	1.00	0.95	338	1.40	Filter Strips

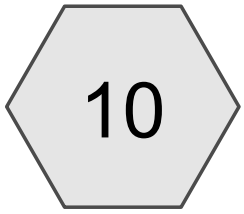
Design Elements			
Is another area based practice applied to this area?	*no*	*Y/N*	
Amended Soils & Dense Turf Cover?	*yes*	*Y/N*	
Is area protected from compaction from heavy equipment during construction?	*yes*	*Y/N*	
Small Area of Impervious Area & close to source?	*yes*	*Y/N*	
Compost Amendments?	*no*	*Y/N*	
Boundary Spreader?	*yes*	*Y/N*	*Gravel Diaphragm at top* *Permeable Berm at bottom*
Boundary Zone?	*yes*	*Y/N*	*25 feet of level grass*
Specify how sheet flow will be ensured.	level spreader		*level spreader shall be used for buffer slopes ranging from 3-15%*
Average contributing slope	8	*%*	*3% maximum unless a level spreader is used.*
Slope of first 10 feet of Filter Strip	2	*%*	*2% maximum*
Overall Slope	8	*%*	
Contributing Length of Pervious Areas (PC)	20	*ft.*	*150 ft. maximum*
Contributing Length of Impervious areas (IC)	75	*ft*	*75 ft maximum*
Maximum PC Contributing Length for combination of PC & IC	95	*ft*	*Okay*
Soil Group (HSG)	D		
Filter Strip Width	58	*ft*	*50 ft minimum for slopes 0-8%* *75 ft minimum for slopes 8-12%* *100 ft minimum for slopes 12-15%* *HSG C or D increase by 15-20%*
Are All Criteria for Filter Strips in Section 5.3.2 met?	*yes*	*Y/N*	

Area Reduction Adjustments		
Subtract	**0.07**	***Acres from total Area***
Subtract	**0.07**	***Acres from total Impervious Area***

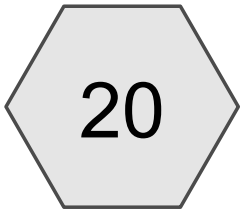
Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix F

Pre-Development Stormwater Analysis



To DP-1



To DP-2

Subcat Reach Pond Link

Routing Diagram for 2020-02-11 Independent Solar Existing
Prepared by Langan Eng & Env Srvcs, Inc, Printed 2/7/2020
HydroCAD® 10.00-18 s/n 08101 © 2016 HydroCAD Software Solutions LLC

Summary for Subcatchment 10: To DP-1

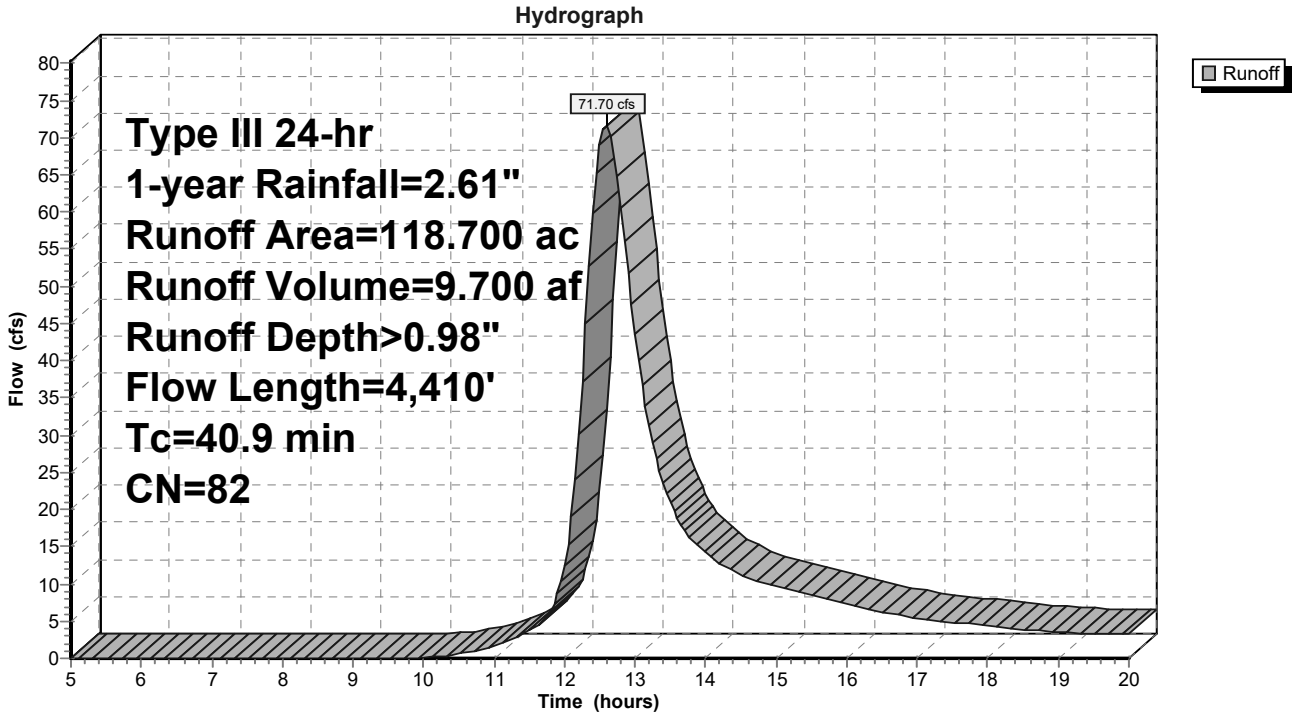
Runoff = 71.70 cfs @ 12.59 hrs, Volume= 9.700 af, Depth> 0.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-year Rainfall=2.61"

	Area (ac)	CN	Description
	34.200	84	Pasture/grassland/range, Fair, HSG D
	24.000	79	Pasture/grassland/range, Fair, HSG C
	1.500	98	Paved parking, HSG D
	5.600	89	Dirt roads, HSG D
	0.500	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.700	82	Weighted Average
	115.800		97.56% Pervious Area
	2.900		2.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 10: To DP-1



Summary for Subcatchment 20: To DP-2

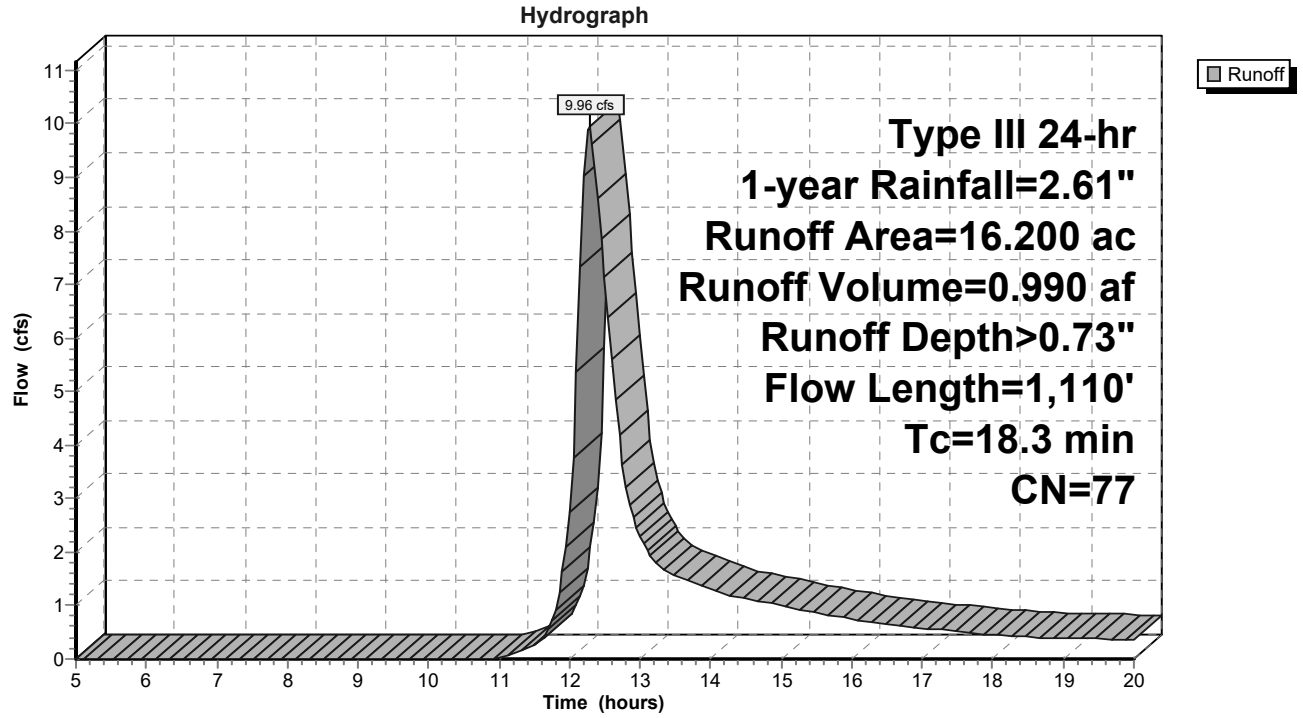
Runoff = 9.96 cfs @ 12.28 hrs, Volume= 0.990 af, Depth> 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-year Rainfall=2.61"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
	4.600	79	Woods, Fair, HSG D
*	2.700	73	Woods, Fair, HSG C (off-site)
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site)
	0.900	79	Pasture/grassland/range, Fair, HSG C
	0.100	87	Dirt roads, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 20: To DP-2



Summary for Subcatchment 10: To DP-1

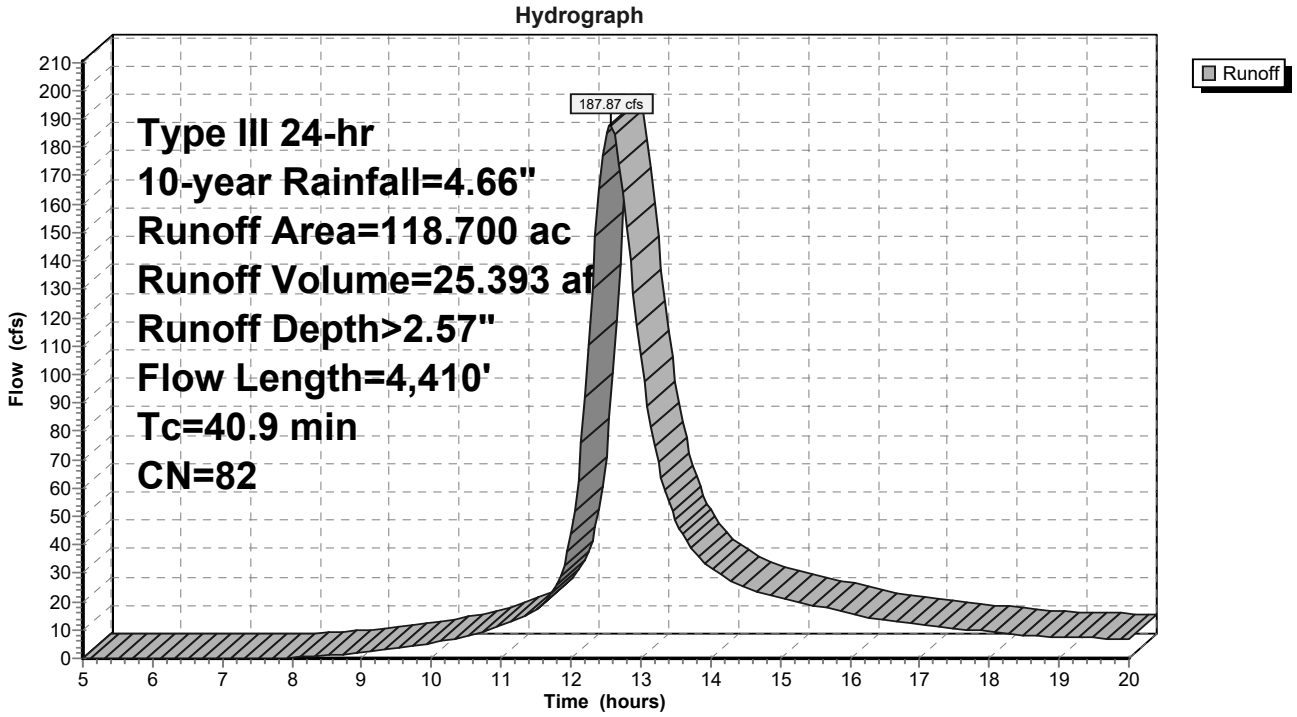
Runoff = 187.87 cfs @ 12.57 hrs, Volume= 25.393 af, Depth> 2.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.66"

	Area (ac)	CN	Description
	34.200	84	Pasture/grassland/range, Fair, HSG D
	24.000	79	Pasture/grassland/range, Fair, HSG C
	1.500	98	Paved parking, HSG D
	5.600	89	Dirt roads, HSG D
	0.500	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.700	82	Weighted Average
	115.800		97.56% Pervious Area
	2.900		2.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 10: To DP-1



Summary for Subcatchment 20: To DP-2

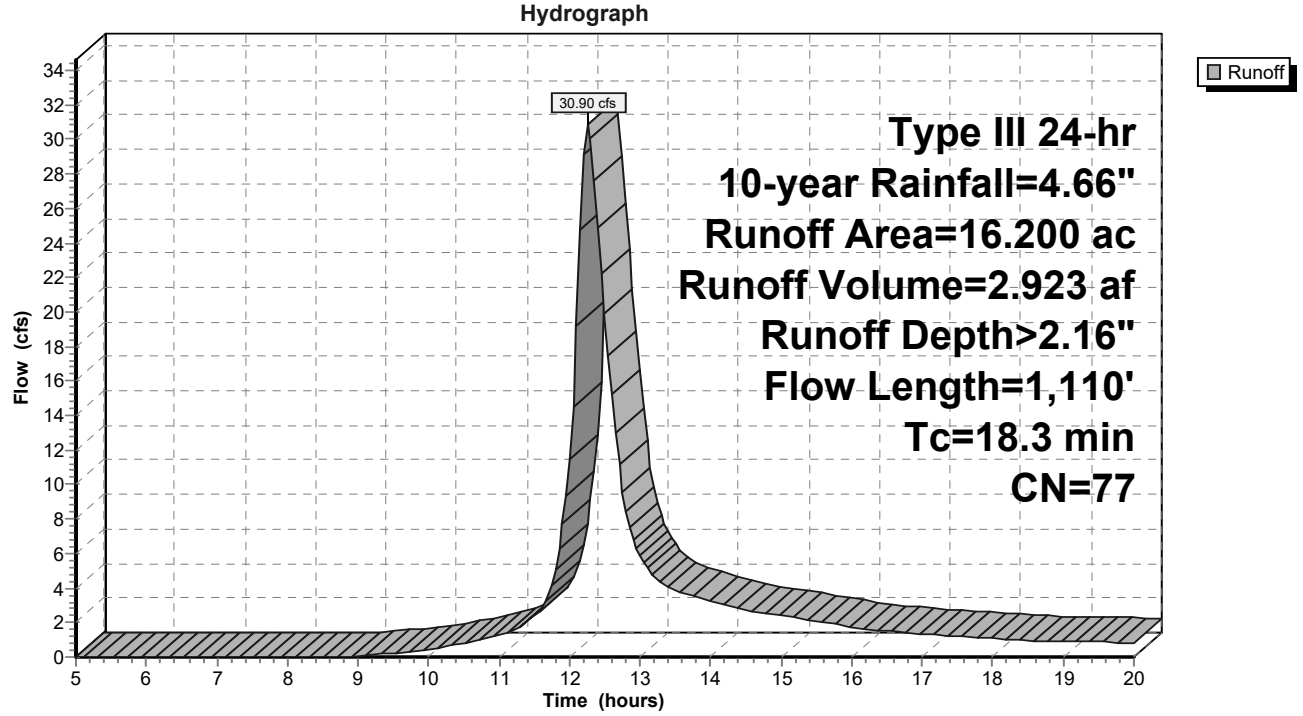
Runoff = 30.90 cfs @ 12.26 hrs, Volume= 2.923 af, Depth> 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.66"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
	4.600	79	Woods, Fair, HSG D
*	2.700	73	Woods, Fair, HSG C (off-site)
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site)
	0.900	79	Pasture/grassland/range, Fair, HSG C
	0.100	87	Dirt roads, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 20: To DP-2



Summary for Subcatchment 10: To DP-1

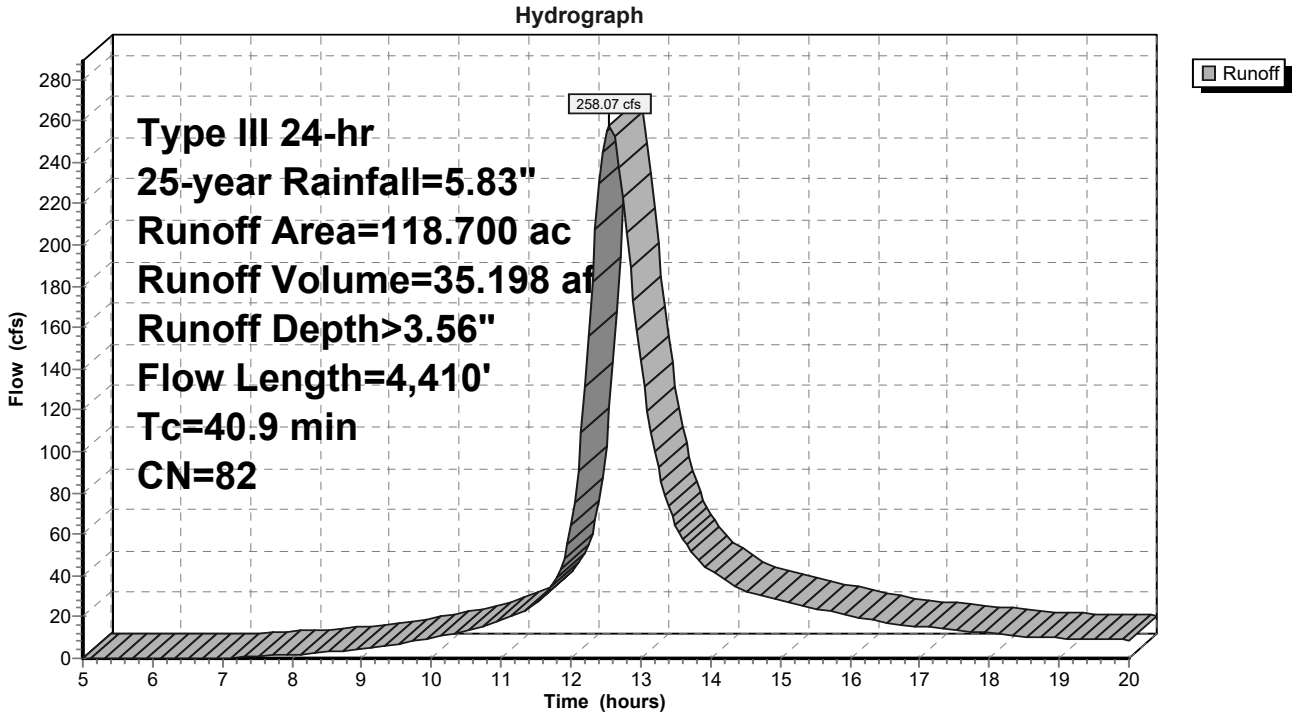
Runoff = 258.07 cfs @ 12.56 hrs, Volume= 35.198 af, Depth> 3.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.83"

	Area (ac)	CN	Description
	34.200	84	Pasture/grassland/range, Fair, HSG D
	24.000	79	Pasture/grassland/range, Fair, HSG C
	1.500	98	Paved parking, HSG D
	5.600	89	Dirt roads, HSG D
	0.500	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.700	82	Weighted Average
	115.800		97.56% Pervious Area
	2.900		2.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 10: To DP-1



Summary for Subcatchment 20: To DP-2

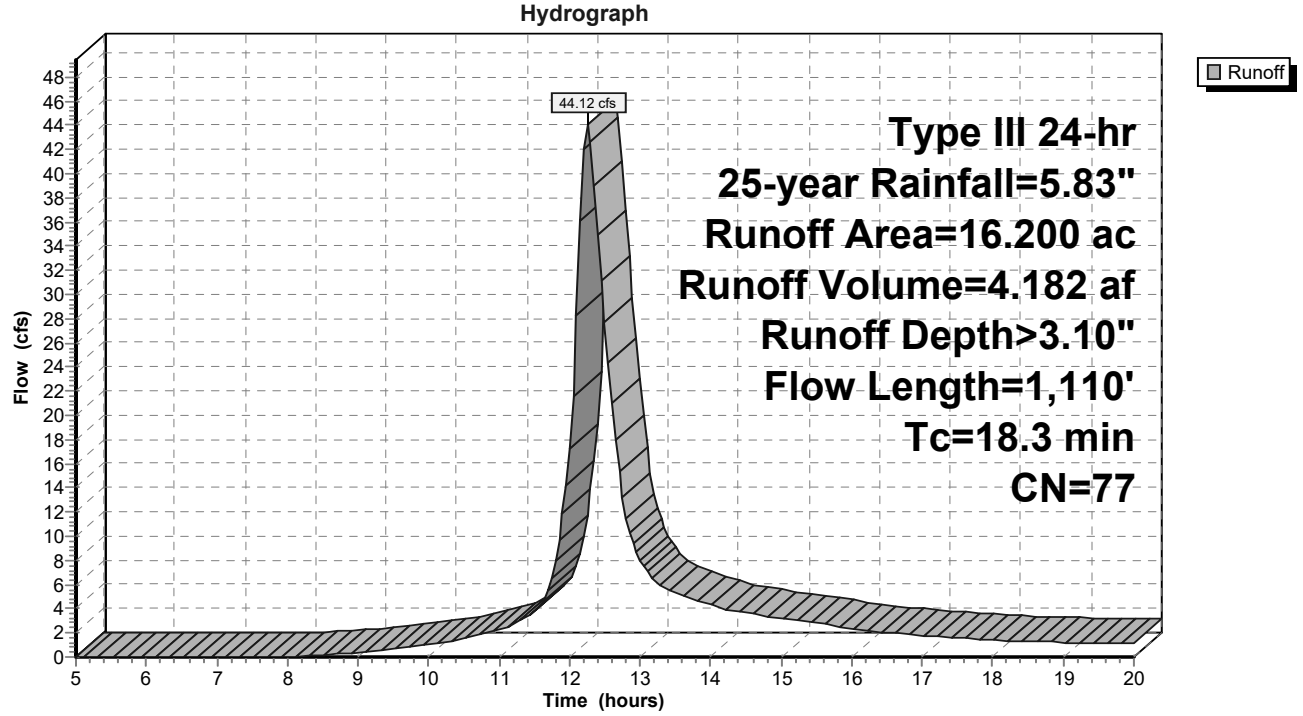
Runoff = 44.12 cfs @ 12.25 hrs, Volume= 4.182 af, Depth> 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.83"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
	4.600	79	Woods, Fair, HSG D
*	2.700	73	Woods, Fair, HSG C (off-site)
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site)
	0.900	79	Pasture/grassland/range, Fair, HSG C
	0.100	87	Dirt roads, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 20: To DP-2



Summary for Subcatchment 10: To DP-1

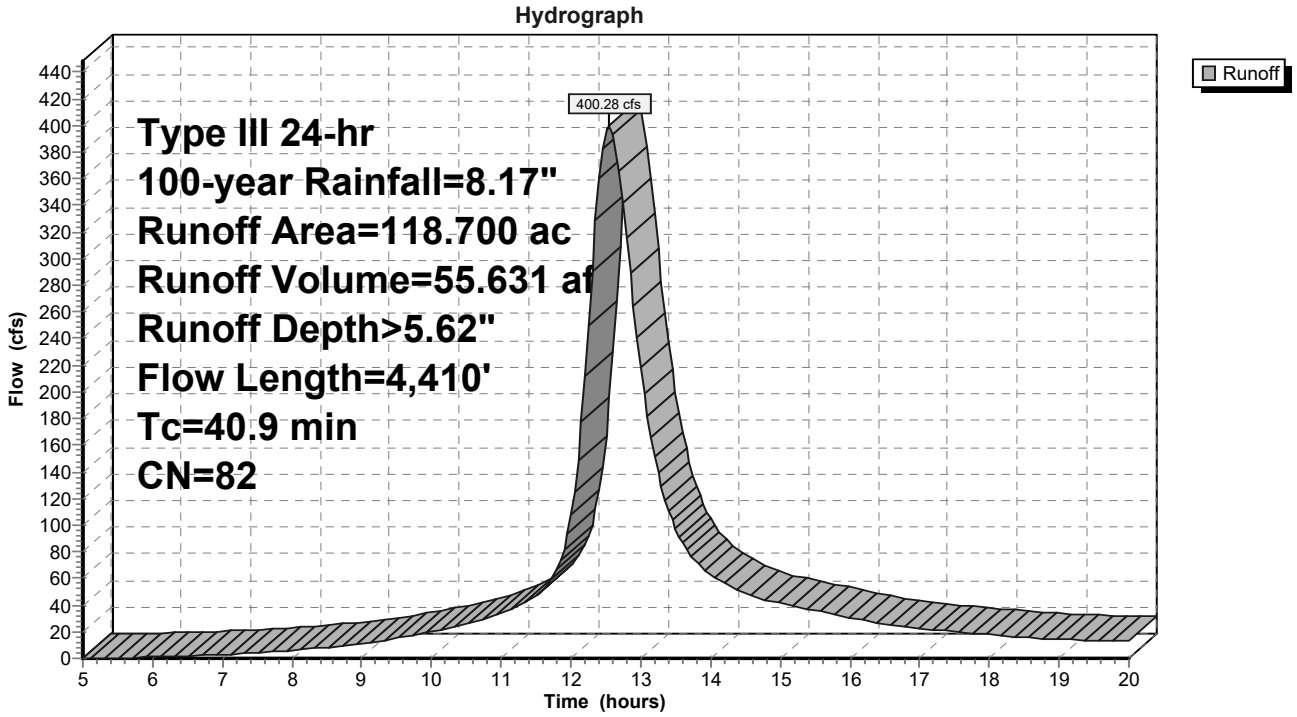
Runoff = 400.28 cfs @ 12.55 hrs, Volume= 55.631 af, Depth> 5.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.17"

	Area (ac)	CN	Description
	34.200	84	Pasture/grassland/range, Fair, HSG D
	24.000	79	Pasture/grassland/range, Fair, HSG C
	1.500	98	Paved parking, HSG D
	5.600	89	Dirt roads, HSG D
	0.500	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.700	82	Weighted Average
	115.800		97.56% Pervious Area
	2.900		2.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 10: To DP-1



Summary for Subcatchment 20: To DP-2

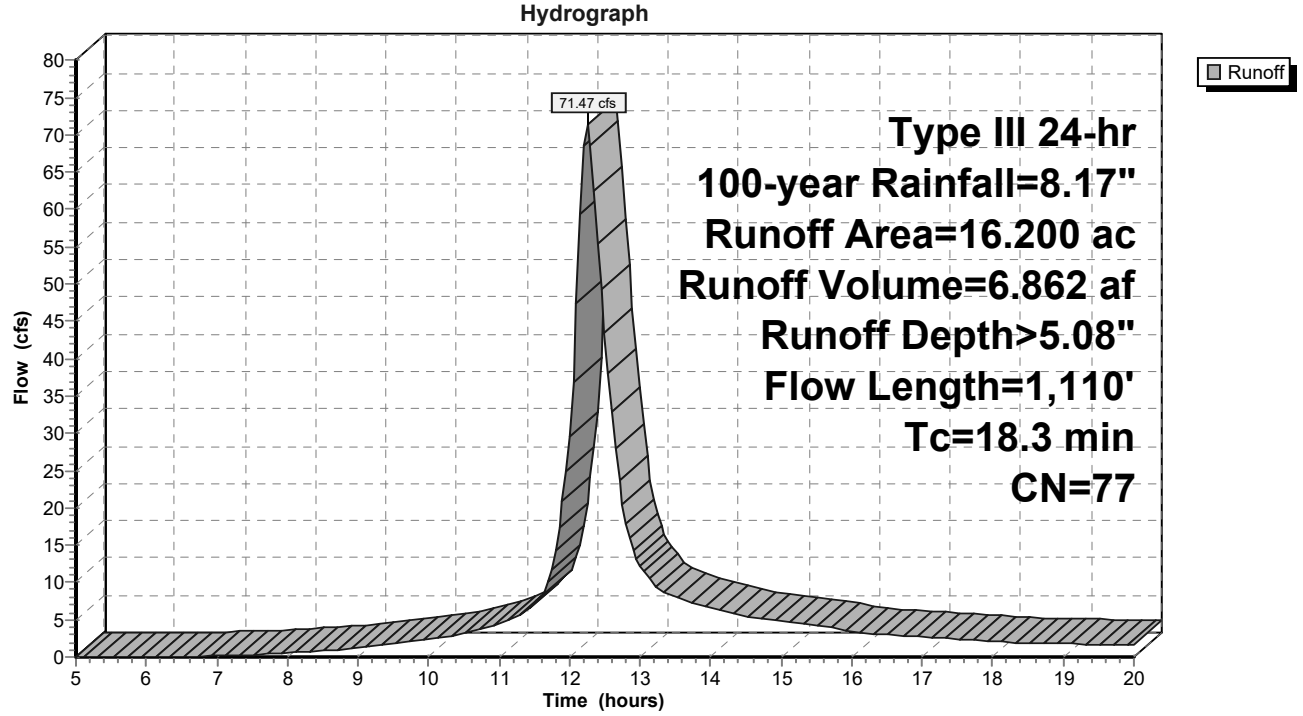
Runoff = 71.47 cfs @ 12.25 hrs, Volume= 6.862 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.17"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
	4.600	79	Woods, Fair, HSG D
*	2.700	73	Woods, Fair, HSG C (off-site)
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site)
	0.900	79	Pasture/grassland/range, Fair, HSG C
	0.100	87	Dirt roads, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

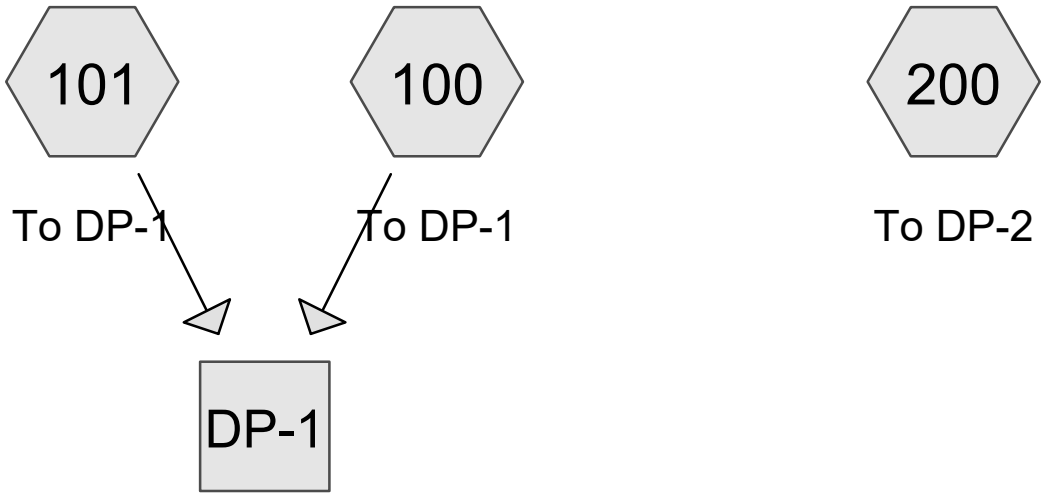
Subcatchment 20: To DP-2



Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix G

Post-Development Stormwater Analysis



Subcat Reach Pond Link

Routing Diagram for 2020-02-11 Independent Solar Proposed
Prepared by Langan Eng & Env Srvcs, Inc, Printed 2/7/2020
HydroCAD® 10.00-18 s/n 08101 © 2016 HydroCAD Software Solutions LLC

Summary for Subcatchment 100: To DP-1

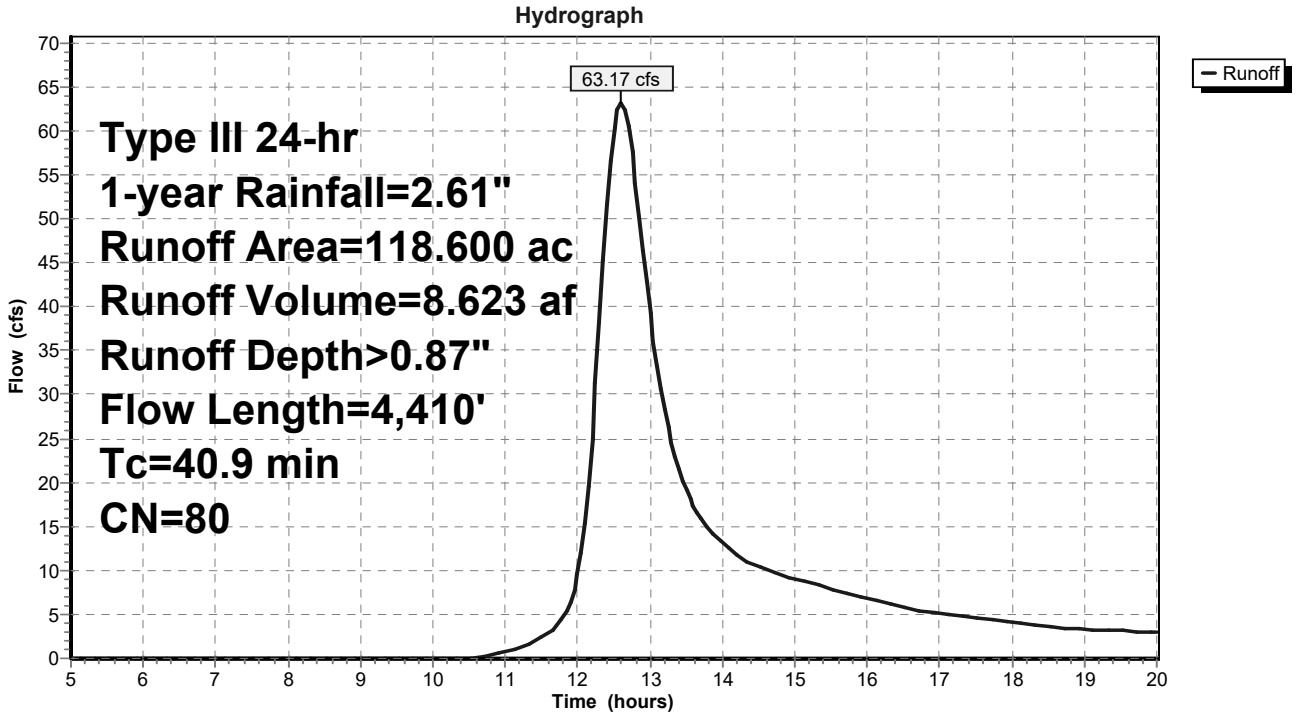
Runoff = 63.17 cfs @ 12.60 hrs, Volume= 8.623 af, Depth> 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-year Rainfall=2.61"

	Area (ac)	CN	Description
	22.200	84	Pasture/grassland/range, Fair, HSG D
	13.700	79	Pasture/grassland/range, Fair, HSG C
	11.550	78	Meadow, non-grazed, HSG D
	10.350	71	Meadow, non-grazed, HSG C
*	0.800	98	Permeable Haul Road, HSG D
*	0.200	98	Permeabl Haul Road, HSG C
	1.500	98	Paved parking, HSG D
	5.250	89	Dirt roads, HSG D
	0.150	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.600	80	Weighted Average
	114.700		96.71% Pervious Area
	3.900		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 100: To DP-1



Summary for Subcatchment 101: To DP-1

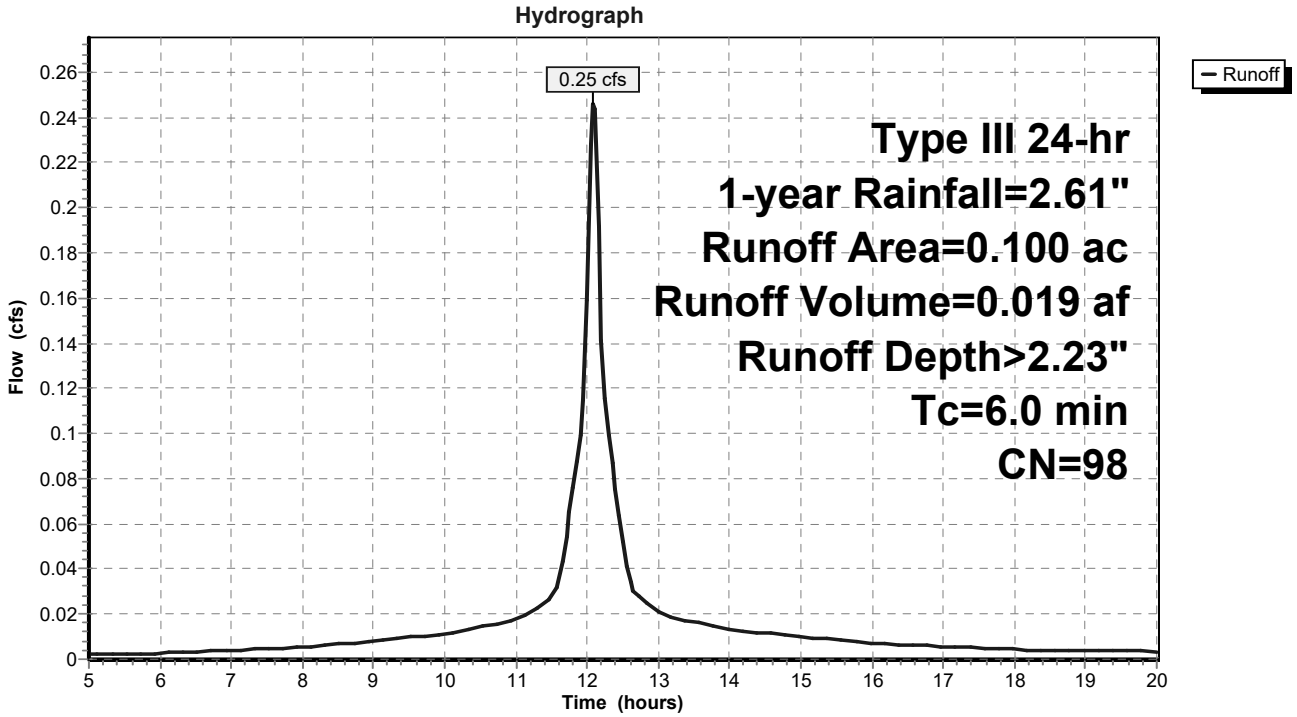
Runoff = 0.25 cfs @ 12.09 hrs, Volume= 0.019 af, Depth> 2.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-year Rainfall=2.61"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 101: To DP-1



Summary for Subcatchment 200: To DP-2

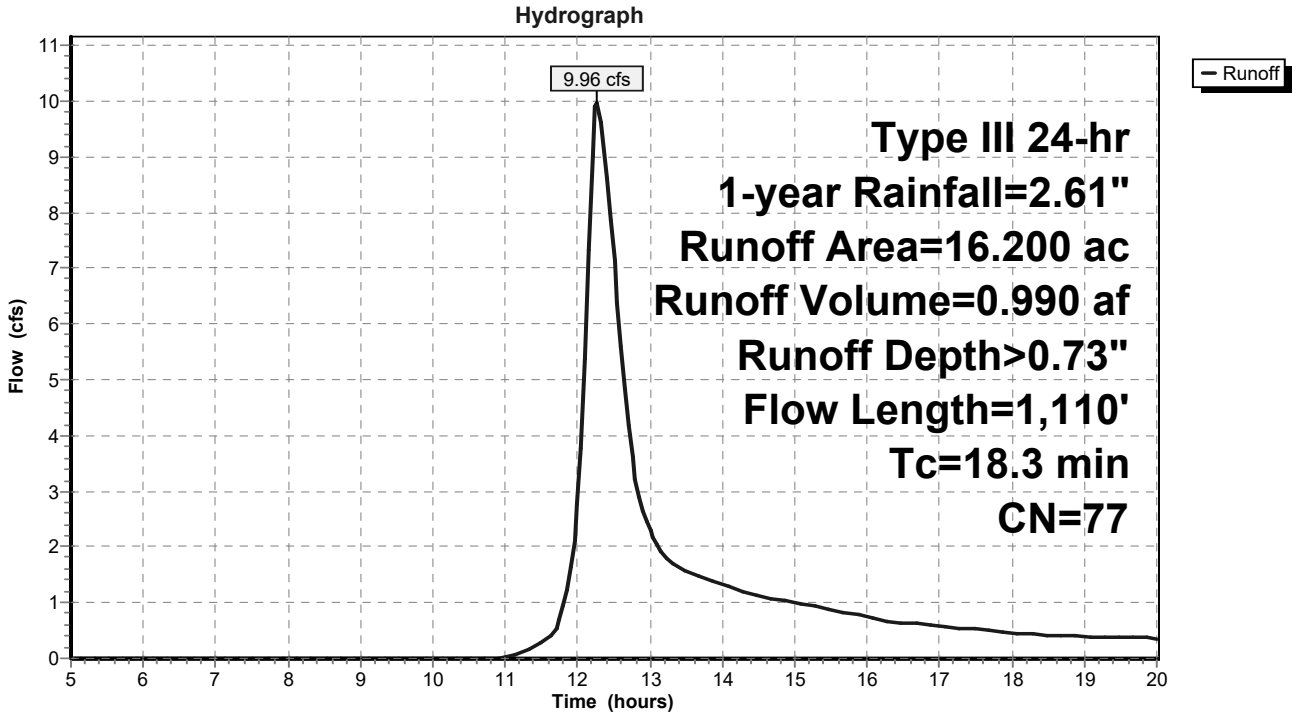
Runoff = 9.96 cfs @ 12.28 hrs, Volume= 0.990 af, Depth> 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 1-year Rainfall=2.61"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
*	2.700	73	Woods, Fair, HSG C (off-site)
	4.600	79	Woods, Fair, HSG D
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site
	0.350	79	Pasture/grassland/range, Fair, HSG C
	0.050	87	Dirt roads, HSG C
	0.600	71	Meadow, non-grazed, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 200: To DP-2



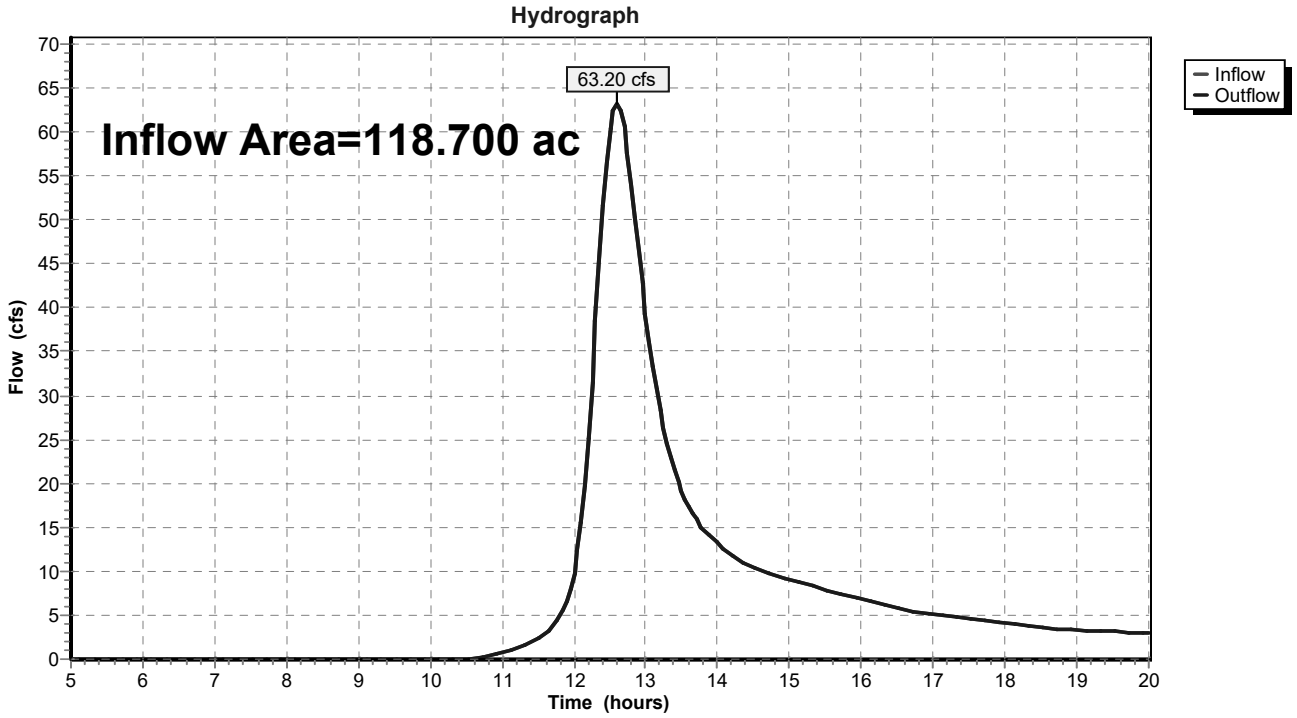
Summary for Reach DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 118.700 ac, 3.37% Impervious, Inflow Depth > 0.87" for 1-year event
Inflow = 63.20 cfs @ 12.60 hrs, Volume= 8.642 af
Outflow = 63.20 cfs @ 12.60 hrs, Volume= 8.642 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP-1:



Summary for Subcatchment 100: To DP-1

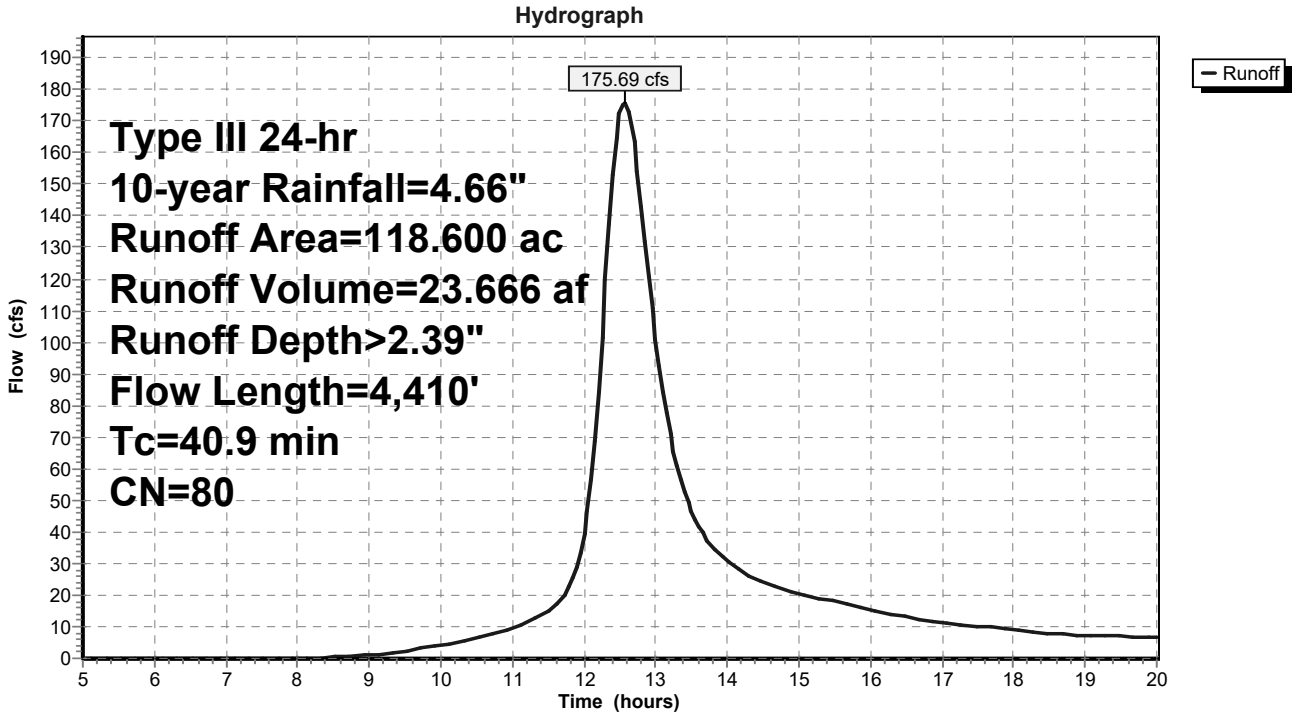
Runoff = 175.69 cfs @ 12.57 hrs, Volume= 23.666 af, Depth> 2.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.66"

	Area (ac)	CN	Description
	22.200	84	Pasture/grassland/range, Fair, HSG D
	13.700	79	Pasture/grassland/range, Fair, HSG C
	11.550	78	Meadow, non-grazed, HSG D
	10.350	71	Meadow, non-grazed, HSG C
*	0.800	98	Permeable Haul Road, HSG D
*	0.200	98	Permeabl Haul Road, HSG C
	1.500	98	Paved parking, HSG D
	5.250	89	Dirt roads, HSG D
	0.150	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.600	80	Weighted Average
	114.700		96.71% Pervious Area
	3.900		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 100: To DP-1



Summary for Subcatchment 101: To DP-1

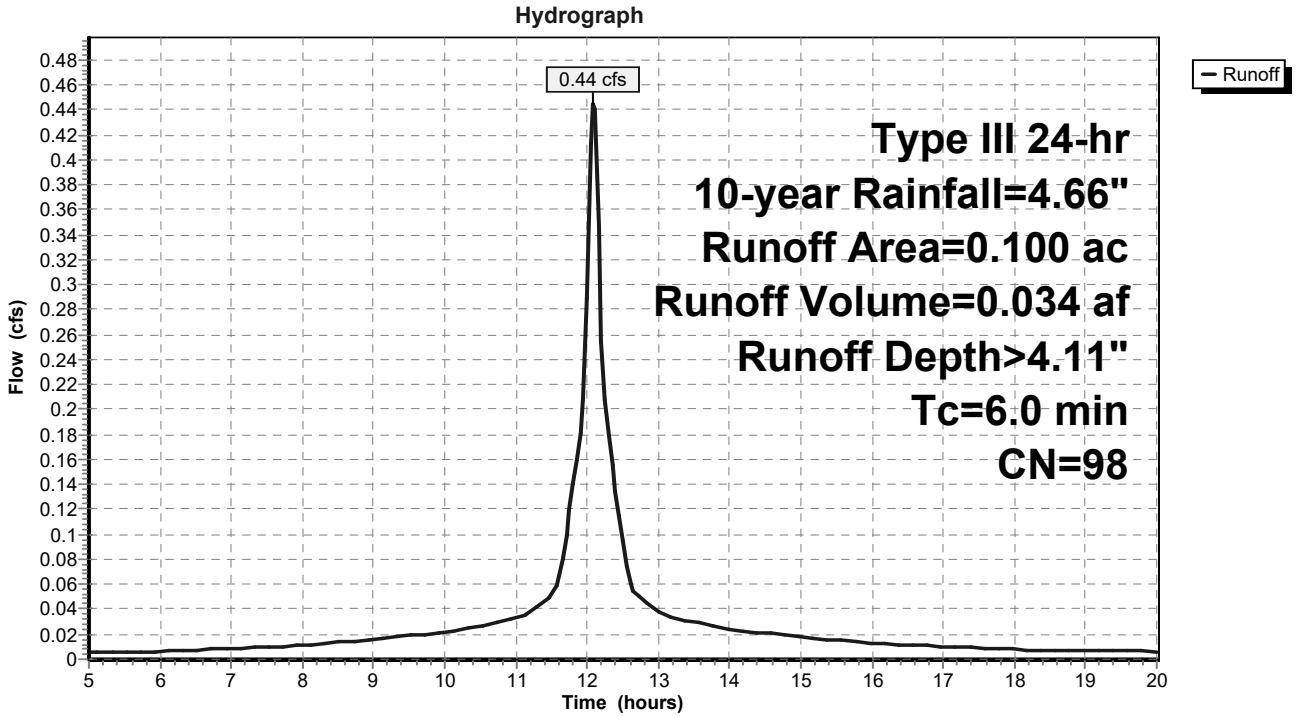
Runoff = 0.44 cfs @ 12.09 hrs, Volume= 0.034 af, Depth> 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.66"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 101: To DP-1



Summary for Subcatchment 200: To DP-2

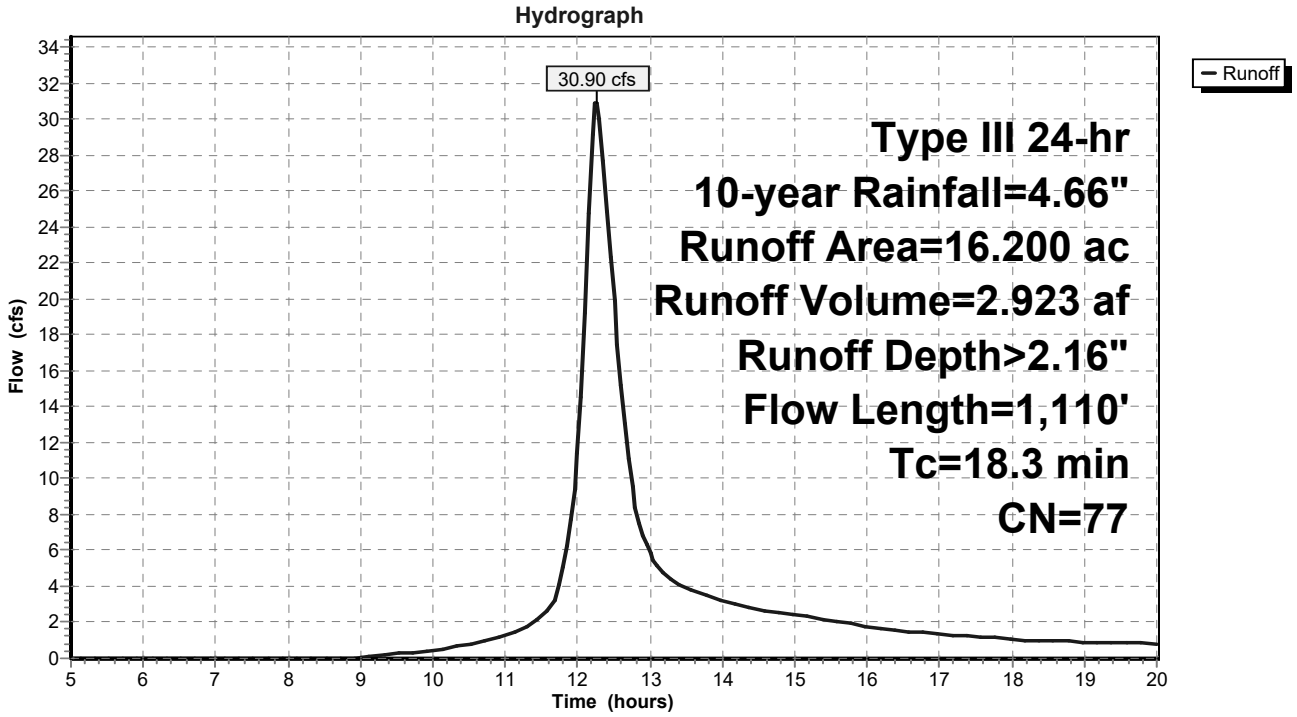
Runoff = 30.90 cfs @ 12.26 hrs, Volume= 2.923 af, Depth> 2.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-year Rainfall=4.66"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
*	2.700	73	Woods, Fair, HSG C (off-site)
	4.600	79	Woods, Fair, HSG D
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site
	0.350	79	Pasture/grassland/range, Fair, HSG C
	0.050	87	Dirt roads, HSG C
	0.600	71	Meadow, non-grazed, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 200: To DP-2



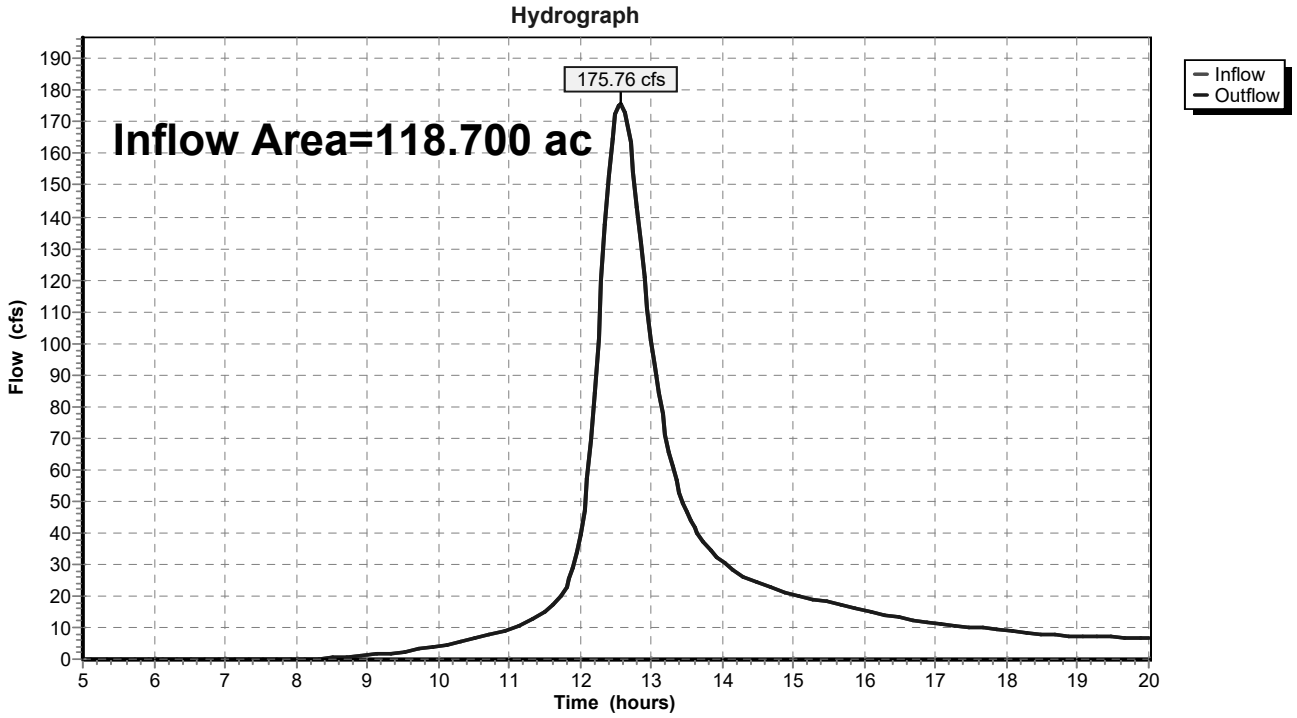
Summary for Reach DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 118.700 ac, 3.37% Impervious, Inflow Depth > 2.40" for 10-year event
Inflow = 175.76 cfs @ 12.57 hrs, Volume= 23.701 af
Outflow = 175.76 cfs @ 12.57 hrs, Volume= 23.701 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP-1:



Summary for Subcatchment 100: To DP-1

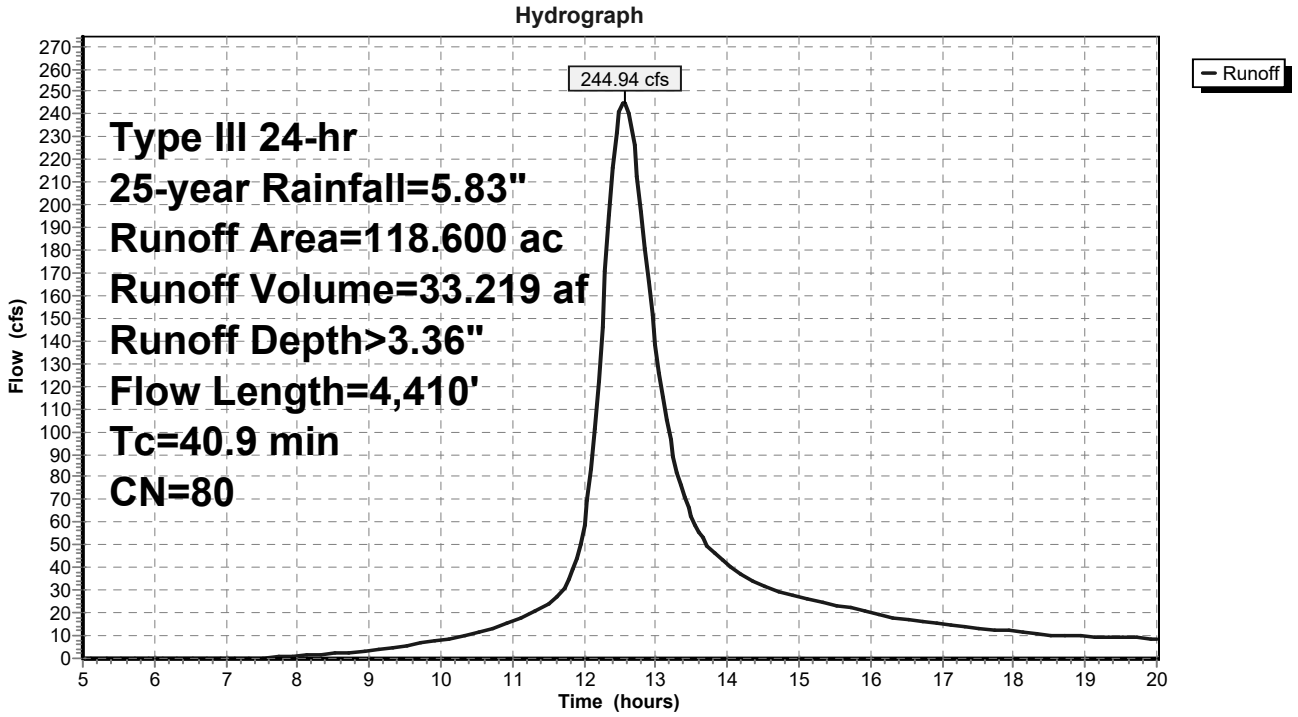
Runoff = 244.94 cfs @ 12.56 hrs, Volume= 33.219 af, Depth> 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.83"

	Area (ac)	CN	Description
	22.200	84	Pasture/grassland/range, Fair, HSG D
	13.700	79	Pasture/grassland/range, Fair, HSG C
	11.550	78	Meadow, non-grazed, HSG D
	10.350	71	Meadow, non-grazed, HSG C
*	0.800	98	Permeable Haul Road, HSG D
*	0.200	98	Permeabl Haul Road, HSG C
	1.500	98	Paved parking, HSG D
	5.250	89	Dirt roads, HSG D
	0.150	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.600	80	Weighted Average
	114.700		96.71% Pervious Area
	3.900		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 100: To DP-1



Summary for Subcatchment 101: To DP-1

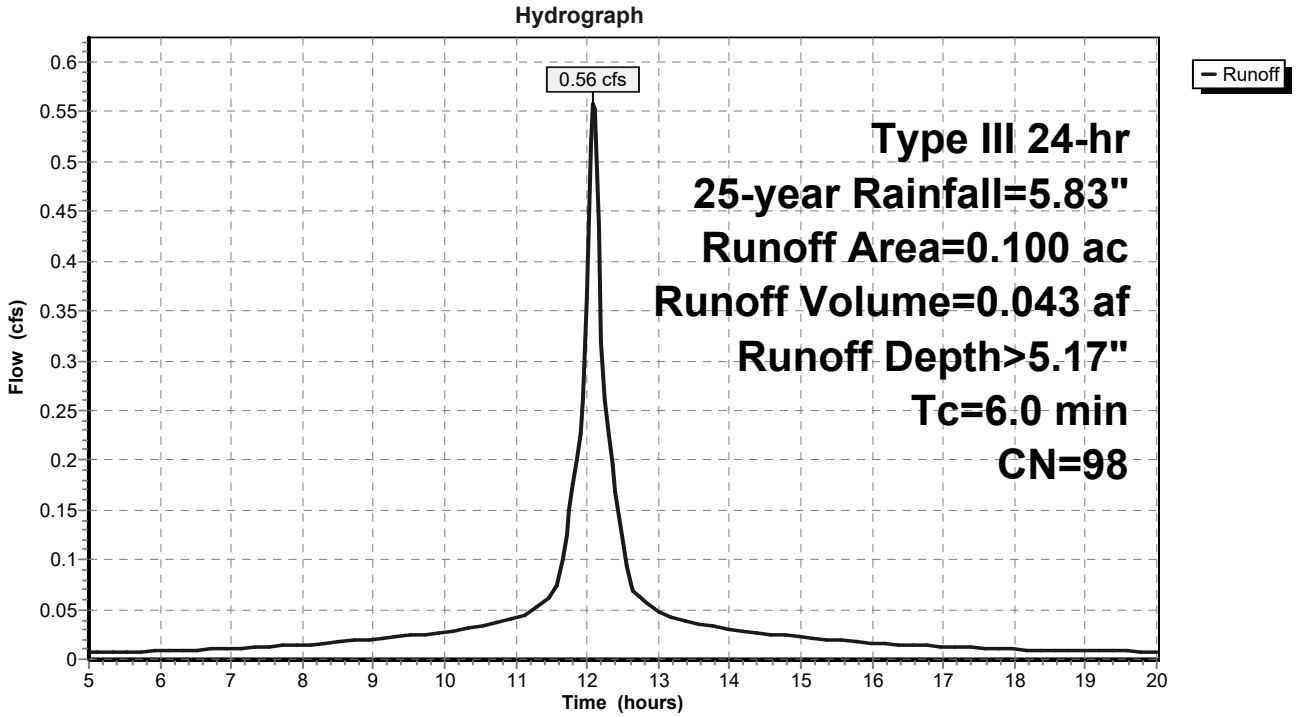
Runoff = 0.56 cfs @ 12.09 hrs, Volume= 0.043 af, Depth> 5.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.83"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 101: To DP-1



Summary for Subcatchment 200: To DP-2

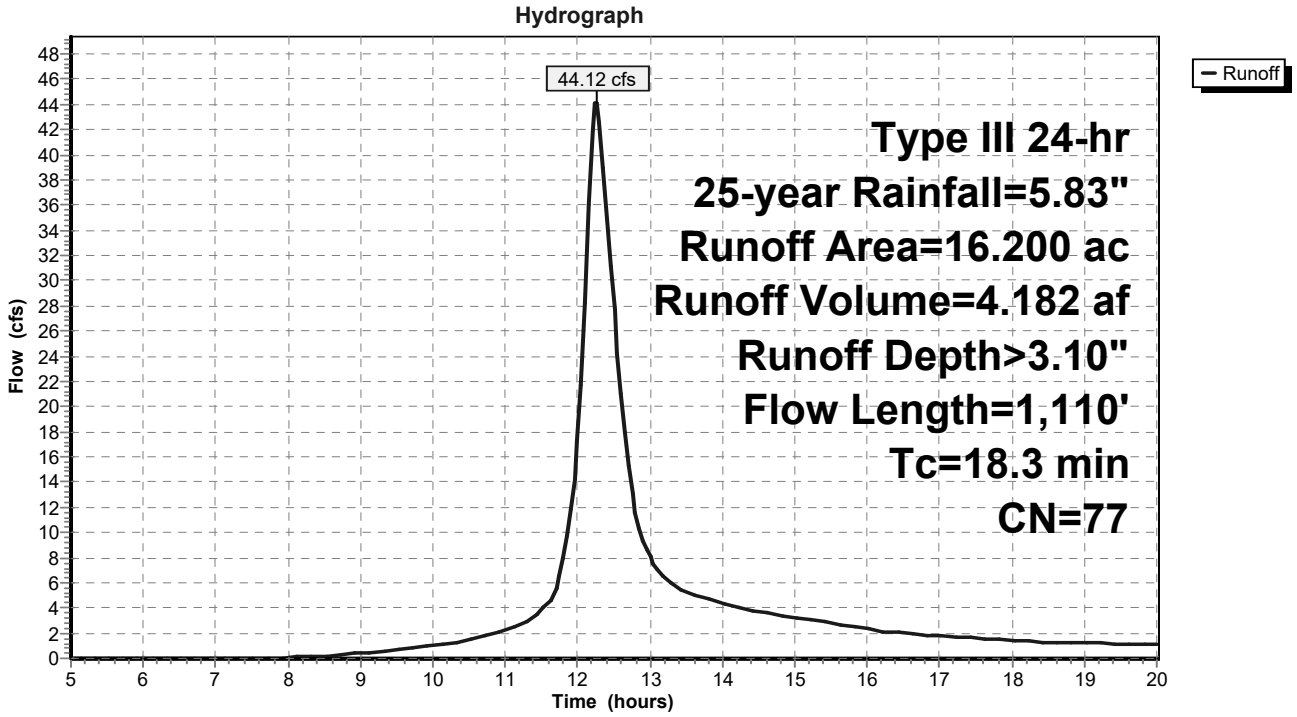
Runoff = 44.12 cfs @ 12.25 hrs, Volume= 4.182 af, Depth> 3.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-year Rainfall=5.83"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
*	2.700	73	Woods, Fair, HSG C (off-site)
	4.600	79	Woods, Fair, HSG D
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site
	0.350	79	Pasture/grassland/range, Fair, HSG C
	0.050	87	Dirt roads, HSG C
	0.600	71	Meadow, non-grazed, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 200: To DP-2



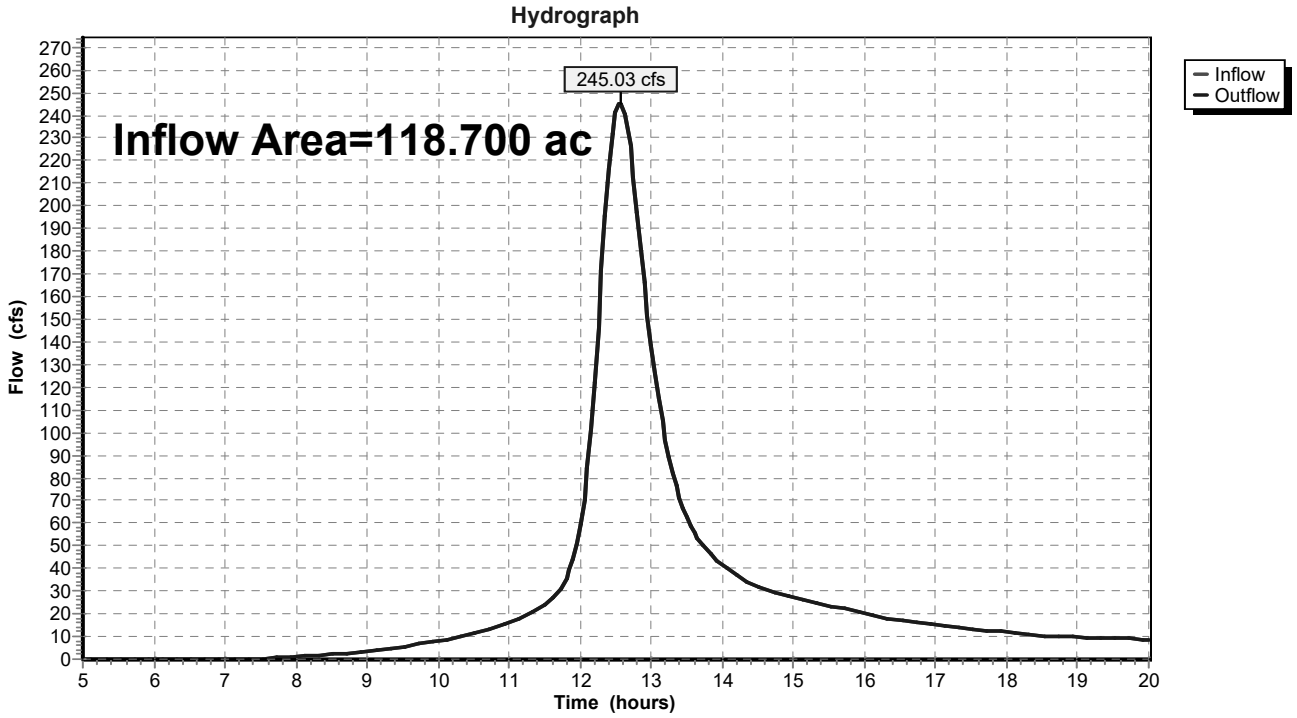
Summary for Reach DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 118.700 ac, 3.37% Impervious, Inflow Depth > 3.36" for 25-year event
Inflow = 245.03 cfs @ 12.56 hrs, Volume= 33.263 af
Outflow = 245.03 cfs @ 12.56 hrs, Volume= 33.263 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP-1:



Summary for Subcatchment 100: To DP-1

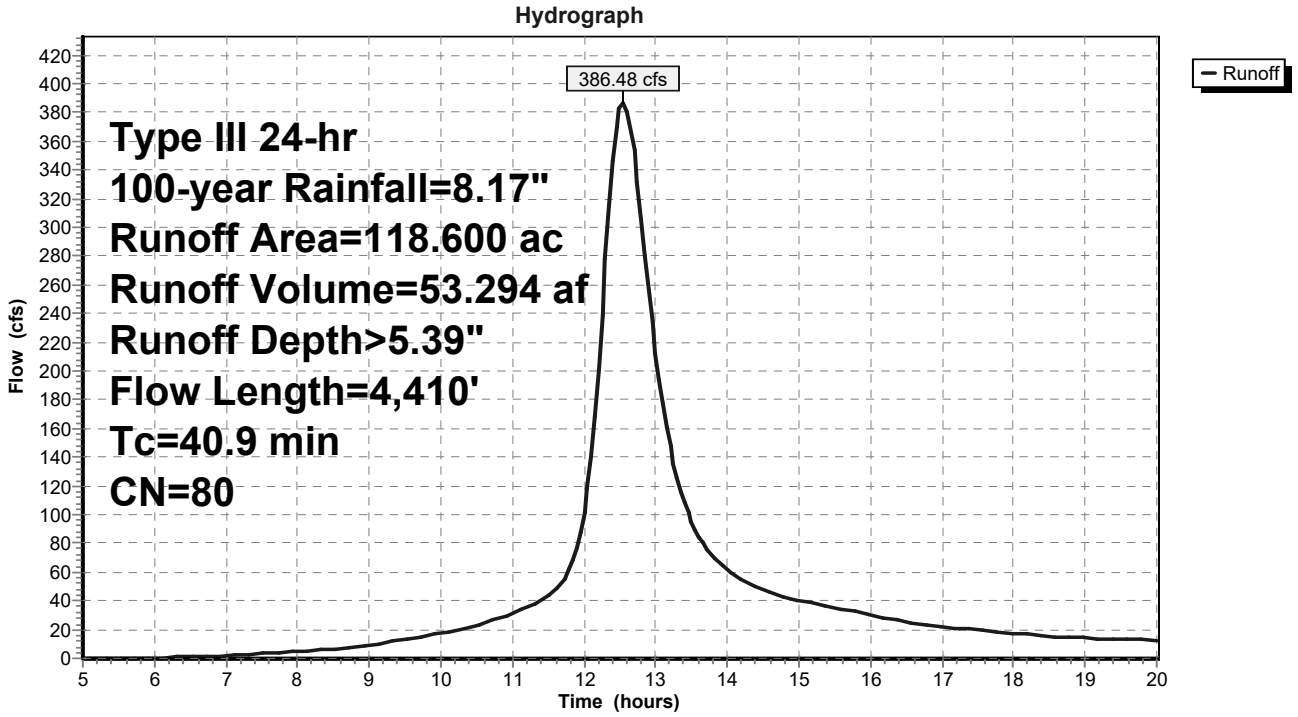
Runoff = 386.48 cfs @ 12.55 hrs, Volume= 53.294 af, Depth> 5.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.17"

	Area (ac)	CN	Description
	22.200	84	Pasture/grassland/range, Fair, HSG D
	13.700	79	Pasture/grassland/range, Fair, HSG C
	11.550	78	Meadow, non-grazed, HSG D
	10.350	71	Meadow, non-grazed, HSG C
*	0.800	98	Permeable Haul Road, HSG D
*	0.200	98	Permeabl Haul Road, HSG C
	1.500	98	Paved parking, HSG D
	5.250	89	Dirt roads, HSG D
	0.150	87	Dirt roads, HSG C
	2.500	73	Woods, Fair, HSG C
*	8.200	79	Woods, Fair, HSG D (off-site)
*	7.800	73	Woods, Fair, HSG C (off-site)
*	0.700	98	Water Surface, HSG D
*	0.700	98	Water Surface, HSG D (off-site)
*	14.500	84	50-75% Grass cover, Fair, HSG D (off-site)
*	18.500	79	50-75% Grass cover, Fair, HSG C (off-site)
	118.600	80	Weighted Average
	114.700		96.71% Pervious Area
	3.900		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
22.0	1,850	0.0400	1.40		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.1	1,800	0.0400	27.98	11,333.04	**Trap/Vee/Rect Channel Flow, C-D** Bot.W=4.50' D=18.00' Z= 1.0 '/' Top.W=40.50' n= 0.040 Earth, cobble bottom, clean sides
9.0	660	0.0600	1.22		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
40.9	4,410	Total			

Subcatchment 100: To DP-1



Summary for Subcatchment 101: To DP-1

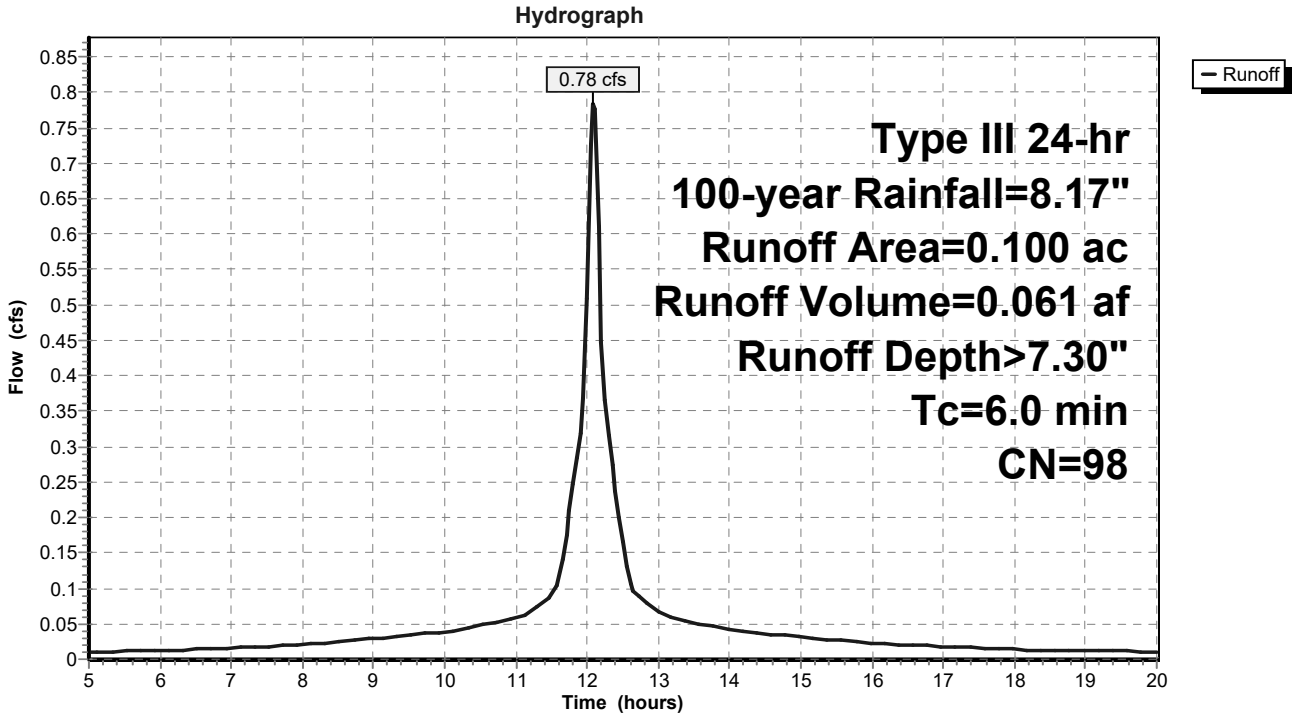
Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.061 af, Depth> 7.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.17"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG C
0.100		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 101: To DP-1



Summary for Subcatchment 200: To DP-2

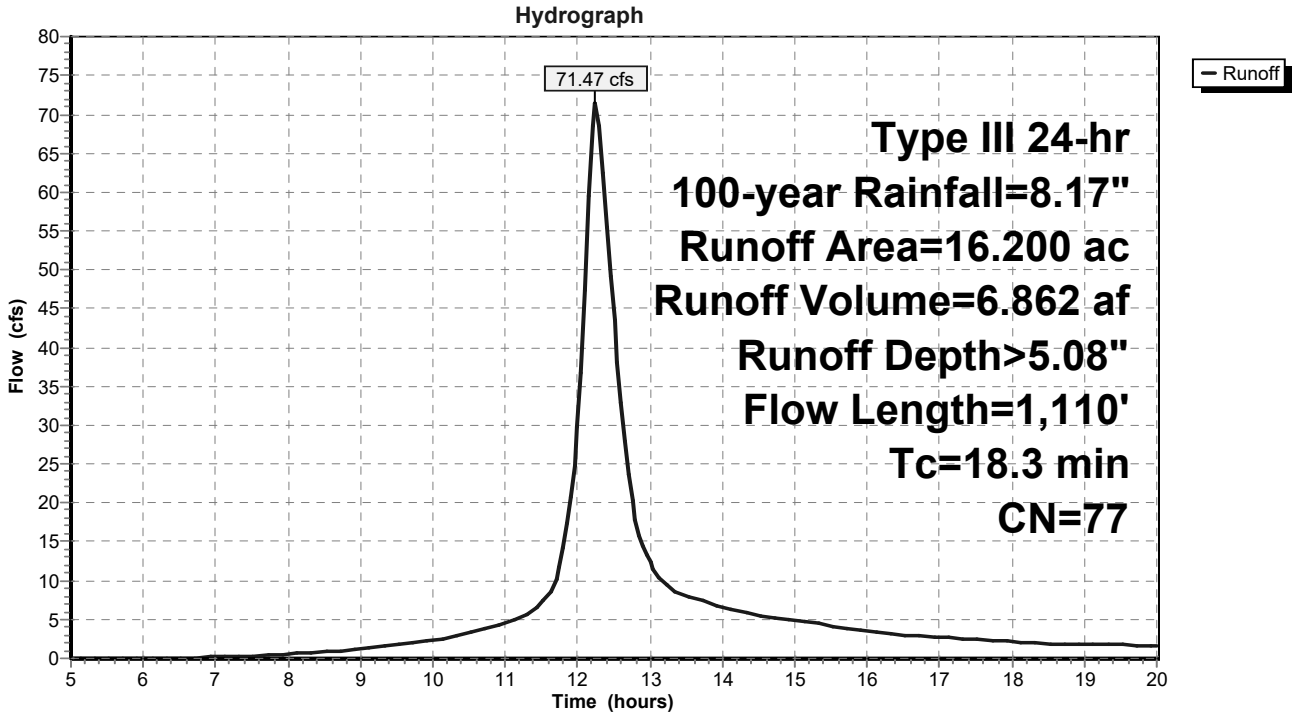
Runoff = 71.47 cfs @ 12.25 hrs, Volume= 6.862 af, Depth> 5.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-year Rainfall=8.17"

	Area (ac)	CN	Description
	2.600	73	Woods, Fair, HSG C
*	2.700	73	Woods, Fair, HSG C (off-site)
	4.600	79	Woods, Fair, HSG D
*	5.300	79	Pasture/grassland/range, Fair, HSG C (off-site
	0.350	79	Pasture/grassland/range, Fair, HSG C
	0.050	87	Dirt roads, HSG C
	0.600	71	Meadow, non-grazed, HSG C
	16.200	77	Weighted Average
	16.200		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0200	0.19		**Sheet Flow, A-B** Range n= 0.130 P2= 3.16"
3.2	300	0.0500	1.57		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
6.3	710	0.1400	1.87		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
18.3	1,110	Total			

Subcatchment 200: To DP-2



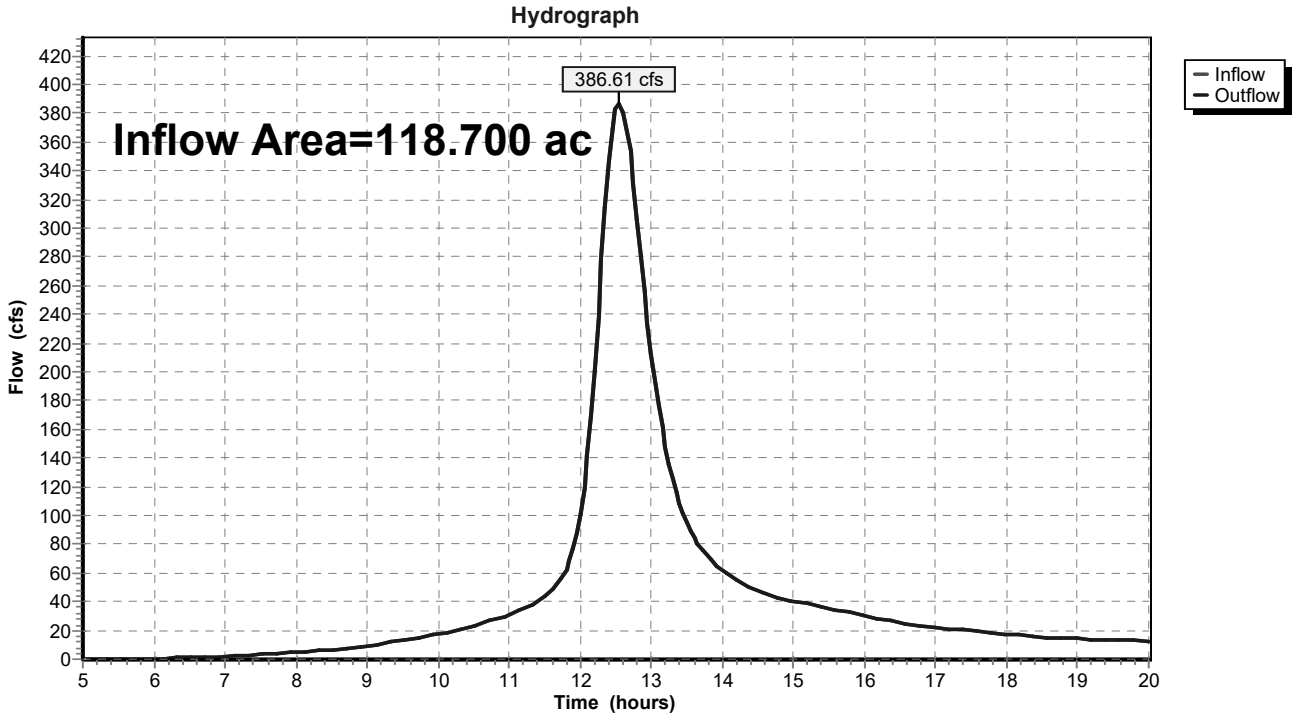
Summary for Reach DP-1:

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 118.700 ac, 3.37% Impervious, Inflow Depth > 5.39" for 100-year event
Inflow = 386.61 cfs @ 12.55 hrs, Volume= 53.355 af
Outflow = 386.61 cfs @ 12.55 hrs, Volume= 53.355 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Reach DP-1:



Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix H

NYSDEC Permeable Haul Road Design

Prepared by: J. Schaffer, PE for Cypress Creek Renewables (November 2017)

NYS DEC Pervious Haul Road Design

This summary explains the design methodology and rationale behind the Pervious Haul Road design. The proposed road design is shown in the attached detail. In layman's terms it can be described as clean, un-compacted stone not unlike railroad ballast installed on a geotextile.

Structurally, the design relies on the Giroud-Han method (GH Method)[1] for aggregate road design. We used the GH Method for typical representative soil conditions and loading conditions with the following design inputs:

Subgrade CBR = 1.60 (represents soaked clay)

Axle Load = 40 kips[2]

Road CBR = 20

ESAL = 10,000 (factor of safety =2)

Allowable rut depth = 3 inches

Using the GH Method implementation from Mirafi-Tencate, we find that the required clean stone application is 8" thick using Tencate RS380i geotextile. For the stone itself, we propose a #2 clean stone. This is a relatively common material in New York, and is frequently used for stabilized construction entrances.

Where a fill wedge is required, the wedge should be installed and compacted to about 80% MDD. This corresponds to the approximate native soil compaction level. To avoid over compaction of the fill wedge soil after installation, low ground pressure tracked equipment may be necessary for installation. It is important to note that in many of CCR's sites, that the native level of compaction could be a bit higher than 80% MDD due to high clay content. Native soil for the fill wedge is preferred to using clean stone.

The proposed ESAL has been computed based on standard anticipated trip generation. O&M assumes that the project will be in service for a full 25 years. It is also assumed that the Decommissioning portion of the project's life cycle will generate the same amount of traffic as the construction stage.

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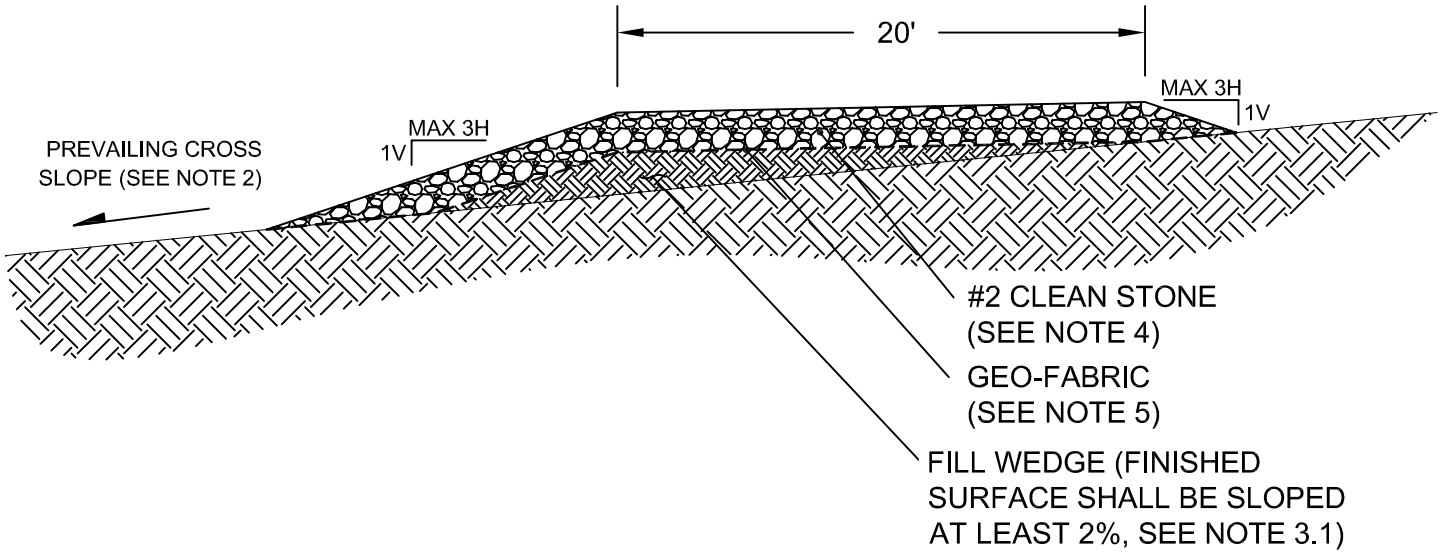
[1] Giroud, JP and Han, J, "Design Method for Geogrid-Reinforced Unpaved Roads, Parts I and II.", ASCE Journal of Geotechnical and Geoenvironmental Engineering, August 2004, pp 775-797.

[2] Corresponds to maximum single axle loading per HS-25. Exceeds single axle loading for a fire apparatus per NY Vehicles and Traffic Law §385[17-b]. It is important to note that the single axle loading for a typical truck is 18 kip.

Stage	Vehicle Class	Pavement Factor	Weekly trips	Project Time	ESAL
Construction	Multi-unit truck	1.3	10	16	416
Construction	Single Unit truck	0.6	10	16	192
Construction	Passenger Car	0.01	400	16	128
O&M	Landscaper Truck	0.6	2	1300	3120
Decom	Multi-unit truck	1.3	10	16	416
Decom	Single Unit truck	0.6	10	16	192
Decom	Passenger Car	0.01	400	16	128
				Total Project ESAL	4592

Attachments:

1. Pervious Haul Road Detail
2. TenCate Geosynthetic Cutsheet
3. TenCate Design Analysis (GH Method)
4. NYSDEC Central Section Correspondence
5. NYSDEC Region 3 Correspondence



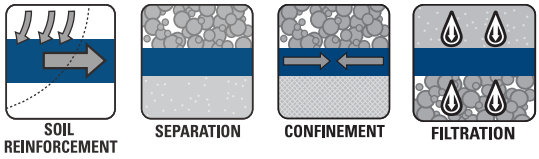
NOTES:

1. THIS HAUL ROAD DETAIL IS LIMITED TO CONSTRUCTION AND OCCASIONAL MAINTENANCE TRAFFIC FOR RENEWABLE ENERGY PROJECTS IN NEW YORK STATE.
2. DESIGN LIMITATIONS:
   - 2.1. ESAL = 10,000
   - 2.2. CLEAN STONE SHALL BE MINIMUM 8 INCHES THICK.
   - 2.3. CROSS SLOPE SHALL NOT EXCEED 5%, RUNNING SLOPE SHALL NOT EXCEED 10%.
3. CONSTRUCTION SPECIFICATION:
   - 3.1. IN AREAS OF NO EARTHWORK, THE ROAD SHALL BE INSTALLED ON UNCOMPACTED SURFACE GRADE. ALIGNMENT MAY BE MOWED BUT NOT GRUBBED. WHERE REQUIRED, A NATIVE SOIL FEATHER WEDGE, COMPACTED 80% MDD MAY BE INSTALLED. FEATHER WEDGE SHALL BE SLOPED AT 2% MINIMUM TO SHED WATER.
   - 3.2. IN AREAS WITH BULK EARTHWORK, THE ROAD SHALL BE INSTALLED ON FINAL GRADE.
   - 3.3. THE HAUL ROAD SHALL NOT BE CONSTRUCTED ON NYSDOT SUBBASE MATERIAL OR EQUIVALENT.
4. THE HAUL ROAD SHALL BE CONSTRUCTED OF #2 (2 $\frac{1}{2}$") CLEAN STONE. STONE MAY BE DEPOSITED AND SPREAD BY A TRACKED VEHICLE.
5. GEOFABRIC SHALL BE MIFARI TENCATE RS 380i (OR APPROVED EQUAL)
6. CONSTRUCTION AND MAINTENANCE LIMITATIONS:
   - 6.1. THE #2 CLEAN STONE SHALL NOT BE COMPACTED WITH A VIBRATORY ROLLER, PLATE COMPACTOR, OR OTHER MEANS.
   - 6.2. TOP DRESS ONLY WITH #2 CLEAN STONE.
   - 6.3. DO NOT OIL OR WATER BIND, SEALCOAT, OR CHOKE STONE.
   - 6.4. DO NOT OVERLAY WITH CONCRETE, ASPHALT PAVEMENT, OR ANY MATERIAL THAT WILL CREATE AN IMPERVIOUS SURFACE.

NYSDEC PERVIOUS HAUL ROAD CROSS SECTION

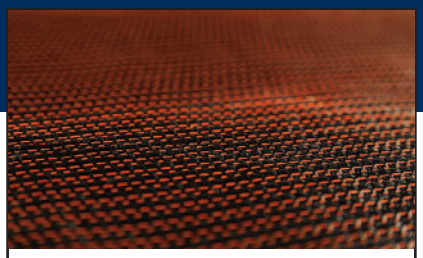
(NTS, 11.07.2017)

TENCATE Mirafi®



Mirafi® RS*i* - Series Woven Geosynthetics

for Soil Stabilization and Base Course Reinforcement Applications



Mirafi® RS*i*-Series Woven Geosynthetic

TenCate develops and produces materials that deliver increased performance, reduce costs and measurable results to provide advanced solutions utilizing patent pending Mirafi® RS*i* geosynthetics that make a difference.

The Difference Mirafi® RS*i*-Series Woven Integrated* Geosynthetics Make:

- Modulus. Separation. Confinement. Water flow. Orange product identification. ***Superior integration*.***
- Reinforcement Strength. Higher tensile modulus properties than the leading stabilization products.
- Separation and Filtration. Unique double layer construction provides a wide range of pore sizes for an excellent separation factor, superior filtration and flow characteristics of a fine to coarse sand layer.
- Soil and Base Course Interaction. Excellent soil and base course confinement resulting in greater load distribution.
- Durability. Robust damage resistance for moderate to severe stress installations.
- Roll Sizes. Mirafi® RS*i*-Series geosynthetics come in several roll sizes to fit project requirements.
- Seams. Panels can be seamed in the factory or field, providing cross-roll direction strength to facilitate efficient installation.

APPLICATIONS

When superior performance, flexibility and versatility are necessary, Mirafi® RS*i*-Series geosynthetics make the difference for varying application needs including: base course reinforcement and subgrade stabilization for road, runway and railway construction; embankment stabilization on soft foundations; reinforcement for mechanically stabilized earth (MSE) structures; liner support, voids bridging, reinforcement over soft hazardous pond closures and other environmental market applications.

INSTALLATION GUIDELINES**

Geosynthetic Placement

Place the geosynthetic directly on prepared surface. It is advisable to leave vegetative cover such as grass and weeds in place to provide a support matting for construction activities. The geosynthetic should be deployed flat and tight with no wrinkles or folds. The rolls should be oriented as shown on plans to ensure the principal strength direction of the material is placed in the correct orientation. Adjacent rolls should be overlapped or seamed as a function of subgrade strength (CBR). Prior to fill placement, Mirafi® RS*i*-Series geosynthetics should be held in place using suitable means such as pins, soil, staples or sandbags to limit movement during fill placement.

Fill Placement

Fill should be placed directly over Mirafi® RS*i* geosynthetic in 8in (20cm) to 12in (30cm) loose lifts. For very weak subgrades, 18in (45cm) lifts or thicker lifts may be required to stabilize the subgrade, as directed by the engineer. Most rubber-tired vehicles can be driven at slow speeds, less than 10mph (16km/h) and in straight paths over the exposed geosynthetic without causing damage. Sudden braking and sharp turning should be avoided. Tracked construction equipment should not be operated directly upon the geosynthetic. A minimum fill soil thickness of 6in (15cm) is required prior to operation of tracked vehicles over the geosynthetic. Turning of tracked vehicles should be kept to a minimum to prevent tracks from displacing the fill and damaging the geotextile.

** These guidelines serve as a general basis for installation. Detailed instructions are available from your TenCate representative.

Visit www.mirafi.com for a demonstration video

Breakthrough Research: TenCate Mirafi® Geosynthetic Outperforms Others in Independent Full-Scale Study.

Protective & Outdoor Fabrics
Aerospace Composites
Armour Composites
Geosynthetics
Industrial Fabrics
Synthetic Grass

TENCATE
materials that make a difference

*Integration refers to the overall set of described characteristics based on a review of technical specifications for comparable products published by their respective manufacturers. Individual characteristics of these products vary and may meet, exceed, or fall below one or more of the above described individual characteristics.

TENCATE Mirafi®

Mirafi® RS*i* - Series Woven Geosynthetics

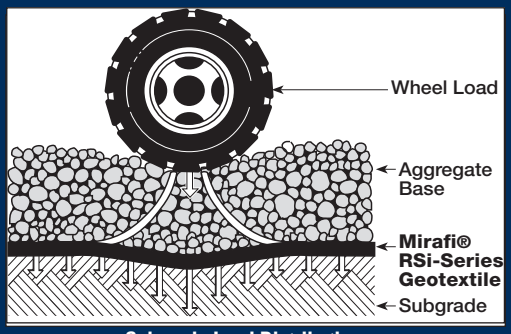
for Soil Stabilization and Base Course Reinforcement Applications

Mechanical Properties	Test Method	Unit	RS280*i*	RS380*i*	RS580*i*
			Typical Roll Value/Minimum Average Roll Value		
Tensile Strength @ 2% strain (MD)	ASTM D4595	lbs/ft (kN/m)	840 (12.3)/600 (8.8)	720 (10.5)/600 (8.8)	540 (7.9)/480 (7.0)
Tensile Strength @ 2% strain (CD)	ASTM D4595	lbs/ft (kN/m)	960 (14.0)/600 (8.8)	1200 (17.5)/1020 (14.9)	2160 (31.5)/1800 (26.3)
Tensile Strength @ 5% strain (MD)	ASTM D4595	lbs/ft (kN/m)	1980 (28.9)/1620 (23.6)	2100 (30.6)/1800 (26.3)	1560 (22.8)/1440 (21.0)
Tensile Strength @ 5% strain (CD)	ASTM D4595	lbs/ft (kN/m)	2100 (30.6)/1620 (23.6)	2580 (37.6)/2256 (32.9)	4920 (71.8)/4380 (69.3)
Flow Rate	ASTM D4491	gal/min/ft^2 (l/min/m^2)	70[1] (2852)	75[1] (3056)	75[1] (3056)
Permittivity	ASTM D4491	sec^{-1}	0.9[1]	0.9[1]	1.0[1]
Pore Size O_{50}	ASTM D676	microns	175	185	192
Pore Size O_{95}	ASTM D6767	microns	273	365	337
Interaction Coefficient[2]	ASTM D6706	---	0.89[2]	0.89[2]	0.9[2]
Index Properties					
Apparent Opening Size (AOS)	ASTM D4751	U.S. Sieve (mm)	40 (0.425)	40 (0.425)	40 (0.425)
Factory Seam Strength	ASTM D4884	lbs/ft (kN/m)	2400 (35.0)[1]	2700 (39.4)[1]	3000 (43.8)[1]
UV Resistance (at 500 hours)	ASTM D4355	% strength retained	90[1]	90[1]	90[1]

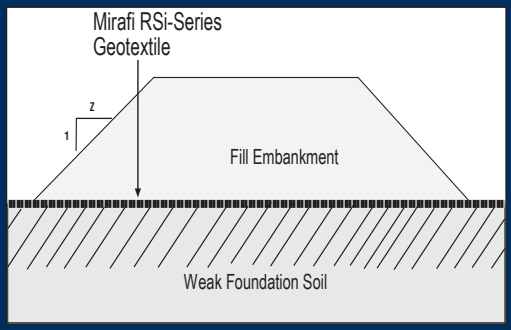
[1] Minimum Roll Value
[2] Interaction Coefficient value is for sand or gravel based on testing by SGI Testing Services.

Physical Properties	Unit	RS280*i*	RS380*i*	RS580*i*
Roll Width	ft (m)	15 (4.6) 17 (5.2)	15 (4.6) 17(5.2)	15 (4.6) 17 (5.2)
Roll Length	ft (m)	300 (91)	300 (91)	300 (91)
Roll Area	yd^2 (m^2)	500 (419) 567 (474)	500 (419) 567 (474)	500 (419) 567 (474)

Mirafi® RS*i*-Series Woven Geosynthetics



Subgrade Load Distribution



Embankments Over Soft Soils

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Fax 706 693 4400
www.mirafi.com

ISO 9001 FM 61026

TENCATE materials that make a difference

TenCate Geosynthetics
North America

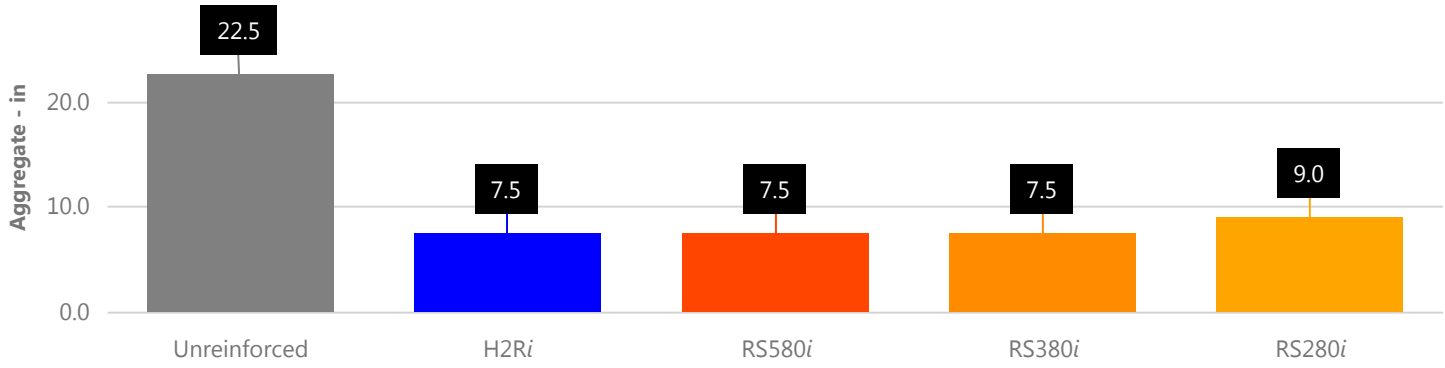
Unpaved Analysis Report

Project Name: New York Haul Road

Clay Soils (HS-25) | Report Date: 10/26/2017 | Report Run By: Joe Schaffer

Traffic Data			
Axle Load - P (lbs)	40,000	Axle Passes - N	10000
Tire Pressure - p (psi)	80	Rut Depth - s (in)	3.0
Subgrade Data			
SG Strength Value	1.60	SG Strength Parameter	CBR, soaked (ASTM D1883) (AASHTO93)
		Converted SG Strength - CBR(%)	1.60
Gravel / Aggregate Data			
CBR of Roadway Aggregate	20.0	Factor of Safety - FS	1.2

Aggregate Thickness



Mirafi® Products
Minimum thickness recommendations shown in the graph above.

Roadway Thickness Analysis Results				
	h_0 (in)	**SN**	**Savings**	**BCR**
H_2Ri	7.5	1.62	67 %	3.0
RS580*i*	7.5	1.62	67 %	3.0
RS380*i*	7.5	1.62	67 %	3.0
RS280*i*	9.0	1.62	60 %	2.5
Unreinforced	22.5	1.62		
CSI specifications: http://www.tencate.com/amer/geosynthetics/knowledge-library/csi-specs/default.aspx				

Comparative Cost Analysis				Total Estimated Quantity (yd^2): 20,000					
	Unit Cost ($)		Depth of Gravel (in)	Excavation and Removal		Section Cost (yd^2)	Project Cost	Project Savings	Cost Savings
				Cost (yd^2-in)	Cost (yd^2)				
H_2Ri	5.00	per yd^2	8	0.25	$1.88	$11.75 *	$272,600	**$244,800**	**47 %**
RS580*i*	4.00	per yd^2	8	0.25	$1.88	$10.75 *	$252,600	**$264,800**	**51 %**
RS380*i*	3.25	per yd^2	8	0.25	$1.88	$10.00 *	$237,600	**$279,800**	**54 %**
RS280*i*	2.25	per yd^2	9	0.25	$2.25	$10.35 *	$252,000	**$265,400**	**51 %**
Unreinforced	18.00	per ton	22	0.25	$5.62	$20.25	$517,400		
*RSi-Series & H_2Ri anticipated cost estimate includes aggregate costs, purchase price, installation, overlap, and waste									

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Tel 888 795 0808

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Joe Schaffer

From: Gasper, David J (DEC) <david.gasper@dec.ny.gov>
Sent: Wednesday, July 05, 2017 12:42 PM
To: Joe Schaffer
Subject: RE: Pervious Haul Road

Joe,

I reviewed the updated Haul Road Cross Section. Based on the changes made, the Department would consider the proposed section to be pervious. Therefore, the SWPPP for this portion of the project (haul road) would typically just need to address erosion and sediment controls.

For specific project reviews, I would recommend that you meet with or discuss this cross section with our Regional Office stormwater staff early on in the planning stages. They will contact me if they have any questions on the cross section.

If you have a specific project in the planning, you can contact me to get the Regional Office staff person you would be working with.

From: Joe Schaffer [mailto:joe.schaffer@ccrenew.com]
Sent: Friday, June 30, 2017 5:00 PM
To: Gasper, David J (DEC) <david.gasper@dec.ny.gov>
Subject: Re: Pervious Haul Road

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Hi Dave - thanks for your quick and thorough review.

I worked your recommended changes and also advanced the structural design a bit. I finally settled on a uniform thickness for the clean stone - this will be easier to build and won't lead to confusion over insitu soaked CBR.

Thanks and have a great weekend!! --Joe

From: Gasper, David J (DEC) <david.gasper@dec.ny.gov>
Sent: Friday, June 30, 2017 9:50:14 AM
To: Joe Schaffer
Subject: RE: Pervious Haul Road

Joe,

One additional question. Your e-mail mentions “pavement thickness”. Did you mean the thickness the “clean stone”?

From: Gasper, David J (DEC)
Sent: Friday, June 30, 2017 9:47 AM
To: 'Joe Schaffer' <joe.schaffer@ccrenew.com>
Subject: RE: Pervious Haul Road

Joe,

I reviewed the Haul Road sectional view and Notes and generated the following comments:

Sectional View

- Change “compacted #2 clean stone (see note 2)” to “#2 clean stone (see note 2)”.

Notes

- Notes 2.2 and 2.3: remove all references to gravel and replace with “clean stone”
- Note 3.1 (second sentence): revise to read as follows “Where required, a native soil feather wedge, compacted to the degree of the native/insitu soil, may be installed.”
- Note 3.2: Add “The haul road shall not be constructed on NYS DOT subbase material or equivalent.”
- Note 3.3: Change first sentence to “The haul road shall be constructed of #2 clean stone (2 ½”).”
- Note 4.1: Add “The #2 clean stone…” and remove “intentionally”.
- Note 4.4: Add “asphalt pavement” after concrete

Please let me know if you have any questions.

From: Joe Schaffer [mailto:joe.schaffer@ccrenew.com]
Sent: Thursday, June 29, 2017 4:44 PM
To: Gasper, David J (DEC) <david.gasper@dec.ny.gov>
Subject: RE: Pervious Haul Road

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Hi Dave –

Please find attached a preliminary detail for our proposed haul road. I am working with the manufacturer (Mirafi) to confirm the pavement thickness numbers and fabric types. What we decide on will follow the theme as presented herein.

Please let me know if this will be acceptable as a “pervious road”.

Thanks!!! --Joe

From: Gasper, David J (DEC) [mailto:david.gasper@dec.ny.gov]
Sent: Tuesday, June 27, 2017 12:33 PM
To: Joe Schaffer <joe.schaffer@ccrenew.com>
Subject: RE: Pervious Haul Road

Joe,

As discussed in our telephone conversation, the DEC does consider the placement of a clean, washed stone (not gravel) over insitu soil as a permeable surface that typically would not need to address post-construction controls. Please note that the clean, washed stone cannot be placed over NYS DOT subbase material or equivalent. The DEC considers that type of surface to be impervious and would require post-construction controls to manage the runoff.

If the designer proposes clean, washed stone; they should make sure that the road can adequately support the expected vehicular traffic (i.e. fire trucks, other rubber tire vehicles) so that the road does not have to be resurfaced with a pavement or subbase material in the future. As discussed above, the subbase (NYS DOT or equivalent) surface would be considered an impervious surface (same for the asphalt) that would require post-construction controls to manage runoff from the road.

I would also recommend that you review the definition of impervious cover in Chapter 4 and the Glossary of the NYS Stormwater Management Design Manual. Please let me know if you have any questions.

From: Joe Schaffer [mailto:joe.schaffer@ccrenew.com]
Sent: Tuesday, June 27, 2017 12:19 PM
To: Gasper, David J (DEC) <david.gasper@dec.ny.gov>
Subject: Pervious Haul Road

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Hi Dave -

Great chatting with you today! Can you send me your boilerplate response on the pervious haul road question?

Thanks!!

Joseph F. Schaffer, PE, PP, LEED-AP
Senior Civil Engineer
Cypress Creek Renewables
601-A West Main Street | Carrboro, NC 27510
(home office) 24 Henry Street | Metuchen, NJ 08840
(d) 919-651-3414 | joe.schaffer@ccrenew.com

NYSDEC Region 3 Review and Response

From: Mike Finan <mfinan@langan.com>
Sent: Monday, August 7, 2017 8:31:55 PM
To: Joe Schaffer; Harrison Netz
Cc: Crystal Eggers
Subject: Fwd: Haul Road

Hi Joe

Per our conversation, please see the below correspondence with NYSDEC on the haul road. This is exactly how we have been addressing the haul road in our SWPPP's.

Michael Finan
Associate

LANGAN

Mobile: 914.523.4496

Begin forwarded message:

From: Christina Zolezi <czolezi@langan.com<mailto:czolezi@langan.com>>
Date: August 7, 2017 at 3:00:12 PM EDT
To: Mike Finan <mfinan@langan.com<mailto:mfinan@langan.com>>
Subject: FW: Haul Road

Please see below.

Christina

Christina M. Zolezi, PE
Project Engineer
Direct: 914.323.7418
File Sharing Link<http://clients.langan.com/FileSharing/default.aspx?shareCD=429022399>

LANGAN
www.langan.com<http://www.langan.com/>

From: Browne, Natalie S (DEC) [mailto:natalie.browne@dec.ny.gov]
Sent: Monday, August 07, 2017 2:59 PM
To: Christina Zolezi
Subject: Haul Road

Christina,

Assuming the surface of the road is uniform size stone with no fines on top of native soils, then it would be considered pervious for water quality calculations. You would use TR-55 to determine if you need to treat for quantity using the curve number that corresponds to the onsite soil group type.

-Natalie

From: Christina Zolezi [mailto:czolezi@langan.com]
Sent: Monday, August 07, 2017 12:27 PM
To: Browne, Natalie S (DEC) <natalie.browne@dec.ny.gov<mailto:natalie.browne@dec.ny.gov>>
Subject: permeable haul road

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Hi Natalie,
I just wanted to follow-up our phone call discussion regarding the permeable haul road with an email.

Based on our discussion, for the water quality calculations the permeable haul road is to be treated as a pervious surface. In the stormwater modeling, the pervious haul road is to be treated as gravel using the curve number that corresponds to the onsite soil group type.

Thanks.
Christina

Christina M. Zolezi, PE
Project Engineer
Direct: 914.323.7418
File Sharing Link<http://clients.langan.com/FileSharing/default.aspx?shareCD=429022399>

LANGAN
Phone: 914.323.7400 Fax: 914.323.7401
707 Westchester Avenue, Suite 304
White Plains, NY 10604-3102
www.langan.com<http://www.langan.com/>

Independent Solar, LLC
206 Milton Turnpike
Marlborough, NY 12547

Appendix I

Post-Construction Inspection and Maintenance

Town of Marlborough, New York

Post Construction Inspection and Maintenance Site Checklist

	Yes	No	NA
1. Steep Slopes (any slope 3:1 or steeper) (Frequency: Annual)			
a. Vegetation and ground cover adequate.	☐	☐	☐
i. Minimum 80% ground cover. *Maintenance: Topsoil, rake and seed bare areas. Remove any dead or dying plants and decaying plant material. Replace dead and dying plants.*	☐	☐	☐
ii. Excessively tall grass (greater than 6" in height) *Maintenance: Mow slopes 3:1 or flatter to have a grass height of 4" to 6". Increase mowing frequency as necessary. Steep slopes planted with meadow mix as shown on the approved plans do not have to be mowed.*	☐	☐	☐
iii. Unauthorized plants. *Maintenance: Remove any unauthorized plants, including roots. Do not use herbicides. Topsoil, rake and seed the area disturbed by their removal.*	☐	☐	☐
b. Slope erosion.	☐	☐	☐
i. Small bare areas (min. 50 square feet). *Maintenance: Topsoil, rake and seed bare areas.*	☐	☐	☐
ii. Ruts less than 12" wide. *Maintenance: Prior to making any repairs, identify the source of erosion and correct. Protect the slopes prior to any work occurring. Backfill ruts and compact soil. Topsoil, rake and seed bare areas. Alternatively, hydroseeding can be used to seed the slope.*	☐	☐	☐
iii. Ruts greater than 12" wide. *Maintenance: Prior to making any repairs, identify the source of erosion and correct. Protect the slopes prior to any work occurring. Re-grade, backfill ruts and compact soil. Install erosion control mats on slopes 3:1 or steeper to protect the re-graded slope. Topsoil, rake and seed bare areas. Inspect on a weekly basis until 80% ground cover is achieved. Alternatively, hydroseeding can be used to seed the slope.*	☐	☐	☐
c. Uneven settling *Maintenance: Visually inspect for uneven settling. Classify the settling based upon the categories below.*	☐	☐	☐
i. Greater than 0" but less than 2" of settling. *Maintenance: No immediate action required. Re-inspect in 6 months.*	☐	☐	☐
ii. Greater than 2" but less than 4" of settling.	☐	☐	☐

Maintenance: Immediately repair. Re-grade and compact the soil. Topsoil, rake and seed the area. Re-inspect in 6 months.

	Yes	No	NA
iii. Greater than 4" of settling. *Maintenance: Immediately stabilize the area and consult a NYS Licensed Professional Engineer within 2 weeks before making any additional repairs.*	☐	☐	☐

2. Swales (Frequency: Annual)	**Yes**	**No**	**NA**
a. Inflow Points	☐	☐	☐
i. Vegetation and ground cover adequate. *Maintenance: Reseed bare areas. Remove any unauthorized plants or any nuisance weeds and vegetation, including their roots. Do not use any herbicides. Topsoil, rake and seed the disturbed area by their removal.*	☐	☐	☐
ii. Free from erosion/undercutting. *Maintenance: Immediately stabilize and repair any areas where erosion around has occurred. Rake and seed the area. Seed mixture shall meet the seed mixture requirements specified on the approved plans.*	☐	☐	☐
iii. Rip rap in good condition. *Maintenance: Replace stone, as necessary.*	☐	☐	☐
iv. No evidence of sediment buildup. *Maintenance: Remove and properly dispose of any accumulated sediment when the depth is 20% of swale design depth.*	☐	☐	☐
b. Check Dams	☐	☐	☐
i. No evidence of sediment buildup. *Maintenance: Remove accumulated sediment behind dams when sediment depth is one-third the dam height.*	☐	☐	☐
ii. Stone in good condition. *Maintenance: Replace stone, as necessary.*	☐	☐	☐
iii. No evidence of erosion *Maintenance: Immediately stabilize and repair any areas where erosion has occurred. Replace stone, as necessary. Topsoil, rake and reseed area.*	☐	☐	☐
c. Energy Dissipaters	☐	☐	☐
i. No evidence of sediment buildup. *Maintenance: Remove and properly dispose of any accumulated sediment when half of the void space is filled.*	☐	☐	☐
ii. Rip rap in good condition.	☐	☐	☐

Maintenance: Replace stone, as necessary.

iii. No evidence of erosion. ☐ ☐ ☐
Maintenance: Immediately stabilize and repair any areas where erosion has occurred. Replace stone, as necessary. Topsoil, rake and reseed.

Notes:

1. The site must be returned to the approved conditions when any repairs are made.
2. Unauthorized plants are any plants that are growing or have been installed that are not any of the plants shown on the approved plans.
3. All seed mixtures shall meet the seed mixture requirements specified on the approved plans.
4. Replace any dead or dying plants with plants specified in the planting schedule shown on the approved plans.

Comments:

_____
_____
_____
_____
_____
_____

Actions to be taken:

_____
_____
_____
_____
_____
_____

EXHIBIT F. SEQR LETTER OF INTENT AND FEAF

Independent Solar, LLC Section F
Full Environmental Assessment

Section F.1
Changes made to FEAF based on errors with the EAF mapper

Section F.2
Status of agency consultations

Federally Listed Threatened and Endangered Species

- The U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) was consulted on May 7, 2019 and again on January 23, 2020. The New York Field Office's online project review process identified the Northern Long-eared bat (NLEB), Indiana Bat, and Bog Turtle as potentially occurring in the vicinity of the Project.
    - Bog Turtle: A habitat survey for the Bog Turtle was completed by TRC on July 16, 2019. During the survey, it was determined that none of the 6 delineated wetlands on site provide suitable habitat for the Bog Turtle. On March 11, 2020, the USFWS concurred with the findings of the survey, agreeing that the project will not result in a take of the species
    - Indiana Bat: On March 11, 2020, the USFWS determined that a take of the Indiana Bat is not anticipated to occur since project activities will not include any tree clearing.

State-Listed Threatened and Endangered Species

- New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper (ERM) dated May 7, 2019 shows the absence of state-listed threatened and endangered species in the vicinity of the project site. During site reconnaissance, however, a Northern Harrier (NYS threatened species) was observed. Consultation with DEC regarding this species sighting was initiated on April 30, 2020 and a response was received on June 9, 2020. This response did not indicate any need for bird surveys on the Project Site.

Cultural Resources

- New York State Office of Parks, Recreation, and Historic Preservation (SHPO) correspondence was initiated on February 13, 2020, and a response was received on March 2, 2020, requesting that a Phase IA/IB survey be conducted to determine the presence or

absence of archaeological resources in areas where substantial ground disturbance is proposed. The Phase IA/IB survey is currently pending, the results of which will be provided to the SHPO.

Wetland and Water Resources

- TRC performed a wetland and waterbody delineation on April 29/30, 2019 at the Project Site. Based on the current Project Design, impacts to jurisdictional features are not anticipated, and no permits will be required.

Federal Wetlands and Streams

- A request for a No Permit Required determination was made to the U.S. Army Corps of Engineers to verify the boundaries of the wetland delineation on March 18, 2020. A response was received on April 2, 2020 stating, "since the proposed work does not appear to include dredging or construction activities in or over any navigable waters of the United States, the placement of any dredged or fill material in any waters of the United States (including coastal or inland wetlands) or the accomplishment of any work affecting the course, location, condition or capacity of such areas, a Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided the proposed work is executed in accordance with the referenced material."

Section F.3

Attachments and supporting documents included with this application.

- Full Environmental Assessment Form
- NYSDEC Environmental Resource Mapper Review
- USFWS Correspondence
- DEC Correspondence
- SHPO Correspondence
- Wetland Delineation Report
- USACE No Permit Required determination
- USDA NRCS Soill Report

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: Independent Solar, LLC		
Project Location (describe, and attach a general location map): 206 Milton Turnpike, north of the intersection with Clarks Ln.		
Brief Description of Proposed Action (include purpose or need): Independent Solar, LLC is proposing to construct an approximately 3,000 kW solar photovoltaic array and energy storage system on a portion of the site described above and illustrated on the attached map. The project will consist of ground-mounted solar photovoltaic panels. The construction of the system will involve driving posts approximately 6-10' into the ground, or at depths appropriate for frost conditions, every 12-16' and mounting panels racks to the posts. The solar farm will operate as a Community Distributed Generation (CDG) facility as prescribed by the New York State Public Service Commission under the electric tariffs of Central Hudson Gas and Electric. As a CDG facility, the project will provide clean energy to the existing electric grid operated by Central Hudson and offer local customers the opportunity to contract for this energy at or below current market rates.		
Name of Applicant/Sponsor: Independent Solar, LLC	Telephone: 310-862-0371 E-Mail: paul.irby@ccrenew.com	
Address: 3402 Pico Blvd		
City/PO: Santa Monica	State: California	Zip Code: 90405
Project Contact (if not same as sponsor; give name and title/role): Paul Irby	Telephone: 310-862-0371 E-Mail: paul.irby@ccrenew.com	
Address: 3402 Pico Blvd		
City/PO: Santa Monica	State: California	Zip Code: 90405
Property Owner (if not same as sponsor): Robert Titanic	Telephone: 914-490-8458 E-Mail: rtitanic@bortechinc.com	
Address: 206 Milton Turnpike		
City/PO: Milton	State: New York	Zip Code: 12547

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 - Negotiation of Pilot Agreement	TBD
b. City, Town or Village Planning Board or Commission ☑Yes ☐No	Town Planning Board - Special Use Permit and Site Plan Review	July 2020
c. City, Town or Village Zoning Board of Appeals ☐Yes ☑No		
d. Other local agencies ☑Yes ☐No	Marlboro Central School District - PILOT/IDA Negotiation	TBD
e. County agencies ☑Yes ☐No	Ulster County Planning Department, Ulster County DPW, PILOT/IDA Negotiation	TBD
f. Regional agencies ☐Yes ☑No		
g. State agencies ☑Yes ☐No	NYSERDA - Funding; NYSDEC - SPDES, SHPO	TBD
h. Federal agencies ☐Yes ☑No		

i. Coastal Resources.

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

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

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

C. Planning and Zoning

C.1. Planning and zoning actions.

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

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

C.2. Adopted land use plans.

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

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

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

If Yes, identify the plan(s):

_____

_____

_____

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

If Yes, identify the plan(s):

_____

_____

_____

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?
The parcel is zoned as RAG-1, Residential / Agriculture

b. Is the use permitted or allowed by a special or conditional use permit? ☑ Yes ☐ No

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

C.4. Existing community services.

a. In what school district is the project site located? Marlboro Central School District

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

c. Which fire protection and emergency medical services serve the project site?
Milton Fire Department

d. What parks serve the project site?
Cluett Schantz Memorial Park, Franny Reese 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)? Solar electric generation and energy storage (commercial)

b. a. Total acreage of the site of the proposed action? 63.2 acres
b. Total acreage to be physically disturbed? 30 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 30 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: 12-16 weeks
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 1.5 acres (impervious surface)

_____ Square feet or 78 acres (parcel size)

ii. Describe types of new point sources. No new point source discharge; sheet flow only.

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 will flow off panels to ground and drain as normal to surface water on and around the site. Appropriate stormwater management controls will be implemented during construction.

- If to surface waters, identify receiving water bodies or wetlands: W1, W2, W3, W4, W5, W6; S1, S2, S3 (See wetland & waterbodies report)
- 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: 7 am - 7 pm
- Saturday: N/A
- Sunday: N/A
- Holidays: N/A

ii. During Operations:

- Monday - Friday: 24/7
- Saturday: 24/7
- Sunday: 24/7
- Holidays: 24/7

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 only exceed ambient levels during construction (12-16 weeks) from use of heavy equipment, including hydraulic pile drivers, excavators, telescopic forklifts, and skid steer loaders. During operation, inverters produce low level noise that will not exceed ambient levels outside the fence line.

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

Describe: No natural barriers will be removed

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):

During facility operation, a limited amount of herbicides may be utilized for vegetation management. Under circumstances where herbicides are deemed necessary, an effort is made to minimize use and to only apply highly biodegradable, EPA registered and approved solutions that are nontoxic to pets and wildlife.

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: Approx. 18 tons per 12-16 (weeks)
- Operation : 0 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: Wooden pallets from the transport of the solar panels are recycled whenever possible
- Operation: N/A

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

- Construction: Solid waste generated on-site is picked up via dumpster and transported to the landfill used by the dumpster company.
- 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:

No hazardous wastes will be generated by the proposed project.

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:

The immediately surrounding properties consist of residential and mixed-use agriculture/residential properties to the north and east; and a mix of commercial (compost facility) and residential properties to the east, south (houses and cold storage facility), and west (Sportsdome arena).

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	1.5	+1.5
• Forested	0	0	0
• Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural)	1	1	0
• Agricultural (includes active orchards, field, greenhouse etc.)	29	0	-29
• Surface water features (lakes, ponds, streams, rivers, etc.)	0	0	0
• Wetlands (freshwater or tidal)	0	0	0
• Non-vegetated (bare rock, earth or fill)	0	0	0
• Other Describe: _____			

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:

The project site is located west and up-gradient from the adjacent Custom Compost facility, currently listed as an inactive SWF/LF facility.

_____

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

No development constraints are anticipated because the compost facility is down-gradient from the project site.

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): 9708415, 9205096

☐ 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):

Spill Number 9708415 was associated with the adjacent property which occurred during a traffic accident, and regulatory closure was granted on October 17, 1997. Spill 9202509 is associated with a leaking agricultural tank, and regulatory closure was granted on August 13, 1992

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+ 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:

Volusia gravelly silt loam (VoB)	24.8 %
Bath gravelly silt loam	42 %
Mardin gravelly silt loam	14.6 %

d. What is the average depth to the water table on the project site? Average: 1.5 feet

e. Drainage status of project site soils:

☑ Well Drained:	51 % of site
☑ Moderately Well Drained:	14.6 % of site
☑ Poorly Drained	34.4+ % of site

f. Approximate proportion of proposed action site with slopes:

☑ 0-10%:	40.4 % of site
☑ 10-15%:	31.6 % of site
☑ 15% or greater:	28 % 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 S-1, S-2, S-3 Classification C (S-1)
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name W-1, W-2, W-3, W-4, W-5, W-6 Approximate Size 3.07
- Wetland No. (if regulated by DEC) _____

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

If yes, name of impaired water body/bodies and basis for listing as impaired: _____

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

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

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

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

i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site:

White-tailed deer (Odocoileus virginianu	American Black Bear (Ursus americana)	Red fox (Vulpes vulpes)
Raccoon (Procyron lotor)	Striped Skunk (Memphitis mephitis)	Gray squirrel (Sciurus carolinensis)
Eastern coyote (Canis latrans)	American robin (Turdus migratorius)	Red-tailed hawk (Buteo jamaicensis)

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: ULST001

b. Are agricultural lands consisting of highly productive soils present? ☑ Yes ☐ No

i. If Yes: acreage(s) on project site? 45.4 (Farmland of Statewide Significance)

ii. Source(s) of soil rating(s): USDA NRCS Web Soil Survey Farmland Classification

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: _____

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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): A Phase IA/IB archeological survey is currently underway to identify any possible resources.

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: Esopus/Lloyd SASS; Locust Grove Estate; Franny Reese State Park, Mid-Hudson Bridge, Walk Over Hudson State Hist Park

ii. Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): SASS; National Register of Historic Places; OPRHP; NYS Scenic Byways, NY SP

iii. Distance between project and resource: 0.7; 1.6; 2.5; 2.5; 2.7 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 Independent Solar, LLC Date 7/8/2020

Signature DocuSigned by: Matthew Bowers 5500B9F2F51946F... Title Authorized Person

PRINT FORM

EAF Mapper Summary Report

Wednesday, April 08, 2020 2:32 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]	Yes
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Stream Name]	862-392
E.2.h.iv [Surface Water Features - Stream Classification]	C
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No

E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No
E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	ULST001
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

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: January 23, 2020
Consultation Code: 05E1NY00-2019-SLI-1949
Event Code: 05E1NY00-2020-E-04233
Project Name: Independent Solar, LLC

Subject: Updated 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: 05E1NY00-2019-SLI-1949

Event Code: 05E1NY00-2020-E-04233

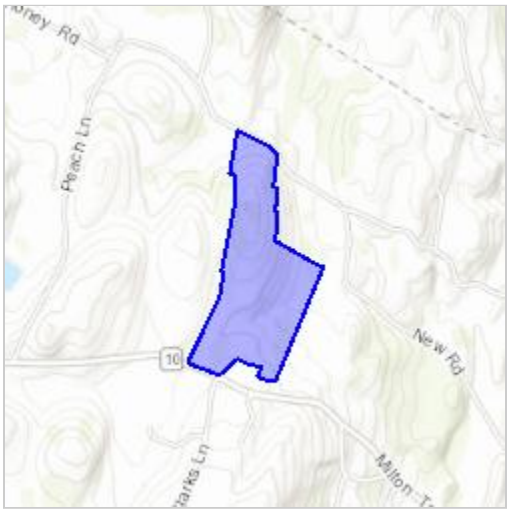
Project Name: Independent Solar, LLC

Project Type: POWER GENERATION

Project Description: Cypress Creek Renewables is requesting to install solar panels on a 67-acre parcel of land in Marlborough, NY for a proposed solar site.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.67107209814155N73.9752083883396W



Counties: Ulster, NY

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat *Myotis sodalis*	Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5949

Reptiles

NAME	STATUS
Bog Turtle *Clemmys muhlenbergii*	Threatened

Population: Wherever found, except GA, NC, SC, TN, VA
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6962
Species survey guidelines:
https://ecos.fws.gov/ipac/guideline/survey/population/182/office/52410.pdf
Habitat assessment guidelines:
https://ecos.fws.gov/ipac/guideline/assessment/population/182/office/52410.pdf

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 Luker Road
Cortland, New York 13045

March 11, 2020

Ms. Valerie Mitchell
TRC Companies
10 Maxwell Drive, Suite 200
Clifton Park, NY 12065

Dear Ms. Mitchell:

This is in response to your February 13, 2020, letter and electronic mail regarding the proposed Independent Solar, LLC, Project located in the Town of Marlborough, Ulster County, New York. We understand that no federal funding or permits are anticipated and that you are looking for information on federally listed species in the project area. The U.S. Fish and Wildlife Service (Service) appreciates this opportunity to provide comments on species under our jurisdiction pursuant to the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Your letter provides a review of potential impacts to the federally listed endangered Indiana bat (*Myotis sodalis*). We agree that "take"[1] of the Indiana bat is not anticipated given the project description (no tree clearing). A phase 1 bog turtle (*Clemmys* [=*Glyptemys*] *muhlenbergii*) report was also submitted to our office for review. The report concludes that the six wetlands found on the project site do not contain suitable habitat for this species. We concur with the report findings and agree that there will be no take of this species as well.

No further coordination with the Service is required pursuant to the ESA for this project. Should project plans change, or if additional information on listed or proposed species or critical habitat becomes available, please contact us for additional assistance. The most recent compilation of federally listed and proposed endangered and threatened species in New York is available for your information. Until the proposed project is complete, we recommend that you check our website regularly to ensure that listed species presence/absence information for the proposed project is current.*

Any new information regarding the proposed project and its potential to impact listed species should be coordinated with both this office and with the New York State Department of Environmental Conservation.

[1] Take is defined in Section 3 of the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

We appreciate the opportunity to review this project. If you require additional information please contact Tim Sullivan at 607-753-9334.

Sincerely,

for David A. Stilwell
Field Supervisor

*Additional information referred to above may be found on our website at: https://www.fws.gov/northeast/nyfo/es/section7.htm

cc: NYSDEC, New Paltz, NY (Env. Permitting)

10 Maxwell Dr., Suite 200
Clifton Park, NY 12065

T 518.348.1190
TRCcompanies.com

April 30, 2020

New York State Department of Environmental Conservation Region 3
Attn: John Petronella, Regional Permit Administrator
21 South Putt Corners Rd
New Paltz, NY 12561-1620
845-256-3054

Sent online via dep.r3@dec.ny.gov

Subject: Cypress Creek Renewables, LLC
Independent Solar, LLC
Town of Marlborough, Ulster County, New York
Jurisdictional Permitting Information Request

Dear Mr. Petronella,

Cypress Creek Renewables, LLC (CCR) proposes the installation of an approximately 3-megawatt (MW) alternating current (AC) ground-mounted solar system (the Project) on a portion of the Independent Solar, LLC Site (the Project Site). The Project Site is located at 206 Milton Turnpike in the Town of Marlborough, Ulster County, New York and is within the Poughkeepsie New York United States Geological Survey (USGS) 7.5-Minute Topographic Quadrangle (Figure 1 of Attachment A).

The system will operate as a Community Distributed Generation (CDG) facility as prescribed by the New York State Public Service Commission under the electric tariffs of Central Hudson. The system is designed to meet the size and energy generating requirements of the New York State Energy Research and Development Authority (NYSERDA) Megawatt Block Inventive Program.

The Project will be located on approximately 30 acres of the 76-acre area. Ground disturbance associated with construction of the Project is limited to the installation of the ground-mounted solar system and associated access roads to the Site. A Site Plan is included as Attachment B.

The Project Site is surrounded by a mix of residential, commercial, agricultural, and forested land. The Project Site is primarily active agricultural land, with some fallow areas, situated on two sloping hills. In the center of the Project Site there are several buildings, farm equipment, an excavated foundation, and access roads that traverse the Project Site. There is a small forested area located in the northern boundary of the Site. Six wetlands, totaling 3.07 acres and three streams were identified onsite through a wetland and waterbody delineation on April 29 and 30, 2019 (Figure 2 of Attachment A). There are no New York State Department of Environmental Conservation (NYSDEC) mapped wetlands onsite. Stream S-1 is mapped as a NYSDEC Class C. Streams S-2 and S-3 are not mapped or classified by the NYSDEC. No wetlands or streams

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3
21 South Putt Corners Road, New Paltz, NY 12561-1620
P: (845) 256-3054 | F: (845) 255-4659
www.dec.ny.gov

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

June 9, 2020

TRC
Attn: Valerie Mitchell
10 Maxwell Drive, Suite 200
Clifton Park, NY 12065

RE: Independent Solar LLC
Permit Jurisdiction Determination/SEQR Review
Town of Marlborough, Ulster County
DEC ID#: 3-5136-00139/00001

Dear Ms. Mitchell:

The New York State Department of Environmental Conservation (DEC or Department) has reviewed the submitted materials regarding the aforementioned proposed project. Cypress Creek Renewables, LLC is proposing to install an approximately 3-megawatt ground mounted solar array on approximately 30 acres at 206 Milton Turnpike in the Town of Marlborough, Ulster County.

Based upon our review of your inquiry dated April 30, 2020, we offer the following comments:

PROTECTION OF WATERS

The following stream is located within or near the site indicated: a subtributary of the Hudson River, DEC Water Index ID No. H-109-1, Class C, and considered "non-protected."

A Protection of Waters permit is required to physically disturb the bed or banks (up to 50 feet from stream) of any streams identified above as "protected." A permit is not required to disturb the bed or banks of "non-protected" streams. Since this subtributary of the Hudson River is considered "non-protected" at the project location, a Protection of Waters Permit is not required for this project.

If a permit is not required, please note, however, you are still responsible for ensuring that work shall not pollute any stream or waterbody. Care shall be taken to stabilize any disturbed areas promptly after construction, and all necessary precautions shall be taken to prevent contamination of the stream or waterbody by silt, sediment, fuels, solvents, lubricants, or any other pollutant associated with the project.

FRESHWATER WETLANDS

The identified project site is not within a New York State protected Freshwater Wetland. However, please contact your town officials and the United States Army Corps of Engineers in New York City, telephone (917) 790-8511 (Westchester/Rockland Counties), or (917) 790-8411 (other counties), for any permitting they might require.

WATER QUALITY CERTIFICATION

According to the provided materials (Attachment C, "USACE No Permit Required Letter), no permit is required from the USACOE for this project, "provided that the proposed work is executed in accordance with the referenced material." Should project plans change, and a permit from the ACOE be required, a Section 401 Water Quality Certification may be required from the Department.

STATE-LISTED SPECIES

No records of sensitive resources were identified by this review.

The absence of data does not necessarily mean that rare or state-listed species, natural communities or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information which indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other sources may be required to fully assess impacts on biological resources.

CULTURAL RESOURCES

We have reviewed the statewide inventory of archaeological resources maintained by the New York State Museum and the New York State Office of Parks, Recreation, and Historic Preservation. These records indicate that the project is not located within an area considered to be sensitive with regard to archaeological resources. For more information, please visit the New York State Office of Historic Preservation website at http://www.nysparks.com/shpo/.

COASTAL MANAGEMENT ZONE

This project is located within the Coastal Management Zone. If the Department had individual permit approvals for this project, the Department would review it in accordance with Coastal Management Program requirements. For additional information about the Coastal Management Zone, please contact the NYS Department of State, 518-474-6000.

SPDES STORMWATER (CONSTRUCTION)

Please note that if project activities will disturb over 1 acre of land, the project sponsor must obtain coverage under the current SPDES General Permit (GP-0-20-001) for Stormwater Discharge from Construction Activities, and a Stormwater Pollution Prevention Plan (SWPPP) must be developed which conforms to the requirements of the General Permit. As the Town of Marlborough is an MS4 community (Municipal Separate Storm Sewer System), the Town is responsible for review and acceptance of the SWPPP. Please be aware that the MS4 Acceptance Form must be submitted to the Department. Authorization for coverage under the SPDES General Permit is not granted until the Department issues any other necessary DEC permits.

OTHER

Please note that this letter only addresses the requirements for the following permits from the Department: Protection of Waters, State-listed Species, and Freshwater Wetlands. Other permits from this Department or other agencies may be required for projects conducted on this property now or in the future. Also, regulations applicable to the location subject to this determination occasionally are revised and you should, therefore, verify the need for permits if your project is delayed or postponed. This determination regarding the need for permits will remain effective for a maximum of one year unless you are otherwise notified. Applications may be downloaded from our website at www.dec.ny.gov under “Programs” then “Division of Environmental Permits.”

Please contact this office if you have questions regarding the above information. Thank you.

Sincerely,

Katherine Coffin

Katherine Coffin
Division of Environmental Permits
Region 3, Telephone No. (845) 256-3158

Cc: Jason Funk, CCR

NOTE: Regarding erosion/sedimentation control requirements:
Stormwater discharges require a State Pollutant Discharge Elimination System (SPDES) Stormwater permit from this Department if they either:

- occur at industrial facilities and contain either toxic contaminants or priority pollutants OR
- result from construction projects involving the disturbance of 5000 square feet or more of land within the NYC Department of Environmental Protection East of Hudson Watershed or for proposed disturbance of 1 acre or more of land outside the NYC DEP Watershed

Your project may be covered by one of two Statewide General Permits or may require an individual permit. For information on stormwater and the general permits, see the DEC website at http://www.dec.ny.gov/chemical/8468.html.
For construction permits, if this site is within an MS4 area (Municipal Separate Storm Sewer System), the stormwater plan must be reviewed and accepted by the municipality and the MS-4 Acceptance Form must be submitted to the Department. If the site is not within an MS4 area and other DEC permits are required, please contact the regional Division of Environmental Permits.

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

ANDREW M. CUOMO
Governor

ERIK KULLESEID
Commissioner

ARCHAEOLOGY COMMENTS

Phase IA/IB Archaeological Survey Recommendation for Solar Farms

Project: Independent Solar Project / 31 Acres
Town/County: Town of Marlborough, Ulster County
PR#: 20PR01044
Date: 2 March 2020

We have determined that this project area is archaeologically sensitive. Therefore, the New York State Office of Parks, Recreation and Historic Preservation and its State Historic Preservation Office (OPRHP) recommends that a Phase IA/B archaeological survey is warranted and offers the following survey guidance. A Phase IA/IB survey is designed to determine the presence or absence of archaeological sites or other cultural resources in the project's Area of Potential Effects (APE).

Phase IB archaeological testing is recommended for areas of substantial proposed ground disturbance, which includes areas of grading, grubbing, tree removal, and any excavations more than one foot wide and more than six inches deep.

Phase IB archaeological testing is not recommended for panel arrays, perimeter fencing and utility poles if their associated posts are driven or drilled into the ground and no grubbing or grading is involved. However, if the installation of the panel array supports, fencing or utility poles requires grubbing and grading then Phase IB archaeological testing is recommended.

If you consider the project area to be disturbed, documentation of the disturbance will need to be reviewed by OPRHP. Examples of disturbance include mining activities and multiple episodes of building construction and demolition. Documentation of ground disturbance typically consists of soil bore logs, photos, or previous project plans.

Our office does not conduct archaeological surveys. A 36 CFR 61 qualified archaeologist should be retained to conduct the Phase IA/IB survey.

If you have any questions concerning archaeology, please contact Philip Perazio at 518-268-2175 or Philip.perazio@parks.ny.gov.

Comments regarding architectural resources are being provided separately.

WETLAND AND WATERBODY DELINEATION REPORT
INDEPENDENT SOLAR, LLC PROJECT

206 MILTON TURNPIKE
TOWN OF MARLBOROUGH
ULSTER COUNTY, NEW YORK

Prepared For:
Cypress Creek Renewables, LLC
3402 Pico Boulevard
Santa Monica, California 90405

Prepared By:
TRC Companies, Inc.
10 Maxwell Drive
Suite 200
Clifton Park, NY 12065

May 2019

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Appendix A – Figures

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Appendix B – Photograph Log

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USACE Routine Wetland Determination Forms
TRC's Stream Inventory Data Forms

1.0 INTRODUCTION

1.1 Project Description and Purpose

Cypress Creek Renewables, LLC (CCR) is proposing to construct a ground-mounted solar Project on a portion of the Independent Solar, LLC Site (the Project Site). The Project Site is approximately 75.8 acres in size and is located at 206 Milton Turnpike in the Town of Marlborough, Ulster County, New York (see Figure 1).

1.2 Report Purpose

TRC Companies, Inc. (TRC) has conducted a wetland and waterbody delineation of the Project Site on behalf of CCR on April 29 and 30, 2019. This report details the wetlands and surface waters within the Project Site (including rivers, waterbodies, ponds, and lakes), regardless of jurisdictional status. However, this report's description of potential jurisdictional areas to regulatory agencies lends itself toward assessing jurisdiction and avoiding wetlands and surface waters by implementing setbacks (both required by the state and CCR's internal process) during Project planning, to the extent practical.

Delineation efforts included the following tasks:

1. A desktop review of existing publicly available federal and state agency resources;

2. A field delineation of all aquatic features within the Project Site using a handheld Global Positioning System (GPS) with reported sub-meter accuracy; and,

3. Documentation of the delineated aquatic features including the assumed agency jurisdiction for each resource based on hydrology, vegetation, and hydric soils data collected in the field.

Conclusions proposed herein provide information necessary to support a permit application to the United States Army Corps of Engineers (USACE) and the New York State Department of Environmental Conservation (NYSDEC).

2.0 REGULATORY AUTHORITY

2.1 United States Army Corps of Engineers

In accordance with Section 404 of the Clean Water Act, the USACE asserts jurisdiction over Waters of the United States (WOTUS). WOTUS are defined as wetlands, waterbodies, and other aquatic resources under the regulatory authority of Title 33 Code of Federal Regulations (CFR) Part 328 and the United States Environmental Protection Agency (EPA), per Title 40 CFR Part 230.3(s). Wetlands are defined as "*those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*" (33 CFR 328.3[c]).

2.1.1 Historical Context

On June 5, 2007, the EPA and the Department of Army issued a memorandum outlining jurisdictional guidance on WOTUS. The document outlined major key points resulting from the United States Supreme Court decision in the matter of *Solid Waste Agency of Northern Cook County v. Army Corps of Engineers* (531 U.S. 159, January 9, 2001) and *Rapanos v. United States* (547 U.S. 715, June 19, 2006). This document defined the following:

The USACE will assert jurisdiction over the following waters:

- Traditional navigable waters, which are subject to the ebb and flow of the tide, and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce, or are "navigable-in-fact;"
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (i.e., typically three months); and
- Wetlands that directly abut such tributaries.

The USACE will decide jurisdiction over the following waters based on an analysis to determine whether they have significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary.

The USACE generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The USACE will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and
- The significant nexus includes consideration of hydrologic and ecologic factors.

2.1.2 Current Status

On August 28, 2015, the EPA released the Clean Water Rule (33 CFR Part 328) intending to clarify the scope of the Clean Water Act (CWA), WOTUS, and definitions of significant nexus. However, on October 9, 2015, implementation of the Clean Water Rule was stayed by the Sixth Circuit Court of Appeals pending further action of the court. On August 16, 2018, the U.S. District Court for the District of South Carolina enjoined the delay of the Clean Water Rule. Therefore, the Clean Water Rule became in effect in 22 states, including New York.

Under the Clean Water Rule, the USACE will assert jurisdiction over the following waters:

- Waters within 100 feet of a traditional navigable water, interstate water, territorial seas, impoundment of jurisdictional waters, or tributary;
- Waters within the 100-year floodplain up to a maximum of 1,500 feet from the ordinary high water mark (OHWM); and
- Waters within 1,500 feet of the high-tide line.

Under the Clean Water Rule, the USACE will decide jurisdiction over the following waters (if not already deemed jurisdictional by Rule) based on an analysis to determine whether they have significant nexus:

- Waters categorically “similarly situated” such as prairie potholes, Carolina and Delmarva bays, pocosins, western vernal pools in California, and Texas coastal prairie wetlands;
- Waters within the 100-year floodplain more than 1,500 feet from the OHWM; and

- Waters within 4,000 feet of a traditional navigable water, interstate water, territorial seas, impoundment of jurisdictional waters, or tributary.

The USACE also regulates navigable waters under Section 10 of the Rivers and Harbor Act (33 U.S.C. 401 et seq.), which requires a permit be issued by the USACE prior to the construction of any structure in or over a navigable water of the United States, as well as any proposed action (such as excavation/dredging or deposition of materials) that would affect the course, location, condition, or capacity of the navigable water, even if the proposed activity is outside the boundaries of the waterbody in associated wetlands.

2.2 New York State Department of Environmental Conservation

The Freshwater Wetlands Act (Article 24 and Title 23 of Article 71 of the Environmental Conservation Law [ECL]) gives the NYSDEC jurisdiction over state-protected wetlands and adjacent areas, typically extending 100 feet from the wetland perimeter. To implement this Act, regulations were promulgated by the State under 6NYCRR Parts 663 and 664. Part 664 designates wetlands into four class ratings, with Class I being the highest or best quality wetland and Class IV being the lowest. Wetlands regulated by the State are those 12.4 acres (5 hectares) in size or larger, as well as those smaller than 12.4 acres, deemed to be of "unusual local importance." The Freshwater Wetlands Act requires the NYSDEC to map all state-protected wetlands. This allows landowners and other interested parties a means of determining where state jurisdictional wetlands exist, although the maps are legally only approximations—thus the need for on-site delineations. Under Part 663, approval under an Article 24 permit is required from the NYSDEC prior to most disturbances to a state-protected wetland or its protected adjacent area, including the removal of vegetation.

Article 15 of the ECL (Protection of Waters), and its implementing regulations under 6 NYCRR Part 608, provides the NYSDEC with regulatory jurisdiction over activities disturbing the bed or banks of protected waterbodies, including small lakes and ponds with a surface area of 10 acres or less, located within the course of a protected waterbody. This law and regulation also provide NYSDEC jurisdiction over navigable waters of the State, including contiguous marshes, estuaries, tidal marshes and wetlands that are inundated at mean high water level or tide, A protected waterbody is defined in the ECL as any waterbody, or particular portion of a waterbody, that has been assigned by the NYSDEC any of the following classifications or standards: AA, A, B, C(T), or C(TS) (6 NYCRR Part 701). State water quality classifications of unprotected watercourses include Class C and Class D waterbodies. The classifications are defined below.

- A classification of AA or A indicates that the best use of the waterbody is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing.

- The best usages of Class B waters are primary and secondary contact recreation and fishing.

- The best usage of Class C waters is fishing. Waterbodies designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

- Waters with a classification of D are generally suitable for fishing and non-contact recreation.

It should be noted, per 6 NYCRR Chapter X, Subchapter B, "*All waterbodies or other bodies of water which are not shown on the reference maps herein shall be assigned to Class D, as set forth in Part 701, supra, except that any continuous flowing natural waterbody which is not shown on the reference maps shall have the same classification and assigned standards as the waters to which it is directly tributary.*"

3.0 PROJECT SITE CHARACTERISTICS

3.1 Resources

The following publicly available resources were used in the investigation, delineation, and report preparation:

- United States Geological Survey (USGS) Poughkeepsie New York 7.5 minute quadrangle;
- United States Department of Agriculture (USDA) Ecoregion Maps;
- NYSDEC Ecozone Mapping;
- USGS National Hydrography Dataset;
- USGS Hydrologic Unit Maps;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 36111C0790E, effective 9/25/2009;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapping;
- NYSDEC Environmental Resource Mapper (ERM);
- NYSDEC Freshwater Wetlands Mapping;
- USDA Natural Resources Conservation Service (NRCS) Web Soil Survey; and
- Recent aerial orthoimagery.

3.2 Vegetation and Ecological Communities

The Project Site resides in the Eastern Broadleaf Forest (Oceanic) Province and Hudson Valley Section ecoregion of the United States as defined by the USDA Forest Service (Bailey et al., 1995). Ecoregions are ecosystems of regional extent. The USDA identifies ecoregions by ecosystem characteristics into the following classifications:

- Domains: the largest ecosystem, which are groups of related climates and are differentiated based on precipitation and temperature.
- Divisions: represent the climates within domains and are differentiated based on precipitation levels and patterns, as well as temperature.

- Provinces: Subdivisions of divisions, which are differentiated based on vegetation or other natural land covers.

- Sections: Subdivisions of provinces based on terrain features, sections are the finest level of detail is described for each subregions.

- Mountainous Areas: Mountainous regions that exhibit different ecological zones based on elevation.

The Eastern Broadleaf Forest (Oceanic) Province consists of topography formed by the Appalachian Mountains and glaciation. Altitudes range from sea level to approximately 3,000 feet above sea level. Average precipitation ranges from 35 to 60 inches, and average annual temperatures range from 40 to 60 degrees Fahrenheit. This province is comprised predominantly of temperate deciduous forest, with the occasional pine-oak, Appalachian, or mixed mesophytic forests. The temperate deciduous forests are dominated by tall broadleaf trees, and contain weakly developed lower layers of small trees and shrubs (Bailey et al., 1995).

The Hudson Valley Section consists of linear lowlands of a glacial lake plain bordered by tall escarpments. The bedrock is a combination of carbonates, shales, siltstones, and sandstones, with some sections of metasediments and metavolcanics. The vegetation is a combination of maple-beech-birch, oak-hickory, and aspen-birch cover types (McNab et al., 2007).

Similarly, the NYSDEC has divided New York State into specific ecological regions (Ecozones). Boundaries of the Ecozones of New York State were derived from Will et al. (1982) and Dickinson (1983) and then further modified by the NYSDEC. The Ecozones of New York State have been classified into Major and Minor Zones. The Project Site is located within Hudson Valley Major Zone and the Central Hudson Minor Zone.

The Hudson Valley Major Zone consists of a complex of hills and terraces underlain with highly folded sedimentary rock. Elevations range from near sea level to approximately 500 feet above sea level in most of the zone. The soils tend to be medium textured, acidic, and contain fragipans in much of the zone. The zone is within the oak-northern hardwood vegetation zone. Annual temperature typically varies between 25 and 75 degrees Fahrenheit, and there is typically 40 to 60 annual inches of snowfall. The growing season is 160 to 180 days long (Will *et al*., 1982).

The Central Hudson Minor Zone consists of flat to rolling land. Elevations are generally less than 500 feet above sea level but some hilltops can exceed 1,000 feet. Northern and pioneer hardwoods are the most extensive forest types in this zone. The economy is based on a combination of industry, residential centers, and agriculture (Will *et al.*, 1982).

Recent aerial orthoimagery of the Project Site and surrounding vicinity indicates that the Project Site is covered primarily by agricultural (primarily row crops and hay fields) land, farm buildings, forest edges and successional shrubland. Older aerial orthoimagery shows that the Project Site used to be an orchard. The following ecological communities, as defined by *Ecological*

Communities of New York State (Edinger et al., 2014), were identified on the Project Site at the time of the delineation:

- Intermittent Stream
- Confined River
- Ditch/artificial intermittent stream
- Riverine Submerged Structure
- Farm Pond or Artificial Pond
- Common reed marsh
- Shallow Emergent Marsh
- Shrub Swamp
- Successional Old Field
- Successional Shrubland
- Cropland/Field Crops
- Cropland/Row Crops
- Unpaved Road/Path
- Rural Structure Exterior
- Basement/Building Foundation
- Construction/Road Maintenance Spoils

3.3 Hydrology

3.3.1 Hydrologic Mapping

The USGS has divided and sub-divided the country into hydrologic units based primarily on drainage basins and watershed boundaries. The main hydrologic unit levels are regions, sub-regions, basins, sub-basins, watersheds, and sub-watersheds. The hydrologic units are nested within each other, from the largest geographic area (regions) to the smallest geographic area (sub-watersheds). Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to twelve digits based on the six levels of classification in the hydrologic unit system. In addition to the hydrologic unit codes, each hydrologic unit is assigned a name corresponding to the unit's principal hydrologic feature, or to a cultural or political feature within the unit.

The region hydrologic unit level contains either the drainage area of a major river or the combined drainage areas of a series of rivers. Regions receive a two-digit code. The following hydrologic unit levels are designated by the addition of another two digits with each level. Each sub-region includes the area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin or basins, or a group of waterbodies forming a coastal drainage area.

The Project Site is located within the USGS defined Hudson-Wappinger sub-basin (HUC 02020008), Hudson-Landsman Kill watershed (HUC 0202000801), and the Twaalfskill Creek-Hudson River sub-watershed (HUC 020200080106).

The Hudson-Wappinger sub-basin is located in the southeastern portion of New York State straddling the Hudson River, just north of the New York City. It contains the Hudson River, and is 604,602 acres in size. Average annual precipitation typically ranges from 40 to 52 inches. The sub-basin ranges in elevation from -7 to 1,663 feet above sea level. Urban areas comprise 28 percent of the watershed according to the 2000 US Census. There are approximately 700 farms, most of which are small in size. Crop land is used primarily to grow hay and corn (USDA NRCS, 2009).

The NYSDEC also classifies watersheds more generally within the State of New York. Unlike mapping efforts outlined by the USGS above, the NYSDEC uses the definitions of watersheds and drainage basins interchangeably. New York's waters (e.g., lakes, rivers, wetlands, and waterbodies) fall within one of seventeen major drainage basins as defined by the NYSDEC. The NYSDEC defines these drainage basins or watersheds as an area of land that drains water into a specific body of water within or adjacent to New York State and includes networks of rivers, waterbodies, lakes, and the surrounding lands. The NYSDEC-classified watersheds are separated by high elevation geographic features (e.g., mountains, hills, and ridges). Each major drainage basin corresponds to one or more USGS sub-basins (USGS HUC 8-digit codes).

The Project Site is located within the Lower Hudson River major drainage basin of New York. This major drainage basin is approximately 3,188,480 acres in size within New York State. It contains 8,861 miles of freshwater rivers and waterbodies, and 324 significant freshwater lakes, ponds, and reservoirs. There are 153 miles of tidal estuary along the lower Hudson River (NYSDEC, Lower Hudson Watershed). Within this major drainage basin, the Project is located in the Hudson-Wappinger sub-basin as previously mentioned.

3.3.2 Hydrologic Character

The predominant surface waterbodies within the Project Site are both Waterbody S-1, labeled as Minor Tributaries to West of Hudson, and Wetland W-3, a pond in the eastern portion of the Project Site. Most aquatic features within the Project Site are in close proximity to Waterbody S-1, with likely connections to it in the form of direct flow, groundwater discharge/recharge, or overland flow.

The Project Site receives, on average, approximately 44 inches of rainfall annually based on information for the City of Poughkeepsie, New York, located approximately two miles northeast of the Project Site (U.S. Climate Data, 2019).

Hydrology within the Project Site primarily originates from the southwest and drains to the northeast. On-site hydrological conditions observed during the delineation included moist soil and puddles due to recent rains.

3.3.3 FEMA Flood Zone Mapping

FEMA maintains materials developed to support flood hazard mapping for the National Flood Insurance Program (NFIP). According to FIRM panel 36111C0790E, effective 9/25/2009, the Project Site is not located within a flood zone (see Figure 3).

3.4 Federal and State Mapped Wetlands and Waterbodies

The USFWS is the principal US federal agency tasked with providing information to the public on the status and trends of wetlands on a national scale. The USFWS NWI is a publicly available resource that provides detailed information on the abundance, characteristics, and distribution of nationwide wetlands (where mapped). NWI mapping data is offered in an effort to promote the understanding, conservation, and restoration of wetlands. Note, unlike NYSDEC wetland maps, NWI wetland maps do not denote federal jurisdiction with their mapped boundaries. NWI wetlands are used as a reference guide by TRC field biologists to conduct a more informed site survey in the demarcation or delineation of wetlands and waterbodies, which could be subject to federal jurisdiction under the CWA within the target Project Site.

Review of the NWI mapping during the preliminary desktop analysis indicated four federally mapped features within the Project Site, totaling approximately 4.5 acres (see Figure 3). NWI mapping data indicates that riverine aquatic features are the dominant NWI features present within the Project Site. These features comprise a total of approximately 3.8 acres. Other common cover types include palustrine unconsolidated bottom (PUB) (0.5 acre) and palustrine emergent (PEM) (0.1 acre).

The TRC field-delineated aquatic features within the Project Site loosely coincide with the features represented by the NWI mapping for the Project Site. However, the majority of the R4SBC riverine feature is north of where it is shown on NWI mapping. Additionally, the NWI feature labeled PEM1F was not observed during the wetland delineation. The area in which it is mapped as an NWI wetland was likely filled in the past in association with farming and agriculture activities. Farm related materials and equipment were observed at this location. Soils, hydrology, and vegetation in this location did not meet the conditional requirements of a wetland. In addition, the southern portion of R4SBC was observed to have been filled in. Water from that feature had been historically diverted to the ditch which comprises the southern portion of Waterbody S-1 and now Wetland W-1 remains where the natural stream used to traverse. Lastly, some additional aquatic features also occur within the Project Site outside of boundaries indicated by the NWI mapping, including Waterbodies S-2 and S-3, and Wetlands W-2, W-4, W-5, and W-6.

Review of the NYSDEC ERM indicated that there are no NYSDEC freshwater wetlands or 100-foot adjacent areas mapped within the Project Site. The closest NYSDEC-regulated wetlands are located approximately 0.2 mile to the northwest, 0.5 mile to the west, and 0.5 mile to the southeast (see Figure 3).

Based on NYSDEC waterbody classification mapping, one waterbody is mapped within the Project Site. State-protected waterbodies are protected per Article 15 of the ECL (see Section 2.2). Since it is mapped as a Class C waterbody, it is not considered to be protected by the NYSDEC. This NYSDEC Class C stream coincides with the mapped riverine NWI feature. Similar to the NWI features previously mentioned, this stream is mapped slightly south of where the actual physical field verified stream is located and has been diverted to the north in the southwestern section. Wetland W-1 remains where this stream likely used to flow through. Table 1 below provides a detailed summary of the NYSDEC-classified unprotected waterbody within the Project Site.

Table 1. NYSDEC Mapped Waterbody within the Project Site

NYSDEC Waterbody Name and Regulatory ID Number	NYS Major Drainage Basin	USGS Sub-basin HUC 8 and Name	NYSDEC Classification[1] and Standard[2]	Cumulative Linear Feet within the Project Site
Minor Tributaries to West of Hudson (862-392)	Lower Hudson River	Hudson-Wappinger sub-basin (HUC 02020008)	Class C	2,048.3

[1]A classification of AA or A indicates that the best use of the waterbody is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Waters with a classification of D are generally suitable for fishing and non-contact recreation.
[2]Waterbodies designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

3.5 Physiography and Soil Characteristics

3.5.1 Physiography and Topography

The Project Site is located within the Hudson-Mohawk Lowlands Physiographic Province of New York State (New York State Department of Transportation, 2013). This Physiographic Province is bound by uplands everywhere except for two small portions. The central lowland portion consists of a valley on both sides of the Hudson River (NYSDOT, 2013). The landforms of the Project Site are hills and valleys.

As shown on the USGS Poughkeepsie NY 7.5-minute quadrangle, the topography is gently to moderately sloped (approximately 8 to 15 percent slopes) within the Project Site (Figure 1). The topography in the majority of the Project slopes toward the waterbody that traverses the center of the Project Site (Waterbody S-1), with the northern section of the Project generally sloping to the southeast and the southern portion of the Project generally sloping to the northeast. The topography ranges from approximately 330 feet above mean sea level (AMSL) in the eastern

portion of the Project Site in the waterbody valley, to approximately 470 feet AMSL in the northern portion, atop the tallest hill. Despite the presence of sections of steeper terrain, the average slope across the entire Project Site is approximately six percent, and the Project Site topography as a whole would be considered moderately sloping.

3.5.2 Site Soils

The USDA NRCS Web Soil Survey is an online resource mapping tool that provides soil data and information for the vast majority of the nation. This information is produced by the National Cooperative Soil Survey (NCSS), in partnership with federal, regional, state, and local agencies and private entities and institutions.

A total of eleven soil map units were identified within the Project Site. Soil map units represent a type of soil, a combination of soils, or miscellaneous land types. Soil map units are usually named for the predominant soil series or land types within the map unit. Due to limitations imposed by the small scale of the soil survey mapping, it is not uncommon to identify wetlands within areas not mapped as hydric soil, while areas mapped as hydric often do not support wetlands. This concept is emphasized by the NRCS:

"*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.*"

Soil drainage in the Project Site is variable, with approximately 44 percent of the mapped soils classified as well drained, 14 percent classified as moderately well drained, 4 percent classified as somewhat excessively drained, 37.2 percent classified as somewhat poorly drained, and 0.6 percent classified as very poorly drained. Additionally, 73.2 percent of soils within the Project Site have been listed as a farmland classification of farmland of statewide importance, 0.1 percent as prime farmland, and 26.8 percent as not prime farmland.

The eleven soil map units identified within the Project Site by the NRCS are briefly described below and outlined in Table 2. Refer to Figure 2 for graphically depicted soil map units of the Project Site.

Soil Descriptions

Atherton silt loam (At) – A very small portion of this poorly drained soil is mapped in the easternmost portion of the Project Site. It is composed of 80 percent Atherton and similar soils and is found in depressions. The minor components of this soil unit are made up of Red hook, Raynham, Canandaigua, and Lamson soils, making up 5 percent each of the map unit. This map unit has a hydric rating of 90 percent.

Bath gravelly silt loam, 8 to 15 percent slopes (BgC) – This well drained soil is mapped in the central and northern portions of the Project Site. It is composed of 80 percent Bath and similar soils and is found on drumlinoid ridges, hills, and till plains. Lordstown soils, Manlius soils, Mardin

soils, and Volusia soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Bath gravelly silt loam, 15 to 25 percent slopes (BgD) – This well drained soil is mapped in the central and northern portions of the Project Site. It is composed of 75 percent Bath and similar soils and is found on hills, till plains, and drumlinoid ridges. Lordstown soils, Manlius soils, Mardin soils, Rock outcrops, and Volusia soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Bath-Nassau complex, 8 to 25 percent slopes (BnC) – This soil complex is mapped in the southern portion of the Project Site. It is composed of 50 percent Bath (a well drained soil) and similar soils and is found on hills, till plains, and drumlinoid ridges. It is also composed of 30 percent Nassau (a somewhat excessively drained soil) and similar soils and is found on benches, ridges, and till plains. Cambridge soils, Manlius soils, Volusia soils, and Hudson soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Bath-Nassau-Rock outcrop complex, hilly (BOD) – This soil complex is mapped in the southern portion of the Project Site. It is composed of 40 percent Bath (a well drained soil) and similar soils and is found on hills, till plains, and drumlinoid ridges. It is also comprised of 25 percent Nassau (a somewhat excessively drained soil) and similar soils, and is found on benches, ridges, and till plains. Rock outcrops comprises 15 percent of the map unit as well. Hudson soils, Manlius soils, Mardin soils, and Volusia soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Canandaigua silt loam, till substratum (Cd) – A small portion of this very poorly drained soil is mapped in the northern portion of the Project Site. It is composed of 80 percent Canandaigua and similar soils and is found in depressions. Raynham, Lamson, Lyons, and Atherton soils make up 5 percent each of the map unit as the minor components. This map unit has a hydric rating of 95 percent.

Castile gravelly silt loam, 0 to 3 percent slopes (CgA) – A small portion of this moderately well drained soil is mapped in the easternmost portion of the Project Site. It is composed of 80 percent Castile and similar soils and is found in valley trains and terraces. Chenango soils, Red hook soils, Tunkhannock soils, and Hoosic soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Mardin gravelly silt loam, 3 to 8 percent slopes (MdB) – This moderately well drained soil is mapped in the southeastern portion and north central portion of the Project Site. It is composed of 85 percent Mardin and similar soils and is found on hills and mountains. Bath soils, Volusia soils, and Lordstown soils make up 5 percent each of the map unit. This map unit has a hydric rating of 0 percent.

Mardin-Nassau complex, 3 to 8 percent slopes (MgB) – This soil complex is mapped in the southern portion of the Project Site. It is composed of 55 percent Mardin (a moderately well

drained soil) and similar soils and is found on hills and mountains. It is composed of 25 percent Nassau (a somewhat excessively drained soil) and similar soils and is found on benches, ridges, and till plains. Volusia soils, found on hills and mountains, Churchville soils, found in lake plains and till plains, Manlius soils, found in till plains, and on benches and ridges, and Schoharie soils, found in lake plains, each make up 5 percent of the map unit. This map unit has a hydric rating of 0 percent.

Volusia gravelly silt loam, 3 to 8 percent slopes (VoB) – This somewhat poorly drained soil is mapped in the southern and central portions of the Project Site. It is composed of 90 percent Volusia and similar soils and is found on hills and mountains. Mardin soils, found on hills and mountains, and Chippewa soils, found in depressions, make up 5 percent each of the map unit. This map unit has a hydric rating of 5 percent.

Volusia gravelly silt loam, 8 to 15 percent slopes (VoC) – This somewhat poorly drained soil is mapped in the northern portion of the Project Site. It is composed of 90 percent Volusia and similar soils and is found on hills and mountains. Mardin soils, found on hills and mountains, make up 6 percent of the map unit. Chippewa soils, found in depressions, make up 4 percent of the map unit. This map unit has a hydric rating of 4 percent.

Hydric Soil

The Web Soil Survey of the Project Site was consulted prior to conducting the delineation to determine the extent of soils meeting hydric criteria as defined by the NRCS. The *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratories, 1987) (1987 Manual) defines a hydric soil as "*a soil that in its undrained condition, is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.*"

Of the Project soils, two of the soils mapped within the Project Site contain higher percentages (33 percent or more) of mapping units with hydric soil inclusions (see Figure 2). These higher rating percentages indicate the potential presence of a wetland feature on the Project Site. Hydric Soil Rating indicates the percentage of map units that meet 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 or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor non-hydric components in the higher positions on the landform, and map units that are made up dominantly of non-hydric soils may have small areas of minor hydric components in the lower positions on the landform. As such, each map unit is rated based on its respective components and the percentage of each component within the map unit. Although a soil series will be given a general hydric soil rating on the Web Soil Survey, this rating is for reference only and does not supersede site-specific conditions documented in the field that constitute hydric soil presence in located wetlands.

Table 2. Mapped Soils within the Project Site

Map Unit Symbol	Map Unit Name	Slope (%)	Drainage Class	Hydric Rating (%)	Acres in Project Site	Percent of Project Site (%)
At	Atherton silt loam	0 to 2	Poorly drained	90	0.0	0.0
BgC	Bath gravelly silt loam	8 to 15	Well drained	0	15.0	19.8
BgD	Bath gravelly silt loam	15 to 25	Well drained	0	12.0	15.9
BnC	Bath-Nassau complex	8 to 25	Well drained/Somewhat excessively drained	0	6.0	7.9
BOD	Bath-Nassau-Rock outcrop complex, hilly	10 to 25	Well drained/Somewhat excessively drained	0	2.3	3.0
Cd	Canandaigua silt loam, till substratum	0 to 1	Very poorly drained	95	0.5	0.6
CgA	Castile gravelly silt loam	0 to 3	Moderately well drained	0	0.0	0.1
MdB	Mardin gravelly silt loam	3 to 8	Moderately well drained	0	9.2	12.2
MgB	Mardin-Nassau complex	3 to 8	Moderately well drained/Somewhat excessively drained	0	2.5	3.4
VoB	Volusia gravelly silt loam	3 to 8	Somewhat poorly drained	5	22.8	30.1
VoC	Volusia gravelly silt loam	8 to 15	Somewhat poorly drained	4	5.4	7.1

4.0 DELINEATION METHODOLOGY

Prior to initiating field investigations, TRC conducted a desktop review of publicly available data to determine the potential presence of federal and state mapped wetlands and waterbodies within the Project Site alongside other potential environmental constraints, which could potentially impact the Project. TRC field biologists subsequently performed field investigations to identify aquatic features within the Project Site. Delineations for wetlands and waterbodies were performed in accordance with criteria set forth in the 1987 Manual (Environmental Laboratory, 1987) and the 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0) (USACE, 2012) (Supplement). Data was collected from a sample plot in each delineated wetland. Based on a change in cover type, multiple sample plots were taken of one of the delineated wetlands. Delineation data was recorded on USACE Routine Wetland Determination Forms (Appendix C). The boundaries of wetlands were demarcated with pink survey ribbon labeled “wetland delineation” and located with a GPS unit during the time of the delineation with reported sub-meter accuracy.

4.1 Hydrology

The presence of wetland hydrology is determined based on primary and secondary indicators established by the USACE. The 1987 Manual defines the presence of wetland hydrology when at least one primary indicator or two secondary indicators are identified. One primary indicator is sufficient to determine if hydrology is present; however, if primary indicators are absent, two or more secondary indicators are required to determine the presence of wetland hydrology. If other probable wetland hydrology evidence was found on-site, then such characteristics were subsequently documented on the USACE Routine Wetland Determination Form. Wetland hydrology indicators are grouped into 18 primary and 11 secondary indicators as presented in the Supplement.

Wetland hydrology may influence the characteristics of vegetation and soils due to anaerobic and reducing conditions (Environmental Laboratory, 1987). This influence is dependent on the frequency and duration of soil inundation or saturation which, in turn, is dependent on a variety of factors including topography, soil stratigraphy, and soil permeability, in conjunction with precipitation, runoff, and stormwater and groundwater influence.

4.2 Vegetation

Hydrophytic vegetation is defined in the 1987 Manual as:

“*…the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.*”

Plants are categorized according to their occurrence in wetlands. Scientific names and wetland indicator statuses for vegetation are those listed in *The National Wetland Plant List: 2016 Wetland Ratings* (Lichvar et al., 2016) (NWPL). Due to regional differences in wetland vegetation, among other characteristics, the USACE divided the United States into regions to improve the accuracy and efficiency of wetland delineations. The indicator statuses specific to the "Northcentral and Northeast Region," as defined by the USACE, apply to the Project Site. The official short definitions for wetland indicator statuses are as follows:

- Obligate Wetland (OBL): Almost always occur in wetlands.
- Facultative Wetland (FACW): Usually occur in wetlands but may occur in non-wetlands.
- Facultative (FAC): Occur in wetlands and non-wetlands.
- Facultative Upland (FACU): Usually occur in non-wetlands but may occur in wetlands.
- Upland (UPL): Almost never occur in wetlands.

For species with no indicator status in the Project Site's region, the indicator status assigned to the species in the nearest adjacent region is applied. Plants that are not included on the NWPL within the Project Site's region, nor an adjacent region, are given no indicator status, and are not included in dominance calculations. Plants that are not listed in any region on the NWPL are considered as UPL on USACE Routine Wetland Determination Forms.

Vegetation in both upland and wetland communities was characterized using areal methods for instituting plot measurement. In accordance with USACE methodology, a plot radius of 30 feet around the soil sample location was applied to tree species and vines, a 15-foot radius for saplings/shrubs, and a 5-foot radius was utilized for herbaceous plants. After the measurement of percent coverage was determined for each species, an application of the 50/20 rule of dominance determination was utilized to determine hydrophytic dominance at sample plots. In using the 50/20 rule, the plants that comprise each stratum are ranked from highest to lowest in percent cover. The species that cumulatively equal or exceed 50 percent of the total percent cover for each stratum are dominant species, and any additional species that individually provides 20 percent or more percent cover are also considered dominant species of its respective strata. The total cover for each stratum, and subsequently the plot as a whole, could exceed 100 percent due to vegetation overlap.

Cover types are also assigned to each wetland. The delineated resources were classified in accordance with the system presented in *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (Federal Geographic Data Committee [FGDC], 2013). Field biologists assign cover types to wetlands based on this classification standard and utilize this document. TRC biologists used the definitions for perennial and intermittent waterbodies found in *The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition* (FGDC, 2013) when classifying delineated waterbodies. Ephemeral waterbodies have flowing water primarily from rainfall runoff and are above the water table.

4.3 Soils

Hydric soil indicators were determined utilizing the Supplement with added provision from the *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils*, Version 8.2 (USDA NRCS, 2018). Soil characteristics were documented, such as color, texture, layer depth, presence of organic layers, and evidence of redoximorphic features, which may include indicators such as reduction, oxidation, gleyed matrices, manganese features. Soil test pits were dug using a spade shovel to a depth of approximately 20 inches. If refusal of a soil sample to 20 inches occurred due to the presence of hardpan layer, rock, or hard fill materials, this occurrence was documented. Soil color was described using the *Munsell Soil Color Book* (Munsell Color, 2015). Texture was determined using the USDA feel method (Thien, 1979).

Hydric soil indicators applicable to the Project Site were determined using the *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin* (NRCS, 2006) (MLRA Handbook). Per the MLRA Handbook, the Project Site is within Major Land Resource Area 144A (New England and Eastern New York Upland, Southern Part) of Land Resource Region (LRR) R (Northeastern Forage and Forest Region). Hydric soil indicators that do not apply to this MLRA were not considered.

4.4 Waterbodies

Waterbodies and other non-wetland aquatic features (e.g., lakes and ponds) within the Project Site were identified by the presence of an OHWM, which is the line established by the fluctuations of water (33 CFR 328.3). The OHWM, where not established and available by public record, is indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other characteristics of the surrounding areas.

The waterbodies were delineated from bank to bank with blue flagging and points of the delineated boundaries were located with a handheld GPS unit set for sub-meter accuracy. In waterbodies less than 6 feet wide, sub-meter GPS point capture and post-processing (differential correction) may yield imprecise waterbody bank measurements due to the narrow nature of the waterbody. In these circumstances, centerline delineations are applied to maintain accurate representation of waterbody sinuosity for planning and impact calculation purposes. Waterbody attributes including width, bank height, and water depth are measured and documented on TRC Stream Inventory Data Forms (Appendix C).

5.0 RESULTS

5.1 General Overview

The Project Site contains primarily agricultural fields. At the time of the survey these fields had likely not yet been planted, but some fields were recently tilled, while others where mounded with black plastic. In addition to the agricultural fields, there are several buildings, numerous pieces of equipment, an excavated foundation, (all accessed by a gravel road) closer to the southern portion of the Project Site, and old successional shrubland in the northern section of the Project Site. There is limited forested habitat within the Project Site and it is primarily found along the northern boundary of the Project Site. The trees in this area were dominated by willow species, quaking aspen (*Populus tremuloides*), green ash (*Fraxinus pennsylvanica*), apple trees (*Malus spp.*), silky dogwood (*Cornus amomum*) and red osier dogwood (*Cornus sericea*). The estimated average diameter at breast height (DBH) of the trees ranged from 2 to 12 inches, with a few trees attaining DBH measurements of over 36 inches. Dominant vegetation within the non-forested sections of the Project Site included Kentucky blue grass (*Poa pratensis*), goldenrod (*Solidago spp.*) ragweed (*Ambrosia spp.*), purple loosestrife (*Lythrum salicaria*), forbs, grapevines (*Vitis spp.*), and poison ivy (*Toxicodendron radicans*).

In the month of April 2019, 4.32 inches of rain fell in nearby Poughkeepsie NY. It had rained in the days leading up to the delineation, which could have attributed to higher water levels in the waterbodies as well as wet fields. During the delineation, weather conditions ranged from overcast with a light drizzle to mostly sunny.

TRC identified and delineated six wetlands and three waterbodies within the Project Site on April 29 and 30, 2019 (see Figure 4 and Figure 5). Approximately 4.0% (3.07 acres) of the approximately 78.5-acre Project Site is classified as wetland. Tables 3 and 4 below detail the wetlands and waterbodies delineated at the Project Site.

5.2 Delineated Wetlands

Wetland W-1 is a 0.34-acre PEM wetland located in the southwestern portion of the Project Site, near the buildings. This wetland continues off-site to the west, where hydrology likely originates from the Minor Tributaries to West of Hudson (S-1 offsite). This wetland was likely formed after the stream (mapped as an NWI feature and NYSDEC Class C stream) that originally flowed through this area, was diverted to the north. This wetland is therefore likely under USACE jurisdiction. Indicators of wetland hydrology include surface water, saturation, inundation visible on aerial imagery, drainage patterns, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. The dominant vegetation is reed canary grass (*Phalaris arundinacea*), and narrowleaf cattail (*Typha angustifolia*). Soils have a silt loam to gravelly silt loam texture. The hydric soil indicator is a stripped matrix (S6).

Wetland W-2 is a 0.07-acre PEM wetland located perpendicular to the western boundary of the Project Site, near the buildings. This wetland is contained within the Project Site and due to man-made disturbances it appears to be isolated from other wetlands and streams. On aerial imagery, which was potentially taken after a storm event, a dark line of wet soil can be seen following depressions in topography “attempting” to drain the wetland towards the S-1 stream corridor, but unsuccessfully. Had there not been the man-made disturbance, this wetland would likely have drained to this area and been hydrologically connected to S-1. While this feature is potentially non-jurisdictional to the USACE due to the man-made features inhibiting the connection, it is within 4,000 feet of a tributary; therefore, a significant nexus determination by the USACE would be required to determine whether or not this wetland is under USACE jurisdiction. Hydrology originates from the agricultural fields to the north. Indicators of wetland hydrology include surface water, a high water table, saturation, water-stained leaves, oxidized rhizospheres on living roots, geomorphic position, and the FAC-neutral test. The dominant vegetation is narrowleaf cattail and reed canary grass. Soils have a clay loam texture. The hydric soil indicator is a depleted matrix (F3).

Wetland W-3 is a 0.82-acre palustrine unconsolidated bottom (PUB) pond located in the easternmost portion of the Project Site. This pond drains off-site to the north through two parallel culverts and likely continues on as “Minor Tributaries to West of Hudson.” Hydrology originates from Waterbody S-1 and Wetland W-5. Wetland W-3 is therefore likely under USACE jurisdiction. Wetland W-3 is also mapped as a NWI PUBHx feature. Indicators of wetland hydrology include surface water, a high water table, inundation visible on aerial imagery, sparsely vegetated concave surface, saturation visible on aerial imagery, and geomorphic position. The dominant vegetation surrounding the pond is silky dogwood and quaking aspen. Soils were not obtainable from the bottom of the pond due to inundation.

Wetland W-4 is a 0.20-acre PEM wetland located in an overgrown field in the eastern portion of the Project Site. This wetland is contained on the Project Site but appears to have connections to Wetland W-5 via overland flow and/or groundwater. Wetland W-4 is therefore likely under USACE jurisdiction. Hydrology originates from uplands to the south. Indicators of wetland hydrology include surface water, a high water table, saturation, oxidized rhizospheres on living roots, drainage patterns, and the FAC-neutral test. The dominant vegetation is purple loosestrife and narrowleaf cattail. Soils have a silt loam to sandy clay loam texture. The hydric soil indicator is a depleted matrix (F3).

Wetland W-5 is a 1.48-acre PEM (1.45 acres) and palustrine scrub-shrub (PSS; 0.03 acres) wetland that occasionally abuts Waterbody S-1 in the eastern portion of the Project Site. Wetland W-5 also ties to Wetland W-3. Portions of this wetland continue off-site to the east. Wetland W-5 is therefore likely under USACE jurisdiction. Within a portion of this wetland there is a man-made dug ditch that ties to Wetland W-3, however this ditch does not have any flowing water and is full of common reed. Hydrology originates from the surrounding uplands and Waterbody S-1. In the PEM portion of the wetland, indicators of wetland hydrology include surface water, a high water table, saturation, drainage patterns, geomorphic position, and the FAC-neutral test. The dominant vegetation is purple loosestrife and common duckweed (*Lemna minor*). Soils have a silt loam

texture, and the hydric soil indicator is a depleted matrix (F3).In the PSS portion of the wetland, indicators of wetland hydrology include surface water, a high water table, saturation, inundation visible on aerial imagery, drainage patterns, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. The dominant vegetation is black willow (*Salix nigra*), silky dogwood, and reed canary grass. Soils have a silty clay loam to rocky silty clay loam texture, and the hydric soil indicator is a loamy gleyed matrix (F2).

Wetland W-6 is a 0.16-acre PEM wetland located in the northernmost corner of the Project Site. This wetland is contained onsite, however, it is in close proximity to Waterbody S-3. Wetland W-6 is therefore likely under USACE jurisdiction. Hydrology originates from the surrounding uplands to the south. Indicators of wetland hydrology include surface water, saturation, water-stained leaves, drainage patterns, saturation visible on aerial imagery, geomorphic position, and the FAC-neutral test. The dominant vegetation is common reed (*Phragmites australis*). Soils have a silty clay loam texture, and the hydric soil indicator is a thick dark surface (A12).

Table 3. Delineated Wetlands within the Project Site

Wetland Field Designation	Cover Type Classification[1] and Acreage				Total Wetland Acreage within Project Site	NWI Cover Type[2]	NYSDEC Wetland ID	NYSDEC Wetland Class[3]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
	PEM	PSS	PFO	PUB								
W-1	0.34	-	-	-	0.34	R4SBC	-	-	USACE	-	41.668183	-73.977409
W-2	0.07	-	-	-	0.07	-	-	-	USACE[4]	-	41.669323	-73.976921
W-3	-	-	-	0.82	0.82	PUBHx	-	-	USACE	-	41.670418	-73.972534
W-4	0.20	-	-	-	0.20	-	-	-	USACE	-	41.668525	-73.974098
W-5	1.45	0.03	-	-	1.48	-	-	-	USACE	-	41.669435	-73.973646
W-6	0.16	-	-	-	0.16	-	-	-	USACE	-	41.675822	-73.97643
Total Wetland Acreage Delineated:					3.07							

[1]PEM – palustrine emergent; PSS – palustrine scrub-shrub; PFO – palustrine forested; PUB – palustrine unconsolidated bottom
[2]R4SBC – all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater.; PUBHx – palustrine unconsolidated bottom wetland excavated by humans, with at least 25% cover of particles other than stones, and a vegetative cover less than 30%.
[3]The NYSDEC classification system of freshwater wetlands designates wetlands into four class ratings (I–IV), with Class I being the highest or best quality wetland and Class IV being the lowest quality.
[4]This wetland may be considered non-jurisdictional due to man-made disturbance, however it is within 4,000 feet of a jurisdictional tributary and would require a significant nexus determination by the USACE to determine the jurisdictional status.

5.3 Delineated Waterbodies

Waterbody S-1 is a perennial waterbody that is approximately 4.5 to 5 feet wide with 4 to 5-foot high banks. It ranges from 12 to 24 inches deep with a cobble, gravel, boulder, and silt/clay streambed. Approximately, 1,617.35 linear feet of this stream flows across the Project Site. This waterbody originates offsite, entering in the southwestern portion of the Project Site and draining to the northeast into Wetland W-3. Water from W-3 exits the northern end of the pond through two parallel culverts where the waterbody continues off-site. Wetland W-5 is adjacent to this waterbody in several areas. Additionally, Waterbody S-2 drains into Waterbody S-1. There is a small concrete dam within S-1, located to the east of the easternmost structure. This dam pooled water above it, however it also allowed water to continue flowing northeast. Waterbody S-1 generally corresponds to a NYSDEC-mapped Class C waterbody: Minor Tributaries to West of Hudson and NWI riverine feature, although the mapping is off slightly to the south. Additionally, the southern end of this mapped stream has been diverted to the north and Wetland W-1 remains where this stream likely used to be. There is an existing crossing of this stream for the access road to the buildings onsite. Waterbody S-1 is likely under USACE jurisdiction, as it drains off-site and likely connects to WOTUS.

Waterbody S-2 is an intermittent waterbody that is approximately 4 feet wide with 2-foot high banks. This waterbody was likely manmade in the recent past as it is not visible on aerial imagery. It ranges from 0 to 6 inches deep with a shale, cobble, gravel, and silt/clay streambed. Approximately 183.11 linear feet of this stream were mapped within the Project Site. This waterbody originates from groundwater behind the barns in the southwestern portion of the Project Site and drains to the southwest where it flows into S-1. No wetlands intersect this waterbody. Waterbody S-2 is likely under USACE jurisdiction, as it drains into S-1 which flows off-site and likely connects to WOTUS.

Waterbody S-3 is a perennial waterbody that is approximately 7 feet wide with 1.5-foot high banks. It ranges from 6 to 24 inches deep with a cobble, gravel, silt/clay, and organic matter streambed. This waterbody originates offsite and enters in the northernmost portion of the Project Site through a culvert. Waterbody S-3 drains to the north into a separate culvert under Mahoney Road through which the waterbody continues off-site. Approximately 144.04 linear feet of this stream were mapped within the Project Site. No wetlands intersect this waterbody, but it lies directly north and adjacent to Wetland W-6. Waterbody S-3 is likely under USACE jurisdiction, as it drains off-site and likely connects to WOTUS.

Representative photographs taken of each delineated wetland community and waterbody within the Project Site are provided in Appendix B. Completed USACE Routine Wetland Determination Forms and TRC Stream Inventory Data Forms are provided in Appendix C.

Table 4. Delineated Waterbodies within the Project Site

Waterbody Field Designation	Flow Regime Classification	Linear Feet within Project Site	NYSDEC Waterbody Name and Regulatory ID Number	NYSDEC Classification[1] and Standard[2]	Potential Jurisdiction	Associated Buffer	Latitude of Centroid	Longitude of Centroid
S-1	Perennial	1,617.35	Minor Tributaries to West of Hudson (862-392)	Class C	USACE	-	41.668926	-73.974883
S-2	Intermittent	183.11	-	-	USACE	-	41.668811	-73.97751
S-3	Perennial	144.04	-	-	USACE	-	41.67597	-73.976469
Total Waterbody Length Delineated:		1,944.50						

[1]A classification of AA or A indicates that the best use of the waterbody is as a source of water supply for drinking, culinary or food processing purposes, primary and secondary contact recreation, and fishing. The best usages of Class B waters are primary and secondary contact recreation and fishing. The best usage of Class C waters is fishing. Waters with a classification of D are generally suitable for fishing and non-contact recreation.
[2] Waterbodies designated (T) indicate that they support trout, while those designated (TS) support trout spawning.

6.0 CONCLUSIONS

During the wetland and waterbody delineation on April 29 and 30, 2019, TRC delineated six wetlands (comprising 3.07 acres in total) and three waterbodies (comprising 1,944.50 linear feet in total). Four of the six wetlands have PEM cover types, one has a combination of PEM and PSS cover types, and the remaining wetland has a PUB cover type. TRC analysis suggests that five wetlands (W-1, W-3, W-4, W-5, and W-6) within the Project Site are likely under USACE jurisdiction as they are all likely hydrologically connected to WOTUS. While Wetland W-2 is potentially non-jurisdictional due to the man-made disturbance, it is also within 4,000 feet of a USACE jurisdictional tributary and therefore is subject to a significant nexus determination by the USACE which could result in the wetland being under USACE jurisdiction. Therefore, within this report, Wetland W-2 has conservatively been presumed USACE-jurisdictional. There are no buffers or setbacks associated with USACE-regulated wetlands. There are no NYSDEC-mapped wetlands within the Project Site.

Two of the three waterbodies found onsite exhibit perennial flow regimes, while the third waterbody exhibits an intermittent flow regime. All three waterbodies are connected to WOTUS and are likely jurisdictional under the USACE. Only one stream, Waterbody S-1, is mapped as a NYSDEC waterbody. As a Class C waterbody, S-1 is not considered a protected stream by the NYSDEC. This stream corridor is the main feature on the Project Site that most of the other features are associated with. Final determination of the jurisdictional status of the wetlands and waterbodies identified on the Project Site must be made by both the USACE and the NYSDEC upon completion of detailed reviews by those agencies.

7.0 REFERENCES

Bailey, R.G. 1995. Description of the ecoregions of the United States. Miscellaneous Publication No. 1391. Second edition, revised. Washington, DC: USDA Forest Service.

Browne, S. et al. 1995. New York State Freshwater Wetlands Delineation Manual. New York State Department of Environmental Conservation, Division of Fish and Wildlife, Bureau of Habitat, Albany, NY.

Bryce, S.A., Griffith, G.E., Omernik, J.M., Edinger, G., Indick, S., Vargas, O., and Carlson, D. 2010. Ecoregions of New York (color poster with map descriptive text, summary tables, and photographs): Reston, Virginia, U.S. geological Survey, map scale 1:1,250,000.

Cowardin, L.M., et al. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C. 131 pp.

Definition of Waters of the United States 33 CFR Part 328 (1986).

Dickinson, N.R. 1983. A division of southern and western New York State into ecological zones. Unpubl. Report for NYSDEC, Wildlife Resources Center, Delmar, NY.

Edinger, G.J., et al. 2014. Ecological Communities of New York State, Second Edition. New York Heritage Program, NYS Department of Environmental Conservation, Albany, NY, 160 pp.

Environmental Laboratory. 1987. Corps of Engineers Wetland Delineation Manual. Technical Report Y-87-1. U.S. Army Corps of Engineers: Waterways Experiment Station; Vicksburg, MS.

Federal Geographic Data Committee. 2013. The Classification of Wetlands and Deepwater Habitats of the United States, Second Edition.

Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. 2016. The National Wetland Plant List: 2016 Update of Wetland Ratings. http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html (Accessed May 2019).

McNab, W. et al. January 2007. Description of “Ecological Subregions: Sections of the Conterminous United States.” First Approximation. USDA Forest Service.

Munsell Color. 2015. Munsell Soil Color Book. X-Rite Corporation, Grand Rapids, MI.

National Weather Service Corporate Image Web Team. (2005, October 24). Albany, NY. https://w2.weather.gov/climate/index.php?wfo=aly. Accessed May 2019.

National Wetlands Inventory Wetlands, Electronic Vector Quad Maps of New York, United States Geological Survey.

New York State Department of Environmental Conservation (NYSDEC) Hydrography Network and Water bodies, NYS Hydrologic Units.

NYSDEC website, (http://www.dec.state.ny.us/).

NYSDEC (n.d.a). Landsman Kill Hudson River (0202000801). http://www.dec.ny.gov/lands/48373.html. Accessed May 2019.

NYSDEC (n.d.a). Lower Hudson Watershed. Available at: https://www.dec.ny.gov/lands/48367.html. Accessed May 2019.

New York State Department of Transportation. 2013. Geotechnical Design Manual. Office of Technical Services, Geotechnical Engineering Bureau.

National Oceanic and Atmospheric Administration (NOAA). 2017. Anthony Arguez, Imke Durre, Scott Applequist, Mike Squires, Russell Vose, Xungang Yin, and Rocky Bilotta (2010). NOAA's U.S. Climate Normals (1981-2010). NOAA National Centers for Environmental Information. DOI:10.7289/V5PN93JP [January 2017].

Seaber, Paul R.; Kapinos, F. Paul; Knapp, George L. "*Hydrologic Unit Maps, U.S. Geological Survey Water-Supply Paper 2294*" (PDF). United States Geological Survey. Retrieved May 2019.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available at: http://websoilsurvey.nrcs.usda.gov/. Accessed May 2019.

Thien, S.J. 1979. A flow diagram for teaching texture by feel analysis. Journal of Agronomic Education. 8:54-55.

United States Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). U.S. Army Engineer Research and Development Center, Vicksburg, MS, 162 pp.

U.S. Climate Data. 2019. Poughkeepsie, New York. Available at: https://www.usclimatedata.com/climate/poughkeepsie/new-york/united-states/usny1174. Accessed May 2019.

USDA NRCS. 2006. Land Resources Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin. USDA Handbook 296.

USDA NRCS. 2009. New York Rapid Watershed Profile: Hudson-Wappinger Watershed. Syracuse State Office. Available at: https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ny/technical/dma/rwa/?cid=stelprdb1246971. Accessed May 2019.

USDA NRCS. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

United States Department of the Interior, Geological Survey (USGS). National Hydrography Dataset. https://nhd.usgs.gov/ Modified 2018.

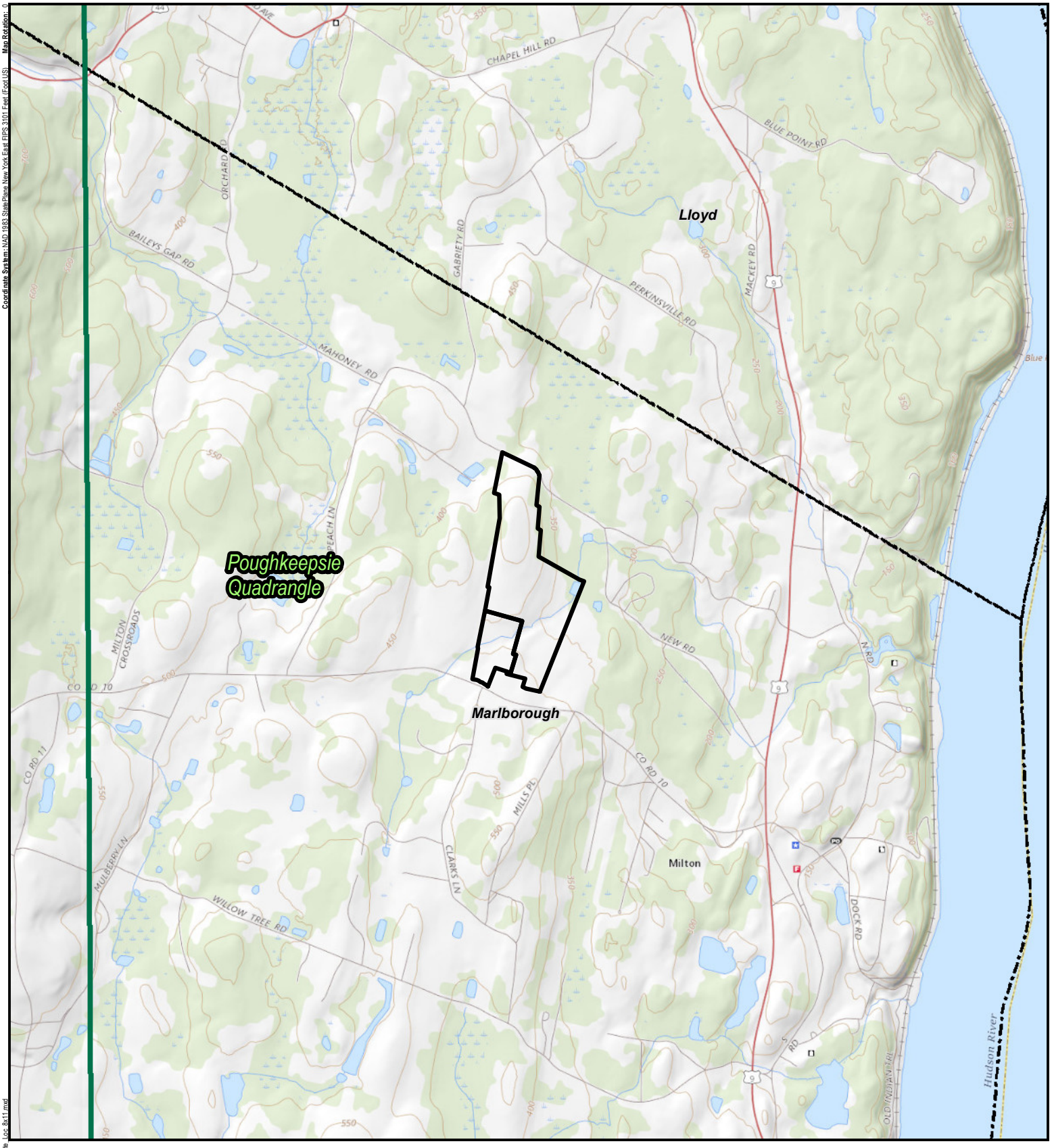
USGS. 2016. Poughkeepsie Quadrangle, New York – Ulster County. 7.5 Minute Series (Topographic).

USGS. 2014. Hydrologic Unit Maps. Available at: http://water.usgs.gov/GIS/huc.html Accessed May 2019.

USGS and USDA NRCS. 2013. Federal Standards and Procedures for the National Watershed Boundary Dataset (WBD) (4 ed.): U.S. Geological Survey Techniques and Methods 11–A3, 63 p. http://pubs.usgs.gov/tm/tm11a3/. Accessed May 2019.

Will, G.B. et al. 1982. The ecological zones of New York. Unpubl. report for NYSDEC, Albany, New York.

APPENDIX A
Figures



LEGEND

- PROJECT BOUNDARY
- USGS 24K QUAD BOUNDARY
- TOWN BOUNDARY

1:24,000
1 " = 2,000 '

1. BASEMAP IMAGERY FROM USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE SERIES.

0 1,000 2,000 Feet

PROJECT:
CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

TITLE:
SITE LOCATION MAP

DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS		
APPROVED BY:	V. MITCHELL		
DATE:	MAY 2019		

FIGURE 1

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

Path: \\agcenv-file01\gis\1-PROJECTS\CCR\New_York\Independent_Fig1_Site_Loc_8x11.mxd
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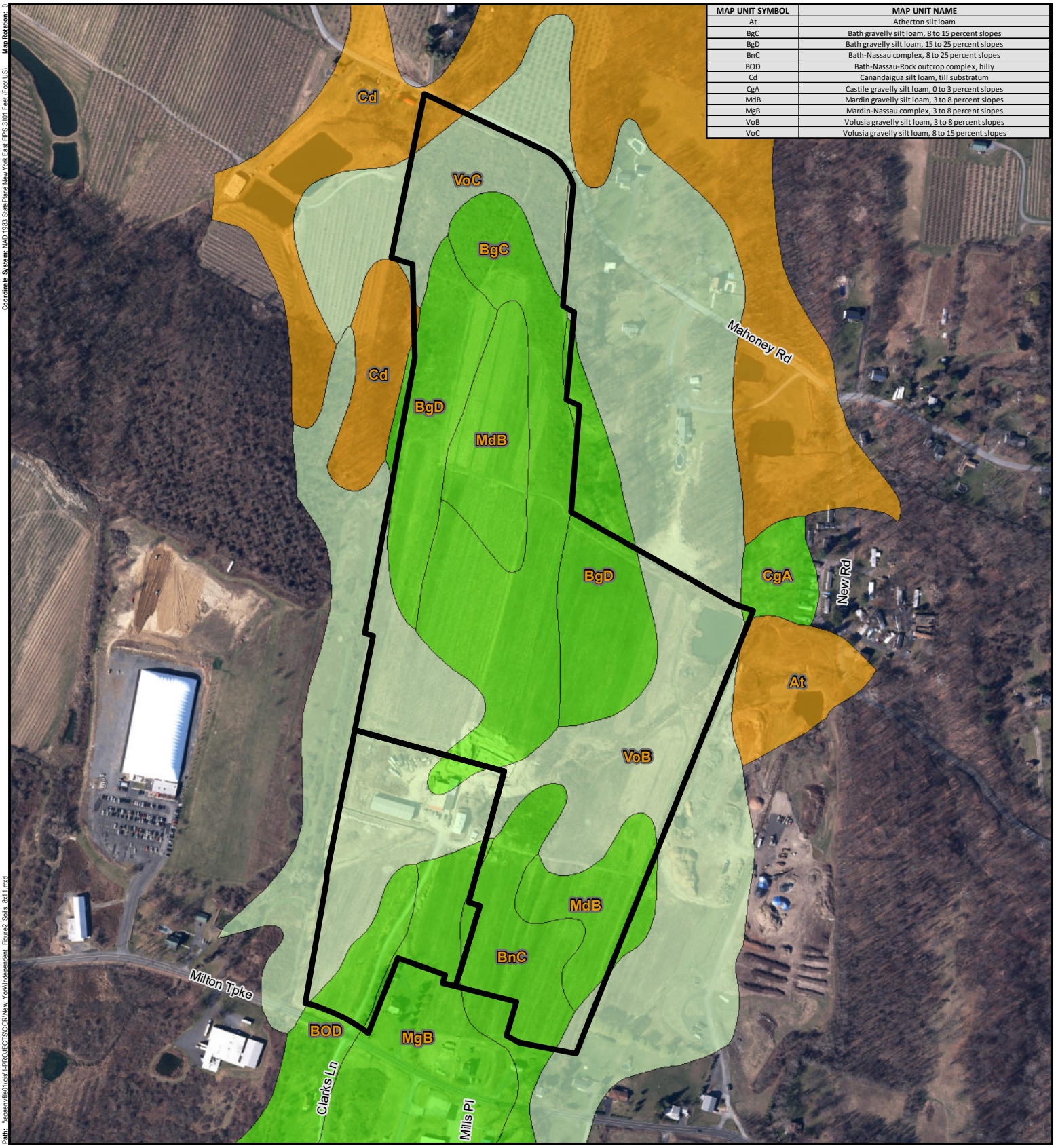

MAP UNIT SYMBOL	MAP UNIT NAME
At	Atherton silt loam
BgC	Bath gravelly silt loam, 8 to 15 percent slopes
BgD	Bath gravelly silt loam, 15 to 25 percent slopes
BnC	Bath-Nassau complex, 8 to 25 percent slopes
BOD	Bath-Nassau-Rock outcrop complex, hilly
Cd	Canandaigua silt loam, till substratum
CgA	Castile gravelly silt loam, 0 to 3 percent slopes
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes
MgB	Mardin-Nassau complex, 3 to 8 percent slopes
VoB	Volusia gravelly silt loam, 3 to 8 percent slopes
VoC	Volusia gravelly silt loam, 8 to 15 percent slopes

Map Rotation: 0
Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Ftcd US)
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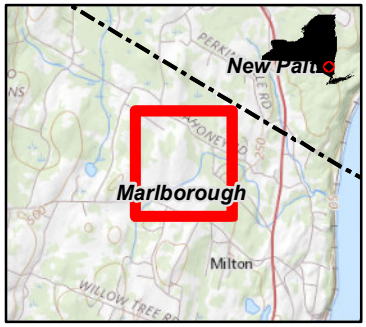


LEGEND

- HYDRIC RATING (100%)
- HYDRIC RATING (66 TO 90%)
- HYDRIC RATING (33 TO 65%)
- HYDRIC RATING (1 TO 32%)
- HYDRIC RATING (0%)
- NOT RATED OR NOT AVAILABLE
- SITE LOCATION

N

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.

2. SOILS DATA ACQUIRED FROM THE NATURAL RESOURCES CONSERVATION SERVICE, USING THE UNITED STATES DEPARTMENT OF AGRICULTURE WEB SOIL SURVEY.

1:6,000

1 " = 500 '

0 250 500 Feet

PROJECT:

CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

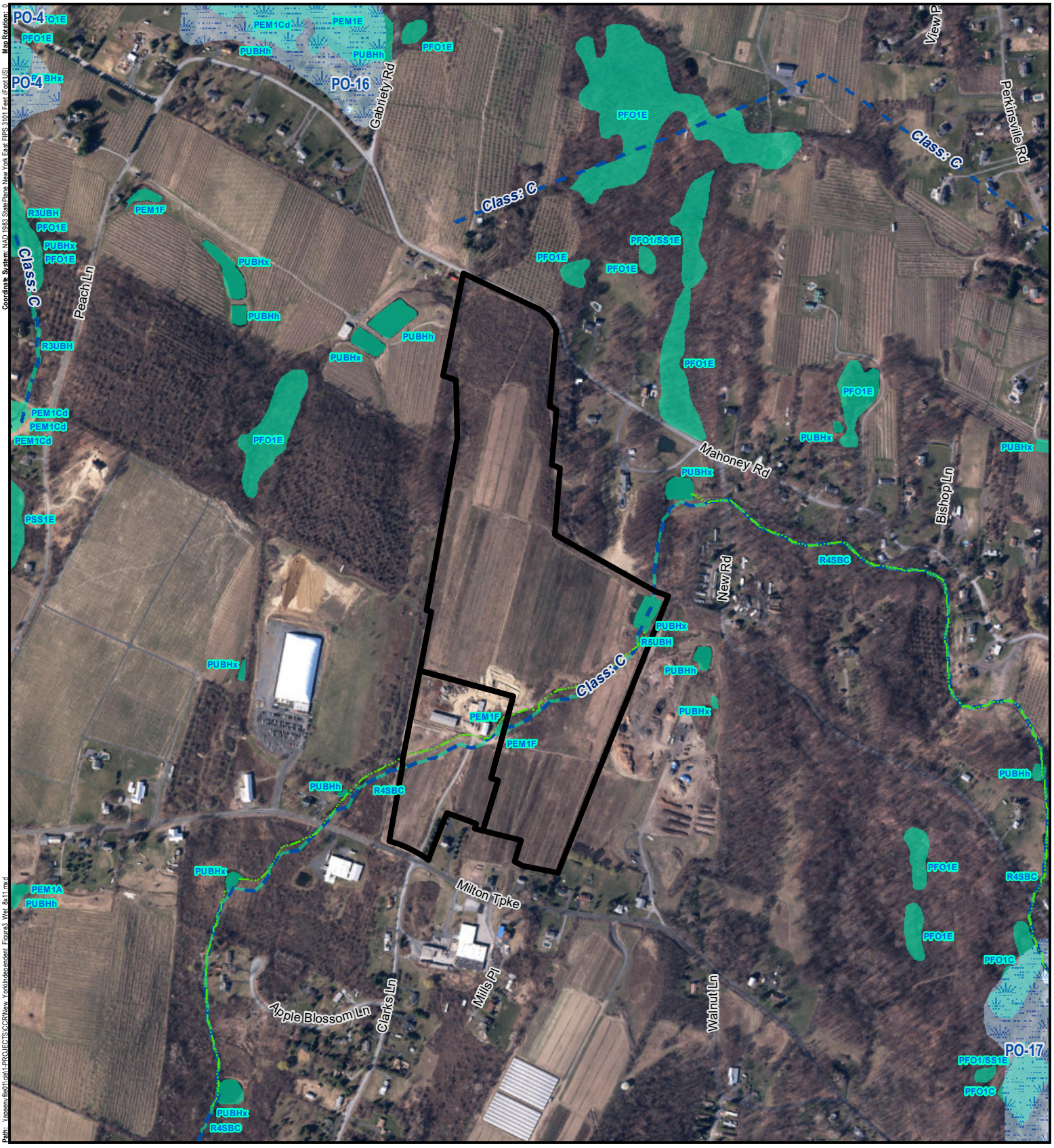
TITLE:

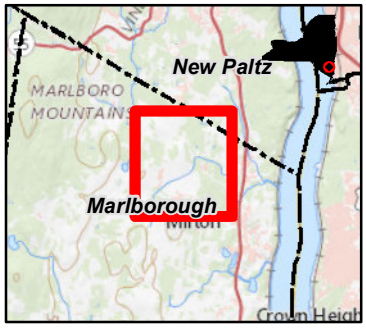
SOILS MAP

DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS		
APPROVED BY:	V. MITCHELL		**FIGURE 2**
DATE:	MAY 2019		

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES





LEGEND

- WATERBODIES (NHD)
- WATERBODIES (NYSDEC)
- WETLANDS (NYSDEC)
- WETLANDS (NWI)
- 100 YEAR FLOODPLAIN (FEMA)
- SITE LOCATION

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.
2. DATA ACQUIRED FROM THE NYSDEC, NWI, FEMA, AND NYGIS.

N

1 " = 800 '
0 400 800 Feet

PROJECT:
CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

TITLE:
FEDERAL & STATE WATER RESOURCES

DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS		
APPROVED BY:	V. MITCHELL		**FIGURE 3**
DATE:	MAY 2019		

TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Ford US) Map Rotation: 0
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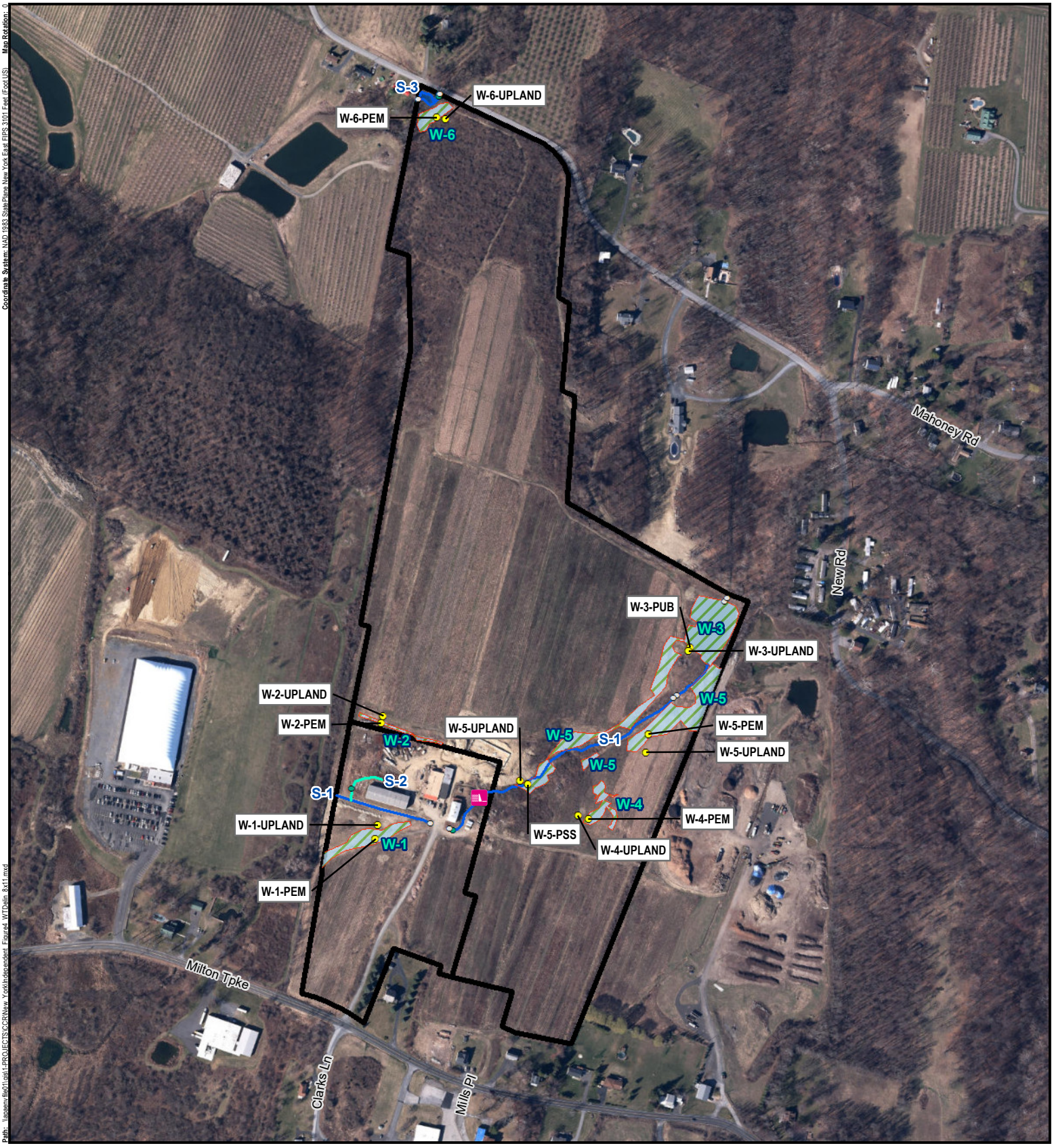
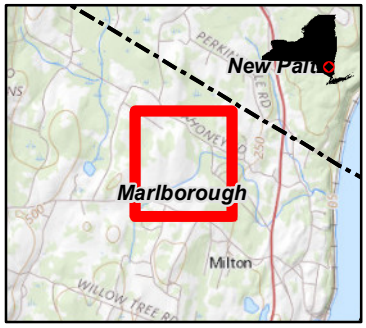




LEGEND

- CULVERT LOCATIONS
- DATA POINT
- STREAM PLOTS
- DAM LOCATION
- TRC DELINEATED STREAM - INTERMITTENT - USACE JURISDICTIONAL
- TRC DELINEATED STREAM - PERENNIAL - USACE JURISDICTIONAL
- TRC DELINEATED WETLAND BOUNDARY
- TRC DELINEATED WETLANDS - USACE JURISDICTIONAL
- TRC DELINEATED SURFACE WATER
- SITE LOCATION

1. BASEMAP IMAGERY FROM ESRI/NAIP, "WORLD IMAGERY" WEB BASEMAP SERVICE LAYER, 2017.
2. RESOURCE DELINEATION COMPLETETED IN THE FIELD BY TRC ON 4/29/2019 & 4/30/2019.

N

0 250 500 Feet

1 " = 500 '

PROJECT:
CYPRESS CREEK RENEWABLES, LLC
INDEPENDENT SOLAR, LLC SITE
MARLBOROUGH, ULSTER COUNTY, NY

TITLE:
DELINEATED WETLANDS AND STREAMS

DRAWN BY:	A. KAILAS	PROJ NO.:	319480.WETL.0000
CHECKED BY:	W. HILLEGAS		
APPROVED BY:	V. MITCHELL		
DATE:	MAY 2019		

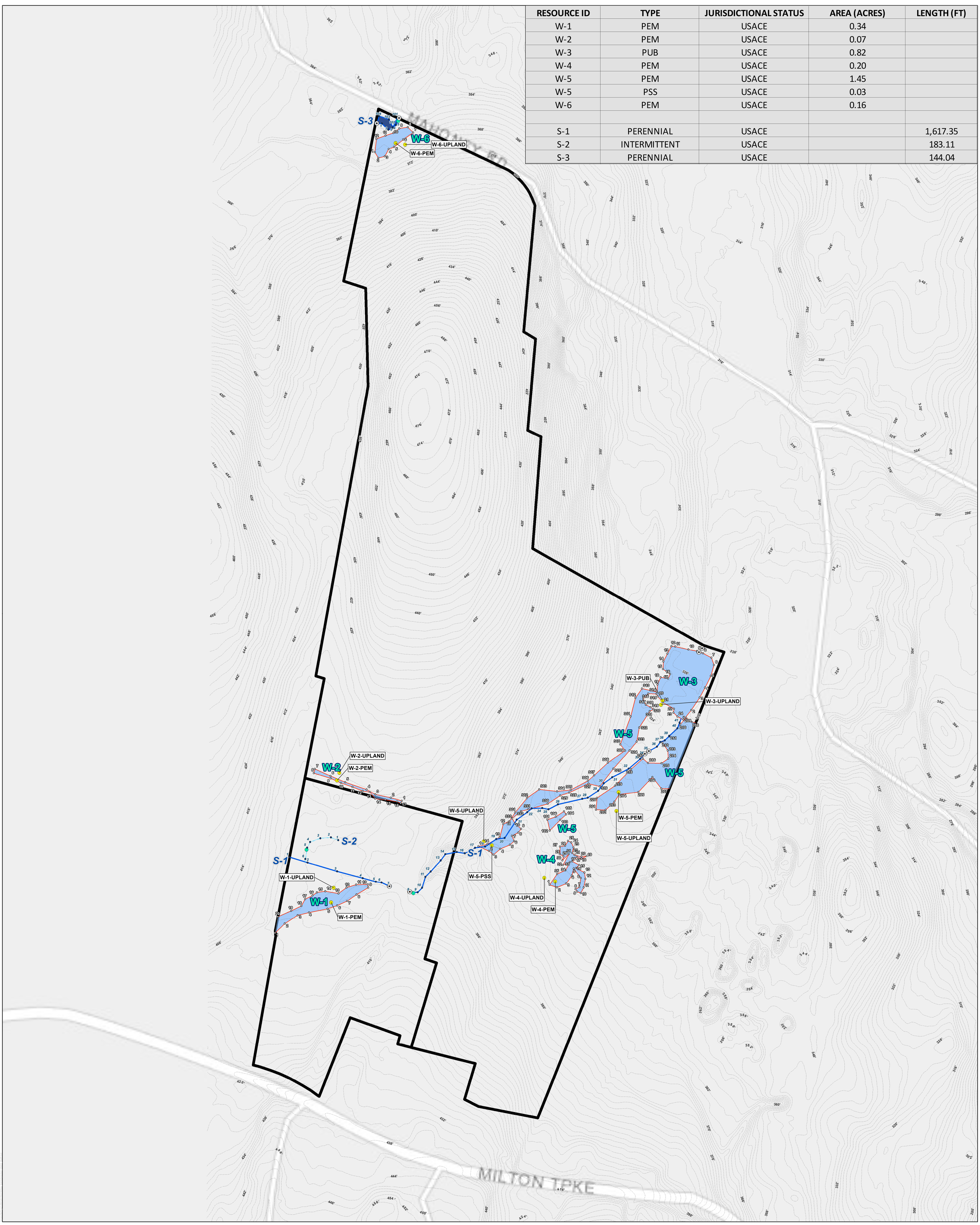
FIGURE 4

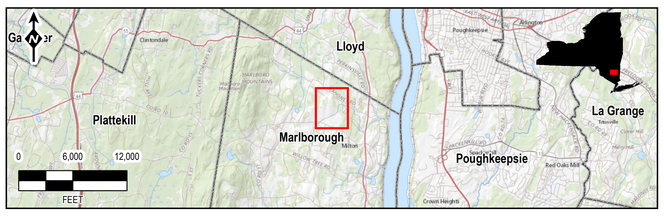
TRC
10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

CYPRESS CREEK RENEWABLES

Path: \\acgenv-file01\esri1\PROJECTS\CCRNew York\Independent Figure4_WTDelin_8x11.mxd
Coordinate System: NAD 1983 StatePlane New York East FIPS 3101 Feet (Ficot US) Map Rotation: 0

RESOURCE ID	TYPE	JURISDICTIONAL STATUS	AREA (ACRES)	LENGTH (FT)
W-1	PEM	USACE	0.34	
W-2	PEM	USACE	0.07	
W-3	PUB	USACE	0.82	
W-4	PEM	USACE	0.20	
W-5	PEM	USACE	1.45	
W-5	PSS	USACE	0.03	
W-6	PEM	USACE	0.16	
S-1	PERENNIAL	USACE		1,617.35
S-2	INTERMITTENT	USACE		183.11
S-3	PERENNIAL	USACE		144.04





LEGEND

- STREAM FLAG
- WETLAND FLAG
- CULVERT LOCATIONS
- TRC DELINEATED INTERMITTENT SREAM - USACE JURISDICTIONAL
- TRC DELINEATED PERENNIAL SREAM - USACE JURISDICTIONAL
- 2-FOOT CONTOURS
- USACE PLOTS
- STREAM PLOTS
- TRC DELINEATED WETLAND BOUNDARY
- TRC DELINEATED WETLANDS - USACE JURISDICTIONAL
- TRC DELINEATED SURFACE WATER
- PROJECT BOUNDARY - 75.80 ACRES

0 100 200
Feet
1 " = 100 '

N

CYPRESS CREEK RENEWABLES

INDEPENDENT SOLAR, LLC

TOWN OF MARLBOROUGH
ULSTER COUNTY, NY

DELINEATION FLAGGING MAP

CREATED: 5/14/2019

TRC

10 MAXWELL DRIVE
CLIFTON PARK, NY 12065

SOURCES: ESRI, NYGIS, TRC, CCR

APPENDIX B
Photograph Log

Photograph 1. Overview of western agricultural fields at the Project Site, facing north. Photo taken on 4/29/19.

Photograph 2. Southeastern agricultural field, facing northeast. Photo taken on 4/29/19.

Photograph 3. Buildings at the Project Site, facing south. Photo taken on 4/29/19.

Photograph 4. Buildings at the Project Site, facing east. Photo taken on 4/29/19.

Photograph 5. Foundation frost walls at the Project Site, facing east. Photo taken on 4/29/19.

Photograph 6. Shrub area in the northern portion of the Project Site, facing north-northeast. Photo taken on 4/30/19.

Photograph 7. Access road to the Project Site, facing southwest. Photo taken on 4/29/19.

Photograph 8. Waterbody S-1, facing west northwest (upstream). Photo taken on 4/29/19.

Photograph 9. Dam in Waterbody S-1, facing north (downstream). Photo taken on 4/29/19.

Photograph 10. Waterbody S-2, facing northeast (upstream). Photo taken on 4/29/19.

Photograph 11. Waterbody S-3, facing southwest (upstream). Photo taken on 4/30/19.

Photograph 12. Palustrine emergent (PEM) Wetland W-1, facing west. Photo taken on 4/29/19.

Photograph 13. PEM Wetland W-2, facing south. Photo taken on 4/29/19.

Photograph 14. Palustrine unconsolidated bottom (PUB) Wetland W-3, facing north. Photo taken on 4/29/19.

Photograph 15. PEM Wetland W-4, facing east. Photo taken on 4/30/19.

Photograph 16. PEM portion of Wetland W-5, facing west. Photo taken on 4/30/19.

Photograph 17. Palustrine scrub-shrub (PSS) portion of Wetland W-5, facing southeast. Photo taken on 4/30/19.

Photograph 18. PEM Wetland W-6, facing northeast. Photo taken on 4/30/19.

APPENDIX C
USACE Routine Wetland Determination Forms
&
TRC's Stream Inventory Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-1_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 10
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668267 **Long:** -73.9772005 **Datum:** WGS84
Soil Map Unit Name: Volusia gravellysilt loam, 3 to 8 percent slopes (VoB) **NWI classification:** R4SB
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-1

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present. Circumstances are not normal due to agricultural activities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	14

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met. Seems to be a historically filled stream.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-1_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Phalaris arundinacea*	80	Yes	FACW
2. *Typha angustifolia*	50	Yes	OBL
3. *Phragmites australis*	20	No	FACW
4. *Lythrum salicaria*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	155	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	55	x 1 =	55
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	155	(A)	255 (B)

Prevalence Index = B/A = 1.6

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-1_PEM-1

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 - 16	2.5Y 4/1	100			D		Silt Loam	
16 - 18	2.5Y 5/2	95	7.5YR 5/8	5	C	M	Gravelly Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
_✓_ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

The criterion for hydric soil is met.

Hydrology Photos

Vegetation Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-1_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): slight slope **Local relief (concave, convex, none):** Undulating **Slope (%):** 1 to 10
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668372 **Long:** -73.9772706 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-1_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	80	Yes	FACU
2. *Solidago sp.*	40	Yes	NI
3. *Rosa multiflora*	15	No	FACU
4. *Fragaria virginiana*	5	No	FACU
5. *Equisetum arvense*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	145	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	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	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals	105	(A)	415 (B)

Prevalence Index = B/A = 4

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-1_UPL-1

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 - 10	10YR 4/2	100					Silt Loam	
10 - 18	2.5Y 5/2	80	7.5YR 5/8	20	C	M	Sandy Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-2_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6694166 **Long:** -73.9772521 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-2

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-2_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Typha angustifolia*	80	Yes	OBL
2. *Phalaris arundinacea*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	80	x 1 =	80
FACW species	25	x 2 =	50
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	130 (B)

Prevalence Index = B/A = 1.2

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-2_PEM-1

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 - 18	2.5Y 5/2	75	10YR 5/6	25	RM	M	Clay Loam	Soil seems historically mixed

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

The criterion for hydric soil is met.

Hydrology Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-29
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-2_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Foot slope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6695036 **Long:** -73.9772048 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-2_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	40	Yes	FACU
2. *Ambrosia psilostachya*	40	Yes	FAC
3. *Taraxacum officinale*	5	No	FACU
4. *Fragaria virginiana*	5	No	FACU
5. *Plantago lanceolata*	5	No	FACU
6. *Trifolium repens*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(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	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals	100	(A)	360 (B)
Prevalence Index = B/A =	3.6		

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: W-2_UPL-1

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 - 12	10YR 3/2	100					Silt Loam	
12 - 18	10YR 4/2	100					Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

The criterion for hydric soil is not met.

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-3_PUB-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.670177 **Long:** -73.972847 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** PUB
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-3

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PUB. Pond.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ✓ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	36
Water Table Present?	Yes ✓ No ____	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-3_PUB-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Cornus amomum*	5	Yes	FACW
2. *Populus tremuloides*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(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	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	10	(A)	30 (B)
Prevalence Index = B/A =	3		

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-3_PUB-1

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, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None

Depth (inches):

Hydric Soil Present? Yes ____ No ✓

Remarks:

Soils were not able to be observed due to inundation from pond water.

Vegetation Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Marlboro, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-3_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 1 to 10
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6701732 **Long:** -73.9728567 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ____	Depth (inches):	
Water Table Present?	Yes ____ No ____	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ____	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-3_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Poa pratensis*	65	Yes	FACU
2. *Equisetum arvense*	30	Yes	FAC
3. *Fragaria virginiana*	10	No	FACU
4. *Trifolium repens*	10	No	FACU
5. *Phalaris arundinacea*	3	No	FACW
6. *Daucus carota*	3	No	UPL
7. *Plantago lanceolata*	3	No	FACU
8.			
9.			
10.			
11.			
12.			
	124	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	30	x 3 =	90
FACU species	88	x 4 =	352
UPL species	3	x 5 =	15
Column Totals	124	(A)	463 (B)
Prevalence Index = B/A =	3.7		

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-3_UPL-1

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 - 4	10YR 4/2	100					Silty Clay Loam	
4 - 7	2.5Y 4/2	100					Rocky Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Rocks
Depth (inches): 7

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Soil Photos

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-4_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 10 to 20
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6682962 **Long:** -73.9743566 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-4

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present. Circumstances are not normal due to agricultural activities.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	12
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met. stormwater drainage from above slope ag field contributing to hydrology.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-4_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Lythrum salicaria*	65	Yes	OBL
2. *Typha angustifolia*	50	Yes	OBL
3. *Juncus effusus*	10	No	OBL
4. *Carex sp.*	5	No	NI
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	130	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	125	x 1 =	125
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125	(A)	125 (B)
Prevalence Index = B/A =	1		

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

Historic agriculture field that is no longer maintained.

SOIL

Sampling Point: W-4_PEM-1

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	2.5Y 4/1	100					Silt Loam	
6 - 12	2.5Y 5/2	75	7.5YR 5/6	25	RM	M/PL	Sandy Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Boulders and gravels
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

The criterion for hydric soil is met.

Hydrology Photos

Soil Photos

Photo of Sample Plot
North

Photo of Sample Plot
East

Photo of Sample Plot
South

Photo of Sample Plot
West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-4_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Undulating **Slope (%):** 10 to 20
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668389 **Long:** -73.974471 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION -- Use scientific names of plants.

Sampling Point: W-4_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	80	Yes	FAC
2. *Solidago sp.*	25	Yes	NI
3. *Cirsium vulgare*	5	No	FACU
4. *Taraxacum officinale*	5	No	FACU
5. *Arctium minus*	5	No	FACU
6. *Allium schoenoprasum*	4	No	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	124	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	19	x 4 =	76
UPL species	0	x 5 =	0
Column Totals	99	(A)	316 (B)
Prevalence Index = B/A =	3.2		

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-4_UPL-1

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 - 12	10YR 4/2	100					Gravelly Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Rock
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flood Plain **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.669223 **Long:** -73.973509 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-5

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1	
Water Table Present?	Yes ✓ No ____	Depth (inches):	9	**Wetland Hydrology Present?** Yes ✓ No ____
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Lythrum salicaria*	70	Yes	OBL
2. *Lemna minor*	55	Yes	OBL
3. *Solidago sp.*	20	No	NI
4. *Poa pratensis*	2	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	147	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	125	x 1 =	125
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column Totals	127	(A)	133 (B)

Prevalence Index = B/A = 1

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_PEM-1

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 - 12	2.5Y 4/2	100			D		Silt Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
_✓_ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Cobbles and gravels
Depth (inches): 12

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

Hydrology Photos

Vegetation Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot
West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Concave **Slope (%):** 1 to 3
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6691273 **Long:** -73.9734994 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	80	Yes	FAC
2. *Solidago sp.*	25	Yes	NI
3. *Poa pratensis*	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	120	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals	95	(A)	300 (B)
Prevalence Index = B/A =	3.2		

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_UPL-1

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 - 10	10YR 4/2	100					Rocky Silt Loam	
10 - 14	10YR 4/3	100					Rocky Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Boulder
Depth (inches): 14

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Soil Photos

Photo of Sample Plot
North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_PSS-2
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Channel **Local relief (concave, convex, none):** Concave **Slope (%):** 10 to 20
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.668679 **Long:** -73.975124 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-5

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PSS. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	2
Water Table Present?	Yes ✓ No ____	Depth (inches):	15
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_PSS-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. *Salix nigra*	45	Yes	OBL
2. *Cornus amomum*	25	Yes	FACW
3. *Populus tremuloides*	5	No	FACU
4.			
5.			
6.			
7.			
	75	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Phalaris arundinacea*	60	Yes	FACW
2. *Impatiens capensis*	15	No	FACW
3. *Lythrum salicaria*	15	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	60	x 1 =	60
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals	165	(A)	280 (B)
Prevalence Index = B/A =	1.7		

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_PSS-2

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 - 5	5GY 5/1	100					Silty Clay Loam	
5 - 18	10YR 4/2	100					Rocky Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
_✓_ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None

Depth (inches):

Hydric Soil Present? Yes _✓_ No ____

Remarks:

A positive indication of hydric soil was observed.

Hydrology Photos

Vegetation Photos

Soil Photos

Photo of Sample Plot North

Photo of Sample Plot East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-5_UPL-2
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):** 25 to 30
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6687405 **Long:** -73.9751718 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 3 to 8 percent slope (VoB) **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is not met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-5_UPL-2

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	65	Yes	FAC
2. *Solidago sp.*	20	No	NI
3. *Potentilla argentea*	10	No	FACU
4. *Trifolium repens*	5	No	FACU
5. *Taraxacum officinale*	5	No	FACU
6. *Toxicodendron radicans*	2	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	107	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	67	x 3 =	201
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals	87	(A)	281 (B)

Prevalence Index = B/A = 3.2

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-5_UPL-2

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 - 16	10YR 5/6	100					Gravelly Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Rocks
Depth (inches): 16

Hydric Soil Present? Yes ____ No ✓

Remarks:

The criterion for hydric soil is not met.

Vegetation Photos

Soil Photos

Photo of Sample Plot
North

Photo of Sample Plot
East

Photo of Sample Plot South

Photo of Sample Plot West

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-6_PEM-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Depression **Local relief (concave, convex, none):** Concave **Slope (%):** 0 to 1
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6758 **Long:** -73.976516 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 8 to 15 percent slope (VoC) **NWI classification:** None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____		
Hydric Soil Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?**	**Yes ✓ No ____**
Wetland Hydrology Present?	Yes ✓ No ____	**If yes, optional Wetland Site ID:**	W-6

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is PEM. Area is wetland, all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✓ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ✓ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓ No ____	Depth (inches):	1
Water Table Present?	Yes ✓ No ____	Depth (inches):	16
Saturation Present? (includes capillary fringe)	Yes ✓ No ____	Depth (inches):	4

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
The criterion for wetland hydrology is met.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-6_PEM-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Phragmites australis*	100	Yes	FACW
2. *Onoclea sensibilis*	5	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	105	x 2 =	210
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	105	(A)	210 (B)
Prevalence Index = B/A =	2		

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 ____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-6_PEM-1

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 - 20	10YR 3/1	95	10YR 4/2	5	RM	M	Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
✓ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: None
Depth (inches):

Hydric Soil Present? Yes ✓ No ____

Remarks:

The criterion for hydric soil is not met.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Independent **City/County:** Milton, Ulster County **Sampling Date:** 2019-April-30
Applicant/Owner: CCR **State:** New York **Sampling Point:** W-6_UPL-1
Investigator(s): Weston Hillegas , Olivia Paetow **Section, Township, Range:**
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Convex **Slope (%):** 0 to 1
Subregion (LRR or MLRA): MLRA 144A of LRR R **Lat:** 41.6757333 **Long:** -73.9764047 **Datum:** WGS84
Soil Map Unit Name: Volusia gravelly silt loam, 8 to 15 percent slope (VoC) **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓		
Hydric Soil Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?**	**Yes ____ No ✓**
Wetland Hydrology Present?	Yes ____ No ✓	**If yes, optional Wetland Site ID:**	

Remarks: (Explain alternative procedures here or in a separate report)
Covertype is UPL. Area is upland, not all three wetland parameters are present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Moss Trim Lines (B16)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches):	
Water Table Present?	Yes ____ No ✓	Depth (inches):	**Wetland Hydrology Present?** Yes ____ No ✓
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches):	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No positive indication of wetland hydrology was observed.

VEGETATION -- Use scientific names of plants.

Sampling Point: W-6_UPL-1

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	15	Yes	FACW
2. *Malus sp.*	5	Yes	NI
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. *Ambrosia psilostachya*	20	Yes	FAC
2. *Rubus allegheniensis*	15	Yes	FACU
3. *Allium schoenoprasum*	15	Yes	FACU
4. *Lonicera morrowii*	15	Yes	FACU
5. *Solidago sp.*	10	No	NI
6. *Toxicodendron radicans*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratum (Plot size: 30 ft)			
1.			
2.			
3.			
4.			
	0	= 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:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	33.3	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply By:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	25	x 3 =	75
FACU species	45	x 4 =	180
UPL species	0	x 5 =	0
Column Totals	85	(A)	285 (B)
Prevalence Index = B/A =	3.4		

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 ✓

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W-6_UPL-1

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 - 4	10YR 4/3	100					Silty Clay Loam	
4 - 12	10YR 4/2	100					Silty Clay Loam	

[1]Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. [2]Location: PL = Pore Lining, M = Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR R, MLRA 149B)**
___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
___ Loamy Mucky Mineral (F1) **(LRR K, L)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
___ Coast Prairie Redox (A16) **(LRR K, L, R)**
___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
___ Dark Surface (S7) **(LRR K, L)**
___ Polyvalue Below Surface (S8) **(LRR K, L)**
___ Thin Dark Surface (S9) **(LRR K, L)**
___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
___ Red Parent Material (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: Rocks, boulders
Depth (inches): 12

Hydric Soil Present? Yes ____ No ✓

Remarks:

No positive indication of hydric soils was observed.

Stream Inventory Data Form

Project Name: CCR - Independent
Date: 4/29/19
Project Number: 319480
Evaluated By: Weston Hillegas
Address: 200 Milton Turnpike Milton, NY
USGS Quadrangle(s): Poughkeepsie, NY

Stream Delineation ID: S-1
Stream Name: Minor tribs to west of Hudson
Stream Location: Agriculture Land
(e.g. nearest road, structure): Warehouse/farm structures

Stream Classification
- X Perennial
- Intermittent
- Ephemeral

Flow
- Direction: NE
- Dry / Low / X Moderate
- High / Flooding

Presumed Regulatory Authority
- X U.S. Army Corps
- State

Streambed Substrate
- Shale / Sand
- Bedrock / X Silt/Clay
- X Boulders / Organic
- X Cobble/Gravel
- Other

Channel Gradient
- <2% (<1°) Gentle
- 2 - 4% (1 - 2°) Moderate
- X 4 - 10% (2 - 6°) Steep
- >10% (>6°) Very Steep

Width Measurements (feet)
- Ordinary High Water Mark: 4.5
- Across Existing Water: 4
- *Flood Plain Present?*
- Yes, Measure Bankfull Width
- No, Measure Top of Bank Width: 10

Probed Stream Depth
- 0 - 6 in.
- 6 - 12 in.
- X 12 - 24 in.
- 24 - 36 in.
- >36 in.

Observed Use
- Boating / Shellfishing
- Swimming / X Irrigation
- Fishing / X Drainage
- Drinking / Aquaculture
- Other

Water Quality
- Clear
- X Slightly Turbid
- Turbid
- Very Turbid

Bank Height (feet)
- Left*: 4
- Right*: 5

* *Direction when facing downstream*

Bank Slope

		Left*	Right*
0 - 8% (0 - 5°)	Nearly Level to Gently Sloping		
8 - 15% (5 - 9°)	Moderately Sloping		
15 - 25% (9 - 14°)	Steeply Sloping		
25 - 35% (14 - 20°)	Steep		
>35% (>20°)	Very Steep	X	X

Bank Erosion Potential

	Left*	Right*
Low		
Moderate	X	X
High		

Bank Substrate
- Shale / X Gravel
- X Bedrock / Sand
- X Cobble / Organic
- X Silt/Clay / Riprap
- Other

Aquatic Habitat
- Aquatic Vegetation / Mud Bar
- Overhanging Vegetation / Sand Bar
- X Undercut Banks / X Riffle - Pool
- Gravel Bar / X Plunge Pools
- Other

Estimated Canopy Closure
- 0 - 10% / 50 - 60%
- X 10 - 20% / 60 - 70%
- 20 - 30% / 70 - 80%
- 30 - 40% / 80 - 90%
- 40 - 50% / 90 - 100%

Stream Inventory Data Form

Stream Delineation ID S-1

Adjacent Community Type Upland

	Percent Cover	Dominant Species
Trees	5%	willow
Shrubs		
Herbaceous	80%	Poa Pratensis, Mint, Solidago sp. dandelion, ragweed
Woody Vines		
Bare Soil/Rock		*Type*
Impervious		*Type*

Observed Fauna

___ Waterfowl	___ Fish	___ Salamanders	___ Mink	___ Other
___ Snakes	X Frogs	___ Beaver	___ Otter	
___ Turtles	___ Toads	___ Muskrat	___ Invertebrates	

Presence of Rare, Threatened, or Endangered Species

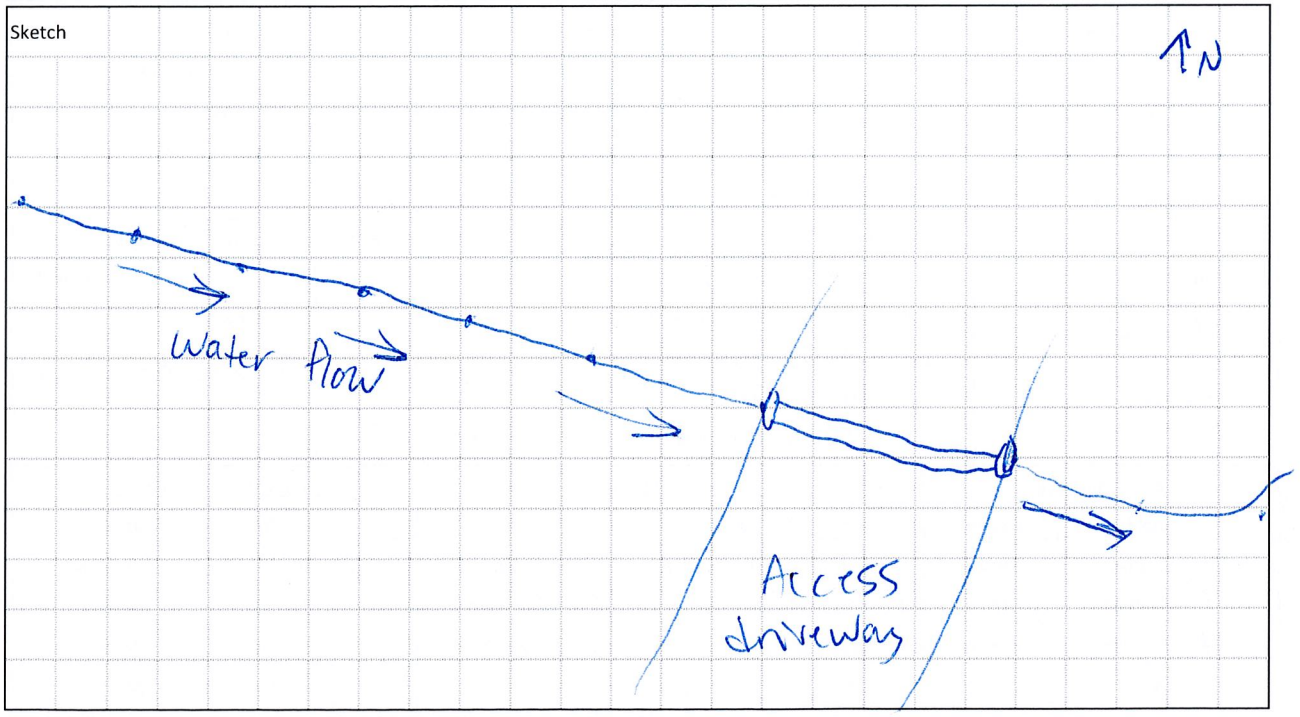
X No ___ Yes *Species & Evidence*

___ Undetermined

Notes (include weather, site access issues, culverts, etc.)

48" HDPE Culvert under the access road to barn/buildings.

Sketch



Stream Inventory Data Form

Project Name: CCR Independent — Date: 4/29/19

Project Number: 319480 — Evaluated By: Weston Hillegas

Address: 206 Milton Turnpike Milton, NY

USGS Quadrangle(s): Poughkeepsie, NY

Stream Delineation ID: S-2 — Stream Name: Unknown

Stream Location: Western side of warehouse

(e.g. nearest road, structure): Warehouse/barn

Stream Classification
- ___ Perennial
- X Intermittent
- ___ Ephemeral

Flow

Direction: SW

___ Dry ___ Low X Moderate ___ High ___ Flooding

Presumed Regulatory Authority
- X U.S. Army Corps
- ___ State

Streambed Substrate

X Shale	___ Sand
___ Bedrock	X Silt/Clay
X Boulders	___ Organic
X Cobble/Gravel	
___ Other	

Channel Gradient

___ <2% (<1°)	Gentle
X 2 - 4% (1 - 2°)	Moderate
___ 4 - 10% (2 - 6°)	Steep
___ >10% (>6°)	Very Steep

Width Measurements (feet)
- Ordinary High Water Mark: 4
- Across Existing Water: 3.5
- *Flood Plain Present?*
- Yes, Measure Bankfull Width: ___
- No, Measure Top of Bank Width: 7

Probed Stream Depth
- X 0 - 6 in.
- ___ 6 - 12 in.
- ___ 12 - 24 in.
- ___ 24 - 36 in.
- ___ >36 in.

Observed Use

___ Boating	___ Shellfishing
___ Swimming	___ Irrigation
___ Fishing	X Drainage
___ Drinking	___ Aquaculture
___ Other	

Water Quality
- ___ Clear
- X Slightly Turbid
- ___ Turbid
- ___ Very Turbid

Bank Height (feet)
- Left*: 2
- Right*: 2

* *Direction when facing downstream*

Bank Slope

		Left*	Right*
0 - 8% (0 - 5°)	Nearly Level to Gently Sloping		
8 - 15% (5 - 9°)	Moderately Sloping		
15 - 25% (9 - 14°)	Steeply Sloping		
25 - 35% (14 - 20°)	Steep	X	X
>35% (>20°)	Very Steep		

Bank Erosion Potential

	Left*	Right*
Low		
Moderate		
High	X	X

Bank Substrate

X Shale	X Gravel
___ Bedrock	___ Sand
X Cobble	___ Organic
X Silt/Clay	___ Riprap
___ Other	

Aquatic Habitat

___ Aquatic Vegetation	___ Mud Bar
___ Overhanging Vegetation	___ Sand Bar
___ Undercut Banks	___ Riffle - Pool
___ Gravel Bar	___ Plunge Pools
___ Other	recently excavated fed by GW in sides of banks.

Estimated Canopy Closure

X 0 - 10%	___ 50 - 60%
___ 10 - 20%	___ 60 - 70%
___ 20 - 30%	___ 70 - 80%
___ 30 - 40%	___ 80 - 90%
___ 40 - 50%	___ 90 - 100%

Stream Inventory Data Form

Stream Delineation ID S-2

Adjacent Community Type: Small wetland fringe @ intersection of S-1 + S-2 (NE corner)

Percent Cover		Dominant Species
Trees		
Shrubs		
Herbaceous	10	Kentucky blue grass, horsetail, Phragmites
Woody Vines		
Bare Soil/Rock		*Type*
Impervious		*Type*

Observed Fauna

	Waterfowl		Fish		Salamanders		Mink		Other
	Snakes	X	Frogs		Beaver		Otter		
	Turtles		Toads		Muskrat		Invertebrates		

Presence of Rare, Threatened, or Endangered Species

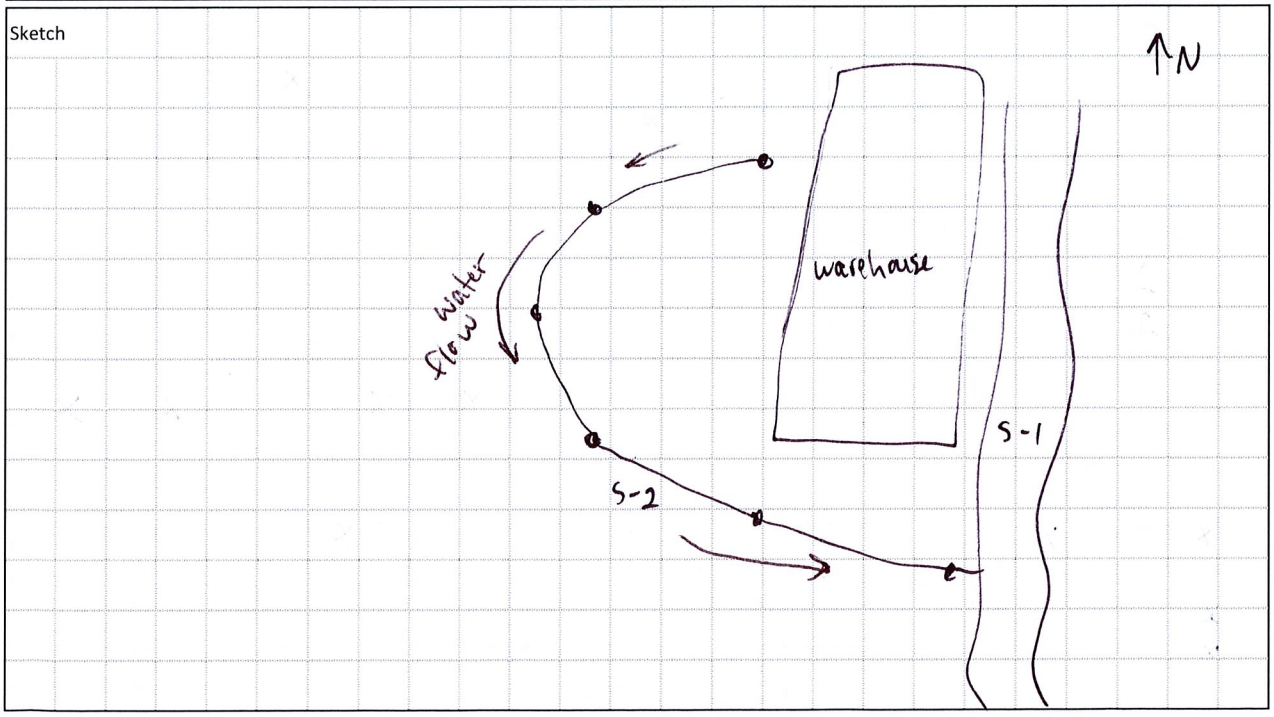
X No ___ Yes *Species & Evidence*

___ Undetermined

Notes (include weather, site access issues, culverts, etc.)

manmade ditch dug to drain GW.

Sketch



Stream Inventory Data Form

Project Name: CCR Independent | Date: 4/30/19

Project Number: 319480 | Evaluated By: Weston Hillegas

Address: 206 Milton Turnpike Milton, NY

USGS Quadrangle(s): Poughkeepsie, NY

Stream Delineation ID: S-3 | Stream Name: N/A

Stream Location: Northern corner of Parcel

(e.g. nearest road, structure): Mahoney Road

Stream Classification

- X Perennial
- Intermittent
- Ephemeral

Flow

Direction: North

- Dry
- Low
- Moderate
- X High
- Flooding

Presumed Regulatory Authority

- X U.S. Army Corps
- State

Streambed Substrate

- Shale
- Bedrock
- Boulders
- X Cobble/Gravel
- Other
- Sand
- X Silt/Clay
- X Organic

Channel Gradient

- X <2% (<1°) Gentle
- 2 - 4% (1 - 2°) Moderate
- 4 - 10% (2 - 6°) Steep
- >10% (>6°) Very Steep

Width Measurements (feet)

Ordinary High Water Mark: 7

Across Existing Water: 6

Flood Plain Present?

Yes, Measure Bankfull Width:

No, Measure Top of Bank Width: 9

Probed Stream Depth

- 0 - 6 in.
- X 6 - 12 in.
- X 12 - 24 in.
- 24 - 36 in.
- >36 in.

Observed Use

- Boating
- Swimming
- Fishing
- Drinking
- Other
- Shellfishing
- Irrigation
- Drainage
- Aquaculture

Water Quality

- Clear
- Slightly Turbid
- X Turbid
- Very Turbid

Bank Height (feet)

Left*: 1.5

Right*: 1.5

* *Direction when facing downstream*

Bank Slope

		Left*	Right*
0 - 8% (0 - 5°)	Nearly Level to Gently Sloping		
8 - 15% (5 - 9°)	Moderately Sloping		
15 - 25% (9 - 14°)	Steeply Sloping	X	X
25 - 35% (14 - 20°)	Steep		
>35% (>20°)	Very Steep		

Bank Erosion Potential

	Left*	Right*
Low		
Moderate	X	X
High		

Bank Substrate

- Shale
- Bedrock
- X Cobble
- X Silt/Clay
- Other
- Gravel
- Sand
- X Organic
- Riprap

Aquatic Habitat

- Aquatic Vegetation
- X Overhanging Vegetation
- X Undercut Banks
- Gravel Bar
- X Other down tree
- Mud Bar
- Sand Bar
- Riffle - Pool
- Plunge Pools

Estimated Canopy Closure

- 0 - 10%
- 10 - 20%
- 20 - 30%
- 30 - 40%
- 40 - 50%
- X 50 - 60%
- 60 - 70%
- 70 - 80%
- 80 - 90%
- 90 - 100%

Stream Inventory Data Form

Stream Delineation ID S-3

Adjacent Community Type W-6 + forest

	Percent Cover	Dominant Species
Trees	80	trempling aspen, malus sp. Weeping willow.
Shrubs		
Herbaceous	20	Phragmites Australis
Woody Vines		
Bare Soil/Rock		Type
Impervious	X	Type Road/culvert

Observed Fauna

Waterfowl	Fish	Salamanders	Mink	Other
Snakes	X Frogs	Beaver	Otter	
Turtles	Toads	Muskrat	Invertebrates	

Presence of Rare, Threatened, or Endangered Species

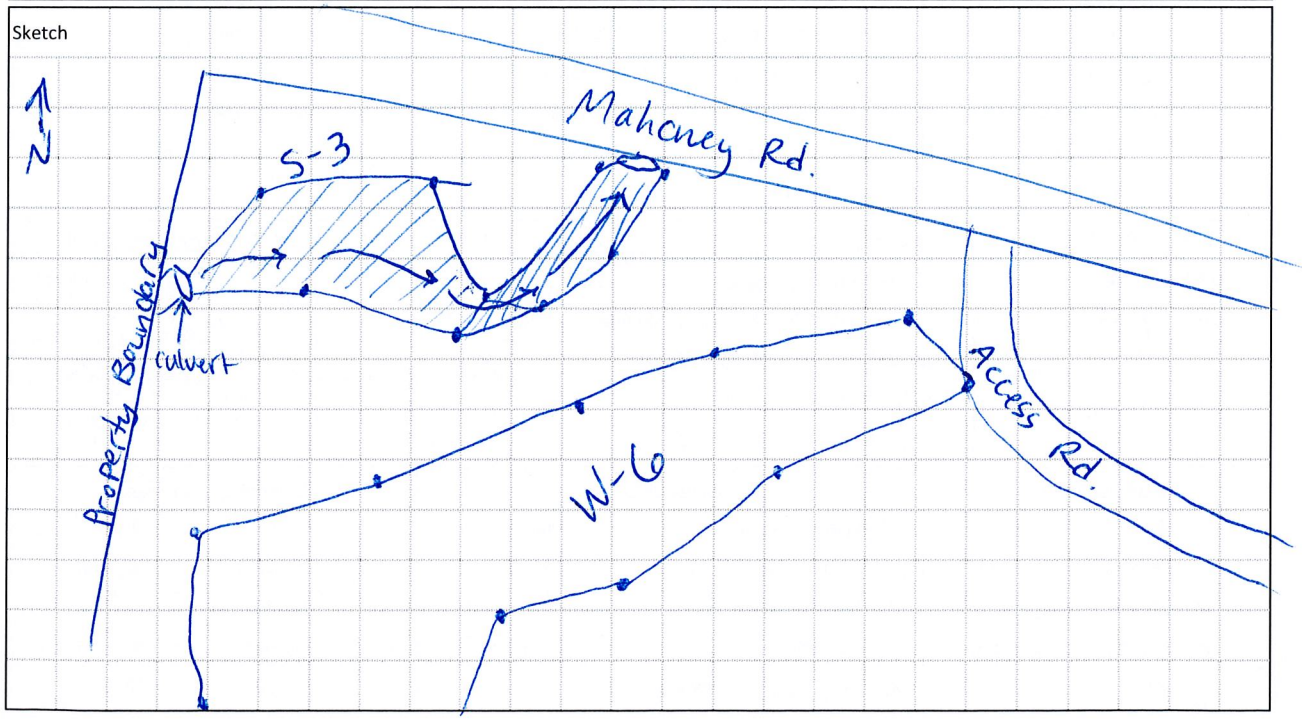
X No Yes *Species & Evidence*

Undetermined

Notes (include weather, site access issues, culverts, etc.)

S-3 enters into an HDPE culvert under Mahoney Rd.

Sketch



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, NEW YORK DISTRICT
JACOB K. JAVITS FEDERAL BUILDING
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278-0090

Regulatory Branch 2 April 2020

SUBJECT: Permit Application Number NAN-2020-00286-WOR
by Cypress Creek Renewables LLC

Valerie Mitchell
TRC
10 Maxwell Drive, Suite 200
Clifton Park, New York 12065

Dear Ms. Mitchell:

On March 26, 2020, the New York District, U.S. Army Corps of Engineers (Corps), received a request for Department of the Army authorization for the construction of a solar power generation facility to be known as Independent Solar. The project site is in the Hudson River watershed, located at 206 Milton Turnpike in the Town of Marlborough, Ulster County, New York.

The proposed work is shown on the drawing entitled “Independent Solar, LLC 206 Milton Turnpike, Marlborough, NY 12547 Zoning – Site Plan”, prepared by Cypress Creek Renewables, dated February 11, 2020.

Our review indicates that since the proposed work does not appear to include dredging or construction activities in or over any navigable waters of the United States, the placement of any dredged or fill material in any waters of the United States (including coastal or inland wetlands) or the accomplishment of any work affecting the course, location, condition or capacity of such areas, a Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided the proposed work is executed in accordance with the referenced material.

Care should be taken so that any fill or construction materials, including debris, do not enter the waterway to become a drift or pollution hazard. A No Permit Required (NPR) determination by the Corps:

- Does not obviate the requirement to obtain any other Federal, State, or local permits which may be necessary for your project;

- Does not constitute a federal evaluation of possible impacts to species protected under the Endangered Species Act. Projects that have the potential to impact federally listed species should contact the U.S. Fish and Wildlife Service; and,

- Does not constitute a federal evaluation of possible impacts to historic resources protected under Section 106 of the Natural Historic Preservation Act. Projects that have the potential to impact historic sites should contact the State Historic Preservation Officer in New York.

This NPR determination neither addresses nor includes any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such.

In order for us to better serve you, please complete our Customer Service Survey located at http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx.

If any questions should arise concerning this matter, please contact Brian A. Orzel, of my staff, at (917) 790-8413.

Sincerely,

Rosita Miranda **2 APR 2020**
Chief, Western Section

United States Department of Agriculture

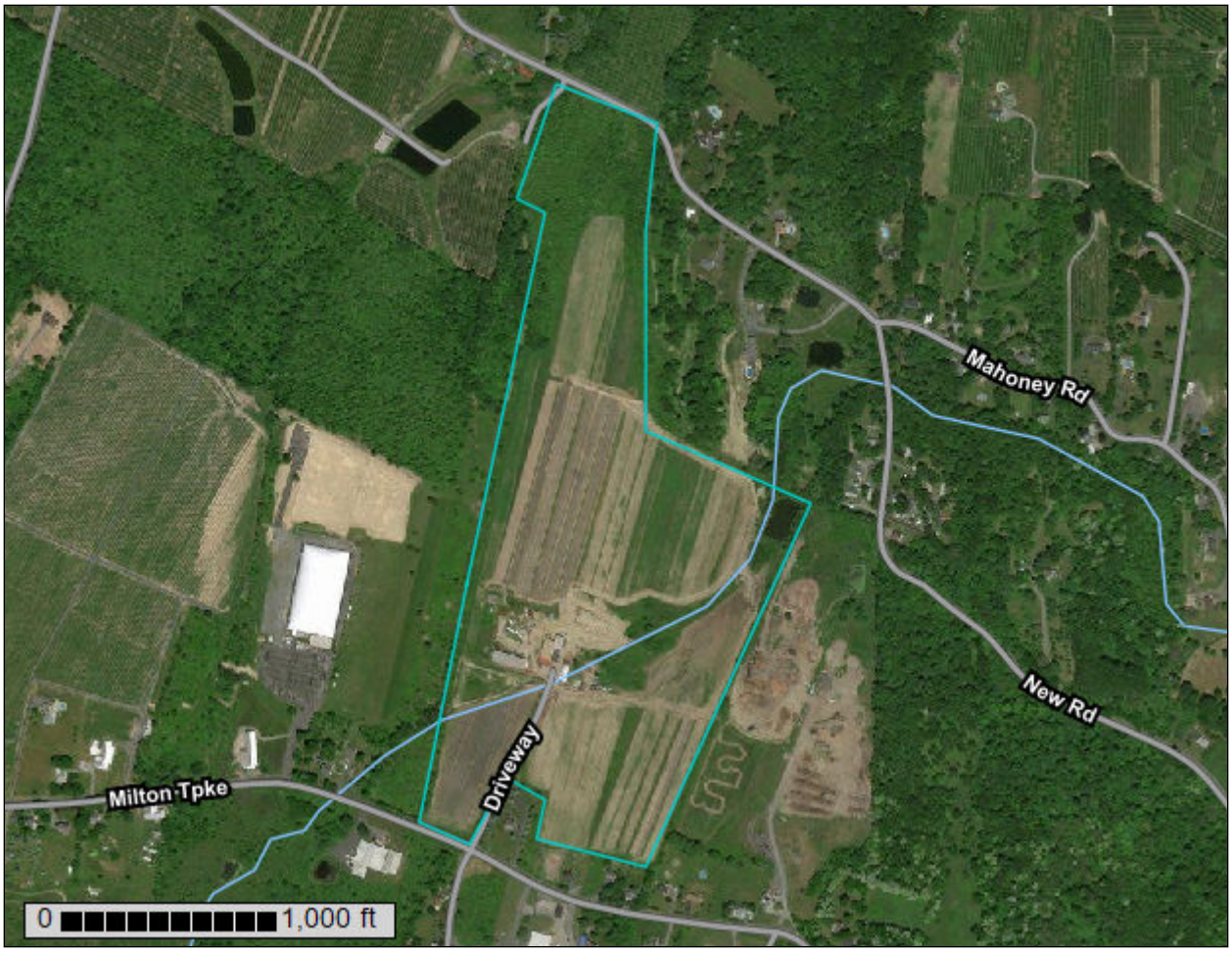
NRCS

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 Ulster County, New York

Independent Solar, LLC



June 25, 2020

Preface

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

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

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

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

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

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

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

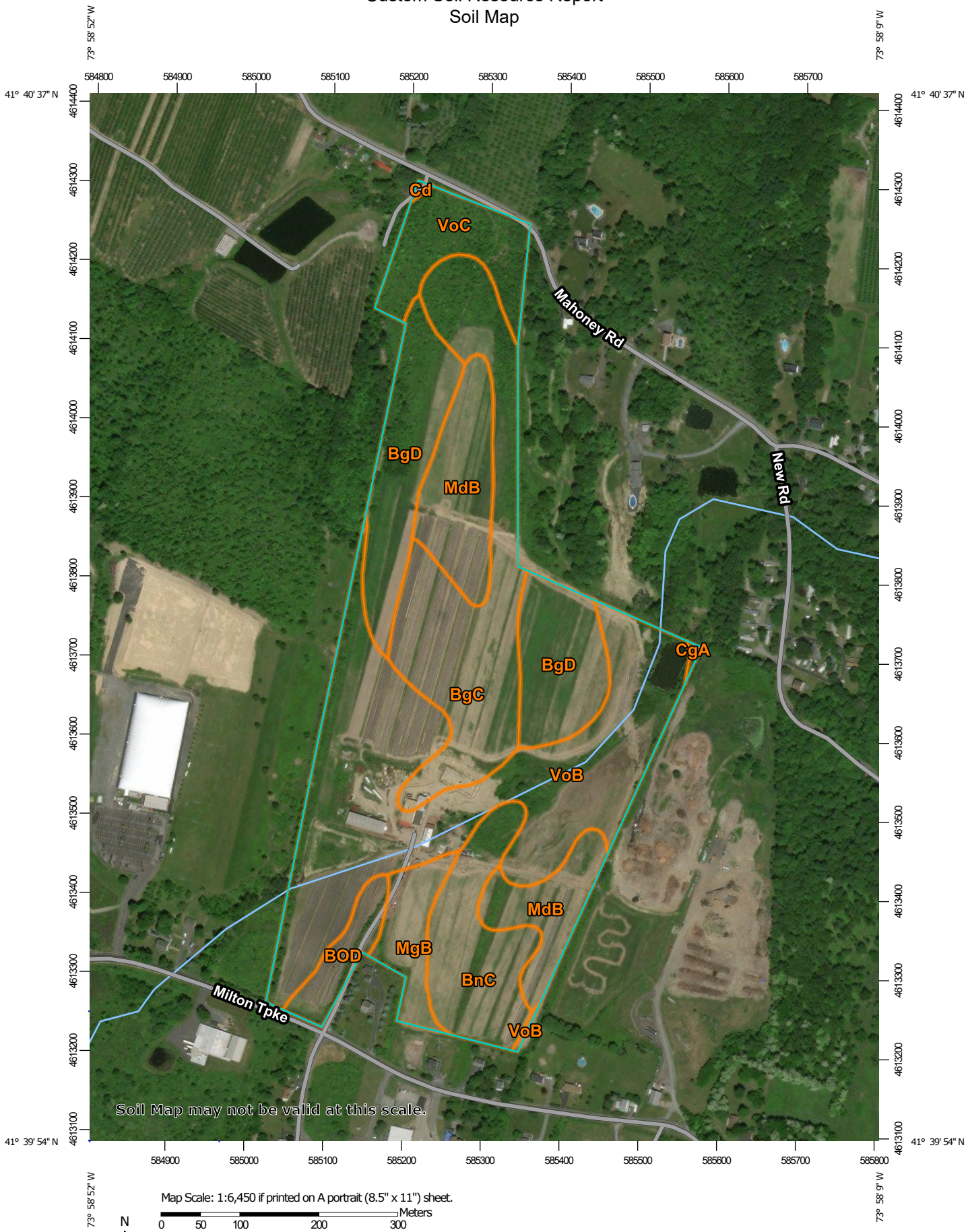
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,450 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Ulster County, New York
Survey Area Data: Version 18, Sep 16, 2019

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

Date(s) aerial images were photographed: Oct 7, 2013—Feb 26, 2017

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
At	Atherton silt loam	0.1	0.1%
BgC	Bath gravelly silt loam, 8 to 15 percent slopes	14.0	18.7%
BgD	Bath gravelly silt loam, 15 to 25 percent slopes	11.4	15.2%
BnC	Bath-Nassau complex, 8 to 25 percent slopes	6.6	8.9%
BOD	Bath-Nassau-Rock outcrop complex, hilly	2.1	2.8%
Cd	Canandaigua silt loam, till substratum	0.1	0.1%
CgA	Castile gravelly silt loam, 0 to 3 percent slopes	0.0	0.0%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	8.8	11.7%
MgB	Mardin-Nassau complex, 3 to 8 percent slopes	2.8	3.8%
VoB	Volusia gravelly silt loam, 3 to 8 percent slopes	24.5	32.7%
VoC	Volusia gravelly silt loam, 8 to 15 percent slopes	4.5	6.0%
Totals for Area of Interest		**74.7**	**100.0%**

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

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

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

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

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

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

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

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

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

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

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

Ulster County, New York

At—Atherton silt loam

Map Unit Setting

National map unit symbol: 9xfl
Elevation: 50 to 1,500 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Atherton

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy glaciofluvial deposits over stratified deposits

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 19 inches: silt loam
H3 - 19 to 34 inches: gravelly loam
H4 - 34 to 65 inches: stratified very gravelly sandy loam to sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Moderate (about 6.8 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

Red hook

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

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

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

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

BgC—Bath gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9xfq
Elevation: 800 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Farmland of statewide importance

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

Description of Bath

Setting
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile
H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 55 inches: very gravelly loam
H4 - 55 to 65 inches: very gravelly loam

Properties and qualities
Slope: 8 to 15 percent
Depth to restrictive feature: 26 to 38 inches to fragipan
Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

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

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

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

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

BgD—Bath gravelly silt loam, 15 to 25 percent slopes

Map Unit Setting
National map unit symbol: 9xfr
Elevation: 800 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

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

Description of Bath

Setting
Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 55 inches: very gravelly loam
H4 - 55 to 65 inches: very gravelly loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 26 to 38 inches to fragipan
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Lordstown

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

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Volusia

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

Manlius

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

Mardin

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

BnC—Bath-Nassau complex, 8 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9xft
Elevation: 600 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Bath

Setting

Landform: Hills, till plains, drumlinoid ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 48 inches: very gravelly loam
H4 - 48 to 52 inches: bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 26 to 38 inches to fragipan; 40 to 80 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Nassau

Setting

Landform: Benches, ridges, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 6 inches: channery silt loam
H2 - 6 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Manlius

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

Volusia

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

Cambridge

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

Hudson

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

BOD—Bath-Nassau-Rock outcrop complex, hilly

Map Unit Setting

National map unit symbol: 9xfv
Elevation: 600 to 1,800 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Bath and similar soils: 40 percent
Nassau and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bath

Setting

Landform: Drumlinoid ridges, hills, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile

H1 - 0 to 6 inches: gravelly silt loam
H2 - 6 to 28 inches: gravelly loam
H3 - 28 to 48 inches: very gravelly loam
H4 - 48 to 52 inches: bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 26 to 38 inches to fragipan; 40 to 80 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C
Hydric soil rating: No

Description of Nassau

Setting

Landform: Benches, ridges, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 6 inches: channery silt loam
H2 - 6 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydric soil rating: Unranked

Minor Components

Manlius

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

Mardin

Percent of map unit: 5 percent

Hydric soil rating: No

Volusia

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

Hudson

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

Cd—Canandaigua silt loam, till substratum

Map Unit Setting

National map unit symbol: 9xg0
Elevation: 100 to 1,200 feet
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Canandaigua

Setting

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

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 37 inches: silt loam
H3 - 37 to 40 inches: silt loam
H4 - 40 to 60 inches: gravelly silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None

Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 15 percent
Available water storage in profile: High (about 10.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Lyons

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

Raynham

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

Atherton

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

Lamson

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

CgA—Castile gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9xg3
Mean annual precipitation: 41 to 62 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Castile

Setting

Landform: Valley trains, terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave

Across-slope shape: Convex
Parent material: Gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, derived mainly from sandstone, shale, and siltstone

Typical profile
H1 - 0 to 8 inches: gravelly silt loam
H2 - 8 to 19 inches: gravelly loam
H3 - 19 to 28 inches: very gravelly sandy loam
H4 - 28 to 60 inches: stratified very gravelly sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A/D
Hydric soil rating: No

Minor Components

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

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

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

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

MdB—Mardin gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2v30j
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F

Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Mardin

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 20 inches: gravelly silt loam
Bx - 20 to 72 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Bath

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Volusia

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

MgB—Mardin-Nassau complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2v30k
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Mardin and similar soils: 55 percent
Nassau and similar soils: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mardin

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 20 inches: gravelly silt loam
Bx - 20 to 72 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Nassau

Setting

Landform: Ridges, till plains, benches
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex, linear
Parent material: Channery loamy till derived mainly from local slate or shale

Typical profile

H1 - 0 to 6 inches: channery silt loam
H2 - 6 to 16 inches: very channery silt loam
H3 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 1.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Volusia

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Schoharie

Percent of map unit: 5 percent

Landform: Lake plains
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Side slope, tread
Down-slope shape: Concave
Across-slope shape: Convex, linear
Hydric soil rating: No

Manlius

Percent of map unit: 5 percent
Landform: Benches, ridges, till plains
Landform position (two-dimensional): Shoulder, footslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex, linear
Hydric soil rating: No

Churchville

Percent of map unit: 5 percent
Landform: Till plains, lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, side slope, tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

VoB—Volusia gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2srf6
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Volusia and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Volusia

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 19 inches: gravelly silt loam
Bx - 19 to 58 inches: gravelly silt loam
C - 58 to 70 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Chippewa

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mardin

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

VoC—Volusia gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2srf7

Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Volusia and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Volusia

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 19 inches: gravelly silt loam
Bx - 19 to 58 inches: gravelly silt loam
C - 58 to 70 inches: gravelly silt loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Mardin

Percent of map unit: 6 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chippewa

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

References

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

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

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

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

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

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

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

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

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

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

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

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

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

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

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

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

EXHIBIT G. AGRICULTURAL DATA STATEMENT

Planning Department
TOWN OF MARLBOROUGH
21 Milton Turnpike
Milton, NY 12547

AGRICULTURAL DATA STATEMENT

Project Identification No. _____

In accordance with Section 283-a of the New York State Town Law, the Town of Marlborough will use the data in this statement to assist in evaluating the impacts of proposed development projects on farm operations in or near Agricultural Use Districts.

A. Name of Applicant: Independent Solar, LLC
Mailing Address: 3402 Pico Blvd, Santa Monica, CA 90405

B. Description of the proposed project:
Independent Solar, LLC is a proposed 3,000 kWac community solar + energy storage facility utilizing approximately 30 acres of parcel 95.4-3-7.210, with site access from the existing driveway at 206 Milton Turnpike. The project will be comprised of approximately 12,000 ground-mounted photovoltaic modules.

C. Project Location: 206 Milton Turnpike, Milton, NY 12547
Tax Map Designation: Section 95.4 Block 3 Lot 7.210, 7.110, 7.220

D. Number of total acres involved with project: 30

E. Number of total acres included in above tax map lot: 78

F. Is any portion of the subject site currently being used to produce an agricultural product?
Yes ✓ No _____ (check one)
If yes, how much? 53 acres

G. Identify the type of agricultural production being conducted on the premises.
Hemp in 2019 and 2020. Vegetables prior to 2019.

H. If no farming is conducted on the site at this time, estimate the last year any of the site was used for agricultural production.

I. Identify the person or entity who is farming the subject site.
Hepworth Farms

J. Does this person or entity ( ) own, or (✓) rent the land? (check one)

K. Indicate what the intentions are for use of the remainder of the tax map lot that is not proposed to be developed.
Hepworth Farms (or some other entity) will continue to farm the approximately 15 acres of remaining arable land on the property. Bortech Company Inc (Robert Titanic) will continue to utilize the outbuildings on site.

L. Who will maintain the remainder of the property not being used for this development?
Robert Titanic (land owner)

M. Other Project Information: Include information about the existing land cover of the site, the slopes, if any, any known impacts on existing storm water drainage (including field tiles) or other significant plant materials.
The site consists of a mix of agricultural fields, forest, grassy wetland areas, and metal outbuildings. The property slopes upwards south to north, and drains naturally to the stream that transects the site west to east, leading to an irrigation pond in the NE corner of the site. Existing drainage will be maintained and utilized, and high slope areas have been avoided to the greatest degree possible. No tree clearing is proposed. A full SWPPP has been prepared and submitted to the town as part of the zoning application.

N. Make a copy of the overall (original) parcel and surrounding parcels within five-hundred (500) feet from the Town's tax maps. Identify the site of this application by placing an "X" on it. Include the tax map with this completed agricultural data statement.

O. Town Law requires that this Data Statement be mailed by the applicant to all owners of land that is farmed within five-hundred (500) feet of the boundaries of the subject parcel provided such lands are within an Ag Use District or within five-hundred (500) feet of an Ag Use District. Therefore, please list the name, address, and section, block, and lot of all such lands.

1. Please see next page(s).
2.
3.
4.
5.
6.

(for additional space, use reverse side)

Independent Solar, LLC – Agricultural Data Statement

Adjoining Parcels

1. **95.4-3-9** – Nicholas & Maryanne Pizza, 230 Milton Tpke, Milton, NY 12547
2. **95.4-3-8** – Hudson Valley Domicile LLC, 240-246 Milton Tpke, Milton, NY 12547
3. **95.4-3-6.210** – James J & Bridget L Mannese, 155 Mahoney Rd, Milton, NY 12547
4. **95.4-3-6.110** – Shannon M Mannese, 171 Mahoney Rd, Milton, NY 12547
5. **95.4-3-5** – Kathleen F Sanicola, 177 Mahoney Rd, Milton, NY 12547
6. **95.4-3-4** – Janet Wahl-Cordero, 233 Mahoney Rd, Milton, NY 12547
7. **95.4-3-35** – Theresa Ann Corso, 204 Milton Tpke, Milton, NY 12547
8. **95.4-3-34** – John J Schaller, 117 Juliella Way, Marlboro, NY 12542
9. **95.4-3-33.100** – Timothy & Tara Marquis, 194 Milton Tpke, Milton, NY 12547
10. **95.4-3-32** – Robert Corso, 184 Milton Tpke, Milton, NY 12547
11. **95.4-3-2.300** – Allstate Apple Exc Inc, 237 Mahoney Rd, Milton, NY 12542
12. **95.4-3-2.200** – Allstate Apple Exc Inc, 235 Mahoney Rd, Milton, NY 12542
13. **95.4-3-2.100** – Allstate Apple Exc Inc, 133-139 Peach Ln, Milton, NY 12542
14. **95.4-3-11.100** – Paradise Valley Orchards, LLC, 262 Milton Tpke, Milton, NY 12547
15. **95.4-2-19.200** – John F Dimeglio, 180 Mahoney Rd, Milton, NY 12547
16. **95.4-2-19.120** – Lisa M & Dominick P Rosso, 140 Mahoney Rd, Milton, NY 12547
17. **95.4-2-19.110** – Marc P & Margarette Cassalina, 130 Mahoney Rd, Milton, NY 12547
18. **95.4-2-15** – David Schreiber, 228 Mahoney Rd, Milton, NY 12542
19. **103.1-5-7** – Eileen & John Scoppa, 170 Milton Tpke, Milton, NY 12547
20. **103.1-5-6** – Adena Crisp, 176 Milton Tpke, Milton, NY 12547
21. **103.1-5-5** – Gustavo Miranda & Elisa Lopez, 180 Milton Tpke, Milton, NY 12547
22. **103.1-5-4** – Moriarty Services Inc, Milton Tpke, Milton, NY 12542
23. **103.1-5-3** – Moriarty Services Inc, Milton Tpke, Milton, NY 12542
24. **103.1-5-2** – Moriarty Services Inc, Milton Tpke, Milton, NY 12542
25. **103.1-5-1** – Moriarty Services Inc, Milton Tpke, Milton, NY 12542
26. **103.1-1-48** – George J Nunnaro & Joan H Kazalla, 80 New Rd, Milton, NY 12542
27. **103.1-1-39** – Marilyn A Miller, 111 Mahoney Rd, Milton, NY 12547
28. **103.1-1-38** – Dennis K Devine, 124 New Rd, Milton, NY 12547
29. **103.1-1-37** – Strawberry Acres Realty Inc, 116 New Rd, Milton, NY 12542
30. **103.1-1-36** – Raphael Wyder, 112-114 New Rd, Milton, NY 12542
31. **102.2-4-8.210** – Queens View PRTNS II LLC, Clarkes Ln, Milton, NY 12547
32. **102.2-4-1.126** – James R Bellacicco, 199 Milton Tpke, Milton, NY 12547

33. **102.2-4-1.125** – Farmcamp LLC, 1 Mills Pl, Milton, NY 12547
34. **102.2-4-1.124** – Samuel & Patricia Doss, Mills Pl, Milton, NY 12547
35. **102.2-4-1.110** – High County Properties LLC, 207 Milton Tpke, Milton, NY 12547
36. **102.2-3-13.200** – Jeanette & Louis Quick, 150 Clarkes Ln, Milton, NY 12542
37. **102.2-3-13.100** – Frances Fremgen, Clarkes Ln, Milton, NY 12542
38. **102.2-3-12** – Frances Fremgen, 149 Clarkes Ln, Milton, NY 12547
39. **102.2-3-11** – Marlboro Central School District, Clarkes Ln, Milton, NY 12542
40. **102.2-3-10** – Ag-Chem Inc, 225 Milton Tpke, Milton, NY 12547

FOR TOWN USE ONLY

Has this Agricultural Data Statement been referred to the County Planning Agency?

( ) YES ( ) NO

If YES, give date of referral _____

If YES, give County Referral Number _____

If NO, state reason_____
_____
_____
_____
_____

_____ Date: _____

Name of Official Completing Form

Independent Solar 500-ft Buffer (approx.)

PREPARED BY
ULSTER COUNTY REAL PROPERTY TAX SERVICE AGENCY

PREPARED FOR
ULSTER COUNTY LEGISLATURE
KINGSTON, NEW YORK

THIS MAP WAS PREPARED FOR TAX ADMINISTRATION PURPOSES ONLY. NOT INTENDED FOR USE IN CONVEYANCE OF LAND. ABSOLUTELY NO ACCURACY OR COMPLETENESS GUARANTEE IS IMPLIED OR INTENDED. ALL INFORMATION SHOWN IS SUBJECT TO SUCH VARIATIONS AND CORRECTIONS AS MIGHT RESULT FROM A COMPLETE TITLE SEARCH AND/OR ACCURATE FIELD SURVEY.

MAP CONVERTED TO ARC/INFO DIGITAL FORMAT - SEPTEMBER 1995 BY THE ULSTER COUNTY REAL PROPERTY TAX SERVICE AGENCY BY MEILER MAPPING, A DIVISION OF JAMES W. SEWALL

400 200 0 400 800
Scale 1 " = 400 '

REVISION TABLE	
DATE	CHANGES OR ADDITIONS
8/14/2015	BLK 1 Lots 5.125,5.126 FM 15-117 LLR
3/4/2011	BLK 1 Lot 37.1, Correction Per Deed 1534/295
2/3/2011	BLK 1 Lots 37.1,37.2 Deed1433/589 Driveway
1/20/2011	BLK 2 Lot 26.210 Number correction per revision
1/19/2010	bl 1 lts 19.41 & 19.51 LLR #09-330

8/13/2008	bl 1 lts 5.121, 5.123 & 5.124 #08-172
3/31/2008	blk 1 lt 31 split per fm 08-33
12/17/2007	bl 1 lts 40.1 - 40.13 #07-348
9/25/2007	Blk 2 Lot 22.52 Split per FM 06-735
6/8/2006	Blk 2 Lot 5.512 Added Road Name
6/1/2005	bl 2 lts 9.511-9.513/9.52 #05-304

SPECIAL DISTRICTS	
HIGHLAND AMBULANCE	
HIGHLAND FIRE	
HIGHLAND LIGHT	
MILTON FIRE	

LEGEND

PROPERTY LINE	U.S. HIGHWAY	SCHOOL DISTRICT LINE	GREAT LOT NUMBER	9	CALCULATED ACREAGE	9.5A (C)
BLOCK LIMIT	INTERSTATE HIGHWAY	FIRE DISTRICT LINE	TAX MAP BLOCK NUMBER	9	DEED ACREAGE	9.5A
TOWN VILLAGE CITY	STATE HIGHWAY	WATER DISTRICT LINE	SUBDIVISION LOT NUMBER	9	SCALED DIMENSION	150 (S)
COUNTY LINE	COUNTY HIGHWAY	SEWER DISTRICT LINE	TAX MAP PARCEL NUMBER	89.10-1-5	DEED DIMENSION	150
GREAT LOT LINE	STREET OR TOWN ROAD BY NAME	LIGHT DISTRICT LINE	LOT LINE		COORDINATE LOCATOR	
		RAILROAD	WATER LINE		DENOTES COMMON OWNER	

SHEET INDEX

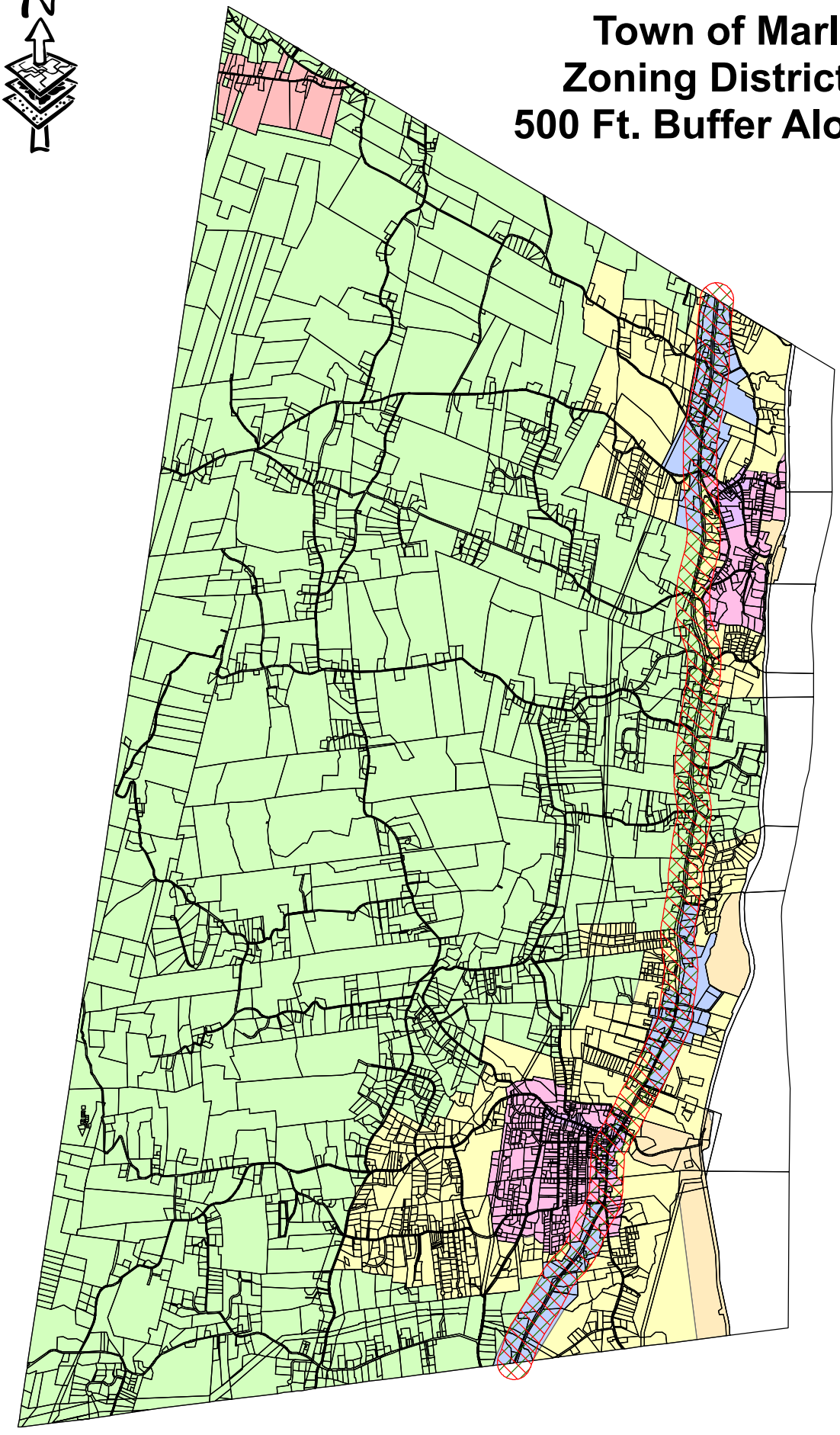
NORTH

TAX MAP
TOWN OF LLOYD
ULSTER COUNTY
NEW YORK

095.004
As of May 1, 2019

EXHIBIT H. TOWN OF MARLBOROUGH ZONING MAP

Town of Marlborough Zoning District Map with 500 Ft. Buffer Along Route 9W



Map Legend

- 500 Ft. Buffer off Route 9W
- Parcel Boundaries

Marlborough Zoning Districts

ZONE

- C
- C-2
- HD
- IND
- R
- R-1
- RAG-1

EXHIBIT I. DECOMMISSIONING PLAN

DocuSign Envelope ID: 6815A21C-1B61-4E60-B68B-42E9657FFEC8

Independent Solar, LLC Decommissioning Plan

Prepared and Submitted by Independent Solar, LLC

Decommissioning will occur as a result of any of the following conditions:

1. The land lease expires or is terminated; or
2. The solar energy system the ("SES") does not produce power for a period of 12 consecutive months

Independent Solar, LLC (the "Operator") of the SES will do the following as a minimum to decommission the SES:

1. Remove all Operator-owned equipment, conduits, structures, and foundations to a depth of at least three feet below grade; and
2. Remove all fencing unless the owner of the leased real estate requests in writing for it to stay in place; and
3. Take the following steps to restore the land:
    a. Grade to maintain existing drainage patterns at the time of decommissioning unless stated otherwise by the leading Authority Having Jurisdiction (AHJ) or in any governing decommissioning ordinance;
    b. Reseed the land using local non-invasive grasses; and
    c. Maintain the grass for a total of three months after the seeding.

All such removal and decommissioning shall occur within 18 months of any aforementioned decommissioning condition.

The Operator is responsible for decommissioning the SES.

The Operator will provide the Town of Marlborough Planning Board with an updated signed decommissioning plan within 30 days if the operator of the SES changes.

Any updates to this plan will be submitted to the Town of Marlborough Planning Board by the party responsible for decommissioning the SES.

Operator: Independent Solar, LLC

Signature: DocuSigned by: Matthew Bowers 5500B9F2F51946F... Date: 7/8/2020

RINA Consulting
705 S. Main St. Suite 260
Plymouth, MI 48170

February 16, 2018

To Whom It May Concern;

This opinion of probable costs is based on the engineer's experience in the design and construction of energy facilities and are subject to final engineering. This opinion is also based on RINA Consulting's experience supervising the construction of PV plants and supervising the demolition of other non-PV facilities. The engineer is unaware of a significant body of decommissioned PV plants with which to benchmark its opinion of cost. With the exception of the PV modules and inter-module wiring, none of the activities undertaken to disassemble a PV plant are unique to PV plants. Disassembly costs can be estimated similar to other types of facilities. While 3rd party software such as RS Means do contain data on PV plant disassembly, RINA has found that the data is not applicable to large ground-mounted systems.

This opinion assumes a third-party contractor, experienced in the construction and decommissioning of PV facilities will lead the effort. The reported costs include labor, materials, taxes, insurance, transport costs, equipment rental, contractor's overhead, and contractor's profit. Labor costs have been estimated using regional labor rates and labor efficiencies from the Bureau of Labor Statistics. This opinion assumes open-shop labor rates.

This opinion of cost has been split between plant disassembly, site restoration, and salvage which reflects the overall decommissioning process. The PV plant will first be disassembled, with all above and below grade components removed to a depth of 3 feet. This includes all buried cables, conduits, and foundations. Costs for disassembly are overall less than those for original assembly of the facility. While PV modules will need to be removed by hand to retain their salvage value, the racks, buried cables, and concrete can be removed by machine to increase efficiency. It is assumed that concrete, gravel, and fiber optic cable do not have salvage value and will be disposed off site for $95/ton or $45/cy. Other materials are assumed to have salvage value and can be sold at market prices. The table at the end of this letter outlines the disassembly methods anticipated.

It is expected that the entire site will be re-seeded with native grasses and vegetation. Planting of trees, shrubs, and other woody vegetation (re-forestation) or other beautification is not included in the costs. It is assumed that mulching and stabilization of seeded areas will only be required where gravel roads or concrete foundations were removed. As all cables will be direct buried, excavation to remove the cables will not be required, and the disturbance to those areas will be minimal. The remainder of site will already be vegetated and disassembly activities will not significantly disturb the vegetation. Seeding in those areas is included as a precautionary measure.

It is assumed that re-grading of the site to remove diversion dikes and retention ponds is not required. The earth-moving required to remove these features would likely trigger a NPDES (or state/local equivalent) permit, which would in turn require those same features to be installed to control storm water on the site. In addition it is assumed that silt fence and tracking control will be installed prior to disassembly and will be removed prior to demobilization.

Salvage values have been estimated using publicly available data from http://www.scrapmonster.com. Inverters were priced at the rate for Complete Computers, which is lower than what could be attained if they were disassembled on site. Transformers were priced at 80% of the market rate for Sealed Unit Transformers. PV modules were price at the rate for Low Grade Boards, which is lower than what could be attained if they were sold as functioning PV modules.

Inflation, if included in this estimate has been projected based on the Producer Price Indices for Final Demand Construction, Iron Steel Scrap, and Copper Base Scrap.

Anticipated Disassembly Methods	
Item	Removal Method
PV Modules	Hand Removal. Place modules face down on pallets, tape wire ends, tied down and transport via skid-steer to staging location. Assumed 5% breakage, salvage value for crystalline, no salvage for thin-film.
Inverters	Removal by crane and transport via flat-bed to staging location. Assume no disassembly. Assumed salvage value.
Transformers	Removal by crane and transport via flat-bed to staging location. Assume no disassembly. Oil removal performed by scrap facility. Assumed salvage value.
Racking Frame	Stabilize w/ machine. Cut legs and lower to ground level. Cut cross beams to appropriate size and transport via dump truck to staging location. Assumed salvage value.
Racking Posts	Remove via post-puller and transport via dump truck to staging location. Assumed salvage value.
Racking Wiring	Disconnect PV connectors, cut cable ties, and remove wires from cable tray. Transport via dump truck to staging area. Assumed salvage value.
Underground Cable	Excavate to cable depth at one end of trench. Use tractor or backhoe pull out all cables in common trench. Cables are direct buried so complete excavation of trenches is not required. Transport via dump truck to staging area. Assumed salvage value.
Fence	Machine roll fence fabric. Remove posts via post-puller and transport via dump truck to staging location. Assumed salvage value.
Concrete	Remove with excavator and jack hammer. Backfill and compact as needed. Transport via dump truck to staging area. Assumed offsite disposal.
Gravel	Remove with skid steer with sweeper. Transport via dump truck to staging area. Assumed offsite disposal.
Offsite Disposal	Assumed disposal at $95/ton or $45/CY including tipping fee.
Re-Seeding	Re-seed using an ATV-pulled drill seeder, at 5lbs bulk seed per acre of native grasses. Stabilize and mulch on areas where concrete or gravel was removed only.
Re-Grading	No bulk re-grading is included as this would alter site hydrology.
Erosion & Sediment Control	Install silt fence around project perimeter. Install tracking control at site entrance and replace once during disassembly. Remove at end of disassembly. We anticipate net soil disturbance is < 1 acre.

Feel free to contact the undersigned with any questions.

Rina Consulting

2/16/2018

Joshua Berkow, PE
Principal Power Systems Engineering Consultant

705 S. Main Street. Suite 260
Plymouth, MI 48170
(734) 634-4088

Date

Project:	*Generic 2MWac SAT PV Plant*	Engineer:	*J.Berkow*
Client:	*Cypress Creek*	Issue Date:	*2/16/18*
Location:	*New York*	Revision:	*1*

OPINION OF PROBABLE COST - PV PLANT DECOMISSIONING - SAT - 2 MWac - ANNUAL INFLATION=1.36% - END OF LIFE: YEAR 35

DISASSEMBLY & DISPOSAL

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
1.0	PV Modules (300 W)	9,990	$ 2.59	$ 25,874.10
2.0	Inverter(s) (1 MVA)	2	$ 1,309	$ 2,618.00
3.0	Transformer(s) (1 MVA)	2	$ 654	$ 1,308.00
4.0	Racking Frame (Single Axis)	124	$ 103	$ 12,772.00
5.0	Racking Posts	1,612	$ 14	$ 22,568.00
6.0	Tracker Motors	124	$ 29	$ 3,596.00
7.0	Racking Wiring	51,546 LF	$ 0.09	$ 4,639.14
8.0	Underground Cable (LV, MV, Comm)	14,435 LF	$ 0.66	$ 9,527.10
9.0	Fence	3,484 LF	$ 2.67	$ 9,302.28
10.0	Concrete	18 CY	$ 100	$ 1,800.00
11.0	Gravel	380 CY	$ 38	$ 14,440.00
12.0	Offsite Disposal	399 CY	$ 45	$ 17,955.00
13.0	General Conditions	2 MWac	$ 6,313	$ 12,626.00
			SUBTOTAL	$ 139,025.62

SITE RESTORATION

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
14.0	Re-Seeding	17 ACRES	$ 294	$ 4,998.00
15.0	Re-Grading	0 CY	$ 25	$ -
16.0	Erosion and Sediment Control	1 LS	$ 11,961	$ 11,961.00
			SUBTOTAL	$ 16,959.00

SALVAGE

ITEM	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
17.0	PV Modules (300 W)	9,990	$ 13	$ 129,870.00
18.0	Inverter(s) (1 MVA)	2	$ 3,528	$ 7,056.00
19.0	Transformer(s) (1 MVA)	2	$ 5,600	$ 11,200.00
20.0	Racking Frame (Single Axis)	359,533 LBS	$ 0.23	$ 82,692.59
21.0	Racking Posts	265,980 LBS	$ 0.23	$ 61,175.40
22.0	Tracker Motors	6,696 LBS	$ 0.59	$ 3,950.64
23.0	LV Wiring	5,445 LBS	$ 4.09	$ 22,270.05
24.0	MV Wiring	18,114 LBS	$ 2.19	$ 39,669.66
25.0	Chain Link Fence	53,443 LBS	$ 0.23	$ 12,291.89
			SUBTOTAL	$ 370,176.23

TOTAL DISASSEMBLY, DISPOSAL, & SITE RESTORATION COST	*$*	*155,984.62*
TOTAL SALVAGE VALUE	*$*	*370,176.23*
NET DECOMISSIONING COST	*$*	*(214,191.61)*

This opinion of probable costs is based on the engineer's experience in the design and construction of energy facilities and are subject to final engineering. The engineer accepts no liability for errors, omissions, or the accuracy and adequacy of this opinion. It is a violation ofstate law for any person, unless they are acting under direction of a licensed professional engineer to alter this document in any way.

RINA Consulting

Joshua Berkow, PE
Principal Power Systems Engineering Consultant

705 S. Main Street. Suite 260
Plymouth, MI 48170
(734) 634-4088

2/16/2018
Date

EXHIBIT J. EMERGENCY RESPONSE PLAN

Emergency Action Plan

Independent Solar Project

206 Milton Tpke, Milton, NY 12547

LAT: 41.6663 LONG: -73.9778

Prepared by: Dennis Costner

1.0 Construction Emergency Response Plan for CYPRESS CREEK

The (EAP) emergency action plan will take effect in the case of a Safety, fire or Medical Emergency. The plan will be initiated by three horn blasts and followed with radio or cellular communications as applicable. Once the three horn blasts are heard, supervision must immediately clear the air waves of all non-essential traffic and wait for further instruction, as applicable. The emergency radio channel will be channel 5. All incident responders should communicate with the Cypress Emergency Response Coordinator (ERC). The ERC will coordinate with all municipals prior to the start of the project to provide them with a scope of work, emergency procedures and how to access the site.

2.0 Pre-Emergency Planning

Cypress Creek's Emergency Response Coordinator (ERC), which is the onsite safety manager. The (ERC) will perform applicable pre-emergency planning tasks before starting field activities and will coordinate emergency response with onsite personnel, the facility and the local emergency service providers. These activities include the following:

- Ensure that there is a good contact list for all personnel onsite See Section 10.0.
- Verify that two way radio communications are available and serviceable.
- Verify that all emergency contact information is correct and up to date.
- Post "Exit and Fire Extinguishers" signs above exit doors and above locations of fire extinguishers, also keep areas exits and fire extinguisher access clear.
- Evaluate site condition, onsite operations, and personnel availability for emergency response procedures.
- Take an inventory of the site's equipment, supplies and potable water.
- Visit with local fire department, EMS, coordinate with a local doctor's office to handle advanced first-aid incidents and locate the local hospital.
- Communicate emergency procedures for site hazards such as personal injury, exposures, fires, explosions and releases.
- The Safety team will brief new workers on the emergency action plan and evaluate emergency response actions during a new hire orientation.

3.0 Emergency Equipment and Supplies

The onsite Safety Coordinator for Cypress Creek will ensure the following emergency equipment is on site and that the equipment is functional and serviceable. The Safety Coordinator will also note the locations of equipment and communicate that to all employees:

Emergency Equipment and Supplies include:

- Appropriate number and size of Class A, B, and C Fire Extinguisher based on construction site and construction activities
- Medical Jump Bag
- First Aid kit located in office
- AED
- Potable water
- Blood borne Pathogen Kit
- Additional equipment needed for site specific reasons
- Spill Kits
- Spill containment systems as required
- Lightning monitor
- WBGT meter

4.0 Incident Response

In case of a fire, explosion or chemical release, please follow the steps below:

- Alert the appropriate response personnel, Milton Fire District
- Shut down operations and evacuate the immediate work area.
- Perform a head count of the designated assembly area(s).
- Assess the need for site evacuation, and evacuate the site as warranted.
- Conduct Incident Notification, Reporting and Investigation as required by OSHA and employer.
- Notify and submit reports to clients to owner and municipals as required.

Please note: Fires or spills that present a minimal safety or health hazard may be controlled with onsite spill kits or fire extinguishers without activating the sites evacuation procedure. When in doubt evacuate.

5.0 Emergency Medical Treatment

In the event that emergency medical treatment is needed whether life threatening or not, it must be immediately reported to site safety (ERC). Site safety will evaluate the course of action that is needed. Major medical emergencies include injuries of severe bleeding, loss of consciousness, breathing or heart failure. A minimum of two first aid, CPR and AED trained persons shall be onsite at all times for medical emergencies. In the event of such, please follow the steps below:

- Notify Safety.
- Notify 911 or other appropriate emergency response authorities that are listed at the site.
- Initiate first aid and CPR and AED if needed.
- Make certain that the injured person is accompanied by Safety personnel to the doctor or emergency room.

6.0 Evacuation

The site map should have clear detailed evacuation routes, assembly areas, severe weather shelters as well as any alternative routes and assembly locations.

- The Cypress primary Muster point is the admin trailer.
- The Cypress secondary Muster is the Laydown yard.
- If site evacuation is needed Milton Fire District will become the muster point.
- The evacuation routes are shown on the map in section 9.0.
- All members of staff will gather at the muster point upon hearing the emergency signal for evacuation.
- The Safety personnel and a “buddy” will remain on the site after the site has been evacuated, if the situation is safe to assist local responders
- The Safety team will account for all personnel in the onsite assembly area.
- A designated person will account for personnel at alternate muster area(s).
- The Safety Coordinators will follow the incident reporting protocols.

7.0 Inclement Weather

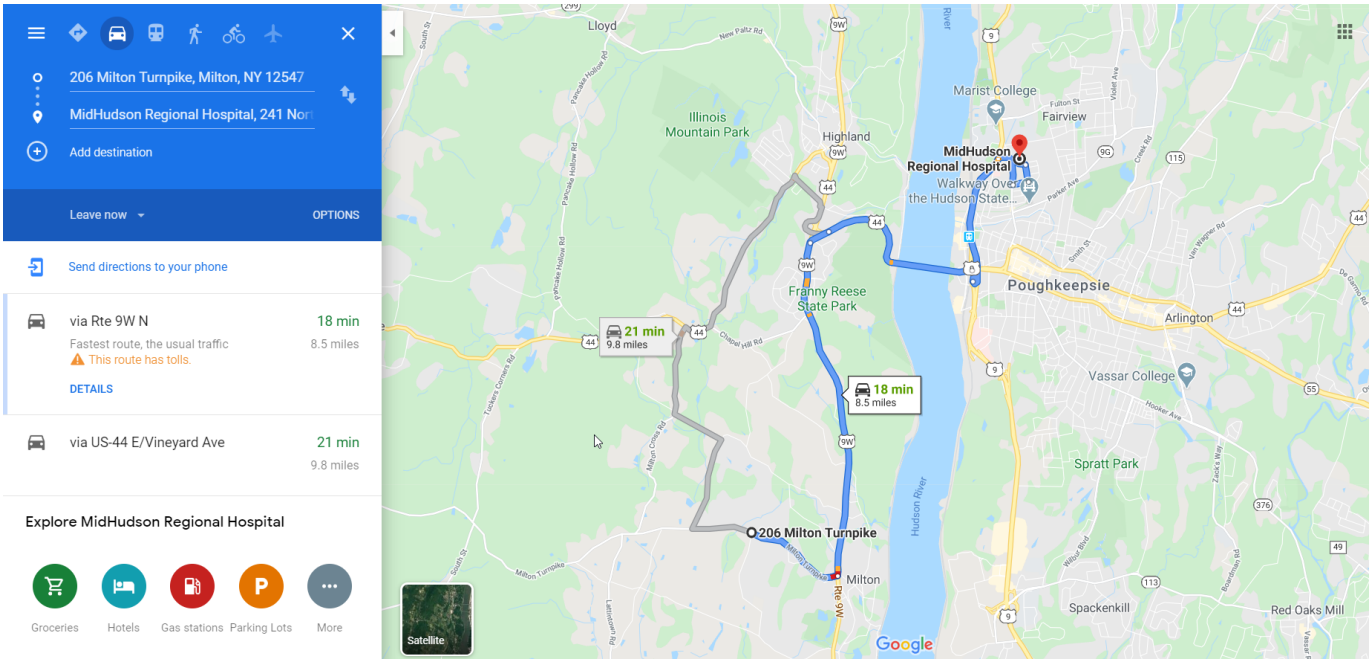
Sudden inclement weather can infringe upon field personnel. Emergency preparedness and caution are the best defense. Field crew members performing work outdoors should carry the appropriate clothing for this type of weather. Staff

should pay close attention to the weather forecast on a daily basis to look for signs of inclement weather. These signs include towering thunderheads, darkening skies, or a sudden increase in wind. If stormy weather ensues, field personnel should discontinue work and seek shelter until the storm has passed. Stay away from open water, metal equipment, wire fences and metal pipes. Other general precautions include, but are not limited to:

- Know where to go and how long it will take to get there. If possible, take refuge in a large building or vehicle. Do not go into a shed in an open area.
- The inclination to see trees as enormous umbrellas is the most frequent and deadly mistake. Avoid standing under large trees, poles, antennae's and towers.
- If the area is wide open, go to a valley or ravine, but be aware of flash flooding.
- If you are caught in a level open area during an electrical storm and start to feel your hair stand on top of your head then you should drop to your knees, bend forward and crouch. This technique will make you less vulnerable to electrocution.
- Do not lie down this is dangerous and can cause the wet earth to conduct electricity.
- Do not touch the ground with your hands.
- Do not use telephones during electrical storms, except in the case of emergency.
- Remember: lightning can strike several miles from the parent cloud, so work should be stopped and restarted accordingly.
- Lightning safety recommendation is 30-30, this translates to seek protection when thunder sounds within 30 seconds after a lightening flash and do not resume work until 30 minute after the last thunder clap. Stay alert for high winds that can cause unsafe conditions. Working in high wind conditions should be avoided. If continuous high wind persists then staff should seek shelter. All employees will stand down when lightning reaches a range of **8 Miles.**

8.0 Emergency Directions

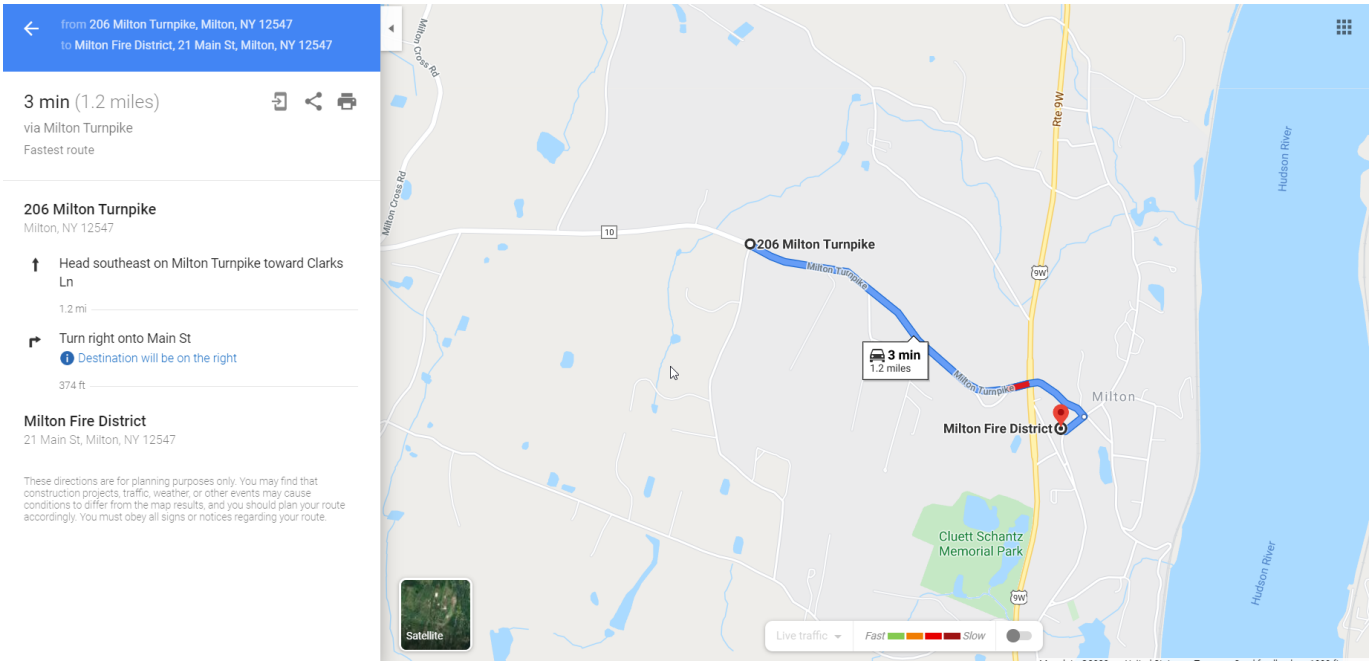
Hospital Directions:



- Head southeast on Milton Turnpike towards Clarks Ln (1.0 mi)
- Follow Rte 9W N, US-44 E and U.S. 9 N to NY-9G N in Poughkeepsie (6.7 mi)
- Continue on NY-9G N to your destination in Fairview (0.8 mi)
- Turn right - Destination will be on the right (62 ft)

End: MidHudson Regional Hospital 241 North Rd, Poughkeepsie, NY 12601

Fire Department Directions:

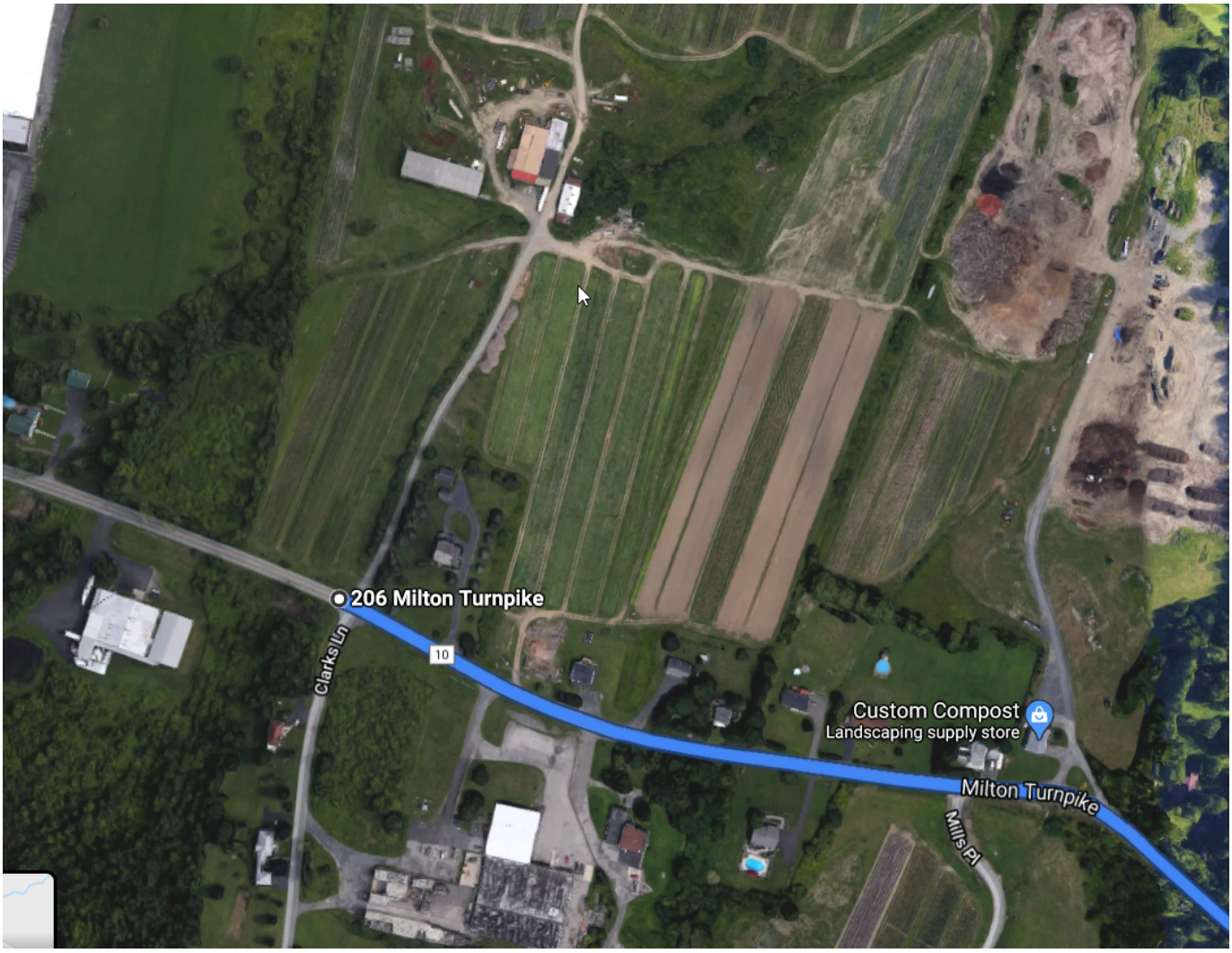


Start: 206 Milton Tpke, Milton, NY 12547

- Head southeast on Milton Turnpike toward Clarks Ln (1.2 mi)
- Turn right onto Main St. Destination will be on the left (374 ft)

End: Milton Fire District 21 Main St, Milton, NY 12547

9.0 Evacuation Route Aerial View



10.0 Emergency Contacts

IN THE EVENT THAT THERE IS AN EMERGENCY THE AIR HORN A WILL SOUND. AFTER THE HORN THERE WILL BE A MESSAGE INDICATING THE TYPE OF EMERGENCY FOLLOWED BY DIRECTION.

IMMEDIATE MUSTER POINT: CYPRESS CREEK CONSTRUCTION TRAILER

IMMEDIATE ALTERNATE: LAYDOWN YARD

OFFSITE MUSTER POINT: MILTON FIRE DISTRICT

CYPRESS CREEK SAFETY MANAGER (ERC):

Dennis Costner	Safety Director	(704) 300-5450

FIRE:

Milton Fire District	21 Main St, Milton, NY 12547	845-795-2355

MEDICAL/FIRST AID CLINIC:

MidHudson Regional Hospital Emergency Room	241 North Rd, Poughkeepsie, NY 12601	845-483-5000

HOSPITAL:

MidHudson Regional Hospital	241 North Rd, Poughkeepsie, NY 12601	845-483-5000

POLICE DEPARTMENT:

Milton Police Department	1650 Rte 9W, Milton, NY 12547	845-795-2181
Ulster County Sheriffs Department	3063 NY-208, Wallkill, NY 12589	845-895-3011

ALTERNATE EMERGENY CALL: 911

EXHIBIT K. CHG&E INTERCONNECTION AGREEMENT

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APPENDIX A

NEW YORK STATE STANDARDIZED CONTRACT FOR INTERCONNECTION OF NEW DISTRIBUTED GENERATION UNITS AND/OR ENERGY STORAGE SYSTEMS WITH CAPACITY OF 5 MW OR LESS CONNECTED IN PARALLEL WITH UTILITY DISTRIBUTION SYSTEMS

Interconnection Customer Information:

Name: Noah Hyte
Independent Solar, LLC

Address: 206 Milton Tpke
MILTON, NY 12547

Telephone: (213) 334-4350

Fax:

Email: hyte@ccrenew.com

Unit Application/File No.: CH-10272

Utility Information:

Name: Central Hudson Gas & Electric

Address: 284 South Ave, Poughkeepsie NY 12601

Telephone: (845) 452-2700

Fax: (845) 486-5658

Email: dg@cenhud.com

Utility Account Number:

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DEFINITIONS

Delivery Service means the services the Utility may provide to deliver capacity or energy generated by the Interconnection Customer to a buyer to a delivery point(s), including related ancillary services.

Energy Storage System (ESS) means a commercially available mechanical, electrical, or electro-chemical means to store and release electrical energy, and its associated electrical inversion device and control functions that may be stand-alone or paired with a distributed generator at a point of common coupling.

Interconnection Customer means the owner of the Unit.

Interconnection Facilities means the equipment and facilities on the Utility's system necessary to permit operation of the Unit in parallel with the Utility's system.

Material Modification means a Modification to a Unit that may have adverse impacts on the Utility's system, Utility customers, other projects, or applications in the interconnection queue.

Modification means a change to the ownership, equipment, equipment ratings, equipment configuration, or operating conditions of the Unit.

Premises means the real property where the Unit is located.

SIR means the New York State Standardized Interconnection Requirements for new distributed generation units with a nameplate capacity of 5 MW or less connected in parallel with the Utility's distribution system.

Unit means the distributed generation, stand-alone ESS, or combined generation and ESS facilities approved by the Utility for operation in parallel with the Utility's system. This Agreement relates only to such Unit, but a new agreement shall not be required if the Interconnection Customer makes physical alterations to the Unit that do not result in an increase in its nameplate generating capacity. The nameplate generating capacity or inverter/converter rating of the Unit shall not exceed 5 MW.

Utility means Central Hudson Gas & Electric.

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I. TERM AND TERMINATION

1.1 Term: This Agreement shall become effective when executed by both Parties and shall continue in effect until terminated.

1.2 Termination: This Agreement may be terminated as follows:

a. The Interconnection Customer may terminate this Agreement at any time, by giving the Utility sixty (60) days' written notice.

b. Failure by the Interconnection Customer to seek final acceptance by the Utility within twelve (12) months after completion of the utility construction process described in the SIR shall automatically terminate this Agreement.

c. Either Party may, by giving the other Party at least sixty (60) days' prior written notice, terminate this Agreement in the event that the other Party is in default of any of the material terms and conditions of this Agreement. The terminating Party shall specify in the notice the basis for the termination and shall provide a reasonable opportunity to cure the default.

d. The Utility may, by giving the Interconnection Customer at least sixty (60) days' prior written notice, terminate this Agreement for cause. The Interconnection Customer's non-compliance with an upgrade to the SIR, unless the Interconnection Customer's installation is "grandfathered," shall constitute good cause.

1.3 Disconnection and Survival of Obligations: Upon termination of this Agreement the Unit will be disconnected from the Utility's electric system. The termination of this Agreement shall not relieve either Party of its liabilities and obligations, owed or continuing at the time of the termination.

1.4 Suspension: This Agreement will be suspended during any period in which the Interconnection Customer is not eligible for Delivery Service from the Utility

II. SCOPE OF AGREEMENT

2.1 Scope of Agreement: This Agreement relates solely to the conditions under which the Utility and the Interconnection Customer agree that the Unit may be interconnected to and operated in parallel with the Utility’s system.

Electricity Not Covered: The Utility shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any electricity produced by the Facility and delivered into the Utility’s System unless the system is net metered as described in Public Service Law Section 66-l.

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III. INSTALLATION, OPERATION AND MAINTENANCE OF UNIT

3.1 Compliance with SIR: Subject to the provisions of this Agreement, the Utility shall be required to interconnect the Unit to the Utility's system, for purposes of parallel operation, if the Utility accepts the Unit as in compliance with the SIR. The Interconnection Customer shall have a continuing obligation to maintain and operate the Unit in compliance with the SIR.

3.2 Observation of the Unit - Construction Phase: The Utility may, in its discretion and upon reasonable notice, perform reasonable on-site verifications during the construction of the Unit. Whenever the Utility chooses to exercise its right to perform observations herein it shall specify to the Interconnection Customer its reasons for its decision to perform the observation. For purposes of this paragraph and paragraphs 3.3 through 3.5, the term "on-site verification" shall not include testing of the Unit, and verification tests shall not be required except as provided in paragraphs

3.3 Observation of the Unit - Ten-day Period: The Utility may perform on-site verifications of the Unit and observe the execution of verification testing within a reasonable period of time, not exceeding ten (10) business days after system installation. The Unit will be allowed to commence parallel operation upon satisfactory completion of the verification test. The Interconnection Customer must have complied with and must continue to comply with all contractual and technical requirements.

3.4 Observation of the Unit - Post-Ten-day Period: If the Utility does not perform an on-site verification of the Unit and observe the execution of verification testing within the ten-day period, the Interconnection Customer will send the Utility within five (5) days of the verification testing a written notification certifying that the Unit has been installed and tested in compliance with the SIR, the utility-accepted design and the equipment manufacturer's instructions. The Interconnection Customer may begin to produce energy upon satisfactory completion of the verification test. After receiving the verification test notification, the Utility will either issue to the Interconnection Customer a formal letter of acceptance for interconnection, or may request that the applicant and utility set a date and time to perform an on-site verification of the Unit and make reasonable inquiries of the Interconnection Customer, but only for purposes of determining whether the verification tests were properly performed. The Interconnection Customer shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.

3.5 Observation of the Unit - Operations: The Utility may perform on-site verification of the operations of the Unit after it commences operations if the Utility has a reasonable basis for doing so based on its responsibility to provide continuous and reliable utility service or as authorized by the provisions of the Utility's Retail Electric Tariff relating to the verification of Interconnection Customer installations generally.

3.6 Costs of Interconnection Facilities: During the term of this Agreement, the Utility shall design, construct and install the Interconnection Facilities. The Interconnection Customer shall be responsible for paying the incremental capital cost of such Interconnection Facilities attributable to the Interconnection Customer's Unit. All costs associated with the operation and

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maintenance of the Dedicated Facilities after the Unit first produces energy shall be the responsibility of the Utility.

3.7 Modifications to the Unit: The Interconnection Customer may request a Modification at any time after commencement of parallel operation. The Utility shall evaluate the request and determine whether the proposed change is a Material Modification in accordance with the rules for requesting changes to applications in the SIR. A Material Modification will be studied pursuant to the procedures in the SIR for new applications. In the case of a non-material modification that is accepted by the Utility, the parties will execute an amendment to this Agreement describing the Unit changes that have been approved.

IV. DISCONNECTION OF THE UNIT

4.1 Emergency Disconnection: The Utility may disconnect the Unit, without prior notice to the Interconnection Customer (a) to eliminate conditions that constitute a potential hazard to Utility personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Utility system; (c) if a hazardous condition relating to the Unit is observed by a Utility inspection; or (d) if the Interconnection Customer has tampered with any protective device. The Utility shall notify the Interconnection Customer of the emergency if circumstances permit. The Interconnection Customer shall notify the Utility promptly when it becomes aware of an emergency condition that affects the Unit that may reasonably be expected to affect the Utility EPS.

4.2 Non-Emergency Disconnection Due to Unit Performance: The Utility may disconnect the Unit, after notice to the responsible party has been provided and a reasonable time to correct, consistent with the conditions, has elapsed, if (a) the Interconnection Customer has failed to make available records of verification tests and maintenance of his protective devices; (b) the Unit system interferes with Utility equipment or equipment belonging to other customers of the Utility; (c) the Unit adversely affects the quality of service of adjoining customers; (d) the ESS does not operate in compliance with the operating parameters and limits described in Attachment 1 to this Agreement.

4.3 Non-Emergency Disconnection for Utility Work: The Utility may disconnect the Unit after notice to Interconnection Customer when necessary for routine maintenance, construction, and repairs on the Utility EPS. The Interconnection Customer may request to reconnect its service prior to the completion of the Utility's work. The Utility shall accommodate such requests, provided that the Interconnection Customer shall be responsible for the costs of the Utility's review and any system modifications required to reconnect the Unit ahead of schedule.

4.4 Disconnection by Interconnection Customer: The Interconnection Customer may disconnect a Unit with an AC nameplate rating above 300 kW upon 18 hours advance notice to the Utility if the planned shutdown will last 8 hours or more. For non-emergency forced outages lasting 8 hours or more, the Interconnection Customer shall notify the Utility within 24 hours of the commencement of the shutdown

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4.5 Utility Obligation to Cure Adverse Effect: If, after the Interconnection Customer meets all interconnection requirements, the operations of the Utility are adversely affecting the performance of the Unit or the Customer's premises, the Utility shall immediately take appropriate action to eliminate the adverse effect. If the Utility determines that it needs to upgrade or reconfigure its system, the Interconnection Customer will not be responsible for the cost of new or additional equipment beyond the point of common coupling between the Interconnection Customer and the Utility.

V. ACCESS

5.1 Access to Premises: The Utility shall have access to the disconnect switch of the Unit at all times. At reasonable hours and upon reasonable notice consistent with Section III of this Agreement, or at any time without notice in the event of an emergency (as defined in paragraph 4.1), the Utility shall have access to the Premises.

5.2 Utility and Interconnection Customer Representatives: The Utility shall designate, and shall provide to the Interconnection Customer, the name and telephone number of a representative or representatives who can be reached at all times to allow the Interconnection Customer to report an emergency and obtain the assistance of the Utility. For the purpose of allowing access to the premises, the Interconnection Customer shall provide the Utility with the name and telephone number of a person who is responsible for providing access to the Premises.

5.3 Utility Right to Access Utility-Owned Facilities and Equipment: If necessary for the purposes of this Agreement, the Interconnection Customer shall allow the Utility access to the Utility's equipment and facilities located on the Premises. To the extent that the Interconnection Customer does not own all or any part of the property on which the Utility is required to locate its equipment or facilities to serve the Interconnection Customer under this Agreement, the Interconnection Customer shall secure and provide in favor of the Utility the necessary rights to obtain access to such equipment or facilities, including easements if the circumstances so require.

VI. DISPUTE RESOLUTION

6.1 Good Faith Resolution of Disputes: Each Party agrees to attempt to resolve all disputes arising hereunder promptly, equitably and in a good faith manner.

6.2 Mediation: If a dispute arises under this Agreement, and if it cannot be resolved by the Parties within ten (10) business days after written notice of the dispute, the parties agree to submit the dispute to mediation by a mutually acceptable mediator, in a mutually convenient location in New York State, in accordance with the then current International Institute for Conflict prevention & Resolution Procedure, or to mediation by a mediator provided by the New York Public Service Commission. The Parties agree to participate in good faith in the mediation for a period of up to 90 days. If the Parties are not successful in resolving their disputes through mediation, then the

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parties may refer the dispute for resolution to the New York Public Service Commission, which shall maintain continuing jurisdiction over this Agreement.

6.3 Escrow: If there are amounts in dispute of more than two thousand dollars ($2,000), the Interconnection Customer shall either place such disputed amounts into an independent escrow account pending final resolution of the dispute in question, or provide to the Utility an appropriate irrevocable standby letter of credit in lieu thereof.

VII. INSURANCE

7.1. Commercial General Liability: The Interconnection Customer shall, at its own expense, procure and maintain throughout the period of this Agreement the following minimum insurance coverage:

7.1.1. Commercial general liability insurance with limits not less than:

7.1.1.1. Five million dollars ($5,000,000) for each occurrence and in the aggregate if the AC Nameplate rating of the Interconnection Customer's Facility is greater than five (5) MWAC;

7.1.1.2. Two million dollars ($2,000,000) for each occurrence and five million dollars ($5,000,000) in the aggregate if the AC Nameplate rating of the Interconnection Customer's Facility is greater than one (1) MWAC and less than or equal to five (5) MWAC;

7.1.1.3. One million dollars ($1,000,000) for each occurrence and in the aggregate if the AC Nameplate rating of the Interconnection Customer's Facility is greater than or equal to 300 (kWAC) and less than or equal to one (1) MWAC

7.1.2. Any combination of general liability and umbrella/excess liability policy limits can be used to satisfy the limit requirements of Section 7.1.1 (a).

7.1.3. The general liability insurance required to be purchased in Section 7.1 (a) may be purchased for the direct benefit of the Utility and shall respond to third party claims asserted against the Utility (hereinafter known as "Owners Protective Liability"). Should this option be chosen, the requirement of Section 7.3(a) will not apply but the Owners Protective Liability policy will be purchased for the direct benefit of the Utility and the Utility will be designated as the primary and "Named Insured" under the policy.

7.2. General Commercial Liability Insurance: The Interconnection Customer is not required to provide general commercial liability insurance for facilities with an AC nameplate rating of 300 kW or less. Due to the risk of incurring damages however, the New York State Public Service Commission ("Commission") recommends that the Interconnection Customer obtain adequate insurance. The inability of the Utility to require the Interconnection Customer to provide general commercial liability insurance coverage for operation of the Unit is not a waiver of any rights the Utility may have to pursue remedies at law against the Interconnection

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Customer to recover damages.

7.3. Insurer Requirements and Endorsements: All required insurance shall be written by reputable insurers authorized to conduct business in New York. In addition, all general liability insurance shall, (a) include the Utility as an additional insured; (b) contain a severability of interest clause or cross-liability clause; (c) provide that the Utility shall not incur liability to the insurance carrier for payment of premium for such insurance; and (d) provide for thirty (30) calendar days' written notice to the Utility prior to cancellation or termination of such insurance, with the exception of a ten (10) days' notice in the event of premium non-payment; provided that to the extent the Interconnection Customer is satisfying the requirements of subpart (d) of this paragraph by means of a presently existing insurance policy, the Interconnection Customer shall only be required to make good faith efforts to satisfy that requirement and will assume the responsibility for notifying the Utility as required above.

7.4. Evidence of Insurance: Evidence of the insurance required shall state that coverage provided is primary and is not in excess to or contributing with any insurance or self-insurance maintained by Interconnecting Customer. Prior to the Utility commencing work on System Modifications, and annually thereafter, the Interconnection Customer shall have its insurer furnish to the Utility certificates of insurance evidencing the insurance coverage required above.

7.4.1 If coverage is on a claims-made basis, the Interconnection Customer agrees that the policy effective date or retroactive date shall be no later than the effective date of this agreement, be continuously maintained throughout the life of this agreement, and remain in place for a minimum of three (3) years following the termination of this agreement or if policies are terminated will purchase a three-year extended reporting period. Evidence of such coverage will be provided on an annual basis.

7.4.2 In the event that an Owners Protective Liability policy is provided, the original policy shall be provided to the Utility.

7.5. Self-Insurance: If the Interconnection Customer has a self-insurance program established in accordance with commercially acceptable risk management practices, the Interconnection Customer may comply with the following in lieu of the above requirements as reasonably approved by the Utility:

7.5.1. The Interconnection Customer shall provide to the Utility, at least thirty (30) calendar days prior to the Date of Initial Operation, evidence of such program to self-insure to a level of coverage equivalent to that required.

7.5.2. If the Interconnection Customer ceases to self-insure to the standards required hereunder, or if the Interconnection Customer is unable to provide continuing evidence of the Interconnection Customer's financial ability to self-insure, the Interconnection Customer agrees to promptly obtain the coverage required under Section 7.1.

7.6. Utility Obligation to Maintain Insurance: The Utility agrees to maintain general liability insurance or self-insurance consistent with its existing commercial practice. Such insurance or self-insurance shall not exclude coverage for the Utility's liabilities undertaken

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pursuant to this Agreement.

7.7. **Notification Obligations**: The Parties further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

VIII. LIMITATION OF LIABILITY

8.1 Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this Agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special,

consequential, or punitive damages of any kind whatsoever. Nothing herein is meant to limit the liability of a Party to an unaffiliated third-party claimant.

IX. INDEMNITY

9.1 This provision protects each Party from liability incurred to third parties arising from actions taken pursuant to the provisions of this Agreement. Liability under this provision is exempt from the general limitations on liability found in Section 7.

9.2 Each Party (the “Indemnifying Party”) shall at all times indemnify, defend, and hold the other Party (the “Indemnified Party”) harmless from any and all damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demands, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, to the extent arising out of or resulting from the Indemnifying Party's action or failure to meet its obligations under this Agreement, except in cases of negligence, gross negligence or intentional wrongdoing by the Indemnified Party.

9.3 If a Party is obligated to indemnify and hold the Indemnified Party harmless under this section, the amount owing to the Indemnified Party shall be the amount of such Indemnified Party’s actual loss, as adjudicated by the Indemnifying Party’s insurance carrier, net of any insurance or other recovery.

9.4 Promptly after receipt by an Indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided for in this section may apply, the Indemnified Party shall notify the Indemnifying Party of such fact. Any unintentional failure of or delay in such notification shall not affect a Party's indemnification obligation unless such failure or delay is materially prejudicial to the Indemnifying Party.

X. CONSEQUENTIAL DAMAGES

10.1 Other than as expressly provided for in this Agreement or pursuant to the utility tariff, neither Party shall be liable to the other Party under any provision of this Agreement for any losses, damages, costs, or expenses for any special, indirect, incidental, consequential, or punitive damages, including but not limited to loss of profit or revenue, loss of the use of

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equipment, cost of capital, cost of temporary equipment or services, whether based in whole or in part in contract, in tort, including negligence, strict liability, or any other theory of liability; provided, however, that damages for which a Party may be liable to the other Party under another agreement will not be considered to be special, indirect, incidental, or consequential damages hereunder.

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XI. MISCELLANEOUS PROVISIONS

11.1 Beneficiaries: This Agreement is intended solely for the benefit of the Parties hereto, and if a Party is an agent, its principal. Nothing in this Agreement shall be construed to create any duty to, or standard of care with reference to, or any liability to, any other person.

11.2 Severability: If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction, such portion or provision shall be deemed separate and independent, and the remainder of this Agreement shall remain in full force and effect.

11.3 Entire Agreement: This Agreement constitutes the entire Agreement between the Parties and supersedes all prior agreements or understandings, whether verbal or written.

11.4 Waiver: No delay or omission in the exercise of any right under this Agreement shall impair any such right or shall be taken, construed or considered as a waiver or relinquishment thereof, but any such right may be exercised from time to time and as often as may be deemed expedient. In the event that any agreement or covenant herein shall be breached and thereafter waived, such waiver shall be limited to the particular breach so waived and shall not be deemed to waive any other breach hereunder.

11.5 Applicable Law: This Agreement shall be governed by and construed in accordance with the law of the State of New York.

11.6 Amendments: This Agreement shall not be amended unless the amendment is in writing and signed by the Utility and the Customer.

11.7 Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected Party; and (b) that the affected Party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a Party from fulfilling any obligations under this Agreement, such Party will promptly notify the other Party in writing, and will keep the other Party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected Party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected Party is taking to mitigate the effects of the event on its performance. The affected Party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected Party will use reasonable efforts to resume its performance as soon as possible.

11.8 Assignment to Corporate Party: At any time during the term, the Interconnection Customer may assign this Agreement to a corporation or other entity with limited liability,

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provided that the Interconnection Customer obtains the consent of the Utility. Such consent will not be withheld unless the Utility can demonstrate that the corporate entity is not reasonably capable of performing the obligations of the assigning Interconnection Customer under this Agreement.

11.9 Assignment to Individuals: At any time during the term, the Interconnection Customer may assign this Agreement to another person, other than a corporation or other entity with limited liability, provided that the assignee is the owner, lessee, or is otherwise responsible for the Unit.

11.10 Permits and Approvals: Interconnection Customer shall obtain all environmental and other permits lawfully required by governmental authorities prior to the construction and for the operation of the Unit during the term of this Agreement.

11.11 Limitation of Liability: Neither by inspection, if any, or non-rejection, nor in any other way, does the Utility give any warranty, express or implied, as to the adequacy, safety, or other characteristics of any structures, equipment, wires, appliances or devices owned, installed or maintained by the Interconnection Customer or leased by the Interconnection Customer from third parties, including without limitation the Unit and any structures, equipment, wires, appliances or devices appurtenant thereto.

ACCEPTED AND AGREED:

Interconnection Customer: Independent Solar, LLC

Signature: DocuSigned by: Noah Hyte FA1FD5869B40485...

Printed Name: Noah Hyte

Title: Authorized Person

Date: 4/7/2020

Utility: Central Hudson Gas & Electric

Signature: Stephanie Palmer

Printed Name: Stephanie Palmer

Title: Director, Electric Distribution and Standards

Date: 4/7/2020

EXHIBIT L. SGHAT GLARE ANALYSIS

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I Accept

ForgeSolar
PV planning & glare analysis

GlareGauge Glare Analysis Results

Site Configuration: Untitled

Project site configuration details and results.

Created **Jan. 22, 2020 1:15 p.m.**
Updated **Jan. 22, 2020 1:16 p.m.**
DNI **varies** and peaks at **1,000.0 W/m^2**
Analyze every **1** minute(s)
0.5 ocular transmission coefficient
0.002 m pupil diameter
0.017 m eye focal length
9.3 mrad sun subtended angle
Timezone **UTC-5**
Site Configuration ID: 34921.6437

Summary of Results No glare predicted!

PV name	Tilt	Orientation	"Green" Glare	"Yellow" Glare	Energy Produced
	deg	deg	min	min	kWh
Independent Array	SA tracking	SA tracking	0	0	-

Component Data

PV Array(s)

Name: Independent Array
Axis tracking: Single-axis rotation
Tracking axis orientation: 180.0 deg
Tracking axis tilt: 5.0 deg
Tracking axis panel offset: 0.0 deg
Maximum tracking angle: 60.0 deg
Resting angle: 60.0 deg
Rated power: -
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

Vertex	Latitude	Longitude	Ground elevation	Height above ground	Total elevation
	deg	deg	ft	ft	ft
1	41.673549	-73.976608	450.00	0.00	450.00
2	41.673196	-73.974591	418.12	0.00	418.12
3	41.669253	-73.975277	383.00	0.00	383.00
4	41.668195	-73.975663	384.77	0.00	384.77
5	41.667874	-73.973818	356.54	0.00	356.54
6	41.666047	-73.974676	401.99	0.00	401.99
7	41.666336	-73.976650	428.43	0.00	428.43
8	41.668131	-73.975878	388.65	0.00	388.65
9	41.668997	-73.975535	384.12	0.00	384.12
10	41.669541	-73.977852	405.71	0.00	405.71

Route Receptor(s)

Name: Route 1
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	41.665123	-73.972438	388.22	0.00	388.22
2	41.665620	-73.976494	438.66	0.00	438.66
3	41.666550	-73.978704	418.58	0.00	418.58
4	41.667015	-73.980614	411.71	0.00	411.71
5	41.667047	-73.982588	424.77	0.00	424.77

Discrete Observation Receptors

Number	Latitude	Longitude	Ground elevation	Height above ground	Total Elevation
	deg	deg	ft	ft	ft
OP 1	41.666442	-73.978446	419.27	6.00	425.28
OP 2	41.665560	-73.975807	438.13	6.00	444.13
OP 3	41.675706	-73.975378	372.83	6.00	378.83
OP 4	41.667031	-73.981021	410.25	6.00	416.25

PV Array Results

Independent Array

Component	Green glare (min)	Yellow glare (min)
OP: OP 1	0	0
OP: OP 2	0	0
OP: OP 3	0	0
OP: OP 4	0	0
Route: Route 1	0	0

Assumptions

- 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.
- Several calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare.
- The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
- 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 assumptions and limitations not listed here.

EXHIBIT M. VISUAL RENDERINGS

INDEPENDENT SOLAR, LLC
206 MILTON TURNPIKE
MARLBOROUGH, NY 12547

Photo Simulation
from Milton Turnpike

7/9/2020

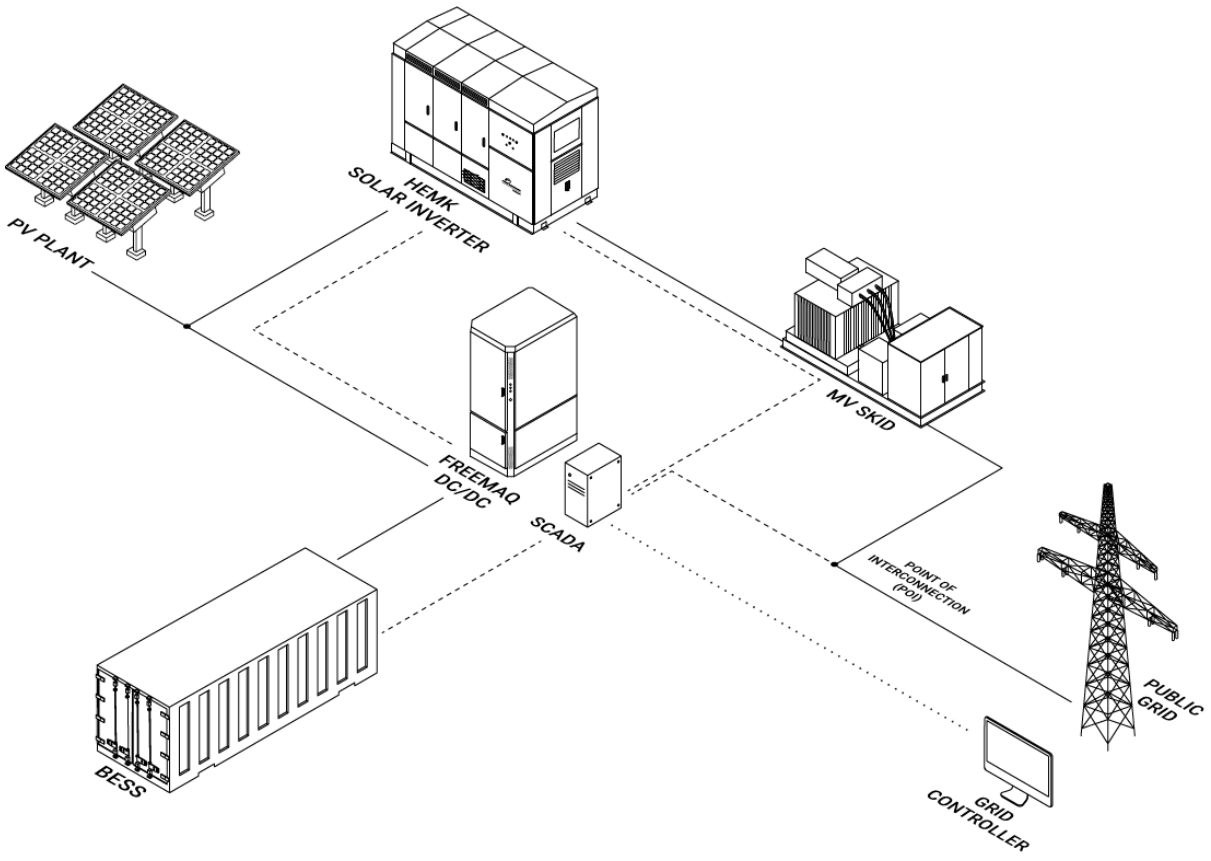
Mavens Consulting, LLC

EXHIBIT N. EQUIPMENT TECHNICAL INFO

POWER ELECTRONICS®
SAVING ENERGY FOR THINGS THAT MATTER

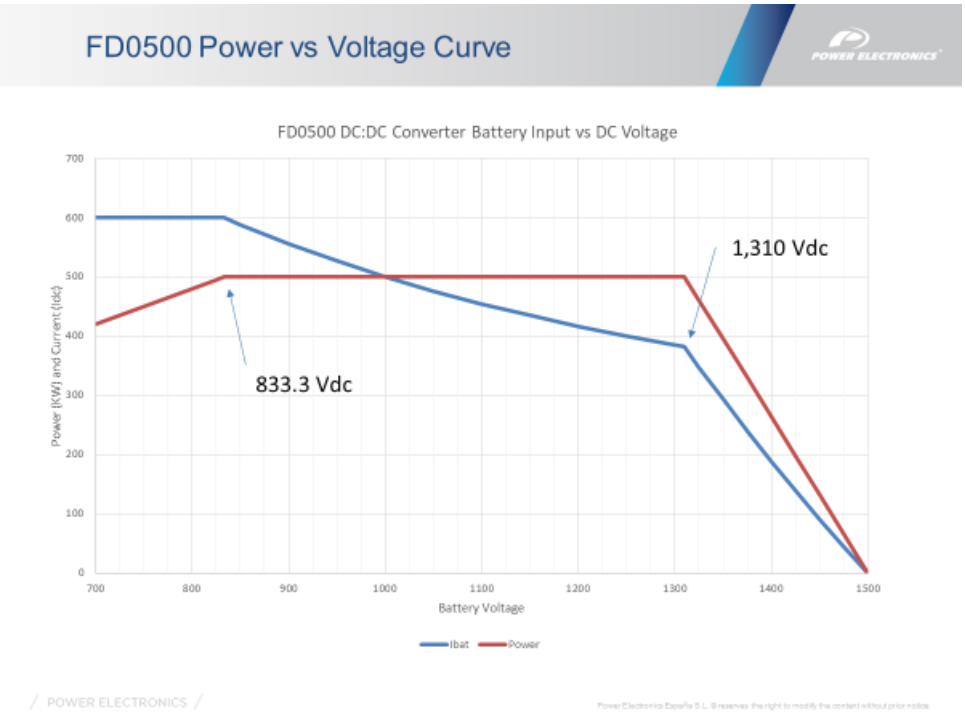
4777 N. 44th Ave
Phoenix, AZ 85031
Tel. 602-354-4890
www.power-electronics.com

Power Electronics FD0500 DC:DC Converter for DC Coupled Solar and Energy Storage



Parameter	FS0500DC-1500 Bi-directional DC/DC Converter	Comments
DC Input Power Module		
Rated Power	500 KW	Per Converter
PV Voltage Range	800 Vdc to 1,310 Vdc (user Configurable)	Consult factory for different ranges
Battery Voltage Range	700 Vdc to 1,310 Vdc	
Maximum DC Input Voltage	1,500 Vdc	
DC Voltage Ripple	< 3%	
Maximum DC Output Current	600 Amps	
Battery Technology	compatible with all Battery Technologies and customer provided BMS system	
System Specifications		
Number of separate DC Inputs	1 DC input per Converter Module with up to 3 DC terminations pos/neg.	Consult factory for DC input options
Terminal Ratings	Up to 90 ℃	
Max Cable size	Up to 750 kcmil	
Cooling	Forced Air	
Frame size	FSDK Cabinet	
Dimensions (LxWxH)	1000 x 1200 x 1800 mm	
Max. Converter Efficiency (%)	98.5% at rated power	Preliminary
Standby Power Consumption	50 W	
Enclosure Rating	NEMA 3R /IP 54	NEMA 4 - Electronics cabinet
Color	RAL 7035	Consult factory for custom colors
Operating Temperature range	-20 ℃ to 50 ℃	-35 ℃ option with cold weather kit
Storage Temperature	-30 `℃ to 55 ℃	
Relative Humidity	4% to 95% noncondensing	
Max. Altitude	>4,000 M	Power derated 1% /200M above 2,000M
Audible Noise level	< 79 dBA	
Interfaces	Graphical Display (Freesun Caibinet), Emergency Pushbutton and indicator lights USB, RJ45 and RJ485 Interface	
Communications Protocol	MODbus TCP/IP, MODbus RTU,	
Plant Manager	Compatible with third party energy management systems	

Protections		
Ground Fault Detection	Insulation monitoring board	
System Protection	Heartbeat Signal Monitoring	TBD
DC disconnection & protection (PV)	Standard	
DC Disconnection	Optional	Future features
Certification		
Safety Certification	UL-1741 pending	

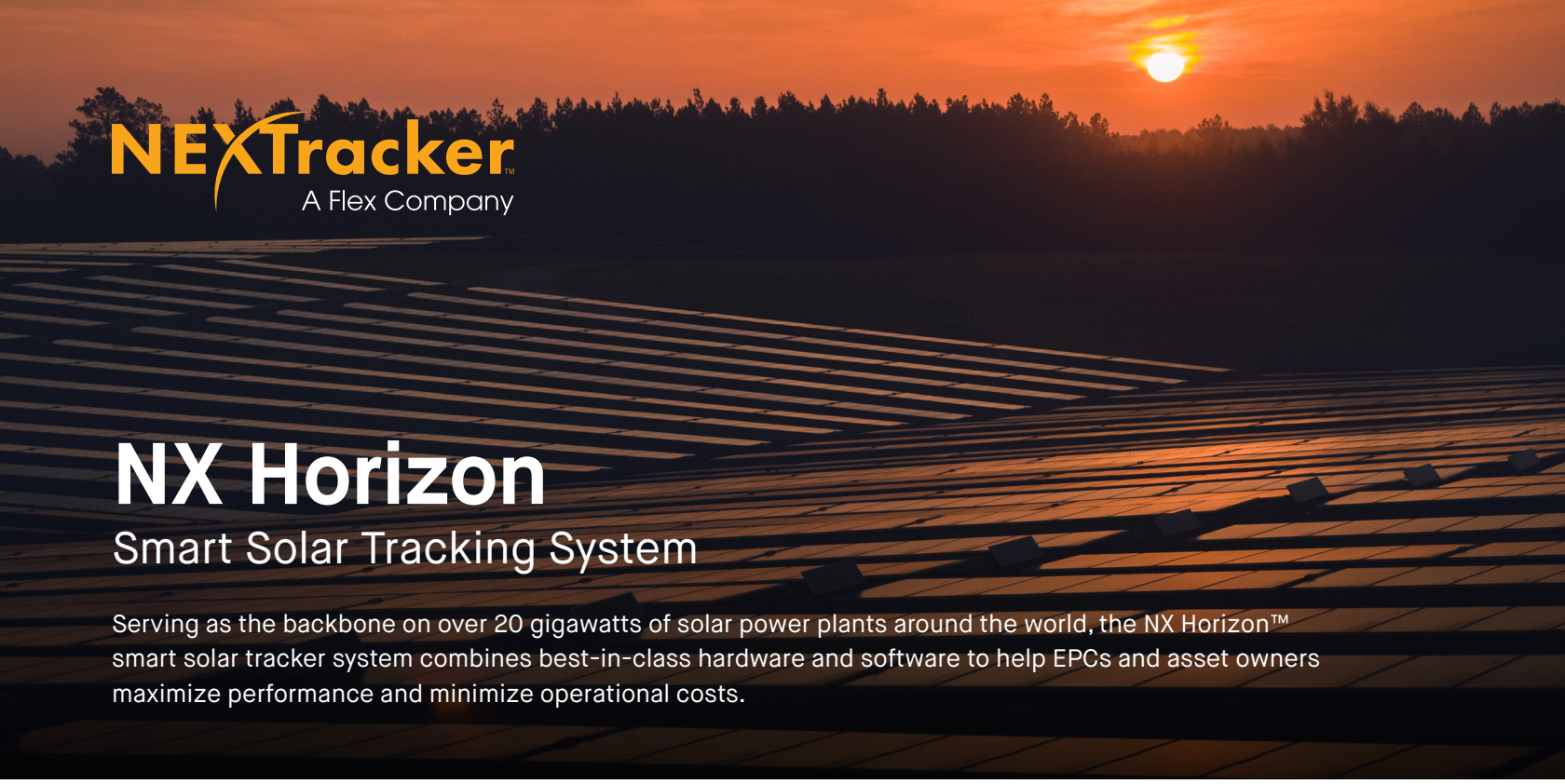


FD0500 Units can be paralleled for larger systems

TECHNICAL CHARACTERISTICS HEMK 600V

		FRAME 1	FRAME 2
REFERENCE		**FS2001K**	**FS3001K**
OUTPUT	AC Output Power(kVA/kW) @50°C [1]	2000/2000	3000/3000
	AC Output Power(kVA/kW) @25°C [1]	2200/2000	3300/3000
	Max. AC Output Current (A) @25°C	2120	3175
	Operating Grid Voltage(VAC) [2]	600V ±10%	
	Operating Grid Frequency(Hz)	50Hz/60Hz	
	Current Harmonic Distortion (THDi)	< 3% per IEEE519	
	Power Factor (cosine phi) [3]	0.5 leading … 0.5 lagging adjustable / Reactive Power injection at night	
INPUT	MPPt @full power (VDC)	849V-1310V	
	Maximum DC voltage	1500V	
	Number of inputs [2]	Up to 36	
	Number of MPPts	Up to 4	Up to 6
	Max. DC continuous current (A)	2645	3970
	Max. DC short circuit current (A)	4000	6000
EFFICIENCY & AUXILIARY SUPPLY	Max. Efficiency PAC, nom (η)	98.8%	98.8%
	Max. Power Consumption (KVA)	8	10
CABINET	Dimensions [WxDxH] (ft)	12 x 7 x 7	
	Dimensions [WxDxH] (m)	3.7 x 2.2 x 2.2	
	Weight (lb)	10802	15432
	Weight (kg)	4900	7000
	Type of ventilation	Forced air cooling	
ENVIRONMENT	Degree of protection	NEMA3R - IP54	
	Permissible Ambient Temperature	-35°C to +60°C / >50°C Active Power derating	
	Relative Humidity	4% to 100% non condensing	
	Max. Altitude (above sea level)	2000m; >2000m power derating (Max. 4000m)	
	Noise level [4]	< 79 dBA	
CONTROL INTERFACE	Interface	Graphic Display	
	Communication protocol	Modbus TCP	
	Plant Controller Communication	Optional	
	Keyed ON/OFF switch	Standard	
PROTECTIONS	Ground Fault Protection	GFDI and Isolation monitoring device	
	General AC Protection	Circuit Breaker	
	General DC Protection	Fuses	
	Overvoltage Protection	AC, DC Inverter and auxiliary supply type 2	
CERTIFICATIONS	Safety	UL1741, CSA 22.2 No.107.1-01, UL62109-1, IEC62109-1, IEC62109-2	
	Compliance	NEC 2014 / NEC 2017 (optional)	
	Utility interconnect	UL 1741SA-Sept.2016, IEEE 1547-2003	

[1] Values at 1.00•Vac nom and cos Φ= 1.
Consult Power Electronics for derating curves.
[2] Consult Power Electronics for other configurations.
[3] Consult P-Q charts available: Q(kVAr)=√(S(kVA)2-P(kW)2).
[4] Readings taken 1 meter from the back of the unit.



NEXTracker
A Flex Company

NX Horizon

Smart Solar Tracking System

Serving as the backbone on over 20 gigawatts of solar power plants around the world, the NX Horizon™ smart solar tracker system combines best-in-class hardware and software to help EPCs and asset owners maximize performance and minimize operational costs.

Self-Powered System with Smart Performance Monitoring

NX Horizon's reliable self-powered motor and control system, balanced mechanical design and independent row architecture provide project design flexibility, while lowering operation and maintenance (O&M) costs. NX Horizon works in concert with the NX Data Hub platform, a utility-grade software that uses bidirectional communications to each and every tracker row in the power plant for continuous, real-time monitoring. In addition, NEXTracker's Digital O&M™ services provide real-time analytics and predictive maintenance to help manage operations and minimize O&M costs over the lifetime of the systems.

Flexible and Resilient by Design

With its self-aligning module rails and vibration-proof fasteners, NX Horizon can be easily and rapidly installed. The self-powered, decentralized architecture allows each row to be commissioned in advance of site power,and is designed to withstand high winds and other adverse weather conditions. On a recent 838 megawatt project in Villanueva, Mexico, these design features allowed for the project to go online nine months ahead of schedule.

TrueCapture and Bifacial Enabled

Incorporating the most promising innovations in utility scale solar, NX Horizon with TrueCapture™ smart control system can add additional energy production by up to six per cent. Further unlocking the advantages of independent-row architecture and the data collected from thousands of sensors across its built-in wireless network, the software continuously optimizes the tracking algorithm of each row in response to site terrain and changing weather conditions. NX Horizon can also be paired with bifacial PV module technology, which can provide even more energy harvest and performance. With bifacial technology, NX Horizon outperforms conventional tracking systems with over 1% more annual energy.

4 YEARS IN A ROW
Global Market Share Leader (2015-18)

20+ GW
Delivered on 5 Continents

BEST-IN-CLASS
Software Ecosystem and Global Services

UP TO 6%
Using TrueCapture Smart Control System

Quality and Reliability from Day One

Quality and reliability are designed and tested into every NX Horizon component and system across our supply chain and manufacturing operations. NEXTracker is the leader in dynamic wind analysis and safety stowing, delivering major benefits in uptime and long-term durability. NX Horizon is certified to UL 2703 and UL 3703 standards, underscoring NEXTracker's commitment to safety, reliability and quality.

GENERAL AND MECHANICAL

Tracking type	Horizontal single-axis, independent row
String voltage	1,500 V_{DC} or 1,000 V_{DC}
Typical row size	78 - 90 modules, depending on module string length
Drive type	Non-backdriving, high accuracy slew gear
Motor type	24V brushless DC motor
Array height	Rotation axis elevation 1.3 to 1.8 m / 4'3" to 5'10"
Ground coverage ratio (GCR)	Configurable. Typical range 28-50%
Modules supported	Mounting options available for virtually all utility-scale crystalline modules, First Solar Series 6 and First Solar Series 4.
Bifacial features	High-rise mounting rails, bearing + driveline gaps and round torque tube

Tracking range of motion	Options for ±60° or ±50°
Operating temperature range	Self powered: -30°C to 55°C (-22°F to 131°F) AC powered: -40°C to 55°C (-40°F to 131°F)
Module configuration	1 in portrait. 3 x 1,500V or 4 x 1,000V strings per standard tracker. Partial length trackers available.
Module attachment	Self-grounding, electric tool-actuated fasteners
Materials	Galvanized steel
Allowable wind speed	Configurable up to 200 kph (125 mph) 3-second gust.
Wind protection	Intelligent wind stowing with symmetric dampers for maximum array stability in all wind conditions.
Foundations	Standard W6 section foundation posts

ELECTRONICS AND CONTROLS

Solar tracking method	Astronomical algorithm with backtracking. TrueCapture™ upgrades available for terrain adaptive backtracking and diffuse tracking mode.
Control electronics	NX tracker controller with inbuilt inclinometer and backup battery.
Communications	Zigbee wireless communications to all tracker rows and weather stations via network control units (NCUs).
Nighttime stow	Yes
Power supply	Self powered: NX provided 30 or 60W Smart Panel AC powered: Customer-provided 120-240 V_{AC} circuit

INSTALLATION, OPERATIONS AND SERVICE

PE stamped structural calculations and drawings	Included
Onsite training and system commissioning	Included
Installation requirements	Simple assembly using swaged fasteners and bolted connections. No field cutting, drilling or welding.
Monitoring	NX Data Hub™ centralized data aggregation and monitoring
Module cleaning compatibility	Compatible with NX qualified cleaning systems.
Warranty	10-year structural, 5-year drive and control components
Codes and standards	UL 3703, UL 2703, IEC 62817

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6200 Paseo Padre Parkway | Fremont, CA 94555 | USA | +1 510 270 2500 | nextracker.com

GCL-M3/72DH

Bifacial Monocrystalline Module

375-410W

410W
Maximum Power Output

20.1%
Maximum Module Efficiency

0~+5W
Power Output Guarantee

Use the Tedlar® PVF film produced by DUPONT

Selected encapsulating material and stringent production process control ensure the product is highly PID resistant and snail trails free

Sand blowing test, salt mist test and ammonia test passed to endure harsh environments

30 Years

Higher lifetime power yield: 0.6% annual power degradation 30 years power warranty

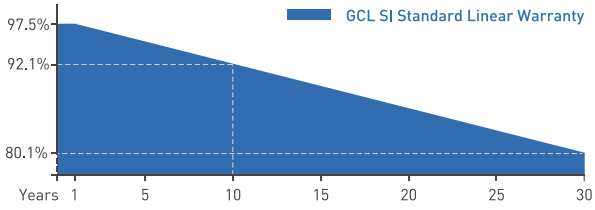
Special cell process ensures great performance under low irradiance conditions

Transparent backsheet, double-sided sun capturing, power generation increase in returns

GCL Delivers Reliable Performance Over Time

- World-class manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO 9001, ISO 14001 and ISO 45001
- Tested for harsh environments (salt mist, ammonia corrosion and sand blowing test: IEC 61701, IEC 62716, DIN EN 60068-2- 68)
- Long term reliability tests
- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 Years Product Warranty 30 Years Linear Power Warranty

* Please refer to GCL standard warranty for details

* Please refer to GCL for details

GCL-M3/72DH

Bifacial Monocrystalline Module

375-410W

Electrical Specification (STC*)

Test Condition		Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear
Maximum Power	Pmax(W)	375	265	380	269	385	272	390	276	395	279	400	283	405	286	410	290
Maximum Power Voltage	Vmp(V)	39.98	40.38	40.17	40.57	40.36	40.76	40.55	40.95	40.73	41.13	40.90	41.30	41.08	41.48	41.25	41.65
Maximum Power Current	Imp(A)	9.38	6.57	9.46	6.62	9.54	6.68	9.62	6.73	9.70	6.79	9.78	6.85	9.86	6.90	9.94	6.96
Open Circuit Voltage	Voc(V)	48.28	47.58	48.47	47.77	48.66	47.96	48.85	48.15	49.03	48.33	49.20	48.50	49.37	48.67	49.54	48.84
Short Circuit Current	Isc(A)	9.88	6.94	9.96	6.99	10.04	7.05	10.12	7.10	10.20	7.16	10.28	7.22	10.36	7.27	10.44	7.33
Module Efficiency	(%)	18.4	13.0	18.7	13.2	18.9	13.4	19.2	13.5	19.4	13.7	19.6	13.9	19.9	14.1	20.1	14.2
Power Output Tolerance	(W)	0~+5															

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Test Condition		Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear	Front	Rear
Maximum Power	Pmax (W)	279.74	196.94	283.49	199.50	287.26	202.07	291.06	204.66	294.88	207.26	298.72	209.88	302.59	212.50	306.48	215.12
Maximum Power Voltage	Vmp (V)	37.20	37.30	37.40	37.50	37.60	37.70	37.80	37.90	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70
Maximum Power Current	Imp (A)	7.52	5.28	7.58	5.32	7.64	5.36	7.70	5.40	7.76	5.44	7.82	5.48	7.88	5.52	7.94	5.56
Open Circuit Voltage	Voc(V)	45.00	44.40	45.20	44.60	45.40	44.80	45.60	45.00	45.80	45.20	46.00	45.40	46.20	45.60	46.40	45.80
Short Circuit Current	Isc (A)	7.98	5.60	8.04	5.64	8.10	5.68	8.16	5.72	8.22	5.76	8.28	5.80	8.34	5.84	8.40	5.88

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	144 Cells (6×24)
Dimensions of Module L*W*H (mm)	2036×1000×35mm (80.16×39.37×1.38 inches)
Weight (kg)	23.4 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	Use Tedlar® PVF film produced by DUPONT
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm² (0.006 inches²), Portrait: 200/200mm (7.87 inches)
Number of diodes	3
Wind/Snow Load	2400Pa/ 5400Pa*
Connector	MC Compatible

* For more details please check the installation manual of GCLSI

Temperature Ratings

Nominal Operating Cell Temperature (NOCT)	44±2°C
Temperature Coefficient of Isc	+0.06%/°C
Temperature Coefficient of Voc	-0.30%/°C
Temperature Coefficient of Pmax	-0.39%/°C

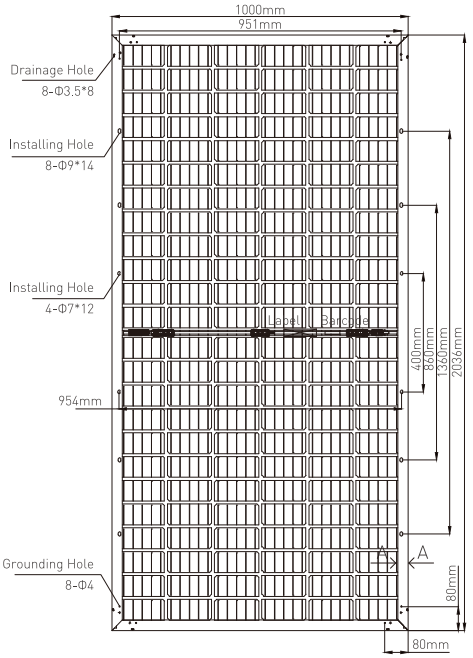
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	25A

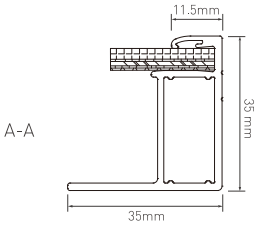
Packaging Configuration

Module per box	30 pieces
Module per 40' container	660 pieces

Module Dimension

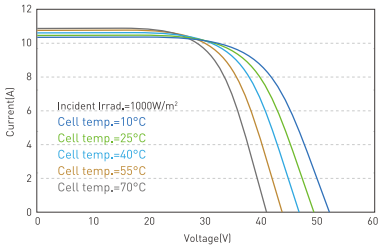


Back View

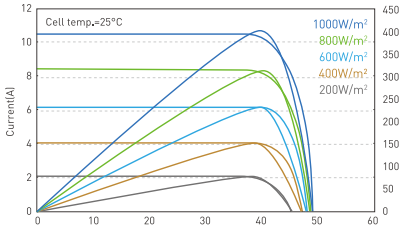


A-A

I-V Curve at Different Temperature (410W)



I-V/P-V Curve at Different Irradiation (410W)



CAUTION: READ INSTALLATION MANUAL BEFORE USING THE PRODUCT

Contact Us for More Information

website: www.gclsi.com email: gclsisales@gclsi.com

EXHIBIT O. SOLAR ENERGY IN NEW YORK – OVERVIEW

Solar Energy in New York

CYPRESS CREEK RENEWABLES

Cypress Creek Renewables is an integrated solar company with a proven track record of developing, financing, building and operating solar projects with integrity. Together with landowners, lenders, community leaders and local businesses, we have successfully developed over 300 projects totaling 3.2 GW of solar in more than a dozen states.

Jefferson solar farm | Jefferson County, NY

Cypress Creek In Your Community

In New York State, Cypress Creek has been working to advance clean energy for over three years, delivering millions of dollars in investment and economic development to communities across the State through its over 25 permitted community solar projects and over 50 others in development. Through this investment, Cypress Creek has demonstrated a commitment to the state through solar development and other community-focused initiatives.

A partnership with the Hudson Valley Community College Workforce Development Institute to reduce course fees in solar job training, with a focus on recruiting veterans, women, and underrepresented communities in the solar industry.

A commitment to plant native, pollinator-friendly species on all solar farms in the state, which will benefit bees, butterflies, and other pollinating insects vital to the region's food supply.

Total investment of approximately $500 million dollars in the next five years, much of it going to the local communities where the solar projects will be developed.

Solar power is a clean and domestic source of energy, contributing to the state and the country's energy independence.

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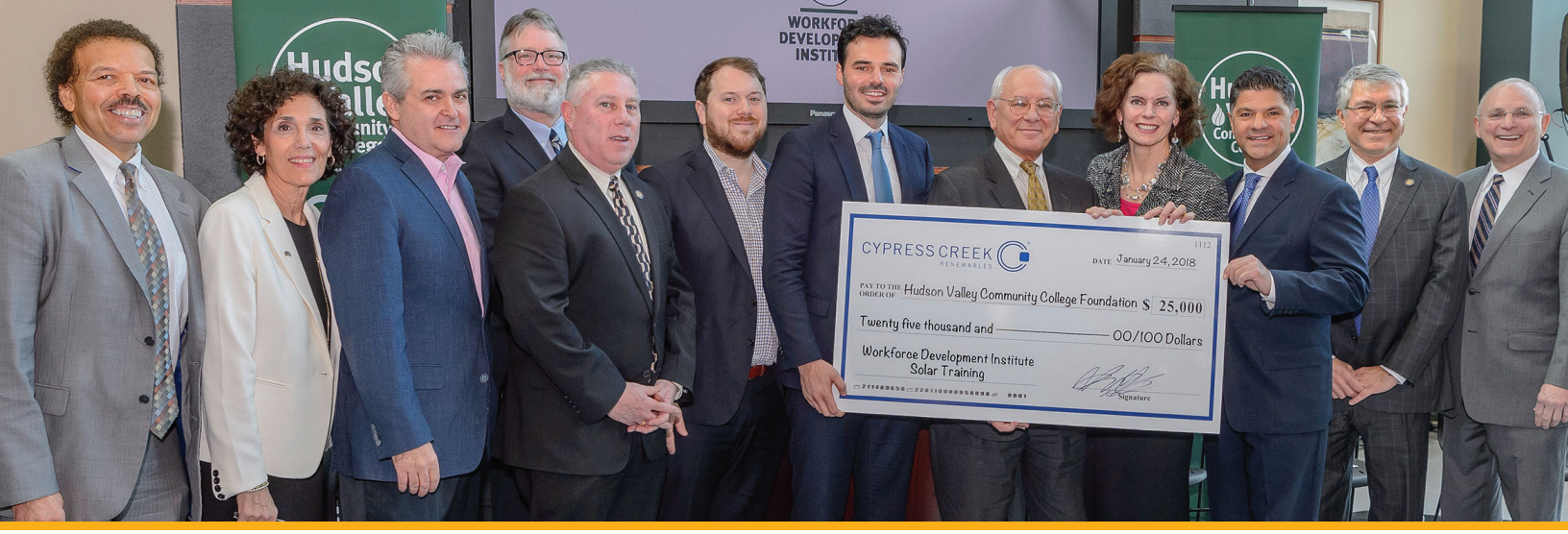

Cypress Creek Renewables celebrates the launch of a partnership with Hudson Valley Community College to invest in New York's solar workforce.

Frequently Asked Questions

What is a solar farm?

A solar farm consists of grid-connected rows of ground-mounted photovoltaic (PV) solar panels. Solar is a proven, safe technology that has been turning sunshine into energy in communities for more than 60 years. Improved technology and economies of scale make ground-mounted solar one of the lowest-cost sources of new energy generation available.

Why New York?

New York State's comprehensive energy strategy, Reforming the Energy Vision, strives to meet 50% of the State's energy needs with renewables by 2030. Cypress Creek and the communities we work with are partnering to help meet that goal.

Who is responsible for the maintenance and decommissioning of the solar farm?

The owner of the project is required by the lease agreement with the landowners and an agreement with the county to maintain and decommission the project. The project owner will cover 100% of the costs associated with the decommissioning of the site. Neither the residents of the county nor the landowners will pay any costs associated with restoring the land once the equipment is removed from the site.

Does a solar farm benefit local communities?

Solar facilities provide a new source of long-term tax revenue, create construction jobs, and produce low-cost, clean power. We work with several contractors in New York to build our pojects. The tax revenue supports community services such as roads and schools, without requiring community resources such as water or police services. Annual lease payments provide a stable, guaranteed revenue stream to support landowners. Additionally, Cypress Creek strives to be long term stewards in the communities we work in and has historically partnered with local stakeholders to support STEM education, workforce development, and environmental sustainability.

Is solar compatible with agriculture?

Yes. Solar farms are low-impact and can operate safely without any impact to neighboring agricultural properties or soils. Cypress Creek solar farms are seeded with native, pollinator-friendly plantings which provide forage for pollinating species important to the agricultural industry. During operation, the land rests and rebuilds, leaving soils aerated with new layers of topsoil, much like traditional land-fallowing practice. At the end of the solar farm's useful life, the pilings are removed and the land is returned to its original state.

For more information, visit:
ccrenew.com

CYPRESS CREEK RENEWABLES

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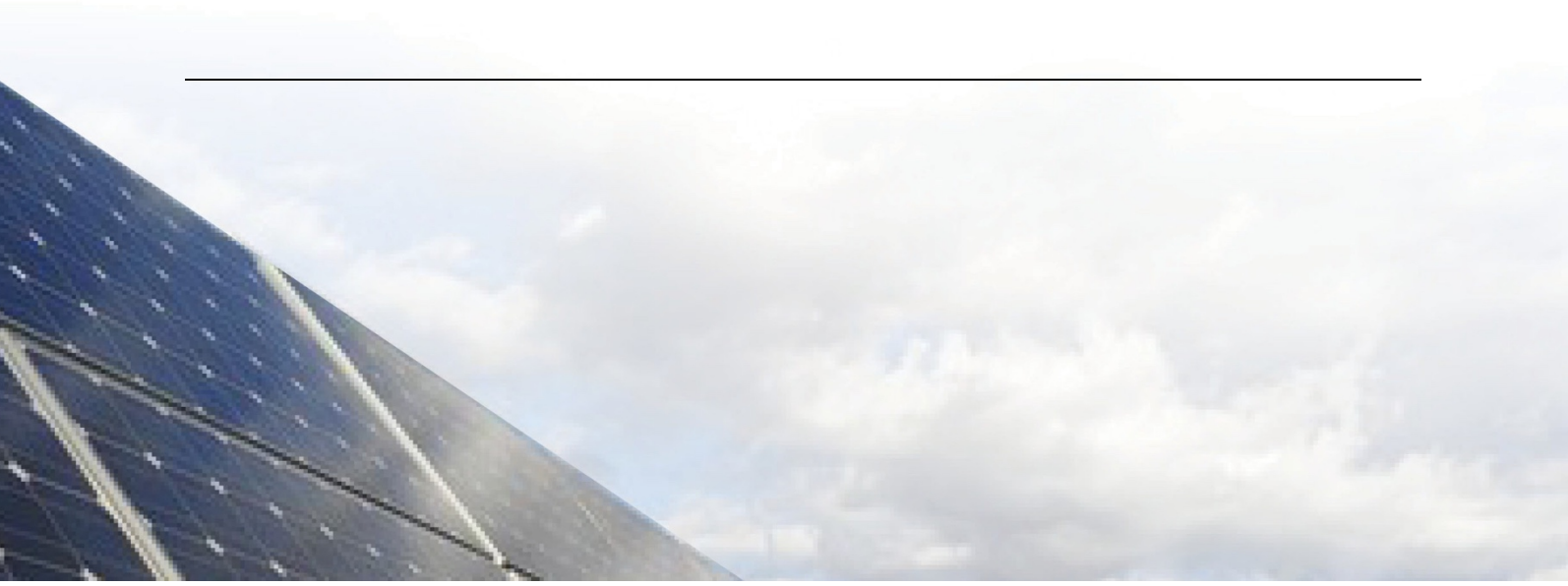
EXHIBIT P. OPERATIONS AND MAINTENANCE SCOPE OF SERVICES

CCR OPERATIONS & MAINTENANCE

INDEPENDENT SOLAR, LLC

Cypress Creek O&M, LLC



O&M OVERVIEW

Cypress Creek O&M, LLC offers industry leading expertise in solar PV technology and system operations, while providing a comprehensive and continuous monitoring solution to ensure the maximum performance of solar PV facilities is achieved. We provide high quality O&M services based on a foundation of best practices and utilizing the following key advantages:

- **Team Experience**
  - Our team consists of highly experienced solar experts from many of the leading renewable companies including Black & Veatch, Strata Solar, Gehrlicher Solar, RGS Energy, Clean Energy Collective, Strata Solar, Baker Renewables, Heelstone Energy, and Duke Energy Renewables.

- **Project Continuity**
  - Our execution of the development, EPC oversight, and Asset Management of projects/portfolios allow us to offer an in-depth familiarity and continuity during the O&M phase of the project life-cycle.
  - Familiarity with local municipalities and land owners – “Local knowledge”
  - Well positioned to evaluate and hold manufactures, EPCs and subcontractors to warranty claims
  - Full understanding of the project economics and production expectations

O&M SCOPE OF SERVICES

Cypress Creek will provide a scope of services based on the best industry practices and the latest technology and methodologies for preventative and predictive maintenance.

PV Operations

- **Administration of Operations:**
    - Effective implementation and control of O&M activities including document management, equipment inventories, owners and operating manuals, and warranties
- **Conducting Operations:**
    - Reliable process operations to achieve the optimum balance between cost of scheduled maintenance, yield, and cash flow through the life of the system
- **Directing Performance of Work:**
    - Specification of rules and provisions to ensure that maintenance is performed safely and efficiently
- **Monitoring:**
    - Closely monitor the day-to-day operation of plants through remote DAS monitoring systems
    - Data analysis of underperforming systems
    - Manage and refine DAS alerts across all plants
    - Aid field technicians with system troubleshooting (via DAS)
    - Create monthly operability and major issue/downtime reports
    - Predict future issues via data analytics and trends
    - Create monthly and annual system performance reports for asset management and project finance teams

- **Analytics:**
    - Optimization of condition-based O&M, such as identification of blown fuses and under-performing sub-systems
- **Operator Knowledge, Protocols, Documentation:**
    - Thorough operator knowledge, training, and performance to support safe and reliable plant operation
- **Workmanship Warranties:**
    - Thorough operator knowledge, training, and performance to support safe and reliable plant operation
- **Product Warranties:**
    - Thorough operator knowledge, training, and performance to support safe and reliable plant operation

PV Maintenance

- **Administration of Maintenance:**
    - Ensuring the effective implementation, control, and documentation of maintenance activities and quality results
- **Preventative Maintenance:**
    - Focus on maximizing system output, preventing expensive failures from occurring, and maximizing the life of a PV system
    - Maintain a schedule for routine maintenance, service, trouble shooting and repair of equipment at solar photovoltaic facilities
- **Corrective Maintenance:**

    - Focus on rapid response times and execution of work required to repair damage or replace failed components in a timely and cost effective manner

- **Predictive Maintenance:**
    - Use of real-time information and historic data to schedule preventative measures such as fuse replacements, or to head off corrective maintenance problems by anticipating failures or catching them early

- **People:**
    - We have a team of highly qualified managers, service technicians and electricians with extensive experience in solar PV O&M

- **Vehicle Fleet:**
    - Technicians have trucks fully stocked with essential tools and commonly used spare parts for rapid repair

- **Tools:**
    - Use of industry leading tools and testing equipment

- **Spare Parts:**
    - Spare parts management and inventory control at centralized warehouse/s and on-site storage solutions

- **Systems and Software/CMMS:**
    - Enterprise Grade Asset Management and O&M Platform with comprehensive Service Ticket Management, Vendor Management and Contract Management System

- **Protocols and Procedures:**
    - Use and improvement of O&M Industry Best Practices

Vegetation Maintenance

Cypress Creek Renewables approaches every local solar site as an opportunity to provide local renewable energy, as well as to maintain or improve upon the local ecosystem. From a vegetation perspective, our goal is to stabilize the soil to add strength and durability for the long term success of the generation facility and health of the land.

In many cases, there is a need to re-seed the portions of the property that have been impacted by large construction equipment. There is not a single solution that works for all climates throughout our national footprint, but rather we work to employ best practices and techniques that are most appropriate for each unique, local environment. Some of the factors that we evaluate when making these decisions are:

- Preventing runoff
- Carbon sequestration
- Pollination and other insect services
- Air quality concerns
- Invasive species resistance
- Viable wildflower areas
- Rate of fescue growth

One of the most important considerations for the vegetation plan is the maintenance requirements for the site, which will vary tremendously given the local terrain and microclimates. Our landscape managers' top priority is to minimize mechanical mowing and reduce the use of pesticides and herbicides. Cypress Creek Renewables employs many different strategies to minimize the use of mechanical and herbicidal treatments. For example, in many regions utilizing grazing livestock as a means to manage vegetation growth is a mutually beneficial plan. Other strategies include the use of local vegetation with slow growth cycles.

In rare circumstances where herbicides are deemed necessary, an effort is made to minimize use and to only apply highly bio-degradable, EPA registered and approved, organic solutions that are nontoxic to pets and wildlife. [1]

[1] Independent Solar, LLC has committed to a "no-spray" approach, utilizing non-herbicidal vegetative maintenance methods.

Cypress Creek Renewables understands the value of sustainable long-term management practices and will continue to develop solutions to enhance these techniques and promote healthy biodiversity within local ecosystems.

O&M SAMPLE MAINTENANCE SCHEDULE

Item #	Service	Service Description	Frequency
1. Monitoring, Reporting, and Inventory			
1.1	Active Site Monitoring	Monitor inverters and meter output data for issues and alarms.	Daily
1.2	Annual Maintenance Plan	Provision of Annual Maintenance Plan, including baseline schedule for all maintenance services contemplated to occur in such year.	Annually
1.3	Monthly Reporting	Provide monthly operating report for the project including a summary of (i) operations; (ii) weather data, power and environmental attributes; (iii) Project performance; (iv) reports of any environmental or Site disturbances; (v) safety/accident reports; (vi) Non-Agreed Services; (vii) maintenance and inspection reporting; and (viii) any proposal of recommended maintenance for the upcoming month.	Monthly
1.4	Annual Reporting	Provide annual maintenance/inspection reports for the project for the preceding calendar year.	Annually
1.5	Incident and Maintenance Reporting	Provide written report (in .pdf format) on any event involving unplanned Services, personnel injury associated with the project or material damage to the project or any part thereof.	No later than five (5) business days after the occurrence, or immediately for OSHA recordable events, but no later than 24 hours.

Item #	Service	Service Description	Frequency
1.6	Security Incident Reporting	Notify Company following provider receiving information indicative of a security issue on site.	Immediately, but no later than 24 hours.
1.7	Maintain Spare Parts	Store, maintain, and replenish spare parts inventory at Company's expense. Inventory will be stored either on-site in an O&M storage structure or off-site at a centralized storage facility or warehouse.	As Needed
2. Site Property Inspection/Maintenance			
2.1	Vegetation Management	Maintain vegetation and debris removal/control and landscaping, for all property within the fence line and all property immediately surrounding fencing (within reason), specifically ensuring vegetation does not encroach on modules.	As Needed per local conditions
2.2	Weed Abatement	Remove all invasive weeds	As Needed per local conditions
2.3	Perimeter and Fence Inspection	Inspect all fencing for signs of damage, intrusion, and overgrowth of vegetation. Inspect signage to ensure all originally installed signs are present and legible	2 X per year
2.4	Roads	Inspect all roads for soil erosion concerns	2 X per year
2.5	Site Security	Inspect entire site for general vandalism or other signs of security related issues.	2 X per year
2.6	Wildlife and Pest Management	Maintain site to address problematic wildlife matters including but not limited to nest and hive removal	As Needed
3. DC Systems			
3.1	Racking Inspection	Inspect all racking, racking mounts and conduits on racking for damage, corrosion, settling and stability	1 X per year

Item #	Service	Service Description	Frequency
3.2	Module Inspections	Visually inspect 25% sampling of modules for soiling, breakage, delamination, discoloring, hot spots (only via aerial thermal audits), rotating sample areas annually to achieve 100% inspection every 4 years. Inspections may be done either on the ground or via aerial visual analysis and aerial thermal imaging. If systemic issues are identified, notify Company and propose a corrective action plan to be implemented as needed.	1 X per year
3.3	Broken Module Replacement	Replace modules that have previously been identified as broken (within reason), or identified as broken at the time of inspection. The cost of replacement modules (either for immediate use or to replenish spare parts) will be paid for by the Company as needed. The procurement of replacement modules is conditional to Company approval.	As Needed
3.4	Wire Inspection	Visually inspect for proper wire management and any possible damage on exposed conductors.	2 X per year
3.5	Combiner Box and Re-Combiner Inspections	Electrical/mechanical inspection of combiners & disconnects. Visually inspect bonding bushings and grounding, check for wire damage especially at entrance/exit locations, terminal corrosion, any discoloration, and inspect fuses for proper functionality. Remove insects/pests debris from all enclosures.	2 X per year
3.6	Combiner Box and Re-Combiner Torque Inspections	Confirm and correct terminal torque settings for both sides of all fuse holders, grounded (negative) terminal bar, grounding bar, PV output circuit and DC Disconnects.	1 X per year
4. AC Systems			
4.1	Inverters	Perform annual inverter preventative maintenance work for all inverters per manufacturer's recommendations and manufacturer's warranty requirements.	Per Manufacturer's Recommendations and Manufacturer's Warranty Requirements

Item #	Service	Service Description	Frequency
4.2	Inverter Air Filters and Transformer heat sinks	Inspect inverter air-filters and heat sinks, and clean or replace air filters if applicable.	4 X per year or Per Manufacturers Recommendations, whichever is more frequent.
4.3	Transformers	Visually inspect and clean all transformers per manufacturer recommendations, including but not limited to oil level measurement and clearing heat sink of debris.	1 X per year
4.4	AC Disconnect (if applicable)	Inspection of latches and seals on enclosure, verify proper operation of disconnect, visually inspect terminations and confirm and correct terminal torque settings. Check for signs of arcing.	1 X per year
5. DAS/SCADA Inspections			
5.1	General DAS Inspection	Perform monitoring system maintenance per manufacturer's specifications; verify orientation and attachment of pyranometers and module temperature sensors and MET station, and verify back up power supply functionality.	1 X per year
5.2	Pyranometers	Clean pyranometer domes with a soft cloth.	All scheduled & unscheduled site visits
5.3	Pyranometer Calibration	Coordinate with Company to cause calibration of pyranometers per manufacturer's specifications.	Per manufacturer specifications
5.4	Data/Instrument Accuracy and Communications Verification	Test MET station sensors (GHI and POA pyranometers, ambient temperature, back-of-module, anemometer, Revenue Grade Meter (including current transducers), and inverter direct	1 X per year
6. Testing			
6.1	IV Curve String Testing or Module Level Thermal Audits	100% IV Curve Testing on strings, or 100% Module Level Thermal Audits	1 X per year

Item #	Service	Service Description	Frequency
6.2	Thermal Imaging	Thermal imaging of all: overcurrent protection devices (OCPD) and bolted electrical connections including terminations in combiners and all disconnects, inverters and transformers	1 X per year
6.3	Transformer Oil Testing	Conduct transformer oil sampling and testing per nationally and/or internationally recognized testing standards	1 X per two years
6.4	Point-to-Point Testing	For 5% random sampling of combiner boxes, inspect grounding from modules & rack to combiners for wear, corrosion, and secure connections, and test the point-to-point resistance between modules, rack and EGC per NETA-ATS 2013 Section 7.13; document location, measure resistance and record results. Investigate point-to-point resistance readings that exceed 0.5 ohms. Notify Company of any issues identified and propose a corrective action plan to be implemented as needed.	1 X per year

EXHIBIT Q. SOLAR FARM DEVELOPMENT & OPERATION OVERVIEW

Solar Farm Development & Operation

Technical Overview

Solar photovoltaic technology has been in use for well over 50 years. While PV materials and technology have improved over time to be more efficient and cost effective, installation and operation have remained unchanged.

"Photovoltaic," commonly abbreviated as PV, is simply the technical term for converting the sun's light into useable electric current.

Solar facilities, often referred to as "solar farms," passively capture naturally occurring sunlight and convert it to clean, renewable energy on a scale large enough to supply electricity for daily living in our homes, businesses and schools. Each solar farm is a collection of solar panels arranged to gather maximum amounts of sunlight during the day. The panels are linked to inverters and transformers that convert the sunlight into useable electricity, which is then transferred to the existing electrical grid.

Equipment and Construction

Solar facilities are simple constructions that employ the following basic equipment:

- Solar PV panels
- Inverters
- Transformers
- Wires and conductor cables
- Structural racking system for PV modules
- Perimeter fencing

Most sites require minimal grading, and an entire facility can often be installed with minimal soil disturbance. Structural frames (called racks) are driven into the ground with steel beams (called piles), on which PV panels are mounted. The inverters and transformers, which receive the power from the solar panels, are mounted on top of concrete pads.

The electricity-making process starts with sunlight striking the solar panels. The energy from this action is converted into low-voltage DC electricity. This low-voltage DC electricity is fed into the inverters where it is converted into low- voltage AC electricity, which is then fed into the transformers where the electricity is converted into medium-voltage AC electricity. The medium-voltage electricity is connected to the grid through underground cables.

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Solar Panel Technology

Cypress Creek Renewables uses several solar PV panel technologies: Crystalline Silicon (C-Si) and Thin Film (TF). Each type of technology uses slightly different materials, work identically, and are of similar construction.

Crystalline Silicon modules are produced by sourcing extremely high quality, pure silicon or quartz. The silicon is heated until it melts, after which a crystal is grown from a source ingot. The silicon crystal is sliced into thin wafers, mounted onto a durable backing material and encapsulated by tempered glass and an aluminum frame. Thin-film solar modules are made by depositing thin film photovoltaic materials into crystalline layers that are bonded to tempered glass, after which the module is encapsulated by the aluminum frame.

Once finished, the solar PV panels function as a solid-state inert crystal, most similar to a pane of solid glass. The solar panels are expected to work upwards of 40 years before they are recycled to recover the valuable materials contained inside. Encapsulation of the modules prevents penetration of air and moisture from entering the cell and conversely prevents the release of materials out of the module and into the environment.

Source: N.C. Clean Energy Technology Center. Health and Safety Impacts of Solar Photovoltaics. Raleigh: N.C. State University, 2017. https:// nccleantech. ncsu.edu/wp-content/uploads/Health-and-Safety-Impacts- of-Solar-Photovoltaics-2017_white-paper.pdf

Sound

The facility's inverters and transformers produce a sound when operating during the hours of peak power production, typically between 10am-2pm. At 150 feet, this sound is inaudible above natural ambient noise in rural areas. The sound created by the inverter during peak power production is typically in the low-range of 65 decibels at a distance of 30 feet—the equivalent of the sound created during normal conversation. The rest of the facility's equipment does not produce any audible sound and no sound is produced at night.

Source: Peter H. Guldberg. Study of Acoustic and EMF Levels from Solar Photovoltaic Projects. Boston: Massachusetts Clean Energy Center, 2012. http://files.masscec.com/research/ StudyAcousticEMFLevelsSolarPhotovoltaicProjects.pdf.

Reflection

Solar panels are designed to absorb light from the visible spectrum, not to reflect it, although some upward reflection does occur. To assist light absorption, each PV panel is treated with an anti-reflective coating. Naturally occurring ponds and streams, snow, and even certain kinds of soil and vegetation are similarly reflective. In fact, the sunlight that is reflected away from solar panels produces the same amount of glare as a flat pond or lake.

Additionally, solar panels are mounted at an angle that allows for maximum light to be absorbed throughout the year, which results in the panels facing the sky at shallow angles (typically less than 25 degrees). As a result, what little light is reflected is not visible to ground-level observers.

All solar farms are required to be approved by the FAA as potential glare hazards for aviators. To date, no PV array has been deemed a glare hazard. In fact, there are a significant number of PV power plants built next to highways and around airports.

Source: Evan Riley and Scott Olson. "A Study of the Hazardous Glare Potential to Aviators from Utility-Scale Flat-Plate Photovoltaic Systems." ISRN Renewable Energy (2011), https://doi.org/10.5402/2011/651857.

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Electro-Magnetic Fields (EMF)

The International Commission on Non-Ionizing Radiation Protection has established 833 milli-Gauss (mG) as the limit for prolonged exposure to electro-magnetic fields. The inverter is the strongest source of magnetic fields in the solar facility with levels varying from 150–500 mG within one to two feet. As an unmanned facility, prolonged exposure is never an issue. The level of EMFs noticed 1–2 feet away from our equipment pad is similar to standing next to your television. At 150 feet, the inverter's magnetic field levels drop below 0.5 mG or less, often falling to the background level of earth's magnetic field of 0.2 mG.

No other solar PV component emits EMFs that are measurable above the earth's magnetic field. There are no EMFs emitted at night.

Sources: Peter H. Guldberg. Study of Acoustic and EMF Levels from Solar Photovoltaic Projects. Boston: Massachusetts Clean Energy Center, 2012. http://files.masscec.com/research/StudyAcousticEMFLevelsSolarPhotovoltaicProjects.pdf

Soil Protection

Minimal ground disturbance only occurs during the construction period. Heavy equipment and traffic is restricted to perimeter roads, which comprise less than 0.03 percent of the site area during construction. To further protect against erosion, most roads on the site are re-seeded with vegetation after construction unless otherwise required by the soil conditions or indicated by the jurisdiction.

A detailed erosion and sedimentation control plan is developed for every project so that water-borne runoff is prevented from entering the surrounding environment. Control measures typically include straw bales, hay coil logs, run-off channels, silt fencing, and sediment basins or other state approved soil stabilization control measures. Once constructed, natural vegetative growth is encouraged within the facility to prevent erosion, and the areas where panels are located are not considered impervious.

Dust and Weed Control

During construction, dust levels are kept to a minimum by limiting heavy equipment and traffic to designated perimeter roads and points of site entry. During dry seasons, roads are regularly kept wet to reduce dust. Wet seasons naturally keep dust levels down.

To minimize the encroachment of weeds following construction native grass is planted across the site. The grounds are watered as needed, and weeds are removed during regular maintenance activities.

Source: Jordan Macknick, Brenda Beatty, and Graham Hill. Overview of Opportunities for Co-Location of Solar Energy Technologies and Vegetation. National Renewable Energy Laboratory, 2013. https://www. nrel.gov/docs/fy14osti/60240.pdf.

Wildlife Protection

Wildlife is protected by using perimeter fencing to prevent access for large mammals, such as deer. Large animals are excluded from the site because they can interfere with equipment, damage wiring, or injure themselves. In cases when barbed wire is not used, perimeter fence height is increased.

Smaller animals, such as squirrels and birds, can pass throughout the facility following construction. The environment in the solar facility is often conducive to a wildlife habitat because of its natural vegetation, significant amount of shade and relative lack of human disruption.

Wildlife access to electrical equipment is prevented with conduit protection for wires and foam sealing at all equipment entry points.

Source: Damon Turney and Vasilis Fthenakis. "Environmental impacts from the installation and operation of large-scale solar power plants." Renewable and Sustainable Energy Reviews (August 2011): 3261-3270.

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Decommissioning

Cypress Creek is committed to responsibly decommissioning all of our projects at the end of their useful lives. Although the mechanism for doing so are market-specific based on local needs and regulations, every project is contractually obligated to decommission per our lease/purchase agreements with our landowner partners. Decommissioning and dismantling of the solar PV power plant is not expected to occur until approximately thirty years after the facility is constructed. The system's equipment, including wires, conductors, and racking, has significant salvage value since it is comprised of useful metals such as copper, aluminum and steel. The PV panels are valuable for their semiconductor materials and rare metals such as silver. At the end of the facility's lifetime, a solar reclamation firm will collect the modules for recycling, the inverters for refurbishing, and the hardware for salvage.

The land is then reseeded with a local seed mix and can be repurposed for agriculture or other uses.

Maintenance

Once constructed, solar farms require minimal maintenance. As such, there is no need to build travel infrastructure to accommodate traffic. Electrical engineers will service the inverters and transformers on average once per quarter. Solar PV panels have a very low failure rate (approximately 1 in 10,000 per year), and are easily replaced from inventory stores.

The panels require no on-site water or chemicals to keep clean. Natural weather conditions, such as snow and rain, occur with enough frequency and quantity to naturally keep the panels clean.

Grass is kept under control by mowing. To maintain weeds, application of weed control products is completed by a licensed herbicide applicator, in accordance with the manufacturer's requirements (incl. Safety Data Sheet); as well as local, State, and Federal regulations. In some regions, sheep grazing within the facility are used to control vegetation. Sites are maintained approximately 5–9 times per year during the growing season, depending on location.

Source: National Rural Electric Cooperative Association. Cooperative Utility PV Field Manual. Department of Energy, 2017. https://www.cooperative.com/programs-services/bts/documents/sunda/nreca-cooperative-utility-pv-field-manual-vol-ii-final.pdf.

Safety

Solar facilities do not generate more than one to three vehicle visits per quarter on average, making them insignificant traffic generators that do not create safety issues for the surrounding road networks. By contrast, the average American household generates ~6 vehicle trips per day.

Additionally, solar PV power plants are constructed according to all required building and electrical codes and safety measures. Site plans are approved by local authorities, and regularly visited throughout construction as required by local ordinance or state building code.

Interconnection agreements are carried out as specified by the local utility. Energized system components, such as inverters, are commissioned by the manufacturers' technicians. Solar facilities employ required lock-out measures and safety warnings. A perimeter security fence prevents trespassing and vandalism.

The regular vegetation control methods prevent buildup of debris that could otherwise pose risk of fire material. As such, solar PV facilities pose no increased risk of fires to the surrounding areas.

Vegetation mangement prevents buildup of debris that could otherwise pose risk of fire material. As such, solar PV facilities pose no increased risk of fires to the surrounding areas.

Sources: Jeff Court, "Photovoltaic Solar Safety Management for Utilities," Incident Prevention Magazine, October 16, 2014, https://incident- prevention.com/ip-articles/photovoltaic-solar-safety-management-for-utilities.

National Fire Protection Association, National Electrical Code, 690.1-91, 370.1-120, 376.1-120, 408.1-58, 450.1-48, 480, 490.1-74,705.1-135, 728, 750.

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EXHIBIT R. AGRICULTURAL LAND USE & SOLAR DEVELOPMENT

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Agricultural Land Use & Solar Development

Compatibility of Solar and Agriculture

Solar development and agriculture coexist to create both economic and environmental benefits for the surrounding community. Recent studies from North Carolina State University and the National Renewable Energy Lab demonstrate:

During solar farms' operations, soils rest and rebuild while deep-rooted plants add organic matter and a fertile top soil.[1]

A diverse mix of plants have stronger hydrologic performance standards than turf-grasses and other monocropping practices. With pollinator habitats, storm water runoff can decrease 8–23%, depending on storm severity and amount of rainfall.[2]

Studies show it is beneficial for agricultural land to lie fallow, allowing the natural biological process to rejuvenate the soil for future generations.[1]

Application of herbicides on solar facilities does not result in higher rates of herbicide application than in conventional agriculture, and is often less per acre than commercial agriculture operations.[3]

[1] D.C. Neilson and F. J. Calderon, "Fallow Effects on Soil," Publications from USDA-ARS/UNL Faculty, 2011.

[2] Davis, Rob. "Soil, Crop, & Storm Water Benefits of Solar Sites." Agriculture, Fresh Energy, 22 Mar. 2016, https://freshenergy.org/soil-crop-storm-water-benefits-of-solar-sites/

[3] North Carolina Clean Energy Technology Center. Health and Safety Impacts of Solar Photovoltaics. May 2017. Accessed June 2017. https://nccleantech.ncsu.edu/wp-content/uploads/Health-and-Safety-Impacts-of-SolarPhotovoltaics-2017_white-paper.pdf

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Cypress Creek's Commitment

Cypress Creek Renewables works with local soil and farming experts on a variety of ways to integrate solar into existing farms. We also work to integrate agriculture into new solar farms by planting cover crops inside project areas, planting pollinator gardens, developing bee colonies onsite to help pollinate area crops, and raising grazing sheep on select sites.

Low Profile

Due to their low profile and simplicity, solar projects can be incorporated into existing farms without negatively impacting farming operations or crop yields.

Vegetation Management

No neonicotinoid insecticides are used on the vegetation in our solar facilities, in order to preserve more sustainable natural landscapes.

Siting

Through responsible siting, we work to avoid environmentally sensitive areas, including wetlands and wildlife, whenever possible.

Decommissioning

Once a solar farm reaches the end of its life, all of the equipment will be removed. The land is then reseeded with a local seed mix and can be repurposed for agriculture or other uses.

Pollinator Habitat

Our Solar + Pollinator Program is intended to benefit the environment and local farmers by increasing the habitat for pollinators, such as honey bees, needed for the success of numerous crops, to produce fruits and seeds as we generate clean solar power.

Landowner Benefit and Support

As a good neighbor, Cypress Creek Renewables works with landowners to provide opportunities for income generation to ensure the financial health of the farm.

> "Overall, solar energy fits well with agriculture; farmers have land and often high energy needs, and solar represents the spirit of independence and self-reliance that characterizes agriculture and agriculture's connection to the environment."
>
> *–The U.S. Department of Agriculture*

> "The National Farmers' Union strongly endorses land-based renewable energy which supports profitable agriculture under current market conditions and policy framework–for example, where farmers own their own renewable energy assets or otherwise benefit from harnessing renewable natural energy resources."
>
> *–The National Farmers Union*

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EXHIBIT S. ILLUSTRATIVE PHOTOS OF TYPICAL SOLAR INSTALLATION

Cypress Creek Renewables Typical Project Illustrations

Independent Solar, LLC

3 MW Community Solar Facility

206 Milton Turnpike, Milton, NY 12547

July 10, 2020

Purpose: To provide an example of a Cypress Creek Renewables developed, owned, and operated solar facility as a visual representation of Independent Solar. Each solar facility developed by Cypress Creek is designed in accordance with the local jurisdiction's guidelines. The facilities shown are 5 MW Cypress Creek solar projects located in Randleman and Garner, North Carolina and include images of a perimeter chain link fence, a gravel access road, ground-mounted solar panels, a DC-to-AC inverter, utility poles, a combiner box, and electrical wiring connecting modules. These photos were not manipulated as part of this assessment.

Photo 1: Solar Facility from Public Road.

This photograph shows the solar facility from a public road. Utility poles used to connect the facility to the electrical grid are shown to the right and far center of the photo. A 6-foot tall chain link fence with three strands of barbed wire is shown surrounding the perimeter of the site. Photo taken in the northeastern direction.

Photo 2: Access Road and Distant View into Facility

Gravel access road entering the site to the south. The road is approximately 20 feet wide and constructed using compacted gravel. Photo taken in the northeastern direction from the side yard of a neighboring property. No reflective light is observed.

Photo 3: Ground-Mounted PV Modules, Diversion Swale, Perimeter Access Road, and Security Fence

Ground-mounted PV modules taken from 15 feet. Stormwater diversion swale to the left of the frame. 15 foot native soil maintenance access road to the far left of the photo. 6-foot tall chain link security fence with three strands of barbed wire surrounding the full site. Photo taken in the northern direction.

Photo 4: Central Inverter & Equipment Pad

Central inverter on top set concrete pad. Inverter is typically 8’ tall and inverts the DC electricity produced by the solar modules to AC electricity as utilized by the larger electricity grid. A small cooling fan is internal to the inverter box. Photo taken in the western direction.

Photo 5: Central Inverter Height, as Compared to Average Human

Central inverter on top set concrete pad. Height of inverter box is typically 8’ tall, as compared to the average human height shown in the photo. Warning placards on the inverter box are shown. All access to the inverter is locked for safety purposes and in accordance with the National Electric Code. Photo taken in the western direction.

Photo 6: Ground-Mounted PV Modules 1

Polycrystalline silicon technology, fixed-tilt PV modules. Panels are typically three feet by six feet and connected in series. Modules shown are oriented two in portrait and do not exceed 12 feet in height at max tilt. Photo taken in the northern direction.

Photo 7: Ground-Mounted PV Modules 2

Photo of ground-mounted PV modules taken at two feet. Solar panels are safe to touch and encased in anti-reflective glass panes and aluminum frames. Photo taken in the northwestern direction.

Photo 9: Combiner Box

Combiner box connected to each string of modules. The combiner box “combines” multiple currents from multiple strings into a single current. The current then flows through trenched, underground cables to the inverter pad, transformer, and on to the electrical grid. Photo taken in the western direction.

Photo 10: Back of PV Modules

Wiring connections between each string of modules. Panels encased in aluminum framing and mounted on steel racking. Panels are connected by DC wiring that are funneled into a combiner box at the end of the string. Photo taken in the southern direction.