



TRANSMITTAL

To: Town of Cortlandville Planning & Zoning
The Raymond G. Thorpe Municipal Building
3577 Terrace Road
Cortland, New York 13045

Project: McLean Solar I
 Project #: 2850.24418.1

Attn: Mr. Bruce Weber

Date: September 27, 2019

| Quantity | Date | Description |
|----------|---------|---------------------------------------------|
| 24 | 9/13/19 | Aquifer protection application |
| 24 | 9/12/19 | Conditional Permit application |
| 24 | 9/23/19 | GML Zoning referral form |
| 24 | 9/13/19 | Use Variance application |
| 24 | 9/13/19 | Narrative report |
| 24 | 9/13/19 | Solar Array Plans |
| 24 | 8/26/19 | NYSDEC Full Environmental Assessment Form |
| 24 | N/A | Attachment A – Applicable Variance Standard |
| | | |

This is transmitted as checked below:

- | | | |
|--------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|
| <input checked="" type="checkbox"/> For Approval | <input type="checkbox"/> No Exception Taken | <input type="checkbox"/> Reviewed |
| <input type="checkbox"/> For Your Use | <input type="checkbox"/> Furnish as Corrected | <input type="checkbox"/> Rejected |
| <input type="checkbox"/> For Review & Comment | <input type="checkbox"/> Revise and Resubmit | <input type="checkbox"/> Submit Specified Item |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> For Immediate Action | <input type="checkbox"/> Prints Returned After Loan to Us |

Remarks:

Thank you.

Copy To: file

Signed: Paul T. Woodward, Senior Designer

TOWN OF CORTLANDVILLE
3577 TERRACE ROAD
CORTLAND, NEW YORK 13045-3552

AQUIFER PROTECTION DISTRICT SPECIAL PERMIT

APPLICANT

Fee Paid _____

Name McLean Solar I LLC, attn: Elie Scher Phone (914) 420-5803

Address 55 5th Avenue, Floor 13 New York, NY 10003

PROPERTY OWNER

Name Farm East LLC Phone 315-409-9199

Address 890 McLean Road Cortland, NY 13045

If applicant is a Corporation, list name, address, phone and fax numbers of all corporate officers and directors on reverse side.

PROPERTY INFORMATION

Location of property 415 McLean Road Cortland, New York 13045

Tax Map No. of Parcel 95.00-01-33.1

PROPERTY ACQUIRED ON, OR PENDING DATE OF AQUISION Lease

IS PROPERTY IN FLOOD PLAIN? YES NO

AQUIFER PROTECTION AREA Area 2: Principle Aquifer

ZONING DISTRICT Residential

Information to be provided as per Article and Section 178-47 of the Town of Cortlandville Zoning Law.

DATE OF APPLICATION 09/13/19



Signature of Applicant

Zoning Officer

Supervisor

PERMIT GRANTED _____

PERMIT DENIED _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

Name _____ Title _____

Address _____ Phone _____

_____ Fax _____

COMMENTS: _____

TOWN OF CORTLANDVILLE 3577 TERRACE ROAD
CORTLAND, NEW YORK 13045-3552

APPLICATION FOR CONDITIONAL PERMIT

APPLICANT

Name: Mclean Solar 1 LLC
Attn: Elie Schecter

Fee Paid:

Address: 55 5th Avenue, Floor 13
New York, New York 10003

Phone: (914) 420-5803

PROPERTY OWNER

Name: Farm East LLC

Fee Paid:

Address: 890 McLean Road
Cortland, NY 13045

Phone: 315-409-9199 (Andy Leonello)

PROPERTY INFORMATION

Location of property: 415 McLean Road Cortland, New York 13045

Tax Map No. of Parcel: 95.00-01-33.1

PROPERTY ACQUIRED ON, OR PENDING DATE OF ACQUISITION: Lease

IS PROPERTY IN FLOOD PLAIN: YES NO

ZONING DISTRICT: Industrial

PROJECT DESCRIPTION: Ground mounted, large scale solar energy system.

Information to be included will be drawn from a check list in Article XIII, Section 178-71 of the Cortlandville Zoning Law. A sketch plan conference may be deemed necessary by the Planning Board.

DATE OF APPLICATION: 9/12/2019

for 
Signature of Applicant

Zoning Officer

Planning Board Chairperson

PERMIT GRANTED _____

PERMIT DENIED _____

GENERAL MUNICIPAL LAW

Zoning Referral Form

Conditional Permits, Special Permits, Site Plan Reviews & Variances

Director
CORTLAND COUNTY PLANNING DEPARTMENT
37 Church St.
Cortland, NY 13045-2838
Telephone: (607) 753-5043
Fax: (607) 753-5150

GML No. 95.00 - 01 - 33 . 1
(Tax Map Number)

Date: 9/23/2019

Submitting Officer: Bruce Weber, Planning & Zoning Officer

Municipality: Town of Cortlandville

Mailing Address: 3577 Terrace Road, Cortland, NY 13045

Phone Number: (607) 756-7052

Fax Number: (607) 758-7922

Type of Referral

The applicant request the following:

Variance: Bulk – Article Section
 Use – Article Section

Special Permit: Article Section

Conditional Permit: Article XIV Section 178.73-77

Site Plan Review: Article Section

Reason(s) for request: To permit a ground mounted large-scale solar energy system.

Is the above action a **Type 1** , **Type 2** , or **unlisted** action under the State Environmental Quality Review Act? Attach required environmental assessment forms for Type I and unlisted actions.

The following information is required for your application to be complete:

1. Name of petitioner: McLean Solar 1 LLC, Attn: Elie Schechter

Owners name (if different): Farm East, LLC.

Date of acquisition: A portion of the property is being leased

Address: 415 McLean Road, Cortland

State: New York Zip: 13045

Phone Number: (914) 420-5803 (Petitioner) Fax Number:

2. A Site Plan Map showing:

- a. Scale (1 inch equals 20 feet if site is less than 1 acre or an agreed upon scale for a site larger than 1 acre)
- b. North Arrow
- c. Physical Characteristics of Site, existing and proposed (Topography, Water and Vegetation)
- d. Layout Plan Showing buildings, parking and available utilities
- e. Surface and Subsurface Drainage Plan, incorporated with Layout Plan
- f. Location of County or State facility pursuant to Section 239 l, m and n of the General Municipal Law
- g. Location Map at 1"=1000' scale
- h. Area Map at 1"=200' or an agreed upon scale
 - (1) zoning classification of subject and adjoining properties
 - (2) surrounding land use within 500 feet of subject property
 - (3) surrounding zoning classifications

3. A certified Tax Map from the Cortland County Office of Real Property and Assessment showing the property lines of the applicant's property.

4. Availability of public utilities and services:

Water N/A District _____ ; Sewer N/A District _____ ;
 Fire Protection Yes District 6 - Cortlandville ; Refuse Collection N/A
 Special services required: N/A

5. Does Site Plan conform to municipal master plan? Yes If not why? _____

6. Does Site Plan conform to county land use plan? Yes If not why? _____

7. School District: Dryden

8. Projected energy consumption: None Type: _____

9. Traffic generation (expected vehicle departures and arrivals per 24 hour period) : Zero (0)

NOTE: All maps require the name and address of the N.Y.S. licensed engineer or land surveyor responsible for preparing the seal and map.


 Signature and Title of Submitting Official

(REVISED: 8/01)

**TOWN OF CORTLANDVILLE
3577 TERRACE ROAD
CORTLAND, NY 13045**

USE VARIANCE FINDINGS & DECISION

Applicant: McLean Solar 1, LLC Attn: Elie Schecter Phone #: (914) 420-5803

Address: 55 5th Avenue, New York , New York 10003 Fee: _____

Property Owner: Farm East LLC

Appeals Concerns Property at the following address: 415 McLean Road, Cortland, New York 13045

Tax Map Number: 95.00-01-33.1

Zoning District Classification: R-1

Use for which Variance is requested: Allow ground-mounted, large scale solar energy system within a Residential District.

Applicable Section of Zoning Code: XIX 178.123.3.D.3.a

Signature:  Date: 9/13/19

TEST: No Use Variance will be granted without a showing by the applicant that applicable zoning regulations and restrictions have caused unnecessary hardship. The following test must be met for each and every use allowed by zoning on the property, including uses allowed by special use permit.

1. Has the Applicant demonstrated that the Applicant cannot realize a reasonable return, and that the lack of return is substantial and has been demonstrated by competent financial evidence?
Yes _____ No _____

Proof: _____

2. Has the Applicant demonstrated that the alleged hardship relating to the property in question is unique and does not apply to a substantial portion of the district or neighborhood?
Yes _____ No _____

Proof: _____

Use Variance Findings & Decision

3. Has the Applicant demonstrated that the requested use variance, if granted, will not alter the essential character of the neighborhood? Yes_____ No_____

Proof: _____

4. Has the Applicant demonstrated that the alleged hardship has not been self-created?
Yes_____ No_____

Proof: _____

DETERMINATION OF ZBA BASED ON THE ABOVE FACTORS:

The ZBA, after reviewing the above four proofs, finds:

That the applicant has failed to prove unnecessary hardship through the application of the four tests required by the state statutes.

That the applicant has proven unnecessary hardship through the application of the four tests required by the state statutes. In finding such hardship, the ZBA shall grant a variance to allow use of the property in the manner detailed below, which is the minimum variance that should be granted in order to preserve and protect the character of the neighborhood and the health, safety and welfare of the community:

(USE) _____

USE VARIANCE FINDINGS & DECISION

Question #1

ILLUSTRATIONS OF FINANCIAL EVIDENCE

Bill of sale for the property, present value of property, expenses for maintenance.

Leases, rental agreements.

Tax bills.

Conversion costs (for a permitted use).

Realtor's statement of inability to rent/sell.

Question #2

ILLUSTRATIONS OF UNIQUENESS

Topographic or physical features preventing development for a permitted use.

Why would it be possible to construct the applicant's proposal and not any of the permitted uses?

Board member observations of the property and surrounding area.

Question #3

ILLUSTRATIVE NEIGHBORHOOD CHARACTER FACTORS

Board members' observations of neighborhood.

Expected effect of proposal on neighborhood, for example, change in parking patterns, noise levels, lighting, traffic.

Question #4

SELF-CREATED

What were the permitted uses at the time the property was purchased by the applicant?

Were substantial sums spent on remodeling for a use not permitted by zoning?

Was the property received through inheritance, court order, divorce?



Kenneth D. Ellsworth, P.E.
Managing Member

Paul L. Bedford, AIA
Architect

Rodney L. Carey, L.S.
Land Surveyor

Kordian W. Wichtowski, R.A.
Architect

September 13, 2019

Ms. Katherine S. Wickwire, Chair
Town of Cortlandville Planning Board
The Raymond G. Thorpe Municipal Building
3577 Terrace Road
Cortland, New York 13045

RE: McLean Solar I, LLC
McLean Road
Cortland, New York

Dear Ms. Wickwire:

As requested by the Cortland County Planning Board, we offer this letter as additional information regarding the above captioned project.

The project is proposed to be a +/- 12.00 acres community solar project with +/- 0.59 acres of disturbance. The project will contain 6,864 each Hanwha 365 watt modules, 80 each Tabuchi 25 kW 3 phase inverters and preliminary estimates indicate that this site will produce +/- 3,507,504 kWh of electricity annually. The (80 each) Inverters will be connected to circuit breakers in (10 each) electrical panelboards, which will then be routed to (2 each) Pad-mounted Electrical Switchgear and Transformers, before interconnecting to the National Grid distribution system (Equipment information is attached). There will be up to 2,000 linear feet of electrical cable in conduit buried to sufficient depths as required by the National Electric Code. The electricity generated by this project will be fed into the National Grid Distribution System as a Community Distributed Generation (CDG) project. Local residents, businesses, and municipalities in the Greater Cortland area who are National Grid ratepayers will have the option of subscribing to purchase a portion of the energy from this project to offset their electric usage, at a discount to the rates that they would otherwise purchase their electricity from National Grid.

The connection point for this project is on McLean Road, please refer to the site plans for additional information. The details for the solar panels are shown on Drawing C200 including the panel height (8') and the posts to support the panels. All post supports be driven or augered for this project.

A concern was raised regarding the "glare" from the solar panels impacting the surrounding properties. We have attached literature regarding the topic of glare and glint as it relates to solar panels. While this literature is focused on the impacts of solar systems near an Airport, the same conclusions can be made regarding impacts to surrounding properties. Please note that "light absorption, rather than reflection, is central to the function of solar PV panels". The proposed panels for this project are PV panels, therefore their intended function is to absorb light. Further, "modern PV panels reflect as little as two percent of incoming sunlight, about the same as water and less than soil or even wood shingles". While there are homes located both north and south of the proposed project, these homes will not be affected as the panels for this project are rotating panels which face east-west. To the east of the project is wooded and therefore will not be impacted. To the west of the project is one (1) home. As stated in the attached literature, as little as two percent of the incoming sunlight is anticipated to be reflected from the panels. Additionally, landscaping is proposed to be installed along both the west and north sides of the

Main Office
58 Exchange Street
Binghamton, New York 13901
Phone: 607.722.1100
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Branch Office
165 South Main Street, Suite 6
Cortland, New York 13045
Phone: 607.753.8015

E-mail: info@keyscomp.com
www.keyscomp.com

project, this will further reduce any potential impact to the home. Therefore, it is our opinion that there are no concerns with glare impacting adjacent properties.

Our office has contacted the Cortland County Highway Department regarding using the existing driveway entrance and we were notified that the only requirement will be that prior to the start of construction the contractor will need to submit for a County Permit 136. A note has been added to the project plans indicating that no work shall be started within the County right-of-way until an approved permit is received.

An Erosion and Sedimentation Control plan was prepared for the project which addresses potential stormwater impacts from the project and demonstrates mitigation measures to prevent excess erosion. Please note that the current property is crop row with exposed soils (refer to Drawing C105) and the final cover for the solar project will be a well maintained grass area. The improved cover from exposed earth to grass will significantly reduce the erosion runoff from the project site. Maintenance requirements are included on the Erosion and Sedimentation Plan for the project.

As discussed during the January 2019 Planning Board meeting, this project is located within an area identified as prime farmland. This matter was reviewed, and the Planning Board did not have any objections to the project's location.

Please find attached a copy of the decommissioning plan for the project.

Please contact our office if you have any questions or comments.

Respectfully,

Keystone Associates
Architects, Engineers and Surveyors, LLC



Paul T. Woodward
Senior Designer

Enclosures

PTW:

P:\Projects\2018\2850\2850_24418\2850_24418_1 Mclean Solar I\Correspondence\Report\285024418_1_McLean I Project Narrative_190911.docx

APPENDIX A

GLARE LITERATURE

Solar and Glare



I. Introduction

A common misconception about solar photovoltaic (PV) panels is that they inherently cause or create “too much” glare, posing a nuisance to neighbors and a safety risk for pilots. While in certain situations the glass surfaces of solar PV systems can produce glint (a momentary flash of bright light) and glare (a reflection of bright light for a longer duration), light absorption, rather than reflection, is central to the function of a solar PV panel - to absorb solar radiation and convert it to electricity. Solar PV panels are constructed of dark-colored (usually blue or black) materials and are covered with anti-reflective coatings. Modern PV panels reflect as little as two percent of incoming sunlight, about the same as water and less than soil or even wood shingles (SEIA/Sandia 2013). Some of the concern and misconception is likely due to the confusion between solar PV systems and concentrated solar power (CSP) systems. CSP systems typically use an array of mirrors to reflect sunlight to heat water or other fluids to create steam that turns an electric generator. These typically involve large ground-mounted reflectors, usually in remote desert locations, and are not installed in residential or commercial areas or near airports.

Solar PV system on the left compared to a parabolic trough CSP system on the right. Photo Copyright DOE/NREL/ORNL



II. PV on or near airports

Solar and Glare

As of June 2013, there were over 30 solar projects in operation at airports in 15 different states (Barrett 2013). Solar installations have been successfully located at or near US international airports in Boston, New York, San Francisco, and Denver, among others. Yet concerns over glint (a quick reflection) and glare (a longer reflection) often arise when a PV system is proposed on or near an airport. Pilots are familiar with both glint and glare as reflection is a common phenomenon, especially off of bodies of water or in the form of glare from the sun itself. However, issues can arise if the solar PV system were to cast glare into an air traffic control tower.¹

The Federal Aviation Administration (FAA) has been actively reviewing the impact of glare from solar panels to streamline an evaluation process that ensures safety while creating more opportunity for solar installations on or near airports. The FAA filed notice of its Interim Policy for review of solar energy systems on federally obligated airports (i.e. airports which receive federal funding) in October of 2013.² This policy requires that a sponsor of a federally obligated airport must request FAA review and approval to install solar on its "airport layout plan." Federally-obligated airports must also notify the FAA of its intent to construct any solar installation by filing FAA form 7460-1. The interim FAA policy also requires the use of the Solar Glare Hazard Analysis Tool for on-airport solar development.

III. FAA and the Solar Glare Hazard Analysis Tool

In order to understand and model glare in accordance with FAA standards, Sandia National Laboratories developed the Solar Glare Hazard Analysis Tool (SGHAT). Standardized safety metrics define what glare intensity will cause unwanted visual impacts to Air Traffic Control towers and airplane pilots. SGHAT can be used to evaluate the potential of a particular PV array to produce glare intensity, predicting when and where glare will occur from a prescribed PV array at user-defined observation points (i.e. from the Air Traffic Control Tower or from a series of points along an aircraft landing route) and be combined with Google maps for an easy user interface. In instances where glare may be a concern, the tool can prescribe minor adjustments to the tilt, direction, and location of the panels to alleviate any issues. SGHAT will predict annual energy production for the various adjusted positions (SEIA/Sandia PPT).

IV. Role for Local Governments

Local governments may wish to include airport guidance within their local zoning ordinances that address solar PV. The North Carolina Solar Center *Template Solar Energy Development Ordinance for North Carolina*³ includes a section on airports and recommends aviation notification steps for both on-airport solar projects and installations within 5 nautical miles of an airport. In addition to amendments to local zoning codes, local governments have the opportunity to conduct outreach to airports,

¹ <http://www.unionleader.com/article/20120830/NEWS02/708309966/0/newhampshire>

² <http://www.gpo.gov/fdsys/pkg/FR-2013-10-23/pdf/2013-24729.pdf>

³ http://ncsc.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance_V1.0_12-18-13.pdf

Solar and Glare

organizations and local stakeholders about methods for predicting and managing glare impacts from solar panels near airports or other locations. Such outreach furthers the safety goals of the FAA and the solar energy development goals of municipalities and communities. Spreading awareness of the safety of PV systems along with FAA guidance and glare measurement tools will help foster informed communities and enable the deployment of safe and productive solar PV projects in locations where glint and glare may be of concern.

V. Useful Links

Sandia Solar Glare Mapping Tools: <https://share.sandia.gov/phlux>

V. Citations

Barrett, S., June 2013, Glare Factor: Solar Installations And Airports, *Solar Industry, Volume 6, Number 5*.
http://www.solarindustrymag.com/issues/SI1306/FEAT_02_Glare_Factor.html.

Federal Register 2013, etc.: <http://www.gpo.gov/fdsys/pkg/FR-2013-10-23/pdf/2013-24729.pdf>

SEIA/Sandia Webinar on Solar PV and Glare:

<http://www.seia.org/sites/default/files/resources/Final%20ofAA%20Webinar%20Slides%20August%202013.pdf>

Authors: Caroline Palmer and Chad Laurent, Meister Consultants Group, Inc.

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**APPENDIX B
DECOMMISSIONING PLAN**

Cortlandville Solar Projects - Decommissioning Plan

At the completion of the expected life of the Solar Energy Facility, the entire system shall be removed by the applicant or the subsequent owner. The Applicant' lease agreement with the landowner has a primary term of 20 years, followed by options for (3) five-year extensions. The lease agreement stipulates that at the conclusion of either the primary or renewal term, the premises shall be restored to its original condition, including the removal of the system mounting pads or other support structures and left in neat and clean order. The agreement allows for a removal term of up to 180 days for the Tenant to remove the system. The agreement also stipulates that if the tenant fails to remove the system prior to the expiration of the removal term, then the landlord shall have the right to remove the system to a public warehouse and restore the premises to its original condition at Tenant's reasonable cost.

The decommissioning process will be completed as follows:

- All items with resale value, including transformers and solar panels, will be removed from the site and sold for fair market value.
- All aluminum, steel, and other metal parts without resale value will be sold for scrap value
- All items with no resale or scrap value will be removed from the site, and recycled where applicable, otherwise disposed of in accordance with all local laws and regulations.

Note: It is widely believed that the resale value and scrap value alone will exceed the costs of system removal. Solar panels themselves, which carry a limited power warranty of >80% of their rated capacity after 25 years, may cover most, if not all, of the costs of decommissioning.

Based on NYSERDA's estimate of decommissioning costs for a 2 MW project (enclosed), each 2 MW-AC project in the Cortlandville Portfolio would carry the following budgetary costs for decommissioning:

| Item | Estimated Cost |
|---------------------------------------------------|---------------------|
| Remove Rack Wiring | \$ 2,459.00 |
| Remove Panels | \$ 2,450.00 |
| Dismantle Racks | \$ 12,350.00 |
| Remove Electrical Equipment | \$ 1,850.00 |
| Breakup and Remove Concrete Pads | \$ 1,500.00 |
| Remove Racks | \$ 7,800.00 |
| Remove Cable | \$ 6,500.00 |
| Remove Ground Screws and Power Poles | \$ 13,850.00 |
| Remove Fence | \$ 4,950.00 |
| Grading | \$ 4,000.00 |
| Seed Disturbed Area | \$ 250.00 |
| Truck to Recycling Center | \$ 2,250.00 |
| Total | \$ 60,209.00 |
| Total after 20 years (2.5% inflation rate) | \$ 98,659.46 |

DECOMMISSIONING SOLAR PANEL SYSTEMS



This fact sheet provides information to local governments and landowners on decommissioning of large-scale solar panel systems.

As local governments develop solar regulations and landowners negotiate land leases, it is important to understand the options for decommissioning solar panel systems and restoring project sites to their original status.

From a land use perspective, solar panel systems are generally considered large-scale when they constitute the primary use of the land, and can range from less than one acre in urban areas to 10 or more acres in rural areas. Depending on where they are sited, large-scale solar projects can have habitat, farmland, and aesthetic impacts. As a result, large-scale systems must often adhere to specific development standards.

Abandonment and decommissioning defined

Abandonment occurs when a solar array is inactive for a certain period of time.

- Abandonment requires that solar panel systems be removed after a specified period of time if they are no longer in use. Local governments establish timeframes for the removal of abandoned systems based on aesthetics, system size and complexity, and location. For example, the Town of Geneva, NY, defines a solar panel system as abandoned if construction has not started within 18 months of site plan approval, or if the completed system has been nonoperational for more than one year.¹
- Once a local government determines a solar panel system is abandoned, and has provided thirty (30) days prior written notice to the owner it can take enforcement actions, including imposing civil penalties/fines, and removing the system and imposing a lien on the property to recover associated costs.

Decommissioning is the process for removing an abandoned solar panel system and remediating the land.

- When describing requirements for decommissioning sites, it is possible to specifically require the removal of infrastructure, disposal of any components, and the stabilization and re-vegetation of the site.

What is a decommissioning plan?

Local governments may require to have a plan in place to remove solar panel systems at the end of their lifecycle, which is typically 20-40 years. A decommissioning plan outlines required steps to remove the system, dispose of or recycle its components, and restore the land to its original state. Plans may also include an estimated cost schedule and a form of decommissioning security (see Table 1).

What is the estimated cost of decommissioning?

Given the potential costs of decommissioning and land reclamation, it is reasonable for landowners and local governments to proactively consider system removal guarantees. A licensed professional engineer, preferably with solar development experience, can estimate decommissioning costs, which vary across the United States. Decommissioning costs will vary depending upon project size, location, and complexity. Table 1 provides an estimate of potential decommissioning costs for a ground-mounted 2-MW solar panel system. Figures are based on estimates from the Massachusetts solar market. Decommissioning costs for a New York solar installation may differ. Some materials from solar installations may be recycled, reused, or even sold resulting in no costs or compensation. Consider allowing a periodic reevaluation of decommissioning costs during the project's lifetime by a licensed professional engineer, as costs could decrease and the required payment should be reduced accordingly.

Table 1: Sample list of decommissioning tasks and estimated costs

| Tasks | Estimated Cost (\$) |
|---------------------------------------------------|---------------------|
| Remove Rack Wiring | \$2,459 |
| Remove Panels | \$2,450 |
| Dismantle Racks | \$12,350 |
| Remove Electrical Equipment | \$1,850 |
| Breakup and Remove Concrete Pads or Ballasts | \$1,500 |
| Remove Racks | \$7,800 |
| Remove Cable | \$6,500 |
| Remove Ground Screws and Power Poles | \$13,850 |
| Remove Fence | \$4,950 |
| Grading | \$4,000 |
| Seed Disturbed Areas | \$250 |
| Truck to Recycling Center | \$2,250 |
| Current Total | \$60,200 |
| Total After 20 Years (2.5% inflation rate) | \$98,900 |

¹ Town of Geneva, N.Y. CODE § 130-4(D)(5) (2016):

How can decommissioning be ensured?

Landowners and local governments can ensure appropriate decommissioning and reclamation by using financial and regulatory mechanisms. However, these mechanisms come with tradeoffs. Including decommissioning costs in the upfront price of solar projects increases overall project costs, which could discourage solar development. As a result, solar developers are sometimes hesitant to provide or require financial surety for decommissioning costs.

It is also important to note that many local governments choose to require a financial mechanism for decommissioning. Although similar to telecommunications installations, there is no specific authority to do so as part of a land use approval for solar projects (see Table 2). Therefore, a local government should consult their municipal attorney when evaluating financial mechanisms.

The various financial and regulatory mechanisms to decommission projects are detailed below.

Table 2: Relevant Provisions of General City, Town, and Village Laws Relating to Municipal Authority to Require Conditions, Waivers, and Financial Mechanisms

| Site Plan Review | General City Law | Town Law | Village |
|------------------------------------|------------------|-----------|-------------|
| Conditions | 27-a (4) | 274-a (4) | 7-725-a (4) |
| Waivers | 27-a (5) | 274-a (5) | 7-725-a (5) |
| Performance bond or other security | 27-a (7) | 274-a (7) | 7-725-a (7) |
| Subdivision | General City Law | Town Law | Village Law |
| Waivers | 33 (7) | 277 (7) | 7-730 (7) |
| Performance bond or other security | 33 (8) | 277 (9) | 7-730 (9) |
| Special | General City Law | Town Law | Village Law |
| Conditions | 27-b (4) | 274-b (4) | 7-725-b (4) |
| Waivers | 27-b (5) | 274-b (5) | 7-725-b (5) |

Source: Referenced citations may be viewed using the NYS Laws of New York Online

Excerpts from these statutes are also contained within the “Guide to Planning and Zoning Laws of New York State,” New York State Division of Local Governments Services, June 2011: www.dos.ny.gov/lg/publications/Guide_to_planning_and_zoning_laws.pdf

Financial mechanisms

Decommissioning Provisions in Land-Lease Agreements.

If a decommission plan is required, public or private landowners should make sure a decommissioning clause is included in the land-lease agreement. This clause may depend on the decommissioning preferences of the landowner and the developer. The clause could require the solar project developer to remove all equipment and restore the land to its original condition after the end of the contract, or after generation drops below a certain level, or it could offer an option for the landowner to buy-out and continue to use the equipment to generate electricity. The decommissioning clause should also address abandonment and the possible failure of the developer to comply with

the decommissioning plan. This clause could allow for the landowner to pay for removal of the system or pass the costs to the developer.

Decommissioning Trusts or Escrow Accounts. Solar developers can establish a cash account or trust fund for decommissioning purposes. The developer makes a series of payments during the project’s lifecycle until the fund reaches the estimated cost of decommissioning. Landowners or third-party financial institutions can manage these accounts. Terms on individual payment amounts and frequency can be included in the land lease.

Removal or Surety Bonds. Solar developers can provide decommissioning security in the form of bonds to guarantee the availability of funds for system removal. The bond amount equals the decommissioning and reclamation costs for the entire system. The bond must remain valid until the decommissioning obligations have been met. Therefore, the bond must be renewed or replaced if necessary to account for any changes in the total decommissioning cost.

Letters of credit. A letter of credit is a document issued by a bank that assures landowners a payment up to a specified amount, given that certain conditions have been met. In the case that the project developer fails to remove the system, the landowner can claim the specified amount to cover decommissioning costs. A letter of credit should clearly state the conditions for payment, supporting documentation landowners must provide, and an expiration date. The document must be continuously renewed or replaced to remain effective until obligations under the decommissioning plan are met.²

Nonfinancial mechanisms

Local governments can establish nonfinancial decommissioning requirements as part of the law. Provisions for decommissioning large-scale solar panel systems are similar to those regulating telecommunications installations, such as cellular towers and antennas. The following options may be used separately or together.

- **Abandonment and Removal Clause.** Local governments can include in their zoning code an abandonment and removal clause for solar panel systems. These cases effectively become zoning enforcement matters where project owners can be mandated to remove the equipment via the imposition of civil penalties and fines, and/or by imposing a lien on the property to recover the associated costs. To be most effective, these regulations should be very specific about the length of time that constitutes abandonment. Establishing a timeframe for the removal of a solar panel system can be based on system aesthetics, size, location, and complexity. Local governments should include a high degree of specificity when defining “removal” to avoid ambiguity and potential conflicts.

² See a letter of credit submitted to the Vermont Public Service Board by NextSun Energy, LLC.

[http://psb.vermont.gov/sites/psb/files/docketsandprojects/Solar/Exhibit%20Petitioner%20JL-7%20\(Revised%20326.14\).pdf](http://psb.vermont.gov/sites/psb/files/docketsandprojects/Solar/Exhibit%20Petitioner%20JL-7%20(Revised%20326.14).pdf)

- **Special Permit Application.** A local government may also mandate through its zoning code that a decommissioning plan be submitted by the solar developer as part of a site plan or special permit application. Having such a plan in place allows the local government, in cases of noncompliance, to place a lien on the property to pay for the costs of removal and remediation.
- **Temporary Variance/Special Permit Process.** As an alternative to requiring a financial mechanism as part of a land use approval, local governments could employ a temporary variance/special permit process (effectively a re-licensing system). Under this system, the locality would issue a special permit or variance for the facility for a term of 20 or more years; once expired (and if not renewed), the site would no longer be in compliance with local zoning, and the locality could then use their regular zoning enforcement authority to require the removal of the facility.

What are some examples of abandonment and decommissioning provisions?

The New York State Model Solar Energy Law provides model language for abandonment and decommissioning provisions: www.cuny.edu/about/resources/sustainability/reports/NYS_Model_Solar_Energy_LawToolkit_FINAL_final.pdf

The following provide further examples that are intended to be illustrative and do not confer an endorsement of content:

- Town of Geneva, N.Y., § 130-4(D): ecode360.com/28823382
- Town of Olean, N.Y., § 10.25.5: www.cityofolean.org/council/minutes/ccmin2015-04-14.pdf

Is there a checklist for decommissioning plans?

The following items are often addressed in decommissioning plans requirements:³

- Defined conditions upon which decommissioning will be initiated (i.e., end of land lease, no operation for 12 months, prior written notice to facility owner, etc.).
- Removal of all nonutility owned equipment, conduit, structures, fencing, roads, and foundations.
- Restoration of property to condition prior to solar development.
- The timeframe for completion of decommissioning activities.
- Description of any agreement (e.g., lease) with landowner regarding decommissioning.
- The party responsible for decommissioning.
- Plans for updating the decommissioning plan.
- Before final electrical inspection, provide evidence that the decommissioning plan was recorded with the Register of Deeds.

Additional Resources

Template Solar Energy Development Ordinance for North Carolina (see Appendix G at pg. 21 for Sample Decommissioning Plan): nccleantech.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance_V1.0_12-18-13.pdf

Land Use Planning for Solar: training.ny-sun.ny.gov/images/PDFs/Land_Use_Planning_for_Solar_Energy.pdf

Zoning Guide for Solar: training.ny-sun.ny.gov/images/PDFs/Zoning_for_Solar_Energy_Resource_Guide.pdf

Information on First Solar's recycling program for all of their modules: www.firstsolar.com/en/Technologies-and-Capabilities/Recycling-Services

PV Cycle: Europe's PV recycling program: www.pvcycle.org/

Solar Energy Industries Association (SEIA) information on solar panel recycling: www.seia.org/policy/environment/pv-recycling

Silicon Valley Toxics Coalition: svtc.org/

Silicon Valley Toxic Coalition Solar Scorecard: www.solarscorecard.com/2015/2015-SVTC-Solar-Scorecard.pdf

End-of-life PV: then what? - Recycling solar panels: www.renewableenergyfocus.com/view/3005/end-of-life-pv-then-what-recycling-solar-pv-panels/

NY-Sun, a dynamic public-private partnership, will drive growth in the solar industry and make solar technology more affordable for all New Yorkers. NY-Sun brings together and expands existing programs administered by the New York State Energy Research and Development Authority (NYSERDA), Long Island Power Authority (LIPA), PSEG Long Island, and the New York Power Authority (NYPA), to ensure a coordinated, well-supported solar energy expansion plan and a transition to a sustainable, self-sufficient solar industry.

³ North Carolina Solar Center, NC Sustainable Energy Center. December 2013. Template Solar Energy Development Ordinance for North Carolina. https://nccleantech.ncsu.edu/wp-content/uploads/Template-Solar-Ordinance_V1.0_12-18-13.pdf

APPENDIX C EQUIPMENT

TABUCHI ELECTRIC

Three-phase 25kW Solar Inverter M25-6



6 MPPT Inverter

Designed for Distributed Solar

- ▶ Improved system performance
- ▶ 98.7% Maximum Efficiency
- ▶ 10-year Warranty (20-year option)
- ▶ Lower BOS costs - No need for combiner boxes
- ▶ Increased system reliability
- ▶ Optional Rapid Shutdown & Monitoring Systems

www.tabuchiaamerica.com



M25-6: Three-phase 25kW Solar Inverter (Model Number : TPD-250P6-US)

Input (DC)

| | |
|---------------------------------------|----------------------------------|
| Nominal Input power per string | 4300 W (5200 W / output limited) |
| Max. input voltage | 1000 V |
| Operation voltage range | 200-1000 V |
| MPPT voltage range | 200 V to 800 V |
| Nominal input voltage range | 500 V to 800 V |
| Min. input voltage / starting voltage | 200 V/200 V |
| Operating input current per string | 10 A |
| Max. short circuit current per string | 20 A |
| Number of MPP tracker inputs | 6 |

Efficiency

| | |
|-----------------|-------|
| Max. Efficiency | 98.7% |
| CEC Efficiency | 97.5% |

Protection

| | |
|----------------------------------------|-----------------------------------|
| Islanding Operation Detection: Active | Frequency shifting method |
| Islanding Operation Detection: Passive | Frequency change detective method |

Output (AC: Grid connected)

| | |
|------------------------------------|--------------------------|
| Rated output power* | 25000 W |
| Grid connection type | Three-phase, 4-wire type |
| Rated AC voltage | 480 V (277 V WYE) |
| Rated power frequency | 60 Hz |
| Rated output current | 30 A |
| Power factor at rated output power | ≥ 0.99 |

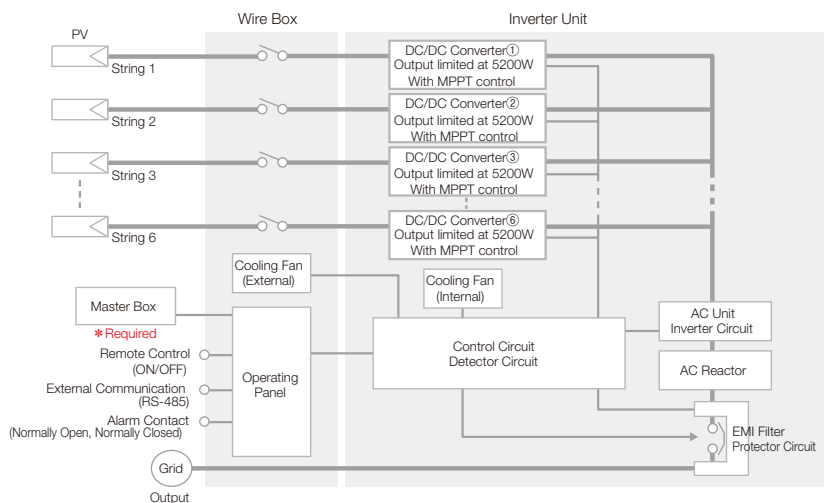
* When the Power factor is 100% during inverter operation.

General Data

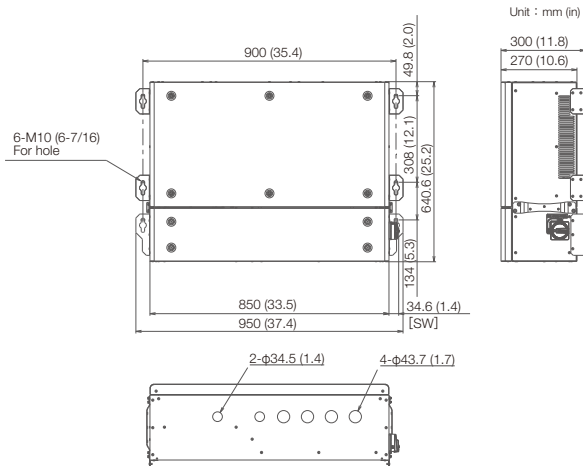
| | |
|------------------------------|---------------------------------------------------------------------------|
| Dimensions W x H x D | 950 x 640.6 x 300 mm (37.4 x 25.2 x 11.8 in) |
| Weight | 69 kg (152.1 lb) |
| Operating temperature range | -20°C to +60°C (-4°F to +140°F) Rated output until +40°C (+104°F) |
| Internal consumption (night) | < 8 W |
| Cooling concept | Cooling Fan |
| Enclosure Rating | NEMA3 |
| Controller/Interface | Master Box* (Required)/RS485 |
| Certification | ETL (UL 1741/1699B, CSA C22.2 No. 107.1-01, IEEE 1547a, CEC), FCC class A |
| Topology | Transformer-less |

* Master Box is required to use three-phase 25 kW inverter.

Block Diagram



Dimensions



Some specifications or aspects of appearance may be changed without notice to improve the product.

Q.PLUS DUO L-G5.2 360-375

Q.ANTUM SOLAR MODULE

The new high-performance module **Q.PLUS DUO L-G5.2** is the ideal solution for commercial and utility applications thanks to a combination of its innovative cell technology **Q.ANTUM** and cutting edge cell interconnection. This 1500 V IEC/UL solar module with its 6 busbar cell design ensures superior yields with up to 375 Wp while having a very low LCOE.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area, lower BOS costs, higher power classes, and an efficiency rate of up to 19.1%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

Long-term yield security with Anti LID Technology, Anti PID Technology¹, Hot-Spot Protect and Traceable Quality Tra.Q™.



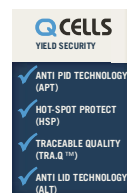
EXTREME WEATHER RATING

High-tech aluminum alloy frame, certified for high snow (5400 Pa) and wind loads (2400 Pa).



A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance warranty².



¹ APT test conditions according to IEC/TS 62804-1:2015, method B (-1500V, 168h)

² See data sheet on rear for further information.

THE IDEAL SOLUTION FOR:



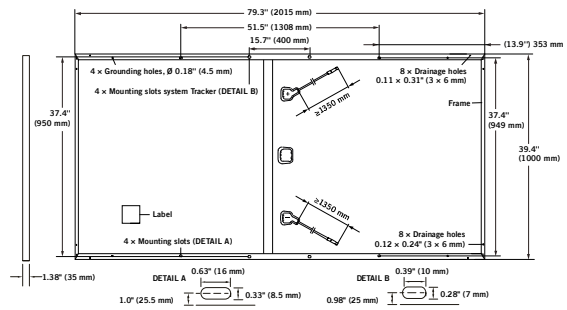
Rooftop arrays on commercial/industrial buildings



Ground-mounted solar power plants

MECHANICAL SPECIFICATION

| | |
|---------------------|------------------------------------------------------------------------------------------------------------------------|
| Format | 79.3 in × 39.4 in × 1.38 in (including frame) (2015 mm × 1000 mm × 35 mm) |
| Weight | 51.8 lbs (23.5 kg) |
| Front Cover | 0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology |
| Back Cover | Composite film |
| Frame | Anodized aluminum |
| Cell | 6 × 24 multicrystalline Q.ANTUM solar half-cells |
| Junction box | 2.76-3.35 in × 1.97-2.76 in × 0.51-0.83 in (70-85 mm × 50-70 mm × 13-21 mm), Protection class IP67, with bypass diodes |
| Cable | 4 mm ² Solar cable; (+) ≥ 53.1 in (1350 mm), (-) ≥ 53.1 in (1350 mm) |
| Connector | Multi-Contact MC4-EVO2, JMTHY PV-JM601A, IP68 or Renhe O5-8, IP67 |

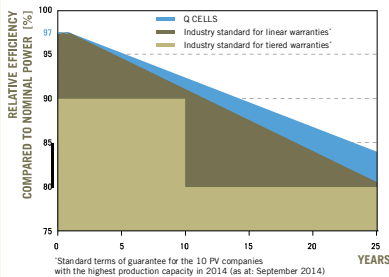


ELECTRICAL CHARACTERISTICS

| POWER CLASS | | 360 | 365 | 370 | 375 | |
|-------------------------------------------------------------------------------------------------|------------------------------------|---------------|--------|--------|--------|--------|
| MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W) | | | | | | |
| Minimum | Power at MPP ¹ | P_{MPP} [W] | 360 | 365 | 370 | 375 |
| | Short Circuit Current ¹ | I_{SC} [A] | 9.87 | 9.92 | 9.96 | 10.01 |
| | Open Circuit Voltage ¹ | V_{OC} [V] | 46.80 | 47.03 | 47.26 | 47.49 |
| | Current at MPP | I_{MPP} [A] | 9.35 | 9.41 | 9.47 | 9.54 |
| | Voltage at MPP | V_{MPP} [V] | 38.52 | 38.79 | 39.05 | 39.32 |
| | Efficiency ¹ | η [%] | ≥ 18.1 | ≥ 18.3 | ≥ 18.6 | ≥ 18.8 |
| MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NMOT ² | | | | | | |
| Minimum | Power at MPP | P_{MPP} [W] | 267.7 | 271.4 | 275.2 | 278.9 |
| | Short Circuit Current | I_{SC} [A] | 7.95 | 7.99 | 8.03 | 8.06 |
| | Open Circuit Voltage | V_{OC} [V] | 43.94 | 44.16 | 44.38 | 44.59 |
| | Current at MPP | I_{MPP} [A] | 7.35 | 7.40 | 7.46 | 7.51 |
| | Voltage at MPP | V_{MPP} [V] | 36.44 | 36.68 | 36.91 | 37.14 |

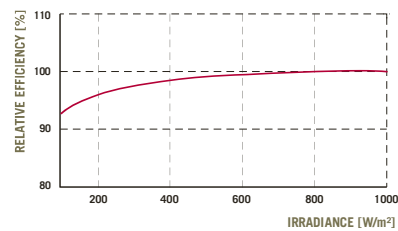
¹Measurement tolerances $P_{MPP} \pm 3\%$; I_{SC} , $V_{OC} \pm 5\%$ at STC: 1000 W/m², 25 ± 2 °C, AM 1.5 G according to IEC 60904-3 - ²800 W/m², NMOT, spectrum AM 1.5 G

Q CELLS PERFORMANCE WARRANTY



At least 97% of nominal power during first year. Thereafter max. 0.54% degradation per year. At least 92% of nominal power up to 10 years. At least 84% of nominal power up to 25 years. All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

| | | | | | | | |
|--------------------------------------|----------|-------|-------|-------------------------------------|---------|-------|-----------------------|
| Temperature Coefficient of I_{SC} | α | [%/K] | +0.04 | Temperature Coefficient of V_{OC} | β | [%/K] | -0.29 |
| Temperature Coefficient of P_{MPP} | γ | [%/K] | -0.39 | Normal Operating Module Temperature | NMOT | [°F] | 109 ± 5.4 (43 ± 3 °C) |

PROPERTIES FOR SYSTEM DESIGN

| | | | | |
|-------------------------------------------------|------------------------|------------------------------|-------------------------------------------------|-----------------------------------------------|
| Maximum System Voltage V_{SYS} | [V] | 1500 (IEC) / 1500 (UL) | Safety Class | II |
| Maximum Series Fuse Rating | [A DC] | 20 | Fire Rating | C (IEC) / TYPE 1 (UL) |
| Max. Design Load, Push / Pull (UL) ² | [lbs/ft ²] | 75 (3600 Pa) / 33 (1600 Pa) | Permitted module temperature on continuous duty | -40 °F up to +185 °F (-40 °C up to +85 °C) |
| Max. Test Load, Push / Pull (UL) ² | [lbs/ft ²] | 113 (5400 Pa) / 50 (2400 Pa) | | ² see installation manual |

QUALIFICATIONS AND CERTIFICATES

UL 1703; CE-compliant;
IEC 61215:2016, IEC 61730:2016 application class A



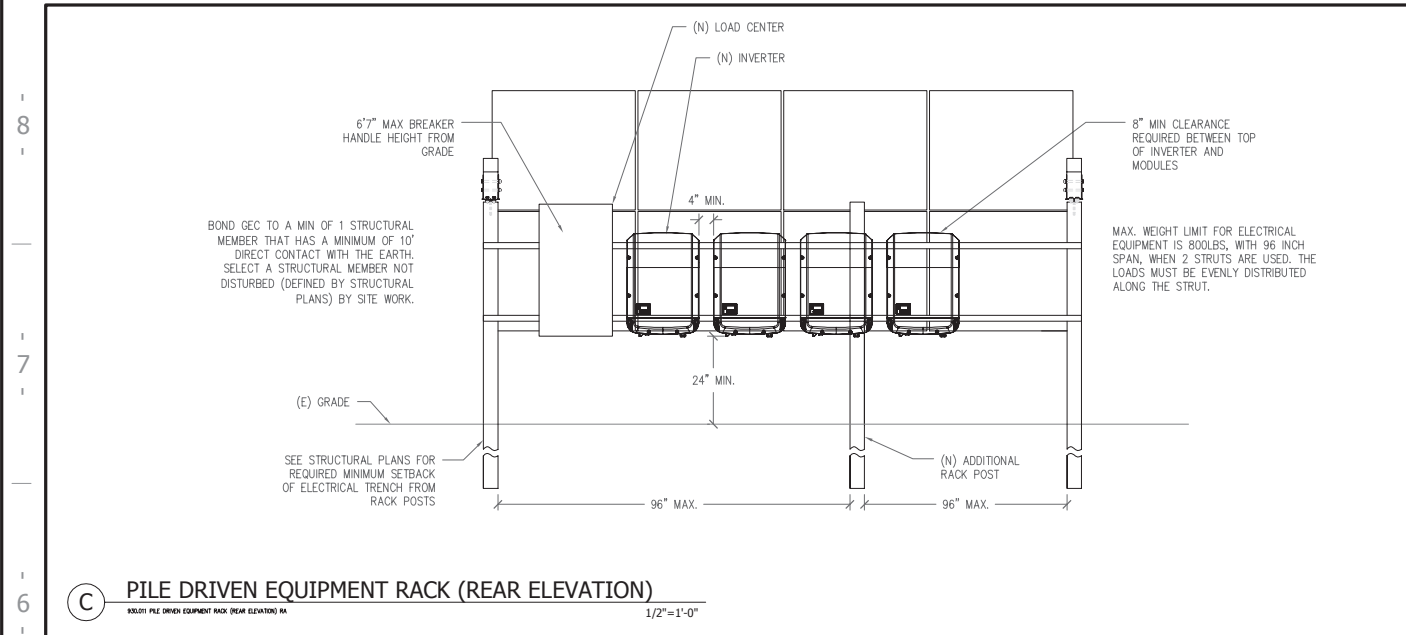
PACKAGING INFORMATION

| | |
|-----------------------------------------------|--------------------------------------------------------------|
| Number of Modules per Pallet | 29 |
| Number of Pallets per 53' Trailer | 26 |
| Number of Pallets per 40' High Cube Container | 22 |
| Pallet Dimensions (L × W × H) | 81.9 in × 45.3 in × 46.7 in (2080 mm × 1150 mm × 1190 mm) |
| Pallet Weight | 1635 lbs (742 kg) |

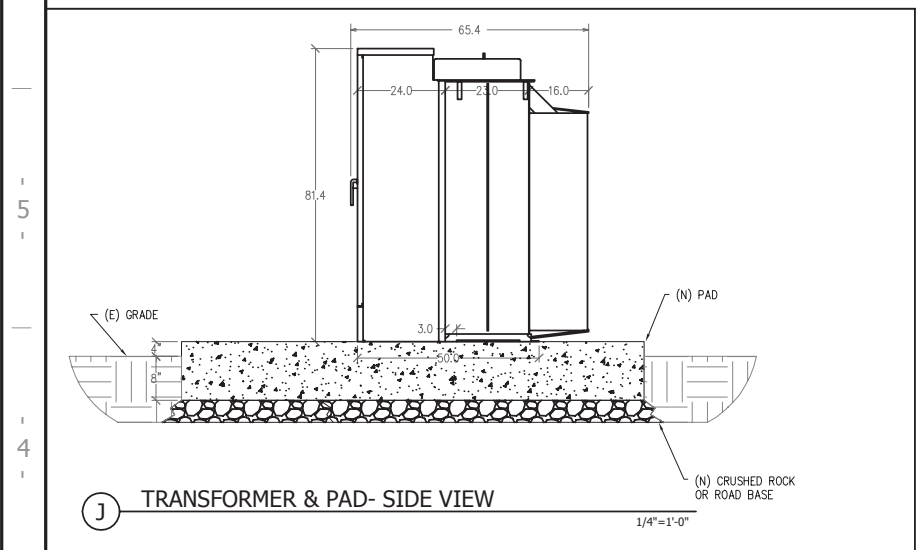
NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.

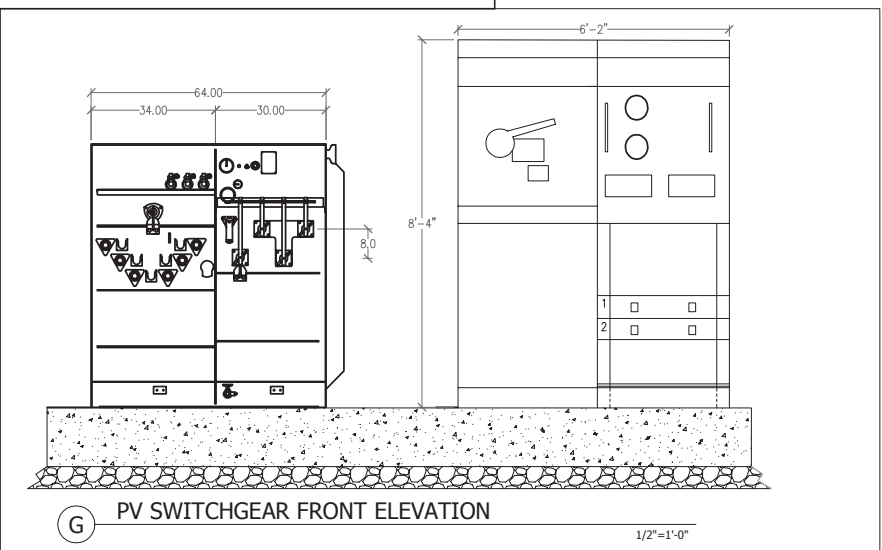
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us



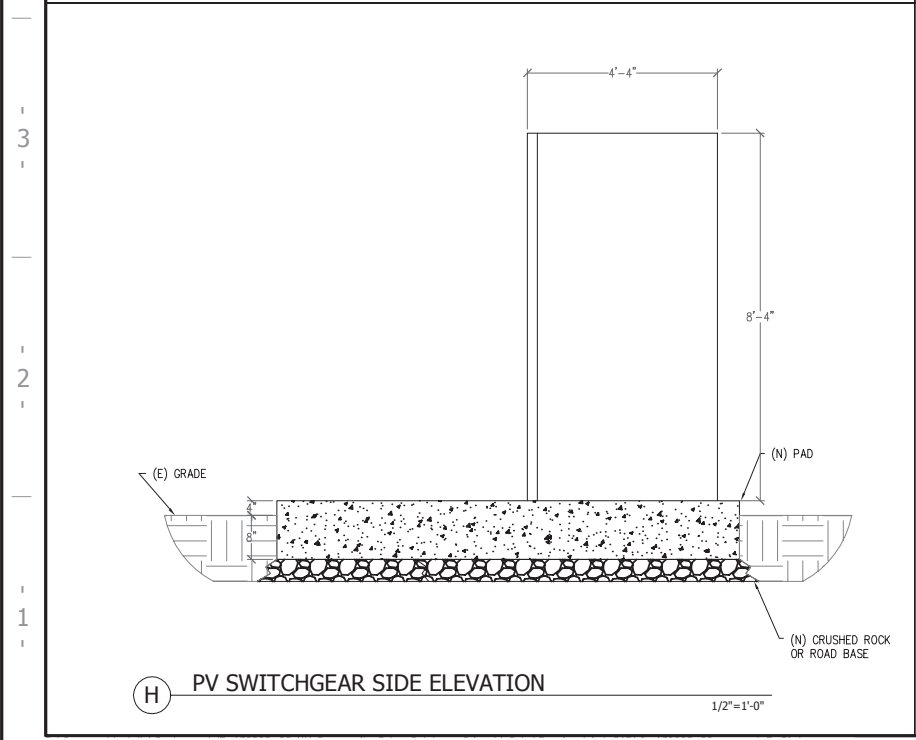
C PILE DRIVEN EQUIPMENT RACK (REAR ELEVATION)
96" MAX. PILE DRIVEN EQUIPMENT RACK (REAR ELEVATION) 04
 1/2"=1'-0"



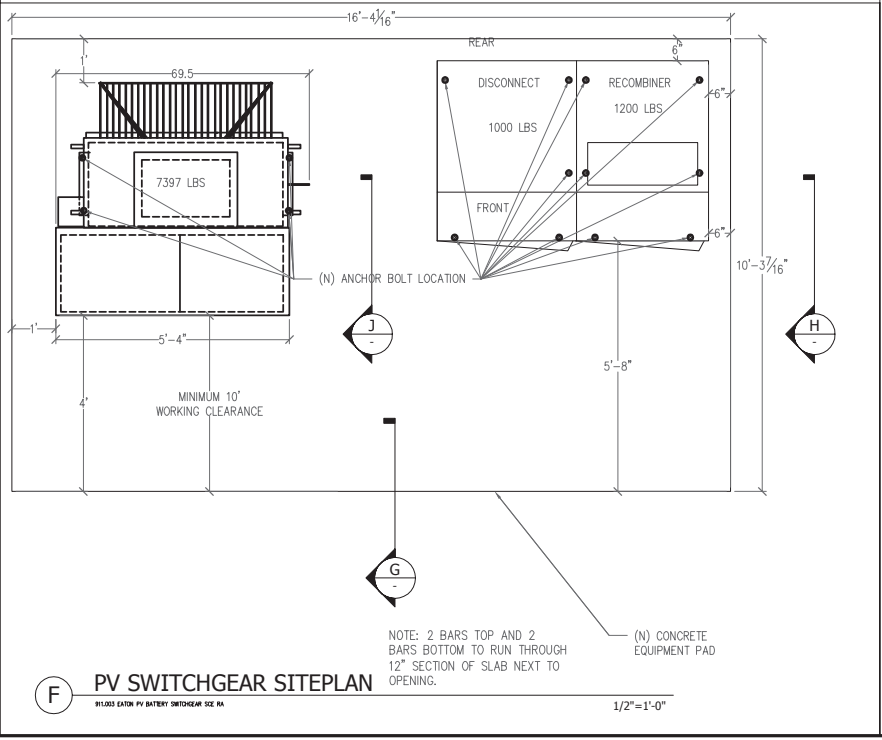
J TRANSFORMER & PAD- SIDE VIEW
TRANSFORMER & PAD- SIDE VIEW 04
 1/4"=1'-0"



G PV SWITCHGEAR FRONT ELEVATION
96" MAX. PV SWITCHGEAR FRONT ELEVATION 04
 1/2"=1'-0"



H PV SWITCHGEAR SIDE ELEVATION
96" MAX. PV SWITCHGEAR SIDE ELEVATION 04
 1/2"=1'-0"



F PV SWITCHGEAR SITEPLAN
96" MAX. PV SWITCHGEAR SITEPLAN 04
 1/2"=1'-0"

NOTE: 2 BARS TOP AND 2 BARS BOTTOM TO RUN THROUGH 12" SECTION OF SLAB NEXT TO OPENING.



**CONSTRUCTION
SERVICES**

C2 Energy

McLean 1 Solar Project

Cortlandville, NY



2019

305 Dela Vina Avenue
Monterey, CA 93940
(855) 428-3000
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CSLB #1000391 | C-10, B General

TRUSTED PARTNER
ARRAY
TECHNOLOGIES

THE GOLD STANDARD IN SOLAR TRACKING

ARRAY TECHNOLOGIES' ADVANTAGES

ARRAY TECHNOLOGIES INC.

THE BEST TRACKER COMPANY IN THE WORLD

- 30 Years of Solar Tracker Design
- 8+ Gigawatts Installed; 10+ Gigawatts Shipped
- Projects In All 50 States and 25 Countries
- 99.996% Field-Tested Uptime
- Easiest Tracker Installation
- Most Bankable, Reliable Trackers

ARRAY DURATRACK® HZ V3

THE MOST ADVANCED TRACKER IN THE WORLD

- 7% Lower LCOE; 31% Lower Lifetime O&M
- Zero Scheduled Maintenance for 25 Years
- Fewest Motors Per MW
- No Wind Stow Necessary
- No Batteries Required
- Up to 25% Energy Gain Over Fixed Tilt



“

I know the RPCS team well and consider them an extension of the Array team. They do excellent work and will make your project successful in every way.”

RON CORIO

FOUNDER , ARRAY TECHNOLOGIES, INC.

RPCS: ARRAY'S DG PARTNER & MECHANICAL INSTALLER

FLAWLESS PROJECT ENGINEERING & CONSTRUCTION SERVICES

RPCS IS ARRAY TECHNOLOGIES INC.'S LONG TERM PARTNER

COAST TO COAST INSTALLATION OF THE WORLD'S BEST TRACKER

- 10 years of partnership with hundreds of completed Array tracker projects
- RPCS is Array's trusted partner for all projects under 10 MW AC
- RPCS exclusively installs Array Technologies' tracker systems
- Our Array focus means predictable Array installations and repeatable success for our customers

TURNKEY SERVICES

EXPERT KNOWLEDGE & SUPPORT

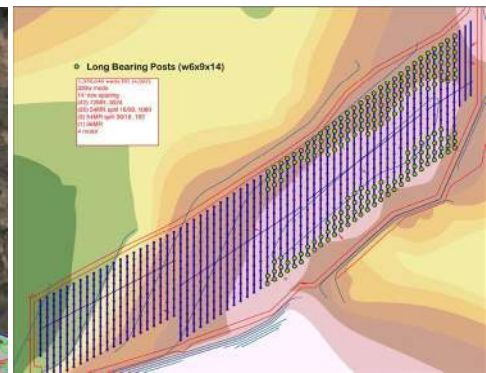
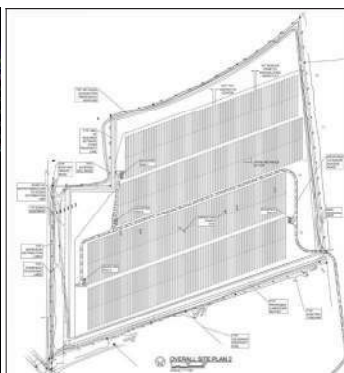
RPCS knows solar trackers. Your team can execute more tracker projects by relying on the knowledge and support RPCS offers. Our team provides you with site layout optimization, ancillary engineering, foundation post and tracker procurement, mechanical installation, and tracker commissioning. Optimize the full potential of your solar project's footprint, from high security sites to projects built 14 feet above the ground. We understand the intricacies that make distributed generation and utility projects unique.

- **Optimized Foundation Design & Layout**
- **Geotechnical Site Assessment Support**
- **Tracker & Foundation Post Procurement & Logistics**
- **Complete Mechanical Installation**

TURNKEY CONSTRUCTION SERVICES

RPCS is a fully licensed mechanical and electrical contractor, performing work across the country using company owned equipment and our own world class construction crews. Our crews are expertly skilled in the mechanical installation of solar trackers, providing full turnkey mechanical installation services, including foundation post installation, tracker and module installation, and on-site project management. Enjoy peace of mind with RPCS' labor warranty upon commissioning of your project.

- **Foundation Post Installation**
- **Tracker & Module Installation**
- **Complete Wire Management**
- **Tracker Commissioning**
- **Vegetation Maintenance Assistance**



PRODUCT SPECIFICATIONS

DURATRACK® HZ V3 UTILITY SYSTEM STANDARD SPECIFICATIONS

STRUCTURAL COMPONENTS

- High strength octagonal tubing with coating, no welding required.
- Array universal clamps with integral grounding.
- I-beam foundation connections provided (standard):
 - Foundation size range: w6x8.5, W6x12, W6x16
 - Other weight I-beams may be used with Array's approval – longer lead times may apply
- Column material is not included in tracker row price.

MECHANICAL COMPONENTS

- UV stabilized, long life dry side bearings.
- Array gear drive system with double-universal-joint driveline per linked row for added flexibility.
- Stowing: Passive mechanical system automatically relieves wind pressure or possible obstruction that could cause damage without requiring power.

DRIVE & CONTROL ARCHITECTURE

- 1.49 kW (2 hp) 230/400 VAC, 60 Hz, 3 phase drive motor per system block.
- Array 4X microprocessor controller unit (MCU) included per 4 motorized blocks for independent system control.
- Array site data unit(s) with centralized communication to each 4X MCU included in each system.
- MODBUS over Ethernet supported standard.
- 6-conductor direct burial control wire for connectivity between 4X MCUs and drive motors provided. (600V rated standard, to 1000V or 2000V rating with cost adder)

CENTRAL CONTROLLER FEATURES

- Garmin GPS 16x™ for precision site-wide time updates.
- Data available via MODBUS to SCADA system.

DOCUMENTATION & SUPPORT

- Site specific tracker building blocks available upon request.
- Ground Reaction Force calculations in order to design foundations.
- Permit package including PE wet stamped tracker system drawings and structural calculations excluding foundations.
- Install guide and BOM.
- Unlimited telephone support.
- Array on-site final system commissioning standard.

WARRANTY LOGISTICS

- 5 year parts only standard warranty; extendable to 10 years at additional cost.
- On site deliveries for the project will begin subject to finalized contracts.
- Tracker ships from multiple locations.
- Site/tracker specific component shipping BOM provided at time of shipment.
- Shipping and handling is estimated only, unless otherwise specified in quote notes.

NOTES, ASSUMPTIONS, CLARIFICATIONS & EXCLUSIONS

- Estimate assumes IBC design loads specified but not verified by Array Technologies.
- UL 2703 and 3703 compliant (UL Certification).
- Standard tracker is designed for ISO 9223 C2 corrosion conditions.
- Topography is assumed to conform within tracker row design parameters.
- Solar Site is assumed to use the minimal amount of row configurations for the most optimized layout and cost to construct.
- Foundations and foundation design not included.
- Modules are not interchangeable; tracker design may change with module.
- Protected by US Patent NO. 8,459,249 and other Patents Pending.

SOLAR ARRAY PLAN

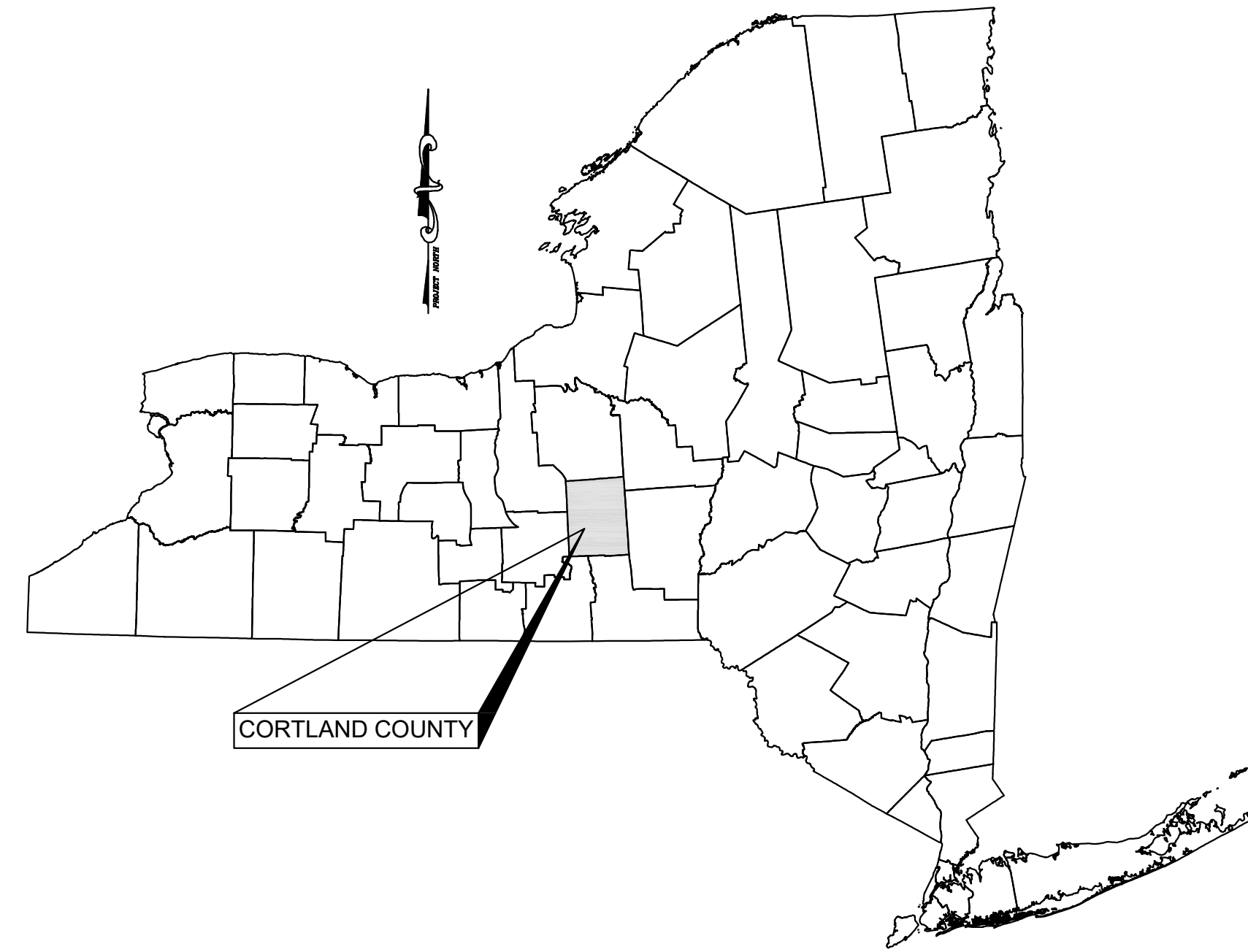
MCLEAN SOLAR 1

415 MCLEAN ROAD

TOWN OF CORTLANDVILLE

COUNTY OF CORTLAND

STATE OF NEW YORK

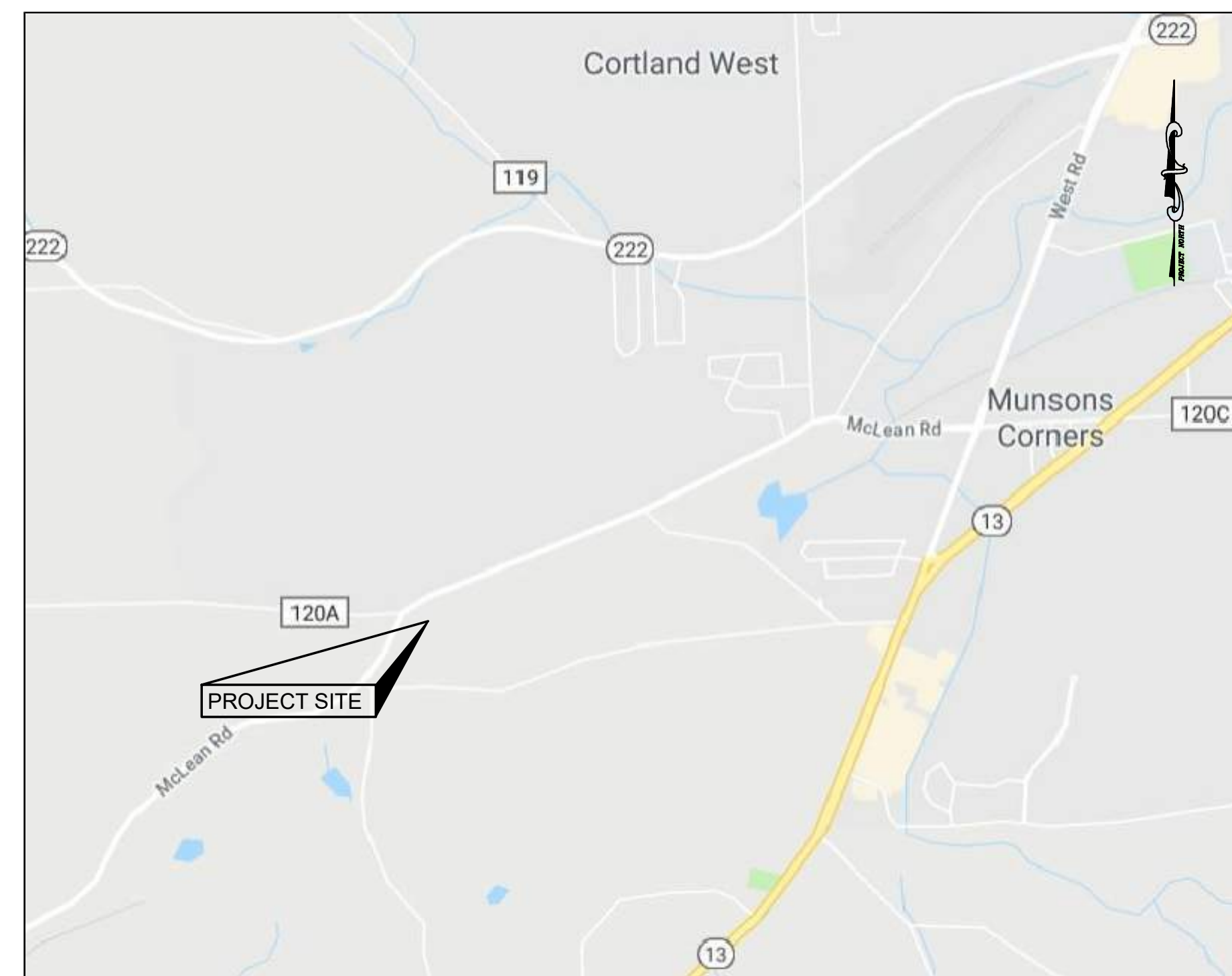


APPLICANT/DEVELOPER:

MCLEAN SOLAR 1, LLC.
55 5TH AVENUE, FLOOR 13
NEW YORK, NEW YORK 10003

INDEX OF DRAWINGS

| <u>SHEET</u> | <u>TITLE</u> |
|--------------|-----------------------------------|
| C010 | EXISTING SITE CONDITIONS |
| C100 | SITE PLAN |
| C105 | SITE PLAN WITH AERIAL PHOTO |
| C110 | EROSION AND SEDIMENT CONTROL PLAN |
| C200 | FARMLAND SOILS AND DETAILS |
| C210 | DETAILS |



LOCATION MAP
SCALE 1" = 2000'

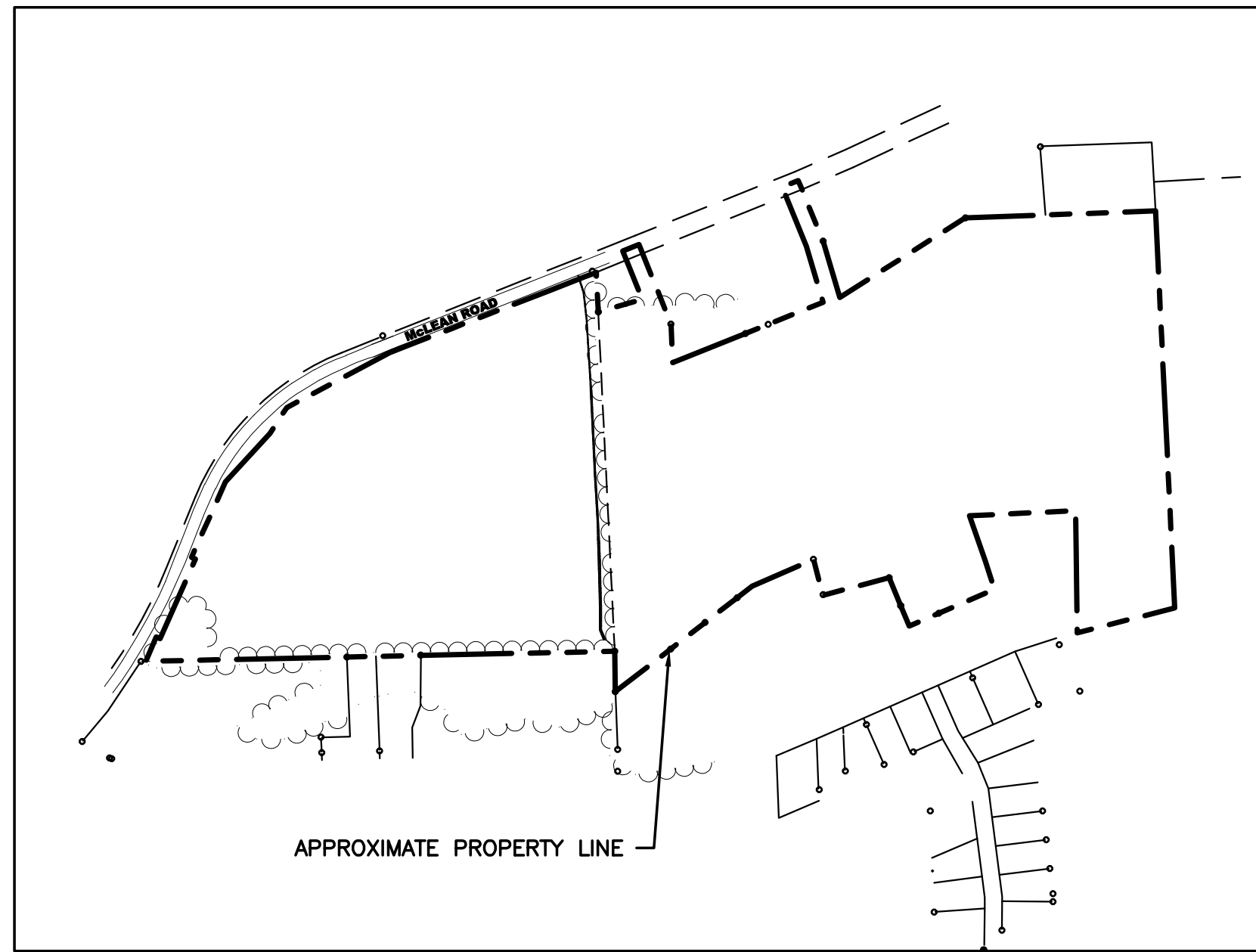
DRAWINGS PREPARED BY

KEYSTONE ASSOCIATES
ARCHITECTS, ENGINEERS AND SURVEYORS, LLC
58 Exchange Street
Binghamton, New York 13901
Phone: 607.722.1100
Fax: 607.722.2515
Email: info@keyscorp.com
www.keyscorp.com

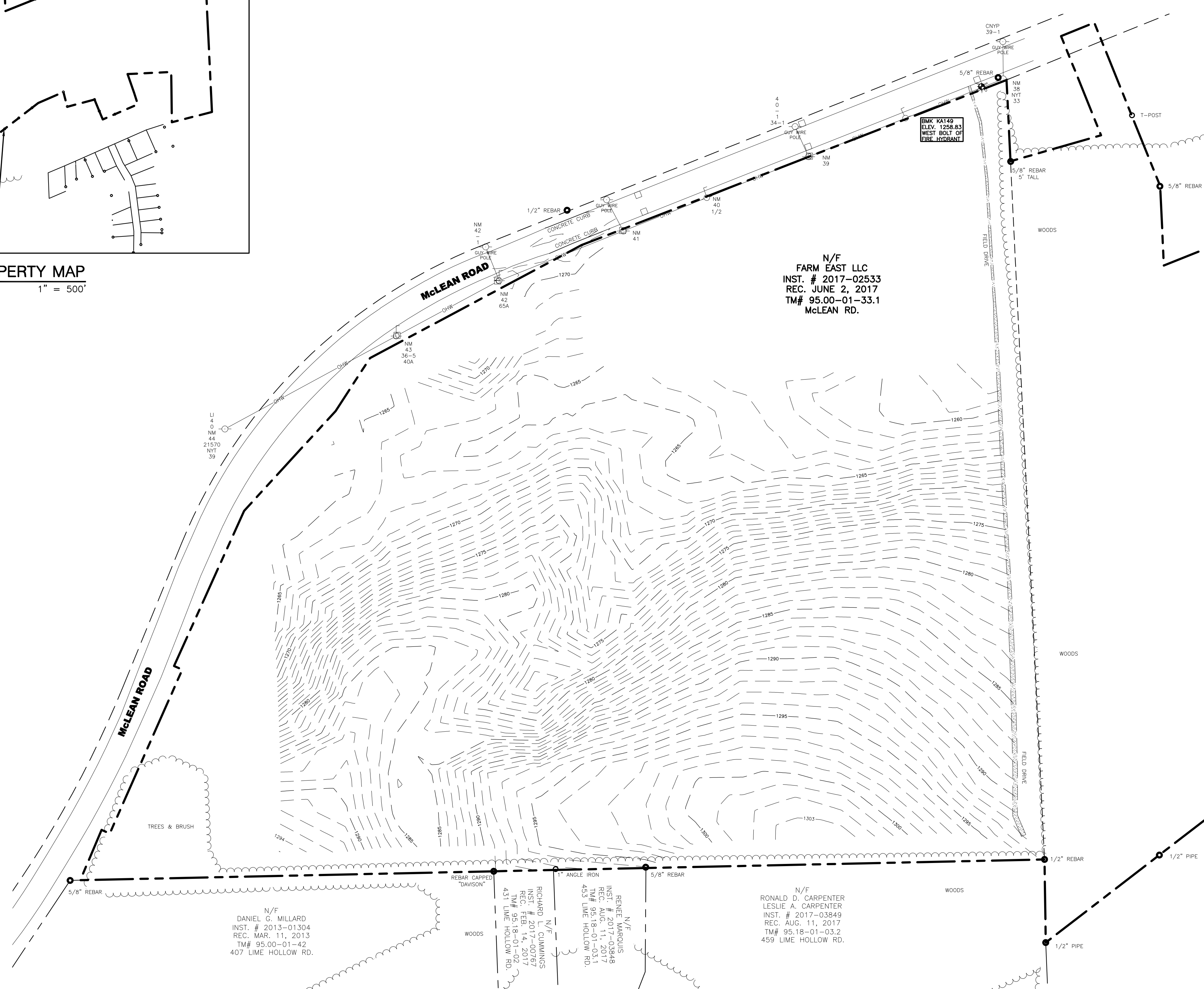
PROJECT NO. 2850.24418.1

DECEMBER 18, 2018
REVISED: FEBRUARY 12, 2019
REVISED: MARCH 15, 2019
REVISED: SEPTEMBER 13, 2019

MARK W. PARKER, P.E. LIC. No. 093972
ALTERATIONS NOT CONFORMING TO SECTION 7209, SUBDIVISION 2,
NEW YORK STATE EDUCATION LAW ARE PROHIBITED BY LAW.



OVERALL PROPERTY MAP
1" = 500'

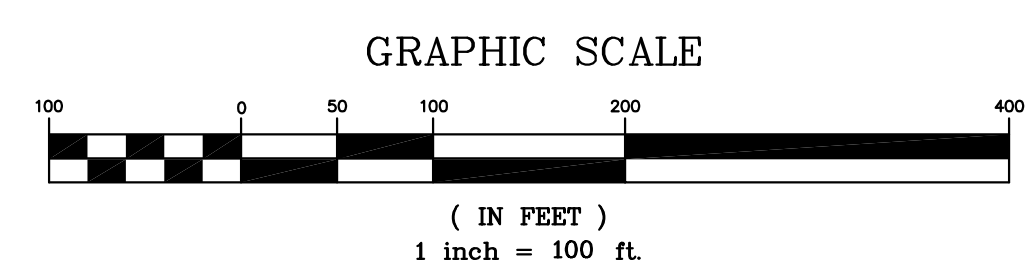


N/F
FARM EAST LLC
INST. # 2017-02533
REC. JUNE 2, 2017
TM# 95.00-01-33.1
McLEAN RD.

N/F
DANIEL G. MILLARD
INST. # 2013-01304
REC. MAR. 11, 2013
TM# 95.00-01-42
407 LIME HOLLOW RD.

N/F
RICHARD J. SWANWICKS
INST. # 2017-00767
REC. FEB. 14, 2017
TM# 95.18-01-02
431 LIME HOLLOW RD.

N/F
RONALD D. CARPENTER
LESUE A. CARPENTER
INST. # 2017-03849
REC. AUG. 11, 2017
TM# 95.18-01-03.2
459 LIME HOLLOW RD.

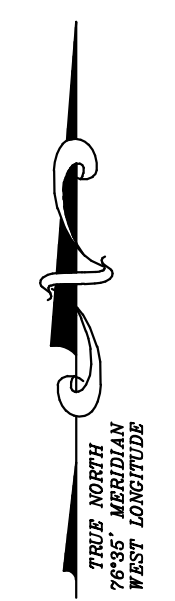


LEGEND

- BENCHMARK (NAVD 88)
- ⊕ MONUMENT FOUND AND NOTED
- N/F NOW OR FORMERLY
- TM# TAX MAP NUMBER
- PROPERTY LINE
- - - TAX MAP LINES
- UTILITY POLE WITH LIGHT
- UTILITY POLE
- OHW OVERHEAD UTILITIES
- CABLE PEDESTAL
- CATCH BASIN
- ⊗ FIRE HYDRANT
- SPOT ELEVATION

- NOTES
1. FIELD SURVEY WAS COMPLETED ON DECEMBER 08, 2018.
 2. HORIZONTAL DATUM IS REFERENCED TO NEW YORK STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD 83.
 3. VERTICAL DATUM IS REFERENCED TO NORTH AMERICAN VERTICAL DATUM 1988.
 4. AT THE TIME OF THE SURVEY THERE WAS APPROXIMATELY 4 INCHES OF SNOW ON THE GROUND.

ALL UNDERGROUND UTILITIES ARE APPROXIMATE.
UNDERGROUND UTILITY LOCATIONS MARKED BY UTILITY OWNERS PER A "DESIGN TICKET" CALLED IN TO "DIG SAFELY NEW YORK" PRIOR TO FIELD SURVEY HAVE BEEN SHOWN.
THE USER OF THIS MAP IS CAUTIONED THAT THE UNDERGROUND UTILITY LOCATIONS ARE NOT GUARANTEED, NOR IS THERE ANY GUARANTEE THAT ALL EXISTING UTILITIES WHETHER FUNCTIONAL OR ABANDONED WITHIN THE PROJECT AREA ARE SHOWN ON THIS DRAWING.
THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE STARTING WORK & SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM HIS WORK. CONTRACTOR SHALL NOTIFY DIG SAFELY NY (FORMERLY UFPO) 1-800-962-7962 IN ACCORDANCE WITH 16 NYCRR PART 753.



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SOLAR ARRAY PLAN 1
MCLEAN ROAD
415 MCLEAN ROAD
TOWN OF CORTLANDVILLE
CORTLAND COUNTY, NY

EXISTING SITE CONDITIONS

SHEET NO.
C010

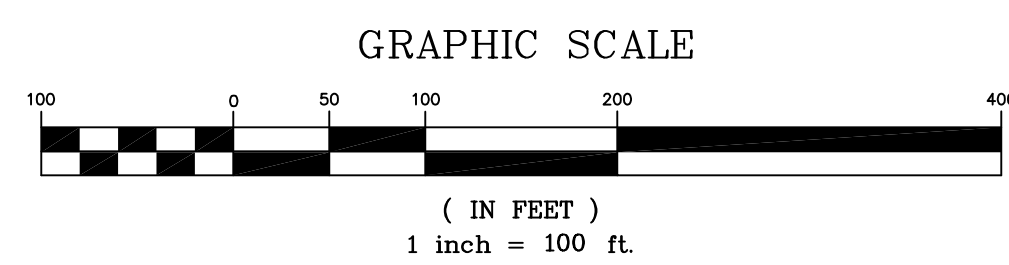
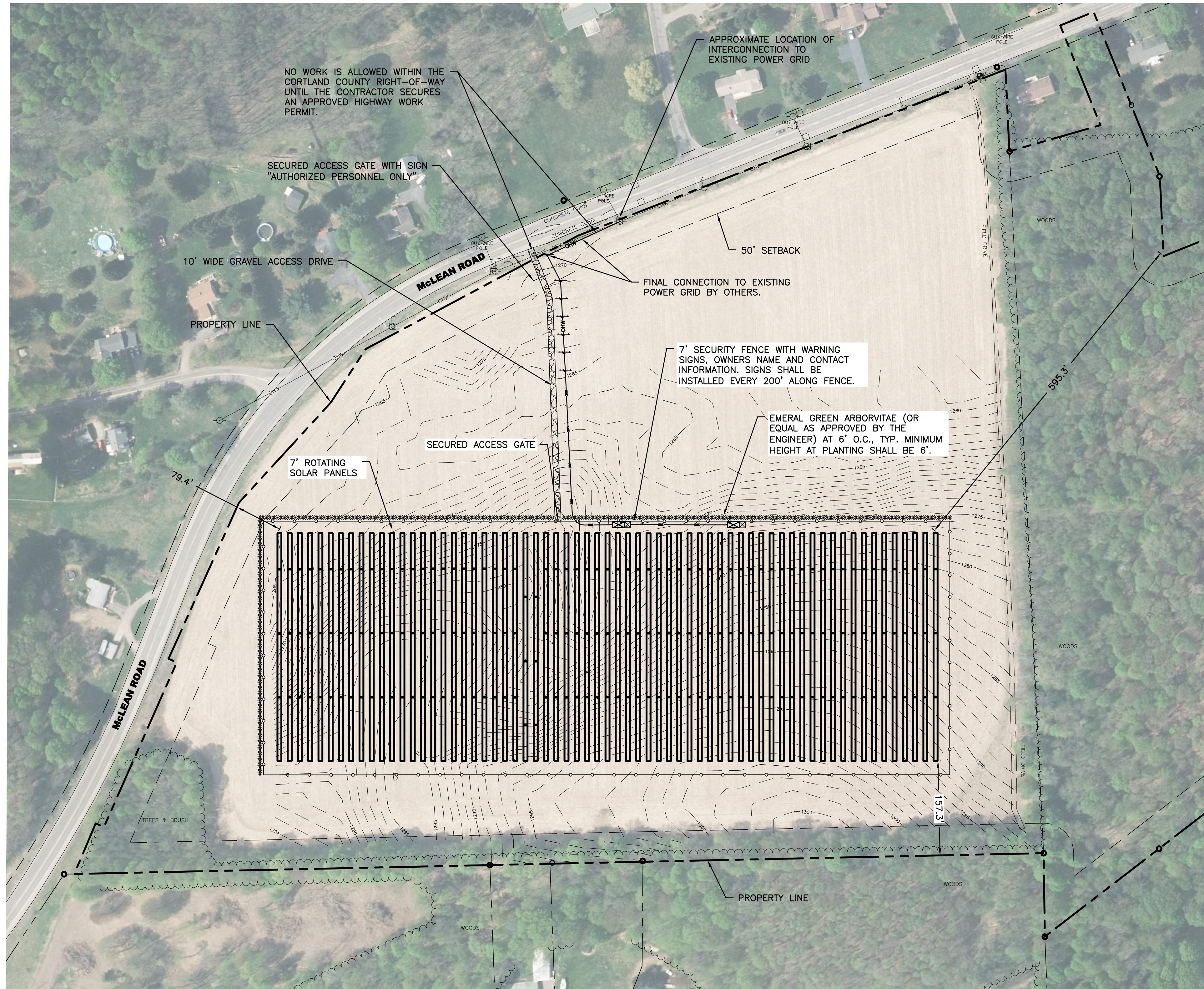
PROJECT NO.
2850.24418.1

DATE: 12/18/18

CAD FILE NO.: 285024418_1_Site.dwg

NO. REVISIONS AND DESCRIPTIONS DATE

| | | |
|---|----------------------------------------------------------------------|---------|
| 3 | LANDSCAPE REVISIONS | 9/13/18 |
| 2 | FINALIZED PANEL LAYOUT, PRINTED EASE PLAN | 3/15/18 |
| 1 | CHANGED PANEL LAYOUT, CHANGED DRAWING NUMBER, ADVANCED DESIGN NUMBER | 2/12/18 |

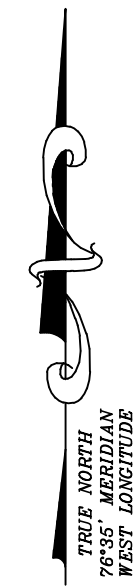


ZONING NOTES

ZONING DISTRICT: I-1
 USE: GROUND-MOUNTED LARGE-SCALE SOLAR ENERGY SYSTEM

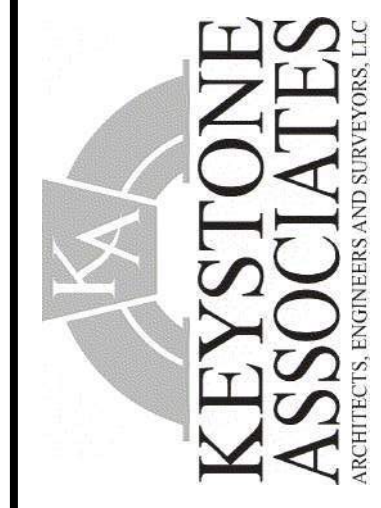
| | ZONING REQUIRED | SOLAR REQUIRED | ACTUAL |
|---------------------------------|-----------------|----------------|----------|
| MINIMUM LOT SIZE: | NONE | NONE | 141.9 AC |
| MINIMUM LOT FRONTAGE: | 50 LF | 50 LF | 2,204 LF |
| MAXIMUM LOT COVERAGE: | 70% | 70% | 6.82% |
| MINIMUM YARD DIMENSIONS: | | | |
| PRINCIPAL: | | | |
| FRONT | 50 LF | N/A | N/A |
| REAR | 40 LF | N/A | N/A |
| SIDE | 12 LF | N/A | N/A |
| ACCESSORY: | | | |
| FRONT | N/A | 50 LF | 75.1 LF |
| REAR | N/A | 50 LF | 154.3 LF |
| TO PRINCIPAL | N/A | N/A | N/A |
| SIDE | N/A | 50 LF | 610.7 LF |
| MAXIMUM STRUCTURE HEIGHT: | NONE | 20 FT | 12 FT |

TOTAL ACREAGE OF PROJECT: ± 12.00 ACRES
 TOTAL ACREAGE TO BE DISTURBED: ± 0.59 ACRES



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| NO. | REVISIONS AND DESCRIPTIONS | DATE |
|-----|------------------------------------------------------------------------------|---------|
| 3 | LANDSCAPE REVISIONS | 9/13/19 |
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SOLAR ARRAY PLAN
MCLEAN SOLAR 1
415 MCLEAN ROAD
 TOWN OF CORTLANDVILLE
 CORTLAND COUNTY, NY

SITE PLAN WITH AERIAL PHOTO

SHEET NO.
C105

PROJECT NO.
 2850.24418.1

DATE:
 12/18/18

CAD FILE NO.: 285024418_1_Site.dwg

EROSION CONTROL NOTES:

1. THE SOIL EROSION AND WATER POLLUTION CONTROL DEVICES AS SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENTS. THE OWNER'S REPRESENTATIVE MAY REQUIRE ADDITIONAL MEASURES (OR DELETION OF MEASURES) DURING CONSTRUCTION.
2. ALL NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT CONTAMINATION OF WATER BY SILT, SEDIMENT, FUELS, SOLVENTS, LUBRICANTS, EPOXY COATINGS, CONCRETE LEACHATE, OR ANY OTHER POLLUTANT ASSOCIATED WITH CONSTRUCTION AND CONSTRUCTION PROCEDURES.
3. DURING CONSTRUCTION, NO WET OR FRESH CONCRETE OR LEACHATE SHALL BE ALLOWED TO ESCAPE INTO THE WATERS OF NEW YORK STATE, NOR SHALL WASHINGS FROM CONCRETE TRUCKS, MIXERS, OR OTHER DEVICES BE ALLOWED TO ENTER ANY WETLAND OR WATERS.
4. THE SEQUENCE OF OPERATIONS SHOULD ALLOW FOR REGRADING AS CLOSE AS POSSIBLE TO FINAL GRADE. EVERY EFFORT SHALL BE MADE TO PROVIDE ESTABLISHMENT OF FINAL TURF IMMEDIATELY AFTER FINAL GRADING SO AS NOT TO LEAVE DISTURBED AREAS EXPOSED TO RAIN OR DRY/WINDY CONDITIONS.
5. IF CONSTRUCTION ACTIVITIES ARE DISCONTINUED IN AREAS OF SOIL DISTURBANCE FOR A PERIOD OF 14 DAYS OR MORE, THE AREA SHALL ALSO BE SEEDED AND MULCHED AS DIRECTED BY ENGINEER WITH A TEMPORARY COVER USING A QUICK GROWING SPECIES (RYEGRASS, ITALIAN RYEGRASS, OR CEREAL GRASSES) SUITABLE FOR THE AREA.
6. TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL DEVICES SHALL BE CLEANED WHEN THE DEVICES REACH 50% STORAGE CAPACITY AND AS DIRECTED BY ENGINEER. INSPECTION OF ALL DEVICES SHALL BE MADE DAILY AND DEFICIENCIES CORRECTED THAT DAY.
7. ALL CONTROLS SHALL BE PLACED PRIOR TO STARTING EARTHWORK OPERATIONS AND SHALL REMAIN IN PLACE UNTIL ALL AREAS ARE STABILIZED WITH HEALTHY STAND OF GRASS.
8. CONTRACTOR SHALL COMPLY WITH NYSDEC, GP-0-15-002, SPDES, GENERAL PERMIT REQUIREMENTS IF APPLICABLE.
9. PRIOR TO CONSTRUCTION EQUIPMENT ENTERING OR EXITING THE SITE, A CONSTRUCTION ENTRANCE SHALL BE BUILT UNLESS EXISTING CONDITIONS PREVENT ANY TRACKING OF DIRT, MUD, OR DEBRIS OFF THE SITE. THE CONTRACTOR WILL BE RESPONSIBLE TO KEEP ALL ROADS FREE OF DIRT, MUD AND OTHER DEBRIS. THIS WILL INCLUDE BUILDING THE CONSTRUCTION ENTRANCE, SWEEPING, SCRAPING AND WASHING THE PAVEMENT SURFACES WHENEVER NEEDED. THE CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS. THE ENTRANCE SHOULD BE LOCATED SO THAT ALL VEHICLES LEAVING THE SITE WILL UTILIZE IT.
10. ALL EROSION CONTROL DEVICES SHALL BE PLACED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH FEDERAL, STATE, LOCAL AND MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL PLACE AND MAINTAIN ALL EROSION CONTROL DEVICES AS NEEDED THROUGHOUT THE PROJECT.
11. TEMPORARY SEEDING SHALL CONSIST OF LIME @ 1/2 TON PER ACRE, FERTILIZER 5-10-10 @ 600 POUNDS PER ACRE, RYEGRASS (ANNUAL OR PERENNIAL) @ 40 POUNDS PER ACRE AND STRAW MULCH @ 2 TON PER ACRE. JUTE MESH SHALL BE PLACED OVER MULCH AND STAKED WHENEVER WINDS OR SLOPE WILL CAUSE THE MULCH AND SEED TO BECOME DEPLETED OR ERODED. AREAS SHALL BE TEMPORARY SEEDED WHEN THEY ARE SUBJECT TO EROSION AND WILL BE INACTIVE FOR 14 OR MORE DAYS.

SEEDING

1. SEED, MULCH AND FERTILIZE AS NECESSARY TO RESTORE ALL DISTURBED AREAS TO ORIGINAL CONDITION OR BETTER.
2. SOIL pH SHALL BE TESTED AND ADJUSTED TO BE 6.0 TO 7.0.
3. PREPARE SEEDBED BY LOOSENING SOIL TO A DEPTH OF 4 TO 6 INCHES. PLACE FERTILIZER (AS REQUIRED BY SOIL TEST) AND SEED THEN LIGHTLY RAKE AND THEN ROLL WITH 200 POUND ROLLER. MULCH THE AREA THEN WATER. STRAW MAY NEED TO BE SECURE TO PREVENT IT FROM BLOWING AWAY.
4. HEAVY SHADE AREAS (UNDER PANELS) SHALL BE SEEDED WITH A 100% FINE FESCUE VARIETY BLEND (± 20% HARD FESCUE, ± 40% CHEWINGS FESCUE, AND ± 40% CREEPING FESCUE). INITIAL SEEDING SHALL BE DONE AT A RATE OF 4.0 TO 5.0 POUNDS PER 1,000 SF. OVER-SEEDING (MAINTENANCE SEEDING) SHALL BE DONE WITH THE SAME SEED BLEND AT A RATE OF 2.0 TO 2.5 POUNDS PER 1,000 SF.
5. LAWN AREAS SHALL BE SEEDED WITH A RECREATIONAL SEED BLEND (± 65% CREEPING RED FESCUE, ± 20% PERENNIAL RYEGRASS, AND ± 15% FINE FESCUE). INITIAL SEEDING SHALL BE DONE AT A RATE OF 4.0 TO 5.0 POUNDS PER 1,000 SF. OVER-SEEDING (MAINTENANCE SEEDING) SHALL BE DONE WITH THE SAME SEED BLEND AT A RATE OF 2.0 TO 2.5 POUNDS PER 1,000 SF.
6. BUFFER AREAS SHALL BE SEEDED WITH A 100% PERENNIAL RYEGRASS SEED. INITIAL SEEDING SHALL BE DONE AT A RATE OF 4.0 TO 5.0 POUNDS PER 1,000 SF. OVER-SEEDING (MAINTENANCE SEEDING) SHALL BE DONE WITH THE SAME SEED BLEND AT A RATE OF 2.0 TO 2.5 POUNDS PER 1,000 SF.

MAINTENANCE

1. MOW AREAS WITHIN FENCE A MINIMUM OF 3 OR 4 TIMES A YEAR. MOW BUFFER AREAS A MINIMUM OF 2 TIMES A YEAR.
2. INSPECT HEALTH OF GRASSED AREAS 3 TO 4 TIMES PER YEAR. LOOK FOR THIN AND BARE AREAS, AREAS OF EROSION, AREAS OF COMPACTION OR OTHER SIGNS OF AN UNHEALTHY LAWN AREA.
3. RESEED ALL THIN AND BARE AREAS. ANY EROSION SHALL BE REPAIRED BY ADDING SOILS AS NECESSARY, RESEED ACCORDING TO APPROPRIATE SEED MIXTURE AND MULCH AREA.
4. TEST SOIL EVERY 3 YEARS. FERTILIZE IN ACCORDANCE WITH SOIL TEST ANALYSIS. MAINTAIN SOIL pH OF 6.0 TO 7.0.
5. AERATE COMPACTED AND HEAVILY TRAVELED AREAS AS NECESSARY.

| | |
|----------------------------------|----------|
| CONCRETE WASHOUT | CW |
| DUST CONTROL | DC |
| TOPSOILING | TS |
| PERMANENT SEEDING | PS |
| MULCHING | M |
| STABILIZED CONSTRUCTION ENTRANCE | [Symbol] |
| SILT FENCE | [Symbol] |

U.S. DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

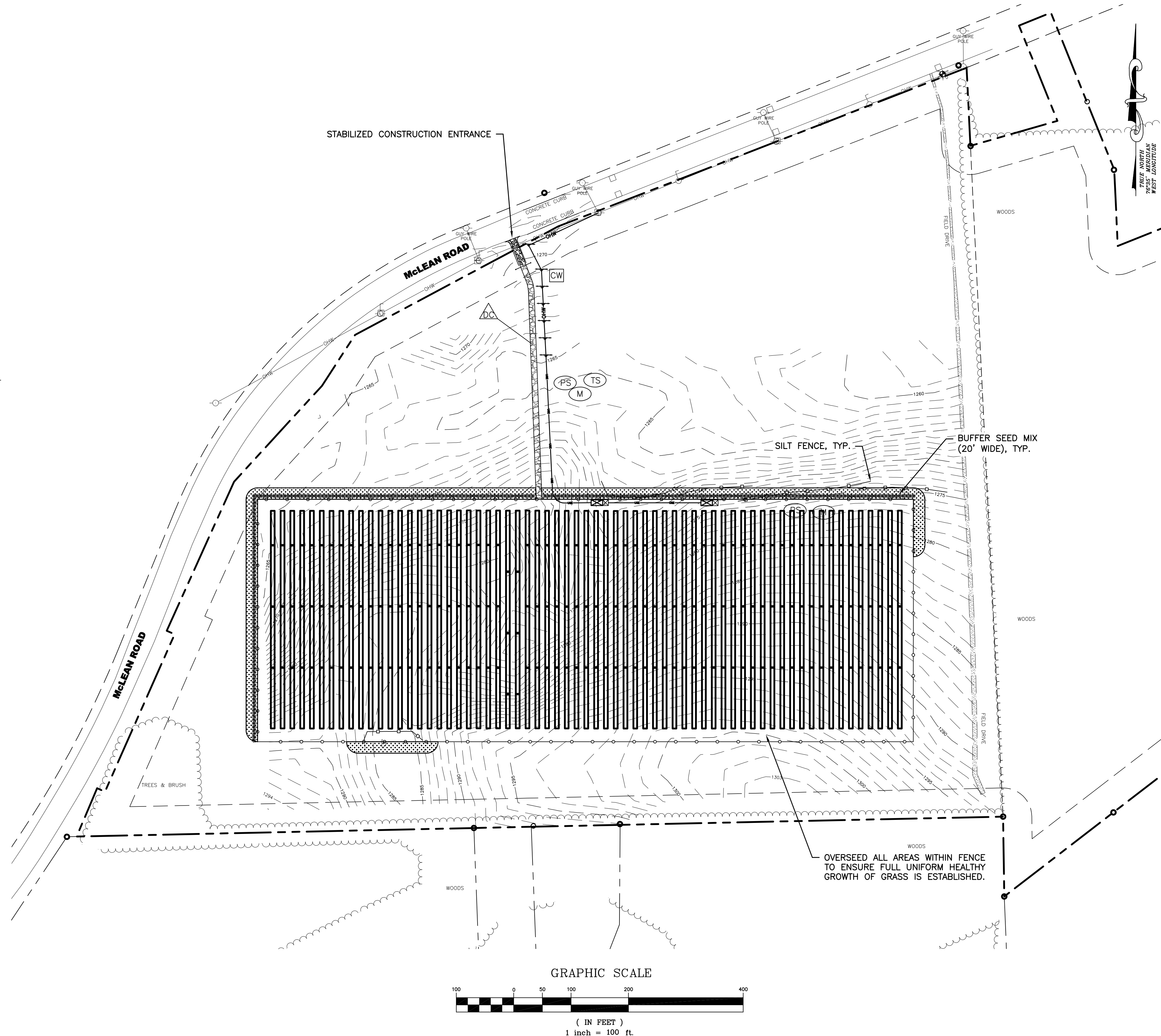
STANDARD SYMBOLS

NOTES:

1. SOLAR ARRAY SUPPORTS AND CHAIN LINK FENCE POST SHALL BE DRIVEN OR DIRECT AUGERED.
2. CONTRACTOR SHALL BACKFILL ALL TRENCHES ON THE SAME DAY AS THEY ARE EXCAVATED. SEEDING AND MULCHING SHALL OCCUR IMMEDIATELY AFTER TRENCHING HAS BEEN COMPLETED.
3. IF THE E&S MEASURES THAT ARE SHOWN DO NOT PROVE TO BE EFFECTIVE, THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE ENGINEER OF RECORD FOR RECOMMENDATIONS OF ADDITIONAL MEASURES TO INSTALL.
4. CONTRACTOR SHALL NOT EXCAVATE FOR ROAD OR UNDERGROUND UTILITIES MORE THAN THEY CAN BACKFILL/INSTALL IN THE SAME DAY.

CONSTRUCTION SEQUENCE

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. INSTALL SILT FENCE.
3. BEGIN GRADING OPERATIONS FOR ACCESS DRIVE.
4. INSTALL SOLAR BASE SUPPORTS AND SOLAR ARRAYS.
5. INSTALL CHAIN LINK FENCE AND OTHER AMENITIES.
6. INSTALL UNDERGROUND AND OVERHEAD ELECTRICAL AND CONNECT TO EXISTING POWER DISTRIBUTION SYSTEM.
7. INSTALL SEED AND MULCH TO STABILIZE ALL DISTURBED AREAS.
8. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.



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SOLAR ARRAY PLAN
MCLEAN SOLAR 1
415 MCLEAN ROAD
TOWN OF CORTLANDVILLE CORTLAND COUNTY, NY

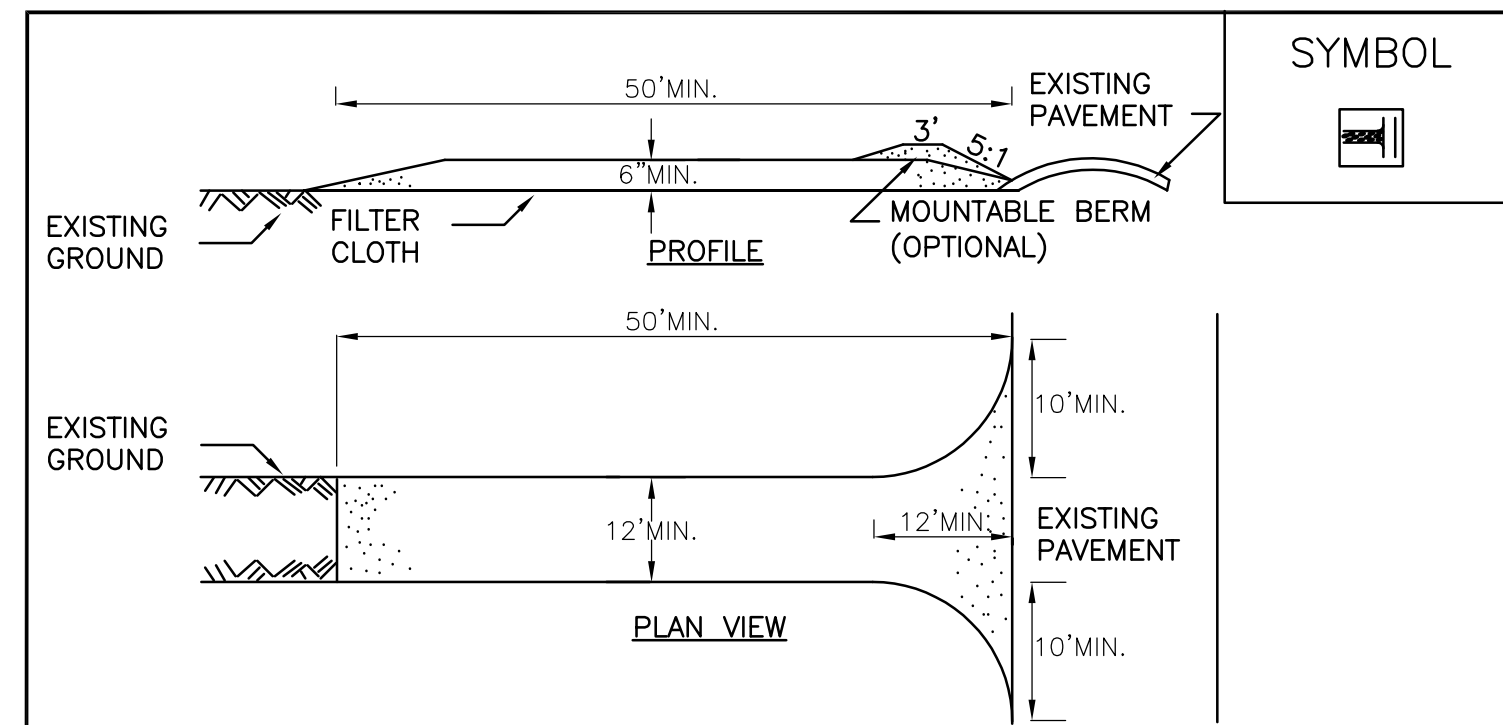
EROSION AND SEDIMENT CONTROL PLAN

SHEET NO. **C110**
PROJECT NO. 2850.24418.1
DATE: 12/18/18
CAD FILE NO.: 285024418_1_Site.dwg

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| NO. | REVISIONS AND DESCRIPTIONS | DATE |
|-----|-----------------------------------------------------------------------|---------|
| 1 | ISSUED PANEL LAYOUT, CHANGED DRAWING LAYOUT, ADVANCED DESIGN NUMBERS. | 2/12/19 |
| 2 | FINALIZED PANEL LAYOUT, PRINTED E&S PLAN. | 3/19/19 |
| 3 | LANESCAPE REVISIONS | 9/13/19 |

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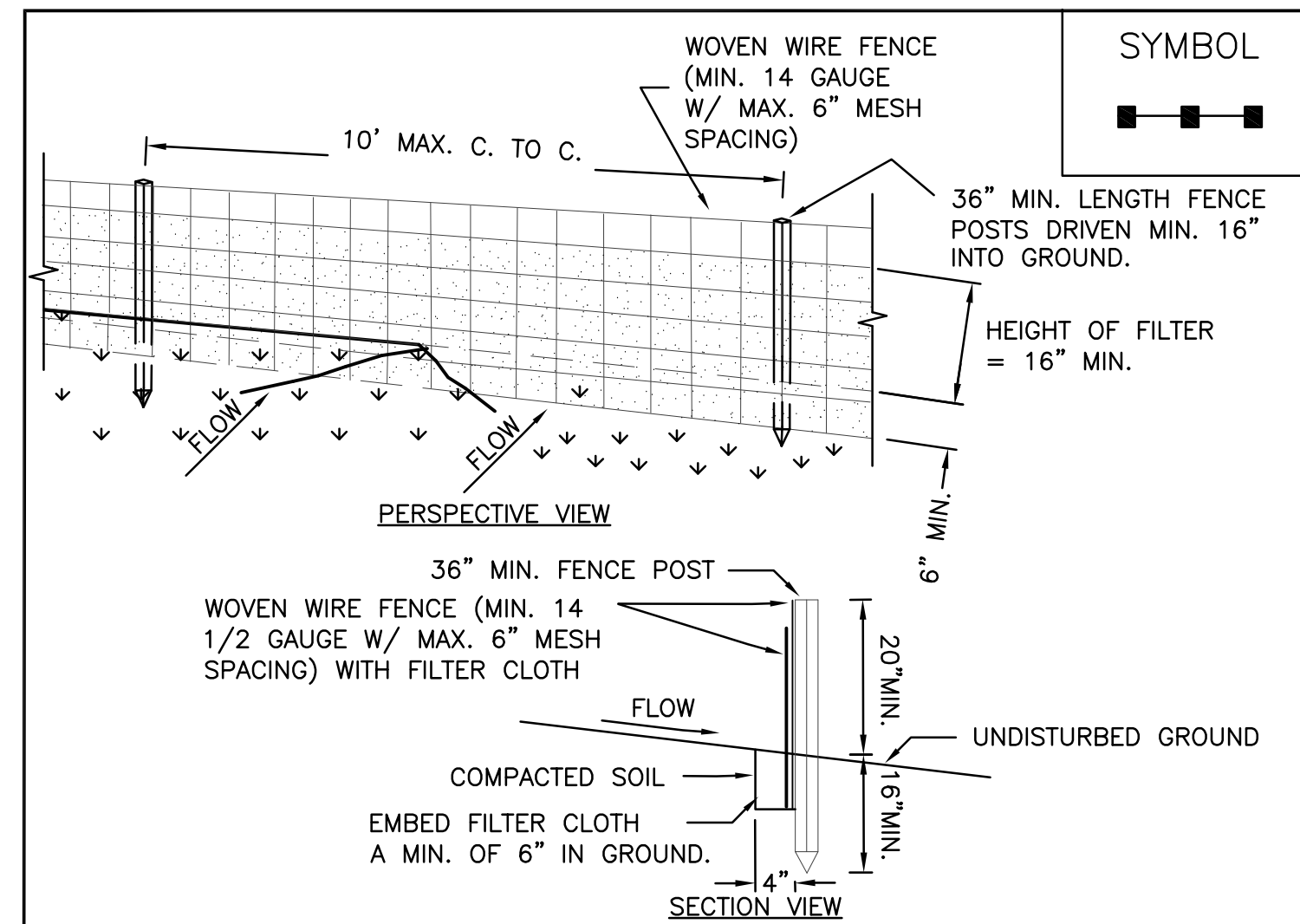
CONSTRUCTION SPECIFICATIONS

- STONE SIZE - USE 1-4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
- GEOTEXTILE - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- 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.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

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

STABILIZED
CONSTRUCTION
ACCESS

1 STABILIZED CONSTRUCTION ACCESS
C210 N.T.S.



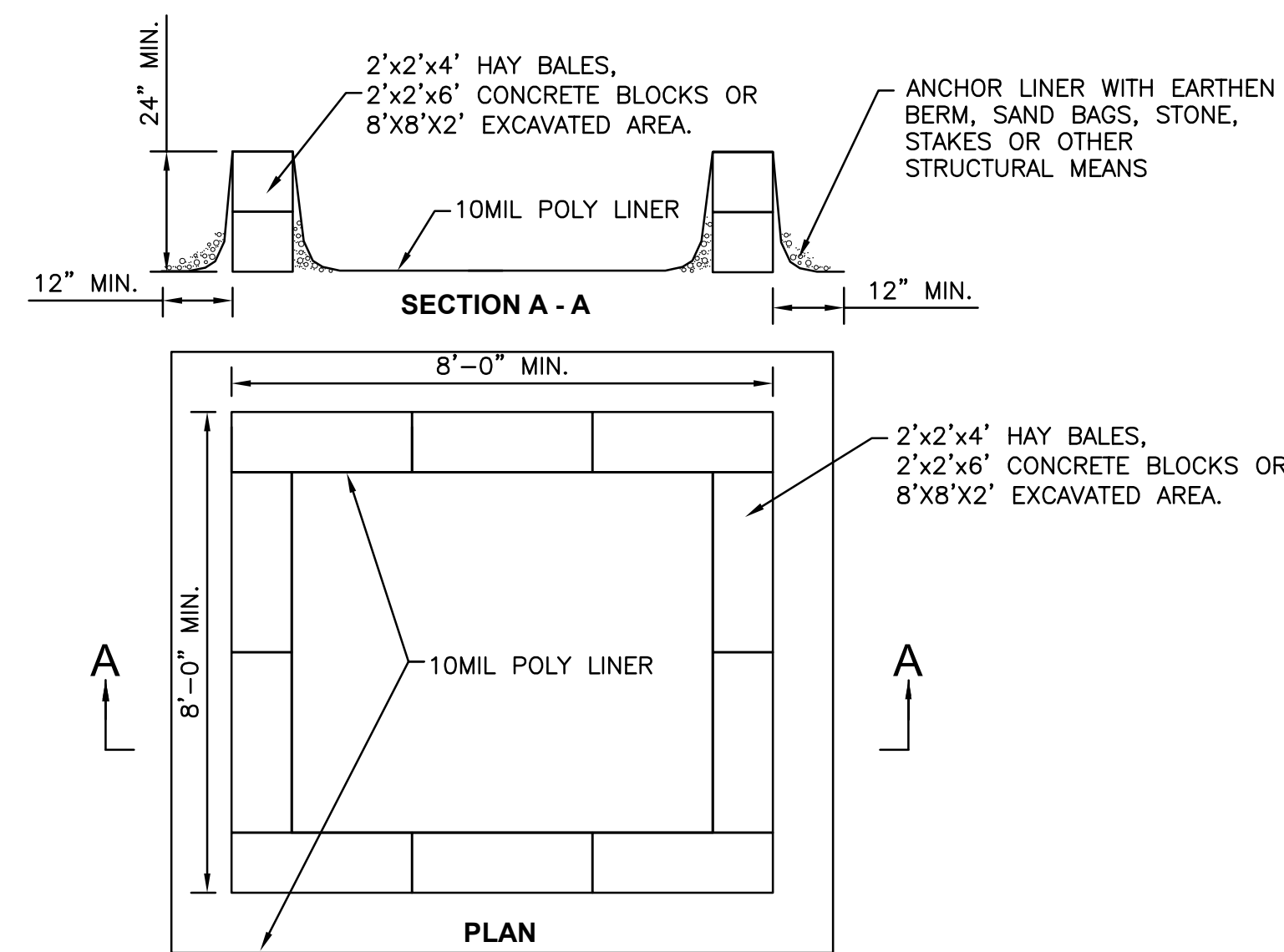
CONSTRUCTION SPECIFICATIONS

- 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.
- FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
- PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

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

SILT FENCE

2 SILT FENCE
C210 N.T.S.



NOTES:

- ACTUAL ABOVE GROUND OR EXCAVATED LAYOUT DETERMINED IN FIELD.
- LOCATE THE FACILITY A MINIMUM OF 100' FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATERS. WASH WATER SHALL NOT BE ALLOWED TO INFILTRATE INTO SOIL OR ENTER SURFACE WATERS. EXCESS RAINWATER SHALL BE PUMPED TO A STABILIZED AREA SUCH AS A GRASSED FILTER STRIP.
- EXCAVATED WASHOUT STRUCTURES SHALL BE A MINIMUM OF 2' DEEP WITH SIDE SLOPES OF 2:1.
- PROVIDE APPROPRIATE ACCESS TO THE STRUCTURE.
- SIGNS SHALL BE INSTALLED TO DIRECT DRIVERS TO THE CONCRETE WASHOUT LOCATION.
- ALL WASHOUT FACILITIES WILL BE LINED. THE LINER SHALL BE PLASTIC SHEETING WITH A MINIMUM THICKNESS OF 10 MILS WITH NO HOLES OR TEARS. LINER SHALL BE REPLACED WITH EACH CLEANING OF STRUCTURE.
- ALL CONCRETE WASHOUT FACILITIES SHALL BE INSPECTED DAILY; DAMAGED OR LEAKING STRUCTURES SHALL BE DEACTIVATED AND REPAIRED OR REPLACED IMMEDIATELY.
- ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75% OF STORAGE CAPACITY OF THE STRUCTURE IS FILLED. THE MATERIAL SHALL BE DISPOSED OF IN A LEGAL MANNER.
- INSPECT THE PROJECT SITE FREQUENTLY TO ENSURE THAT NO CONCRETE DISCHARGES ARE TAKING PLACE IN NON-DESIGNATED AREAS.

3 CONCRETE WASHOUT STRUCTURE
C210 N.T.S.

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SOLAR ARRAY PLAN
MCLEAN SOLAR 1
415 MCLEAN ROAD
TOWN OF CORTLANDVILLE CORTLAND COUNTY, NY

DETAILS

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| NO. | REVISIONS AND DESCRIPTIONS | DATE |
|-----|----------------------------------------------------------------------|---------|
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| 3 | LANDSCAPE REVISIONS | 9/13/19 |

SHEET NO.
C210

PROJECT NO.
2850.24418.1

DATE: 12/18/18

CAD FILE NO.: 285024418_1_Site.dwg

**Full Environmental Assessment Form
Part 1 - Project and Setting**

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 1 is accurate and complete.

A. Project and Applicant/Sponsor Information.

| | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------|
| Name of Action or Project: McLean Solar 1 | | |
| Project Location (describe, and attach a general location map): 415 McLean Road Cortland, NY | | |
| Brief Description of Proposed Action (include purpose or need): Construction of a ground mounted, 2 MW large scale solar energy system (+/- 12 acres) including landscaping, access drive, utility easements and connection to existing power distribution system. A use variance, conditional use permit or other local approvals are required for this project. | | |
| Name of Applicant/Sponsor: McLean Solar 1, LLC; ATTN: Elie Schecter | | Telephone: (914) 420-5803 |
| | | E-Mail: eas@c2.energy |
| Address: 55 5th Avenue | | |
| City/PO: New York | State: New York | Zip Code: 10003 |
| Project Contact (if not same as sponsor; give name and title/role): | | Telephone: |
| | | E-Mail: |
| Address: | | |
| City/PO: | State: | Zip Code: |
| Property Owner (if not same as sponsor): Farm East, LLC | | Telephone: (315) 409-9199 |
| | | E-Mail: |
| Address: 890 McLean Road | | |
| City/PO: Cortland | State: New York | Zip Code: 13045 |

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, <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No or Village Board of Trustees | Aquifer Permit | TBD |
| b. City, Town or Village Planning Board or Commission <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Site Plan approval, referral for use variance | TBD |
| c. City, Town or Village Zoning Board of Appeals <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | Use Variance | TBD |
| d. Other local agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | PILOT Agreement | TBD |
| e. County agencies <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 239 Review and PILOT Agreement | TBD |
| f. Regional agencies <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| g. State agencies <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| h. Federal agencies <input type="checkbox"/> Yes <input type="checkbox"/> No | | |
| i. Coastal Resources. i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No iii. Is the project site within a Coastal Erosion Hazard Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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):

NYS Major Basins: Upper Susquehanna

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):

The Town of Cortlandville Agriculture and Farmland Protection Plan

C.3. Zoning

a. Is the site of the proposed action located in a municipality with an adopted zoning law or ordinance. Yes No
If Yes, what is the zoning classification(s) including any applicable overlay district?
Zoned Residential _____

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? **Use Variance being requested** 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? Dryden _____

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

c. Which fire protection and emergency medical services serve the project site?
Cortlandville Fire _____

d. What parks serve the project site?
N/A _____

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 energy facility _____

b. a. Total acreage of the site of the proposed action? _____ +/- 12.00 acres
b. Total acreage to be physically disturbed? _____ +/- 0.59 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ +/- 12.00 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: +/- 3 months
ii. If Yes:
• Total number of phases anticipated _____
• Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
• Anticipated completion date of final phase _____ month _____ year
• Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

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

If Yes, show numbers of units proposed.

| | <u>One Family</u> | <u>Two Family</u> | <u>Three Family</u> | <u>Multiple Family (four or more)</u> |
|---------------|-------------------|-------------------|---------------------|---------------------------------------|
| Initial Phase | _____ | _____ | _____ | _____ |
| At completion | _____ | _____ | _____ | _____ |
| of all phases | _____ | _____ | _____ | _____ |

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

If Yes, **Construction includes access drive, solar panels with equipment and perimeter fence with landscaping.**

i. Total number of structures _____

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

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

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

If Yes,

i. Purpose of the impoundment: _____

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

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

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

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

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

D.2. Project Operations

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

If Yes:

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

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

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

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

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

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

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

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

viii. Will the excavation require blasting? Yes No

ix. Summarize site reclamation goals and plan: _____

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

If Yes:

i. Identify the wetland or waterbody which would be affected (by name, water index number, wetland map number or geographic description): _____

ii. Describe how the proposed action would affect that waterbody or wetland, e.g. excavation, fill, placement of structures, or alteration of channels, banks and shorelines. Indicate extent of activities, alterations and additions in square feet or acres:

iii. Will the proposed action cause or result in disturbance to bottom sediments? Yes No

If Yes, describe: _____

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

If Yes:

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

v. Describe any proposed reclamation/mitigation following disturbance: _____

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

If Yes:

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

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

If Yes:

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

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

If Yes:

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

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

If Yes:

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

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

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

d. Will the proposed action generate liquid wastes? Yes No

If Yes:

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

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

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

If Yes:

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

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Do existing sewer lines serve the project site? _____ • Will a line extension within an existing district be necessary to serve the project? _____ <p>If Yes:</p> <ul style="list-style-type: none"> • Describe extensions or capacity expansions proposed to serve this project: _____ _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <p>iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? _____</p> <p>If Yes:</p> <ul style="list-style-type: none"> • Applicant/sponsor for new district: _____ • Date application submitted or anticipated: _____ • What is the receiving water for the wastewater discharge? _____ | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <p>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):</p> <p>_____</p> <p>_____</p> | |
| <p>vi. Describe any plans or designs to capture, recycle or reuse liquid waste: _____</p> <p>_____</p> <p>_____</p> | |
| <p>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? _____</p> <p>If Yes:</p> <p>i. How much impervious surface will the project create in relation to total size of project parcel?</p> <p style="padding-left: 40px;">_____ Square feet or _____ acres (impervious surface)</p> <p style="padding-left: 40px;">_____ Square feet or _____ acres (parcel size)</p> <p>ii. Describe types of new point sources. _____</p> <p>_____</p> <p>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)?</p> <p>_____</p> <p>_____</p> <ul style="list-style-type: none"> • If to surface waters, identify receiving water bodies or wetlands: _____ _____ _____ • Will stormwater runoff flow to adjacent properties? _____ | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <p>iv. Does the proposed plan minimize impervious surfaces, use pervious materials or collect and re-use stormwater? _____</p> | <input type="checkbox"/> Yes <input type="checkbox"/> No |
| <p>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? _____</p> <p>If Yes, identify:</p> <p>i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)</p> <p>_____</p> <p>ii. Stationary sources during construction (e.g., power generation, structural heating, batch plant, crushers)</p> <p>_____</p> <p>iii. Stationary sources during operations (e.g., process emissions, large boilers, electric generation)</p> <p>_____</p> | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| <p>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? _____</p> <p>If Yes:</p> <p>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)</p> <p>_____</p> <p>ii. In addition to emissions as calculated in the application, the project will generate:</p> <ul style="list-style-type: none"> • _____ Tons/year (short tons) of Carbon Dioxide (CO₂) • _____ Tons/year (short tons) of Nitrous Oxide (N₂O) • _____ Tons/year (short tons) of Perfluorocarbons (PFCs) • _____ Tons/year (short tons) of Sulfur Hexafluoride (SF₆) • _____ Tons/year (short tons) of Carbon Dioxide equivalent of Hydroflouorocarbons (HFCs) • _____ Tons/year (short tons) of Hazardous Air Pollutants (HAPs) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No |

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 1/2 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.

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <p>i. During Construction:</p> <ul style="list-style-type: none"> • Monday - Friday: _____ • Saturday: _____ • Sunday: _____ • Holidays: _____ | <p>ii. During Operations:</p> <ul style="list-style-type: none"> • Monday - Friday: _____ • Saturday: _____ • Sunday: _____ • Holidays: _____ | <p>- Mowing 4-5 times a year - Annual Maintenance 1 time a year - Maintenance as needed (+/- 3 times a year)</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? Yes No
 If yes:
 i. Provide details including sources, time of day and duration:

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

n. Will the proposed action have outdoor lighting? Yes No
 If yes:
 i. Describe source(s), location(s), height of fixture(s), direction/aim, and proximity to nearest occupied structures:

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

o. Does the proposed action have the potential to produce odors for more than one hour per day? Yes No
 If Yes, describe possible sources, potential frequency and duration of odor emissions, and proximity to nearest occupied structures: _____

p. Will the proposed action include any bulk storage of petroleum (combined capacity of over 1,100 gallons) or chemical products 185 gallons in above ground storage or any amount in underground storage? Yes No
 If Yes:
 i. Product(s) to be stored _____
 ii. Volume(s) _____ per unit time _____ (e.g., month, year)
 iii. Generally, describe the proposed storage facilities: _____

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

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

r. Will the proposed action (commercial or industrial projects only) involve or require the management or disposal of solid waste (excluding hazardous materials)? Yes No
 If Yes:
 i. Describe any solid waste(s) to be generated during construction or operation of the facility:
 • Construction: _____ tons per _____ (unit of time)
 • Operation : _____ tons per _____ (unit of time)
 ii. Describe any proposals for on-site minimization, recycling or reuse of materials to avoid disposal as solid waste:
 • Construction: _____

 • Operation: _____

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

 • Operation: _____

s. Does the proposed action include construction or modification of a solid waste management facility? Yes No
 If Yes:
 i. Type of management or handling of waste proposed for the site (e.g., recycling or transfer station, composting, landfill, or other disposal activities): _____
 ii. Anticipated rate of disposal/processing:
 • _____ Tons/month, if transfer or other non-combustion/thermal treatment, or
 • _____ Tons/hour, if combustion or thermal treatment
 iii. If landfill, anticipated site life: _____ years

t. Will the proposed action at the site involve the commercial generation, treatment, storage, or disposal of hazardous waste? Yes No
 If Yes:
 i. Name(s) of all hazardous wastes or constituents to be generated, handled or managed at facility: _____

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

 iii. Specify amount to be handled or generated _____ tons/month
 iv. Describe any proposals for on-site minimization, recycling or reuse of hazardous constituents: _____

 v. Will any hazardous wastes be disposed at an existing offsite hazardous waste facility? Yes No
 If Yes: provide name and location of facility: _____

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

E. Site and Setting of Proposed Action

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

a. Existing land uses.
 i. Check all uses that occur on, adjoining and near the project site.
 Urban Industrial Commercial Residential (suburban) Rural (non-farm)
 Forest Agriculture Aquatic Other (specify): _____
 ii. If mix of uses, generally describe:

b. Land uses and coverytypes on the project site.

| Land use or Coverytype | Current Acreage | Acreage After Project Completion | Change (Acres +/-) |
|------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| • Roads, buildings, and other paved or impervious surfaces | | | |
| • Forested | | | |
| • Meadows, grasslands or brushlands (non-agricultural, including abandoned agricultural) | | | |
| • Agricultural (includes active orchards, field, greenhouse etc.) | 141.93 | 141.93 | 0.0 |
| • Surface water features (lakes, ponds, streams, rivers, etc.) | | +/- 12.0 acres will be used for the solar system and accessories, but will be returned to agricultural land at end of useful life. | |
| • Wetlands (freshwater or tidal) | | | |
| • Non-vegetated (bare rock, earth or fill) | | | |
| • 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: _____
iii. Describe any development constraints due to the prior solid waste activities: _____

g. Have hazardous wastes been generated, treated and/or disposed of at the site, or does the project site adjoin property which is now or was at one time used to commercially treat, store and/or dispose of hazardous waste? Yes No
If Yes:
i. Describe waste(s) handled and waste management activities, including approximate time when activities occurred: _____

h. Potential contamination history. Has there been a reported spill at the proposed project site, or have any remedial actions been conducted at or adjacent to the proposed site? Yes No
If Yes:
i. Is any portion of the site listed on the NYSDEC Spills Incidents database or Environmental Site Remediation database? Check all that apply: Yes No
 Yes – Spills Incidents database Provide DEC ID number(s): _____
 Yes – Environmental Site Remediation database Provide DEC ID number(s): _____
 Neither database
ii. If site has been subject of RCRA corrective activities, describe control measures: _____
iii. Is the project within 2000 feet of any site in the NYSDEC Environmental Site Remediation database? Yes No
If yes, provide DEC ID number(s): _____
iv. If yes to (i), (ii) or (iii) above, describe current status of site(s): _____

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

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

E.2. Natural Resources On or Near Project Site

a. What is the average depth to bedrock on the project site? _____ > 6.5 feet

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

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

| | | |
|----------------------|-------|------------|
| Howard gravelly loam | _____ | +/- 92.2 % |
| Bath-Valois | _____ | +/- 7.8 % |
| _____ | _____ | _____ % |

d. What is the average depth to the water table on the project site? Average: _____ > 6.5 feet

e. Drainage status of project site soils: Well Drained: _____ 100 % of site
 Moderately Well Drained: _____ % of site
 Poorly Drained _____ % of site

f. Approximate proportion of proposed action site with slopes: 0-10%: _____ 100 % of site
 10-15%: _____ % of site
 15% or greater: _____ % of site

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

h. Surface water features.

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

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

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

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

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

- Streams: Name _____ Classification _____
- Lakes or Ponds: Name _____ Classification _____
- Wetlands: Name _____ Approximate Size _____
- Wetland No. (if regulated by DEC) _____

v. Are any of the above water bodies listed in the most recent compilation of NYS water quality-impaired waterbodies? Yes No
 If yes, name of impaired water body/bodies and basis for listing as impaired: _____

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

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

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

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? Yes No
 If Yes:
 i. Name of aquifer: Principal Aquifer, Primary Aquifer, Sole Source Aquifer Names: Cortland-Homer Preble SSA _____

| | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>m. Identify the predominant wildlife species that occupy or use the project site:</p> <p>birds _____ deer _____ rabbits _____</p> <p>squirrel _____ _____ _____</p> | |
| <p>n. Does the project site contain a designated significant natural community? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p style="margin-left: 20px;">i. Describe the habitat/community (composition, function, and basis for designation): _____</p> <p style="margin-left: 20px;">ii. Source(s) of description or evaluation: _____</p> <p style="margin-left: 20px;">iii. Extent of community/habitat:</p> <ul style="list-style-type: none"> • Currently: _____ acres • Following completion of project as proposed: _____ acres • Gain or loss (indicate + or -): _____ acres | |
| <p>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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p style="margin-left: 20px;">i. Species and listing (endangered or threatened): _____</p> <p>_____</p> <p>_____</p> | |
| <p>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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p style="margin-left: 20px;">i. Species and listing: _____</p> <p>_____</p> | |
| <p>q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If yes, give a brief description of how the proposed action may affect that use: _____</p> <p style="margin-left: 20px;">No impact is anticipated</p> | |
| E.3. Designated Public Resources On or Near Project Site | |
| <p>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? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes, provide county plus district name/number: _____</p> | |
| <p>b. Are agricultural lands consisting of highly productive soils present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p style="margin-left: 20px;">i. If Yes: acreage(s) on project site? _____</p> <p style="margin-left: 20px;">ii. Source(s) of soil rating(s): _____</p> | |
| <p>c. Does the project site contain all or part of, or is it substantially contiguous to, a registered National Natural Landmark? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p style="margin-left: 20px;">i. Nature of the natural landmark: <input type="checkbox"/> Biological Community <input type="checkbox"/> Geological Feature</p> <p style="margin-left: 20px;">ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____</p> <p>_____</p> <p>_____</p> | |
| <p>d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If Yes:</p> <p style="margin-left: 20px;">i. CEA name: _____</p> <p style="margin-left: 20px;">ii. Basis for designation: _____</p> <p style="margin-left: 20px;">iii. Designating agency and date: _____</p> | |

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 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? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| If Yes: | |
| <i>i.</i> Nature of historic/archaeological resource: <input type="checkbox"/> Archaeological Site <input type="checkbox"/> Historic Building or District | |
| <i>ii.</i> Name: _____ | |
| <i>iii.</i> 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? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| g. Have additional archaeological or historic site(s) or resources been identified on the project site? | |
| If Yes: | |
| <i>i.</i> Describe possible resource(s): _____ | |
| <i>ii.</i> Basis for identification: _____ | |
| h. Is the project site within five miles of any officially designated and publicly accessible federal, state, or local scenic or aesthetic resource? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| If Yes: | |
| <i>i.</i> Identify resource: _____ | |
| <i>ii.</i> Nature of, or basis for, designation (e.g., established highway overlook, state or local park, state historic trail or scenic byway, etc.): _____ | |
| <i>iii.</i> Distance between project and resource: _____ miles. | |
| i. Is the project site located within a designated river corridor under the Wild, Scenic and Recreational Rivers Program 6 NYCRR 666? | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| If Yes: | |
| <i>i.</i> Identify the name of the river and its designation: _____ | |
| <i>ii.</i> Is the activity consistent with development restrictions contained in 6NYCRR Part 666? | |
| <input type="checkbox"/> Yes <input type="checkbox"/> 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 Paul T. Woodward Date 8/26/19

Signature  Title Senior Designer



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



| | |
|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| B.i.i [Coastal or Waterfront Area] | No |
| B.i.ii [Local Waterfront Revitalization Area] | No |
| C.2.b. [Special Planning District] | Yes - Digital mapping data are not available for all Special Planning Districts. Refer to EAF Workbook. |
| C.2.b. [Special Planning District - Name] | NYS Major Basins:Upper Susquehanna |
| E.1.h [DEC Spills or Remediation Site - Potential Contamination History] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.i [DEC Spills or Remediation Site - Listed] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.1.h.iii [Within 2,000' of DEC Remediation Site] | No |
| E.2.g [Unique Geologic Features] | No |
| E.2.h.i [Surface Water Features] | No |
| E.2.h.ii [Surface Water Features] | No |
| E.2.h.iii [Surface Water Features] | No |
| 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] | Yes |
| E.2.l. [Aquifer Names] | Principal Aquifer, Primary Aquifer, Sole Source Aquifer Names:Cortland-Homer Preble SSA |
| E.2.n. [Natural Communities] | No |

| | |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| E.2.o. [Endangered or Threatened Species] | No |
| E.2.p. [Rare Plants or Animals] | No |
| E.3.a. [Agricultural District] | No |
| E.3.c. [National Natural Landmark] | No |
| E.3.d [Critical Environmental Area] | No |
| E.3.e. [National or State Register of Historic Places or State Eligible Sites] | Digital mapping data are not available or are incomplete. Refer to EAF Workbook. |
| E.3.f. [Archeological Sites] | No |
| E.3.i. [Designated River Corridor] | No |

Attachment A
McLean 1 Solar Use Variance Application
Applicable Variance Standard

Zoning boards of appeal (ZBAs) throughout New York State are familiar with the set of two statutory tests established for use and area variance requests. As articulated in New York Town Law Sections 267-b(2) and (b)(3) respectively, a typical variance applicant must demonstrate either unnecessary hardship arising from the application of the current zoning law for a use variance or determine that the benefit to the applicant outweighs the detriment resulting from the grant of the area variance to the neighborhood.

The statutory standards have been deemed inapplicable to public utilities and private companies developing renewable energy projects, however, because they do not fit the problem that prompts a such an entity to seek a variance. The subject parcel may be quite useable for a purpose consistent with the zoning regulations, may not be unique in any respect other than its particular suitability to the entity, and the entity's planned use may have impacts upon the neighborhood, even if the essential character is not altered. Notwithstanding these obvious conflicts with the normal use variance standards, public utility uses and facilities have been found to have a special value and importance to communities such that a separate set of standards have been derived for variance requests concerning them.

In the case of public utilities facilities (including electric, gas, water and telecommunications uses), the normal set of four use variance standards has been supplanted by a two-part test that requires the utility to demonstrate: (a) there is a public necessity for the installation or expansion at issue, meaning it is necessary to enable the utility to render safe and adequate service; and (b) there are no available alternatives that would bring less disruption of the community's zoning plan.

This two-part test was articulated by the New York State Court of Appeals in the case of *Consolidated Edison Co. of New York, Inc. v. Hoffman*, 43 N.Y.2d 598, 403 N.Y.S.2d 193 (1978), and has been followed in a string of state and federal court cases since. See also *Cellular Telephone Co v. Rosenberg*, 82 N.Y.2d.364 (1993)(applying public utility standard to telecommunications facilities); *West Beekmantown Neighborhood Association Inc. v. Zoning Board of Appeals of the Town of Beekmantown*, 53 A.D.3d 954 (3rd Dept. 2008) (upholding determination that wind energy applicant was a public utility for zoning purposes). Renewable energy generating facilities, whether owned by a utility or by a private company, are considered public utilities under this standard for use variances. See *West Beekmantown*, 53 A.D.3d at 956 and *Wind Power Ethic Group (WPEG) v Zoning Bd. Of Appeals of Town of Cape Vincent*, 60 A.D.3d 1282, 1283 (4th Dept. 2009). Further, "where the intrusion or burden on the community is minimal, the showing required by the utility should be correspondingly reduced." See e.g. *United Water New Rochelle, Inc v. Zoning Bd. Of Appeals of Town of Eastchester*, 254 A.D.2d 490, 491 (2d Dept. 1998)(internal citations omitted).

As long as an applicant can demonstrate that the proposed use of land is necessary to render safe and adequate service such as the production of electricity, and there is no available alternative that could accomplish the same objectives with less disruption and fewer impacts, a use or area variance must be granted. Even if the proposed utility use will impose

Attachment A
McLean 1 Solar Use Variance Application
Applicable Variance Standard

inconvenience and some loss of value on adjacent lands, the community may not be denied such an essential service simply to preserve the zoning scheme or to protect certain owners from alleged loss of value. *See Northport Water Works Co. v. Caril*, 133 N.Y.S.2d 859 (Sup. Ct. 1954); *see also* New York Zoning Law and Practice, 4th Ed. Salkin, Section 11.21.

In the case of the proposed McLean 1 Solar project, certainly qualifies as a public utility use for this evaluation. The applicant will demonstrate that its proposed use is necessary to render safe and effective electric service to customers in New York – including but not limited the Town of Cortlandville and greater Cortland County – and is the least disruptive alternative for doing so.

Need for the Variance. The McLean 1 Solar Project is comprised of a ±2 MW solar array that occupies a portion of a parcel owned by Farm East LLC (Tax Map No. 95.00-01-33.1) currently zoned for residential use.

The property is currently zoned for residential use within which a large-scale ground mounted solar facility is not a permitted use. The Applicant had petitioned the Town Board to change the zoning designation of this parcel to Agricultural but withdrew this request to allow the Town Board to consider a zoning amendment to allow for the establishment of Solar overlay zoning districts which would have allowed the underlying zoning to remain in place but allow the solar use to be developed. The Town Board declined to consider adoption of this proposed zoning amendment. As such, the Applicant is therefore seeking a use variance subject to the public necessity test.

Safe and Effective Electric service. In current times, with the proliferation of electronic devices, electric vehicles and continued growth and development, taken together with the retirement of fossil fuel fired electrical plants and the Indian Point nuclear facility, additional generating resources are needed to meet the current and increasing demands. Moreover, in New York, the State has set ambitious goals of generating 70% of the State’s electrical power by clean renewable energy sources by 2040. Solar energy facilities such as the Project are key to the meeting the State’s energy goals and needs. Finally, the Project has a position reserved in the NY Independent System Operator (“NYISO”) Electrical Queue which means that the electricity to be produced by the Project is necessary to provide safe and reliable electrical service in that utility’s load zone and territory.

Minimal Disruption from the Project. It is respectfully submitted that the intrusion of this facility and the impact of the requested variance is minimal. As shown on the Site Plan submitted herewith, the solar panel arrays are centered along the southern property line with access to McLean Road to the north. The Applicant is proposing to install a substantial perimeter landscaping plan to screen views of the solar arrays to the extent feasible (*See* Site Plans submitted herewith). The solar array will occupy only a twelve (12) acre portion of the larger 141 acre parcel which will continue to be used for agricultural uses. Further, the issuance of the use variance does not preclude the use of the remainder of the parcel for residential or agricultural uses as permitted under the zoning code nor the twelve acres

Attachment A
McLean 1 Solar Use Variance Application
Applicable Variance Standard

occupied by the solar facility upon decommissioning. Given the large balance of lands will remain available for residential or agricultural use it will remain in harmony with the surrounding area. In addition, the applicant has submitted herewith studies addressing glare, visual effect and noise that demonstrate little to no effect from the solar array will impact the neighborhood or community.