



102 W State Street
Ithaca, NY 14850

T 607.330.0322
TRCcompanies.com

August 18, 2020

To: Mr. Bruce Weber
Planning/Zoning Officer
3577 Terrace Road
Cortland, NY 13045

Re: Cipriani Energy Group
Tower Solar Power Facility Project
Cortlandville, NY

Dear Mr. Weber,

On behalf of the Cipriani Energy Group Corp. (Cipriani), TRC Environmental Corporation (TRC), is submitting a Site Plan Application and relevant attachments for the Tower Solar Project (Project). Cipriani is part of the Sol Real Group, which has more than 12 years of experience and has developed hundreds of megawatts in solar projects on a commercial scale throughout Italy, Eastern Europe, and Central and South America.

Cipriani proposes the construction of an approximately 3-megawatt (MW) ground mounted solar array system within the Project Area at 1585 Tower Road (Figure 1). Battery storage is not proposed for this Project. The Project Area is located on an approximately 17-acre parcel of land that consists primarily of successional old field. The Project Area is zoned Agriculture. Cipriani is submitting applications for conditional use permit, aquifer protection permit, and a zoning referral form.

Allowing the property to develop as a solar energy facility provides many benefits, including: an opportunity for locally generated, clean energy resources in the Town of Cortlandville; income creation for the landowner; and economic investment and increased tax revenue for the Town of Cortlandville. The Project will also help the Town of Cortlandville and the State of New York advance the renewable energy and energy efficiency goals of the State.

The proposed community solar project presents an exciting opportunity for the Town of Cortlandville. This Project will produce clean affordable energy that will not only benefit the local environment, but will also benefit the State of New York, increasing the quality of life and experience for those who live within the Town of Cortlandville. The Project will also have immediate short-term financial benefits due to associated localized job creation and economic influx related to Project construction. This Project will additionally support the long-term financial viability of the town by creating additional tax revenues throughout the lifetime of the Project, as well as providing residents of the Town of Cortlandville with the option to subscribe to this community solar Project and save money on their monthly electricity bills.

In addition to the financial benefits, the proposed Project will improve the direct community's access to locally produced power. This significantly increases the Town of Cortlandville's grid resilience, improves electric infrastructure, and delivers sustained benefits to long-term electrical operations.

Construction will begin after Cipriani receives required permits and will take approximately three months to complete.

In accordance with requirements set forth by the Town of Cortlandville, the following items are provided for review in consideration with our applications.



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Attachments:

1. Application for Conditional Permit
2. Application for Aquifer Protection District Special Permit
3. General Municipal Law Zoning Referral Form
4. Completed Full EAF Part 1
5. Decommissioning Plan
6. Engineering/Site Plan Drawings of the Proposed Project
7. Specification Sheets

A total of 18 copies of the application materials and site plan have been provided. An electronic copy of this application package was also sent to Bruce Weber. TRC respectfully requests your review of the Tower Road Solar Project application materials.

If you have any questions, please contact me at 315.679.6781 or via email at BStoos@trccompanies.com.

Sincerely,

A handwritten signature in black ink that reads "Brian Stoos". The signature is written in a cursive, flowing style.

Brian Stoos
Project Manager

Enc.

cc: Chris Stroud, Cipriani Energy Group Corp.



1090 Union Road, Suite 280
West Seneca, NY 14224

T 716.204.9543
TRCcompanies.com

Attachment 1

Application for Conditional Permit

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

APPLICATION FOR CONDITIONAL PERMIT

APPLICANT

Name Christopher H. Stroud Fee Paid \$250
Address 125 Wolf Road, Suite 312 Phone 885.786.4383 ext. 104
Colonie, NY 12205

PROPERTY OWNER

Name Thomas M. Dehaven Phone _____
Address 20 Verneth Dr, Binghamton, NY 13901

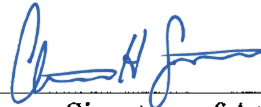
PROPERTY INFORMATION

Location of property 1585 Tower Road, Cortlandville, NY
Tax Map No. of Parcel 106.00-06-05.200

PROPERTY ACQUIRED ON, OR PENDING DATE OF AQUITION 12/31/2020
IS PROPERTY IN FLOOD PLAIN? YES NO
ZONING DISTRICT AG
PROJECT DISCRPTION 3.0 MW solar facility

Information to be included will be drawn from a checklist in Article XIV of the Cortlandville Zoning Law.

DATE OF APPLICATION 8/18/2020



Signature of Applicant

Zoning Officer

Planning Board Chairperson

PERMIT GRANTED _____

PERMIT DENIED _____

Attachment 2
Application for Aquifer Protection District Special Permit

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

AQUIFER PROTECTION DISTRICT SPECIAL PERMIT

APPLICANT Fee Paid \$100
Name Christopher H. Stroud Phone 1.855.786.4383 Ext. 104
Address 125 Wolf Road Suite 312, Colonie, NY 12205

PROPERTY OWNER

Name Thomas M. Dehaven Phone _____
Address 20 Verneth Dr, Binghamton, NY 13901

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

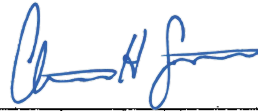
PROPERTY INFORMATION

Location of property 1585 Tower Road, Cortlandville, NY
Tax Map No. of Parcel 106.00-06-05.200

PROPERTY ACQUIRED ON, OR PENDING DATE OF AQUISION 12/31/2020
IS PROPERTY IN FLOOD PLAIN? YES NO
AQUIFER PROTECTION AREA None
ZONING DISTRICT AG

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

DATE OF APPLICATION 08/18/2020



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: _____

Attachment 3
General Municipal Law Zoning Referral Form

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. 106 . 00 - 06 - 05 . 200
(Tax Map Number)

Date: _____

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 X Section 178-46

Conditional Permit: Article XIX Section 178-123.3

Site Plan Review: Article XIX Section 178-123.3

Reason(s) for request: Cipriani Energy Group Corp. is proposing to build a 5.0 MW solar facility at the Tower Road location.

Is the above action a **Type 1** X , **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: Christopher H. Stroud

Owners name (if different): Thomas M. DeHaven

Date of acquisition: Proposed to buy before 12/31/2020

Address: 1585 Tower Road
State: NY Zip: 13045
Phone Number: 1.855.786.4383 Fax Number: N/A

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 Cortlandville ; Refuse Collection N/A
Special services required: None

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: Cortland

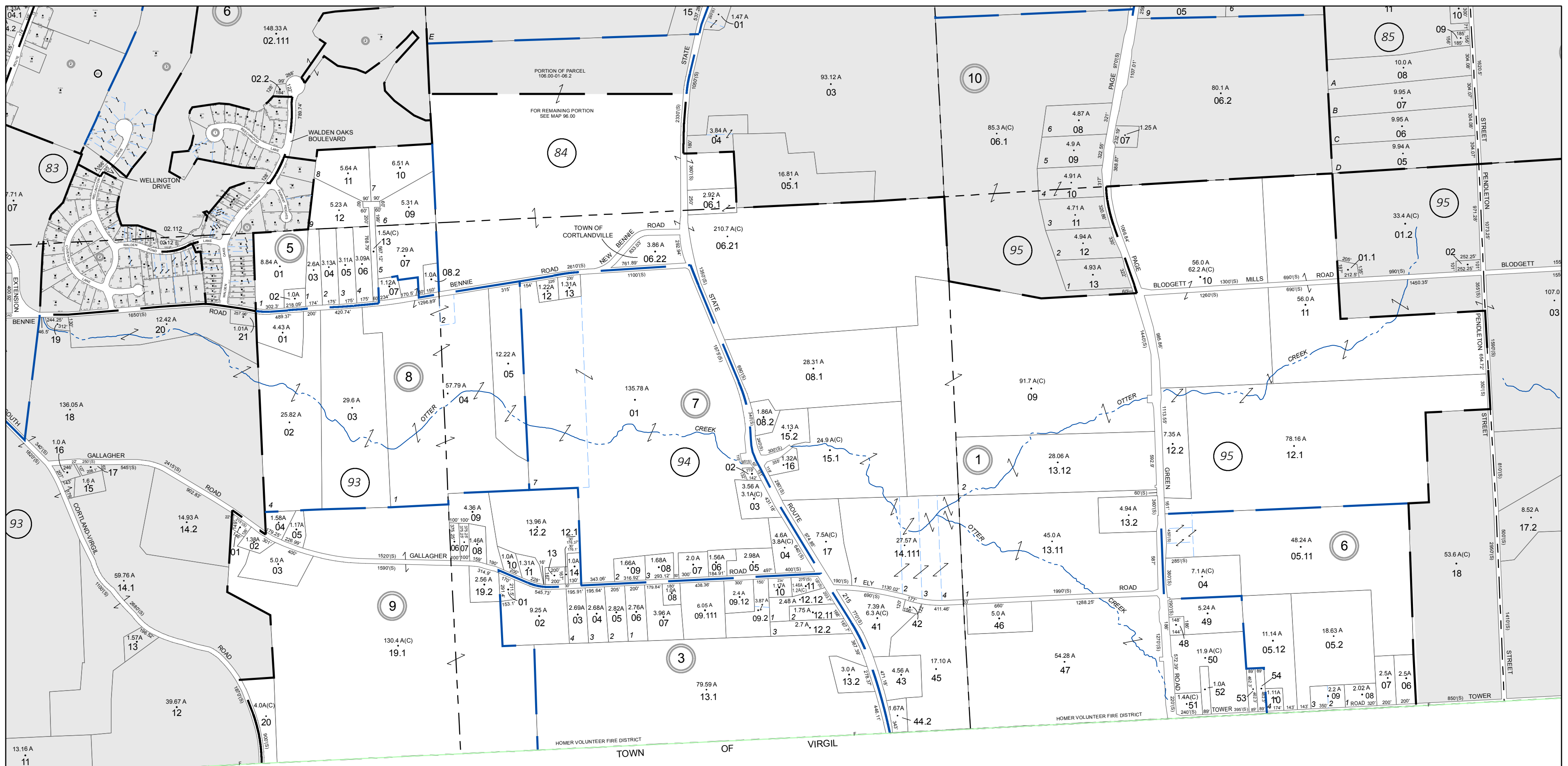
8. Projected energy consumption: None Type: N/A

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

	CORTLAND COUNTY, NEW YORK REAL PROPERTY TAX SERVICE DEPARTMENT <small>THIS MAP WAS PREPARED FOR TAX PURPOSES ONLY AND IS NOT TO BE REPRODUCED OR USED FOR SURVEYING OR CONVEYANCING.</small>	REVISION TABLE <table border="1"> <thead> <tr> <th>DATE</th><th>MADE BY</th><th>DATE</th><th>MADE BY</th><th>DATE</th><th>MADE BY</th><th>DATE</th><th>MADE BY</th><th>DATE</th><th>MADE BY</th></tr> </thead> <tbody> <tr> <td>JAN 1979</td><td>TLC</td><td>MAR 1989</td><td>TLC</td><td>JAN 1995</td><td>TLC</td><td>FEB 2001</td><td>TLC</td><td>FEB 2007</td><td>TLC</td></tr> <tr> <td>APR 1981</td><td>T.WILKINS</td><td>JUN 1991</td><td>TLC</td><td>OCT 1996</td><td>TLC</td><td>MAR 2002</td><td>TLC</td><td>AUG 2008</td><td>TLC</td></tr> <tr> <td>JAN 1983</td><td>TLC</td><td>DEC 1992</td><td>TLC</td><td>OCT 1997</td><td>TLC</td><td>JAN 2003</td><td>TLC</td><td>JAN 2010</td><td>WJT</td></tr> <tr> <td>MAR 1984</td><td>TLC</td><td>JUL 1993</td><td>TLC</td><td>AUG 1998</td><td>TLC</td><td>MAR 2004</td><td>WJT</td><td>NOV 2012</td><td>WJT</td></tr> <tr> <td>JAN 1988</td><td>TLC</td><td>OCT 1994</td><td>TLC</td><td>OCT 1999</td><td>TLC</td><td>JAN 2003</td><td>TLC</td><td>FEB 2010</td><td>WJT</td></tr> </tbody> </table>		DATE	MADE BY	DATE	MADE BY	DATE	MADE BY	DATE	MADE BY	DATE	MADE BY	JAN 1979	TLC	MAR 1989	TLC	JAN 1995	TLC	FEB 2001	TLC	FEB 2007	TLC	APR 1981	T.WILKINS	JUN 1991	TLC	OCT 1996	TLC	MAR 2002	TLC	AUG 2008	TLC	JAN 1983	TLC	DEC 1992	TLC	OCT 1997	TLC	JAN 2003	TLC	JAN 2010	WJT	MAR 1984	TLC	JUL 1993	TLC	AUG 1998	TLC	MAR 2004	WJT	NOV 2012	WJT	JAN 1988	TLC	OCT 1994	TLC	OCT 1999	TLC	JAN 2003	TLC	FEB 2010	WJT	SPECIAL DISTRICTS <table border="1"> <thead> <tr> <th>CORTLAND CITY SCHOOL DISTRICT</th> <th>HOMER VOL. FIRE DISTRICT</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>		CORTLAND CITY SCHOOL DISTRICT	HOMER VOL. FIRE DISTRICT			LEGEND <table border="1"> <tr> <td>PROPERTY LINE</td> <td>TOWN LINE</td> <td>FIRE DISTRICT LINE</td> <td>GREAT LOT NO.</td> </tr> <tr> <td>ORIGINAL LOT LINE</td> <td>CITY OR VILLAGE LINE</td> <td>SEWER DISTRICT LINE</td> <td>CALCULATED ACREAGE</td> </tr> <tr> <td>RAILROAD</td> <td>BLOCK LIMIT</td> <td>COMMON OWNER</td> <td>DEED ACREAGE</td> </tr> <tr> <td>STREAM OR DITCH</td> <td>GREAT LOT LINE</td> <td>TAX MAP BLOCK NO.</td> <td>SCALED DIMENSION</td> </tr> <tr> <td>ROAD OR RAILROAD BNDY</td> <td>SCHOOL DISTRICT LINE</td> <td>TAX MAP PARCEL NO.</td> <td>DEED DIMENSION</td> </tr> <tr> <td>COUNTY LINE</td> <td>WATER DISTRICT LINE</td> <td>FILED PLAN LOT NO.</td> <td>COORDINATE LOCATOR</td> </tr> </table>		PROPERTY LINE	TOWN LINE	FIRE DISTRICT LINE	GREAT LOT NO.	ORIGINAL LOT LINE	CITY OR VILLAGE LINE	SEWER DISTRICT LINE	CALCULATED ACREAGE	RAILROAD	BLOCK LIMIT	COMMON OWNER	DEED ACREAGE	STREAM OR DITCH	GREAT LOT LINE	TAX MAP BLOCK NO.	SCALED DIMENSION	ROAD OR RAILROAD BNDY	SCHOOL DISTRICT LINE	TAX MAP PARCEL NO.	DEED DIMENSION	COUNTY LINE	WATER DISTRICT LINE	FILED PLAN LOT NO.	COORDINATE LOCATOR	TAX MAP TOWN OF CORTLANDVILLE CORTLAND COUNTY, NEW YORK SHEET INDEX 	106.00 MAP DATE 5/11/2020
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Attachment 4
Completed Full EAF Part I

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:		
Project Location (describe, and attach a general location map):		
Brief Description of Proposed Action (include purpose or need):		
Name of Applicant/Sponsor:		Telephone:
		E-Mail:
Address:		
City/PO:	State:	Zip Code:
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):		Telephone:
		E-Mail:
Address:		
City/PO:	State:	Zip Code:

B. Government Approvals

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

Government Entity	If Yes: Identify Agency and Approval(s) Required	Application Date (Actual or projected)
a. City Counsel, Town Board, or Village Board of Trustees <input type="checkbox"/> Yes <input type="checkbox"/> No		
b. City, Town or Village Planning Board or Commission <input type="checkbox"/> Yes <input type="checkbox"/> No		
c. City, Town or Village Zoning Board of Appeals <input type="checkbox"/> Yes <input type="checkbox"/> No		
d. Other local agencies <input type="checkbox"/> Yes <input type="checkbox"/> No		
e. County agencies <input type="checkbox"/> Yes <input type="checkbox"/> No		
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. <ul style="list-style-type: none"> <li data-bbox="121 829 1485 861">i. Is the project site within a Coastal Area, or the waterfront area of a Designated Inland Waterway? <input type="checkbox"/> Yes <input type="checkbox"/> No <li data-bbox="121 892 1485 924">ii. Is the project site located in a community with an approved Local Waterfront Revitalization Program? <input type="checkbox"/> Yes <input type="checkbox"/> No <li data-bbox="121 924 1485 955">iii. Is the project site within a Coastal Erosion Hazard Area? <input type="checkbox"/> Yes <input 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):

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

If Yes, identify the plan(s):

C.3. Zoning

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

b. Is the use permitted or allowed by a special or conditional use permit? Yes No

c. Is a zoning change requested as part of the proposed action? Yes No

If Yes,

i. What is the proposed new zoning for the site? _____

C.4. Existing community services.

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

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

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

d. What parks serve the project site?

D. Project Details

D.1. Proposed and Potential Development

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

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

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

d. Is the proposed action a subdivision, or does it include a subdivision? Yes No
If Yes,

i. Purpose or type of subdivision? (e.g., residential, industrial, commercial; if mixed, specify types)

ii. Is a cluster/conservation layout proposed? Yes No

iii. Number of lots proposed? _____

iv. Minimum and maximum proposed lot sizes? Minimum _____ Maximum _____

e. Will the proposed action be constructed in multiple phases? Yes No

i. If No, anticipated period of construction: _____ months

ii. If Yes:

- Total number of phases anticipated _____
- Anticipated commencement date of phase 1 (including demolition) _____ month _____ year
- Anticipated completion date of final phase _____ month _____ year

• Generally describe connections or relationships among phases, including any contingencies where progress of one phase may determine timing or duration of future phases: _____

f. Does the project include new residential uses? Yes No
 If Yes, show numbers of units proposed.

	<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,

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

• Do existing sewer lines serve the project site? Yes No
 • Will a line extension within an existing district be necessary to serve the project? Yes No
 If Yes:
 • Describe extensions or capacity expansions proposed to serve this project: _____

iv. Will a new wastewater (sewage) treatment district be formed to serve the project site? Yes No
 If Yes:
 • Applicant/sponsor for new district: _____
 • Date application submitted or anticipated: _____
 • What is the receiving water for the wastewater discharge? _____

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

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

e. Will the proposed action disturb more than one acre and create stormwater runoff, either from new point sources (i.e. ditches, pipes, swales, curbs, gutters or other concentrated flows of stormwater) or non-point source (i.e. sheet flow) during construction or post construction? Yes No
 If Yes:
 i. How much impervious surface will the project create in relation to total size of project parcel?
 _____ Square feet or _____ acres (impervious surface)
 _____ Square feet or _____ acres (parcel size)
 ii. Describe types of new point sources. _____

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

 • If to surface waters, identify receiving water bodies or wetlands: _____

• Will stormwater runoff flow to adjacent properties? Yes No

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

f. Does the proposed action include, or will it use on-site, one or more sources of air emissions, including fuel combustion, waste incineration, or other processes or operations? Yes No
 If Yes, identify:
 i. Mobile sources during project operations (e.g., heavy equipment, fleet or delivery vehicles)

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

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

g. Will any air emission sources named in D.2.f (above), require a NY State Air Registration, Air Facility Permit, or Federal Clean Air Act Title IV or Title V Permit? Yes No
 If Yes:
 i. Is the project site located in an Air quality non-attainment area? (Area routinely or periodically fails to meet ambient air quality standards for all or some parts of the year) Yes No
 ii. In addition to emissions as calculated in the application, the project will generate:
 • _____ Tons/year (short tons) of Carbon Dioxide (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)

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: _____
--	---

m. Will the proposed action produce noise that will exceed existing ambient noise levels during construction, operation, or both? Yes No
 If yes: Equipment used during construction will generate noise from ~7 am to 7pm. Solar panels are noise-free and residential solar inverters are
 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 covertypes on the project site.

Land use or Covertypes	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.)			
• Surface water features (lakes, ponds, streams, rivers, etc.)			
• 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:

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? _____ 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: _____ %
 _____ %
 _____ %

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

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

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

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

h. Surface water features.

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

ii. Do any wetlands or other waterbodies adjoin the project site? Yes No
 If Yes to either *i* or *ii*, continue. If No, skip to E.2.i.

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

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

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

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

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

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

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

l. Is the project site located over, or immediately adjoining, a primary, principal or sole source aquifer? Yes No
 If Yes:
 i. Name of aquifer: _____

m. Identify the predominant wildlife species that occupy or use the project site: _____ _____ _____	
n. Does the project site contain a designated significant natural community? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes: i. Describe the habitat/community (composition, function, and basis for designation): _____ _____ ii. Source(s) of description or evaluation: _____ iii. Extent of community/habitat: <ul style="list-style-type: none"> • Currently: _____ acres • Following completion of project as proposed: _____ acres • Gain or loss (indicate + or -): _____ acres 	
o. Does project site contain any species of plant or animal that is listed by the federal government or NYS as endangered or threatened, or does it contain any areas identified as habitat for an endangered or threatened species? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes: i. Species and listing (endangered or threatened): _____ _____ _____	
p. Does the project site contain any species of plant or animal that is listed by NYS as rare, or as a species of special concern? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes: i. Species and listing: _____ _____	
q. Is the project site or adjoining area currently used for hunting, trapping, fishing or shell fishing? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, give a brief description of how the proposed action may affect that use: _____ _____	
E.3. Designated Public Resources On or Near Project Site	
a. Is the project site, or any portion of it, located in a designated agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, provide county plus district name/number: _____	
b. Are agricultural lands consisting of highly productive soils present? <input type="checkbox"/> Yes <input type="checkbox"/> No i. If Yes: acreage(s) on project site? _____ ii. Source(s) of soil rating(s): _____	
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 type="checkbox"/> No If Yes: i. Nature of the natural landmark: <input type="checkbox"/> Biological Community <input type="checkbox"/> Geological Feature ii. Provide brief description of landmark, including values behind designation and approximate size/extent: _____ _____ _____	
d. Is the project site located in or does it adjoin a state listed Critical Environmental Area? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes: i. CEA name: _____ ii. Basis for designation: _____ iii. Designating agency and date: _____	

e. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places? Yes No

If Yes:

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

ii. Name: _____

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

f. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory? Yes No

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

If Yes:

i. Describe possible resource(s): _____

ii. Basis for identification: _____

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

If Yes:

i. Identify resource: Tuller Hill State Forest, Kennedy State Forest, Suggestt, Courthouse, Randall, Dexter, Yaman, and Beaudry Parks.

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

iii. Distance between project and resource: _____ miles.

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

If Yes:

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

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

F. Additional Information

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

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

G. Verification

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

Applicant/Sponsor Name Christopher H. Stroud Date 8/17/2020

Signature  Title Chief Operating Officer

Attachment 5
Decommissioning Plan



Solar Farm Decommissioning Plan

NY, Cortland - 1585 Tower Rd

August 13, 2020



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

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1. Introduction

Cipriani Energy Group Corp. (“**Cipriani Energy**”) proposes to build a photovoltaic (PV) Solar Farm at 1585 Tower Road, Cortland, NY 13045, USA with a nameplate capacity of approximately 3 megawatts (MW) alternating current (AC) and be built on a 18.1 acres of a 18.1 acre parcel.

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

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

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

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

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

2. The Proponent

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

Contact information for the proponent is as follows:

Full Name of Company: Cipriani Energy Group Corp.
Contact: Christopher H. Stroud
Address: 125 Wolf Rd, Suite 312, Colonie, NY 12205
Telephone: (855) Sun-4-Ever
Email: c.stroud@solreal.eu

2.1 Project Information

Address: 1585 Tower Road, Cortland, NY 13045, USA
Tax ID: 106.00-06-05.200
Project Size (est.): One Project of 3 MWac
Landowner: Thomas M. Dehaven
Purchase / Lease: Purchase

3. Decommissioning of the Solar Farm

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

3.1 Equipment Dismantling and Removal

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

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

3.2 Environmental Effects

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

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

3.3 Site Restoration

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

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

3.4 Managing Materials and Waste

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

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

Table 1: Management of Excess Materials and Waste

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

3.5 Decommissioning During Construction or Abandonment Before Maturity

In case of abandonment of the Solar Farm during construction or before its 2 year maturity, the same decommissioning procedures as for decommissioning after ceasing operation will be undertaken and the same decommissioning and restoration program will be honored, in as far as construction proceeded before abandonment. The Solar Farm will be dismantled, materials removed and disposed, the soil that was removed will be graded and the site restored to a state similar to its preconstruction condition.

3.6 Decommissioning Notification

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

3.7 Approvals

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

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

4. Costs of Decommissioning

The costs below are the current estimated costs to decommission a Solar Farm per MWac, based on guidance from NYSERDA and estimates from the Massachusetts solar market, a mature solar market with experience decommissioning projects. **The values below should be multiplied by a value of 3 for this project.** The salvage values of valuable recyclable materials (aluminum, steel, copper, etc) are not factored into the below costs. The scrap value will be determined on current market rates at the time of salvage.

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

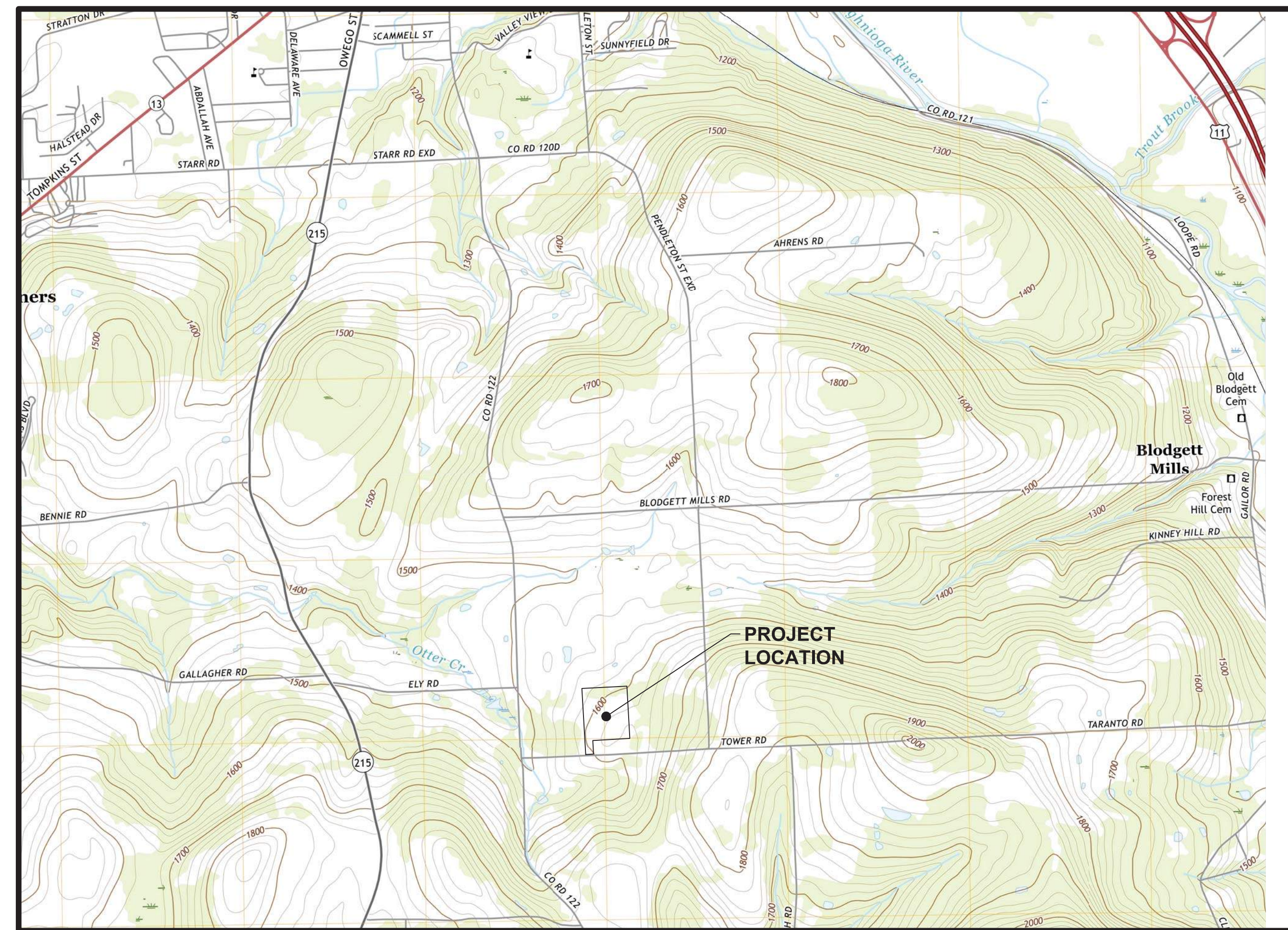
5. Decommissioning Bond

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

Attachment 6
Engineering/Site Plan Drawings of the Proposed Project

CIPRIANI ENERGY GROUP CORTLAND COUNTY 2 SOLAR ENERGY FACILITY

CORTLAND COUNTY
1585 TOWER ROAD
CORTLANDVILLE, NY 13045



LOCATION MAP
N.T.S.

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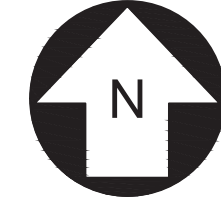
SHEET NUMBER	SHEET TITLE
G-01	COVER SHEET
G-02	GENERAL NOTES & LEGEND
C-01	EXISTING CONDITIONS & CLEARING PLAN
C-02	OVERALL SITE PLAN
C-03	SITE LAYOUT PLAN - SOUTH
C-04	SITE LAYOUT PLAN - NORTH
C-05	GRADING, DRAINAGE & EROSION CONTROL PLAN - SOUTH
C-06	GRADING, DRAINAGE & EROSION CONTROL PLAN - NORTH
C-07	EROSION & SEDIMENT CONTROL NOTES & DETAILS
C-08	EROSION & SEDIMENT CONTROL NOTES & DETAILS
C-09	CONSTRUCTION DETAILS
C-10	CONSTRUCTION DETAILS
C-11	CONSTRUCTION DETAILS

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION
08/18/2020

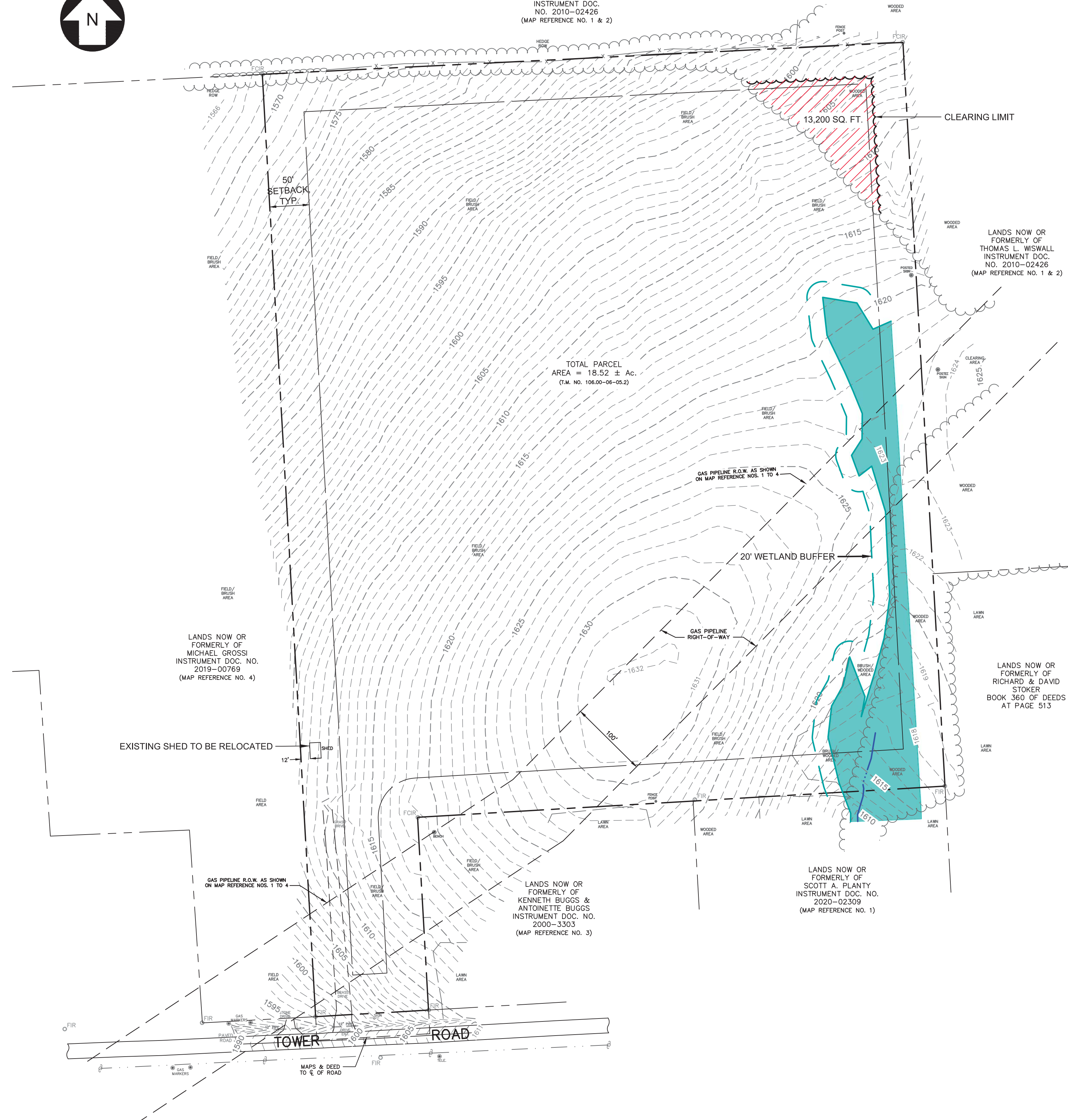
UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.



		249 Western Avenue Augusta, ME 04330		PROJECT NO: 395300					CIPRIANI ENERGY GROUP CORTLAND COUNTY 2 SOLAR ENERGY FACILITY		COVER SHEET		CORTLAND NEW YORK	
REV	DESCRIPTION	DATE	DES	CHK	APP	RAY	DATE	SCALE	TRC	G-01	REV.	1		
1	ISSUED FOR PERMITTING	08/18/20	DED	RAY	PMM	RAY	08/17/20	AS NOTED						

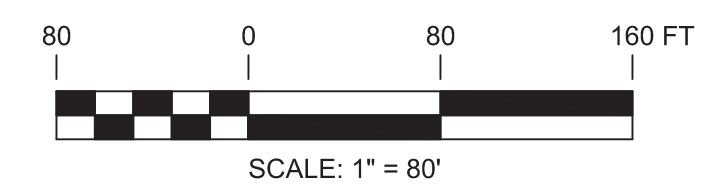


LANDS NOW OR FORMERLY OF THOMAS L. WISWALL
INSTRUMENT DOC. NO. 2010-02426
(MAP REFERENCE NO. 1 & 2)

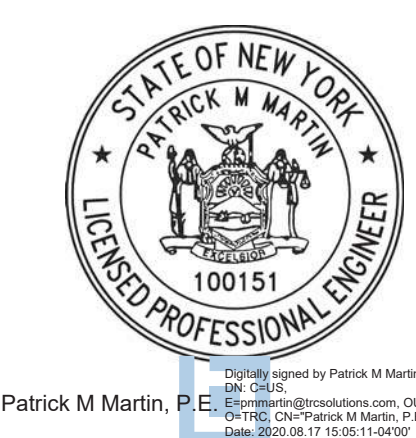


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08/18/2020

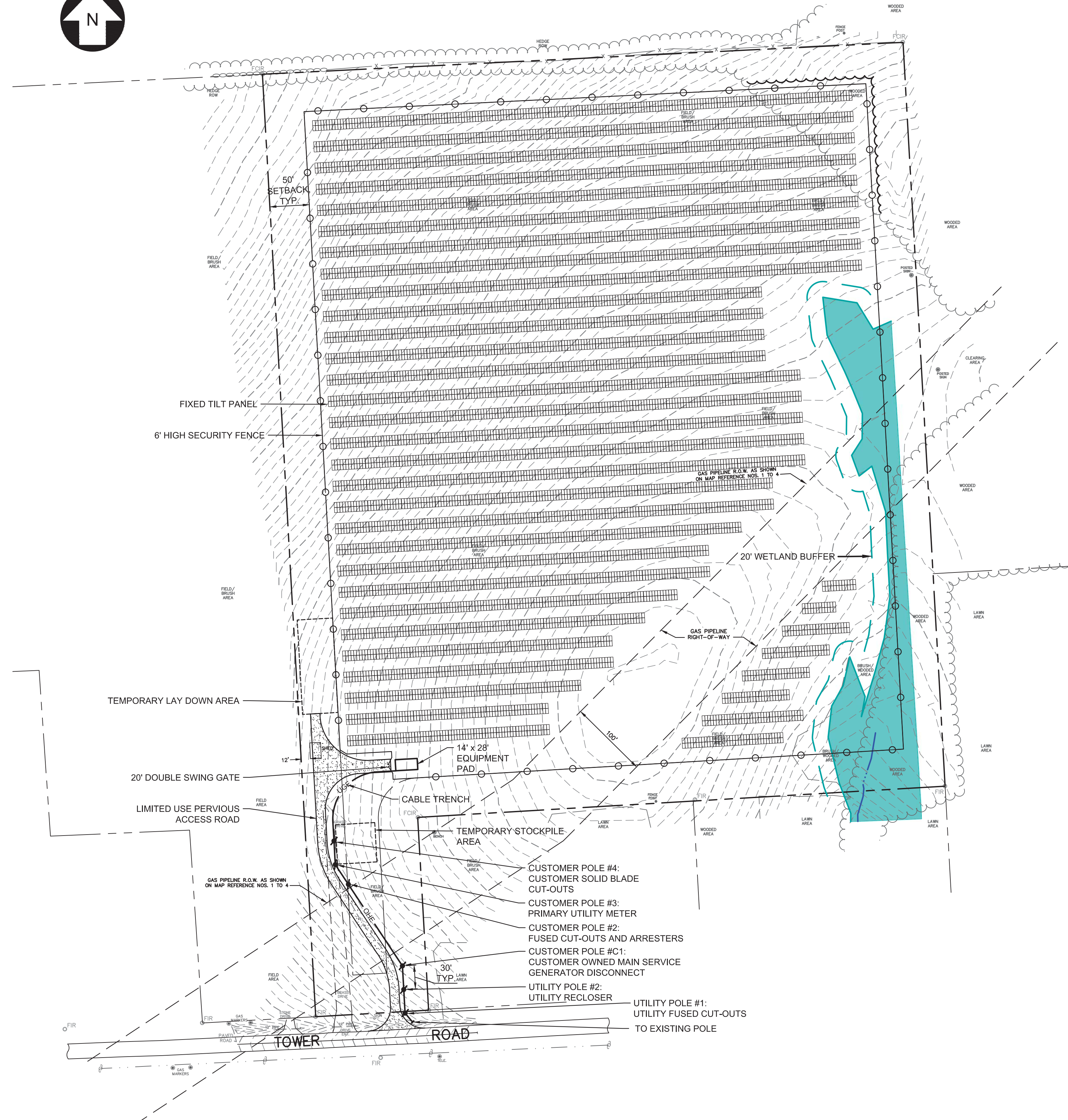
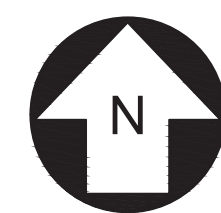
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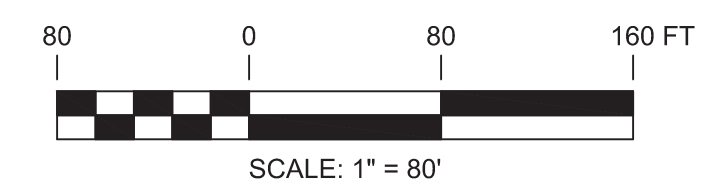



DESIGNED	DED	CIPRIANI ENERGY GROUP		
DRAWN	DED	CORTLAND COUNTY 2 SOLAR ENERGY FACILITY		
CHECKED	PMM	EXISTING CONDITIONS & CLEARING PLAN		
APPROVED		CORTLAND	NEW YORK	
RAY	08/17/20		C-01	REV. 1
REVIEW 1	DATE			
REVIEW 2	SCALE			



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 249 Western Avenue Augusta, ME 04330		PROJECT NO: 395300			
REV	DESCRIPTION	DATE	DES	CHK	APP
1	ISSUED FOR PERMITTING	08/18/20	DED	RAY	PMM

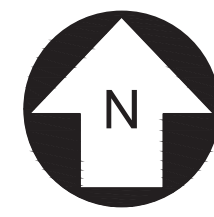


DESIGNED	DED	CIPRIANI ENERGY GROUP		
DRAWN	PMM	CORTLAND COUNTY 2 SOLAR ENERGY FACILITY		
CHECKED	APPROVED	OVERALL SITE PLAN		
DATE	DATE	CORTLAND	NEW YORK	
08/17/20	08/17/20			
SCALE	SCALE			
1" = 80'	1" = 80'			



C-02

REV. 1



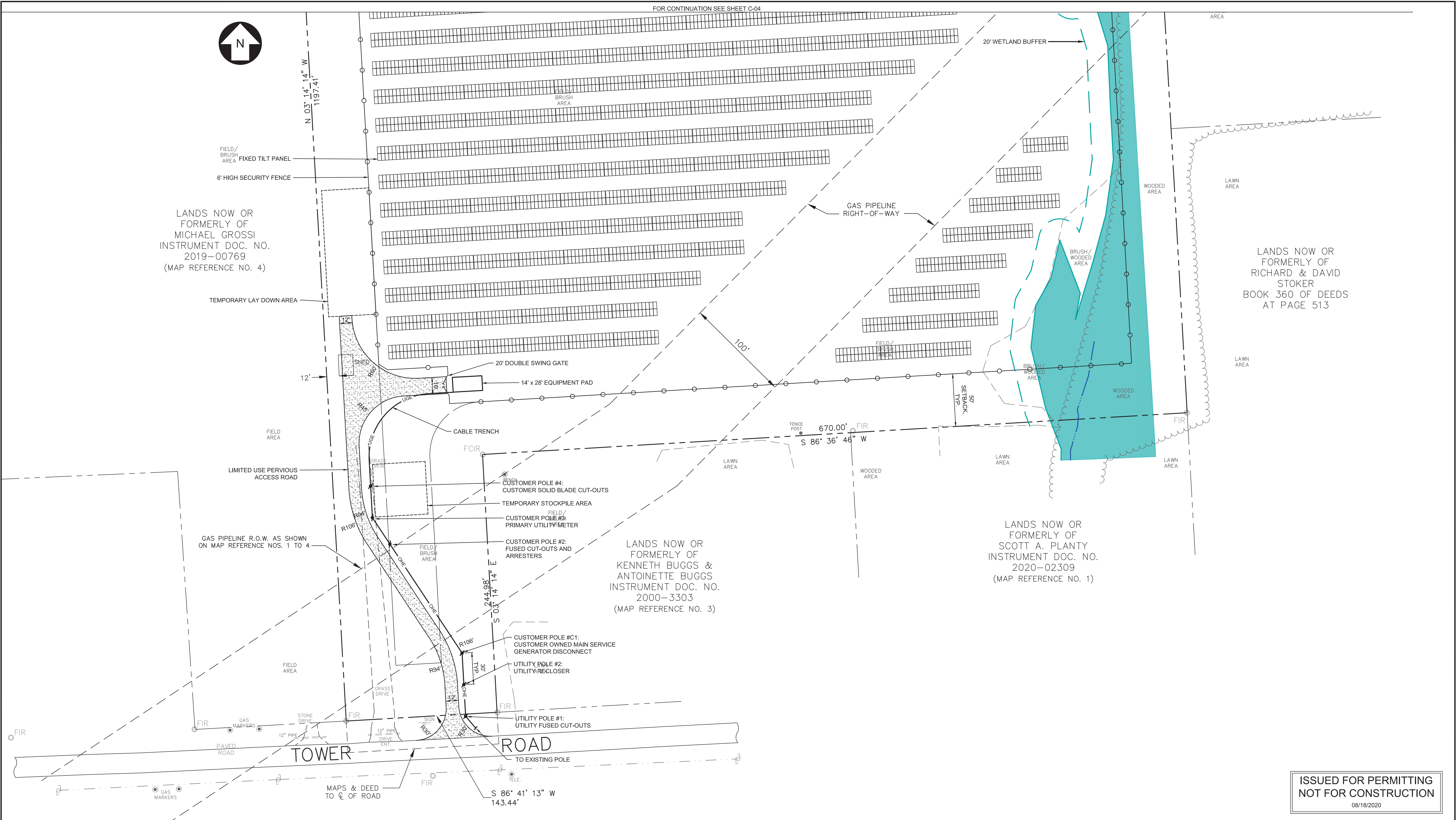
FOR CONTINUATION SEE SHEET C-04

LANDS NOW OR FORMERLY OF MICHAEL GROSSI INSTRUMENT DOC. NO. 2019-00769 (MAP REFERENCE NO. 4)

LANDS NOW OR FORMERLY OF RICHARD & DAVID STOKER BOOK 360 OF DEEDS AT PAGE 513

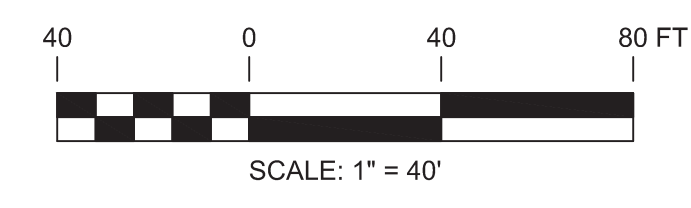
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LANDS NOW OR FORMERLY OF SCOTT A. PLANTY INSTRUMENT DOC. NO. 2020-02309 (MAP REFERENCE NO. 1)



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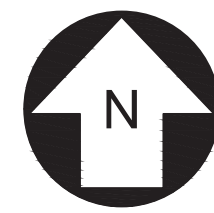
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REV	DESCRIPTION	DATE	DES	CHK	APP	
1	ISSUED FOR PERMITTING	08/18/20	DED	RAY	PMM	



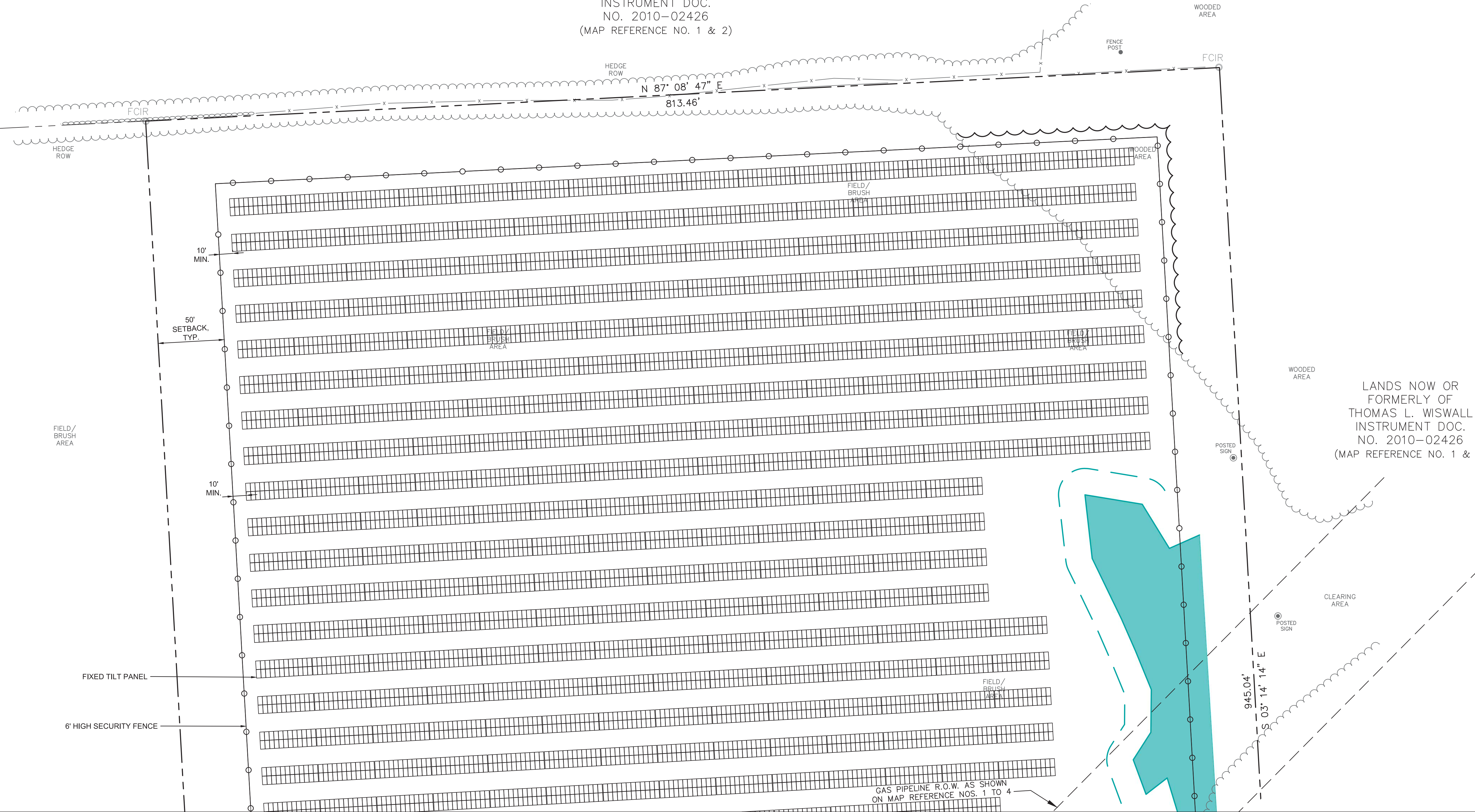
DED	DESIGNED
DED	DRAWN
PMM	CHECKED
APPROVED	
RAY	REVIEW 1
	REVIEW 2

CIPRIANI ENERGY GROUP	
CORTLAND COUNTY 2 SOLAR ENERGY FACILITY	
SITE LAYOUT PLAN - SOUTH	
CORTLAND	NEW YORK
DATE	08/17/20
SCALE	1" = 40'
PROJECT NO.	C-03
REV.	1





LANDS NOW OR
FORMERLY OF
THOMAS L. WISWALL
INSTRUMENT DOC.
NO. 2010-02426
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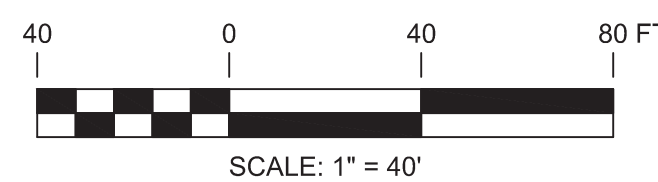
LANDS NOW OR
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INSTRUMENT DOC.
NO. 2010-02426
(MAP REFERENCE NO. 1 & 2)

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08/18/2020

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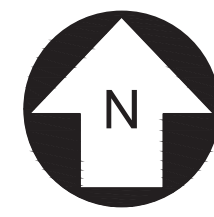


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REV	DESCRIPTION	DATE	DES	CHK	APP	
1	ISSUED FOR PERMITTING	08/18/20	DED	RAY	PMM	

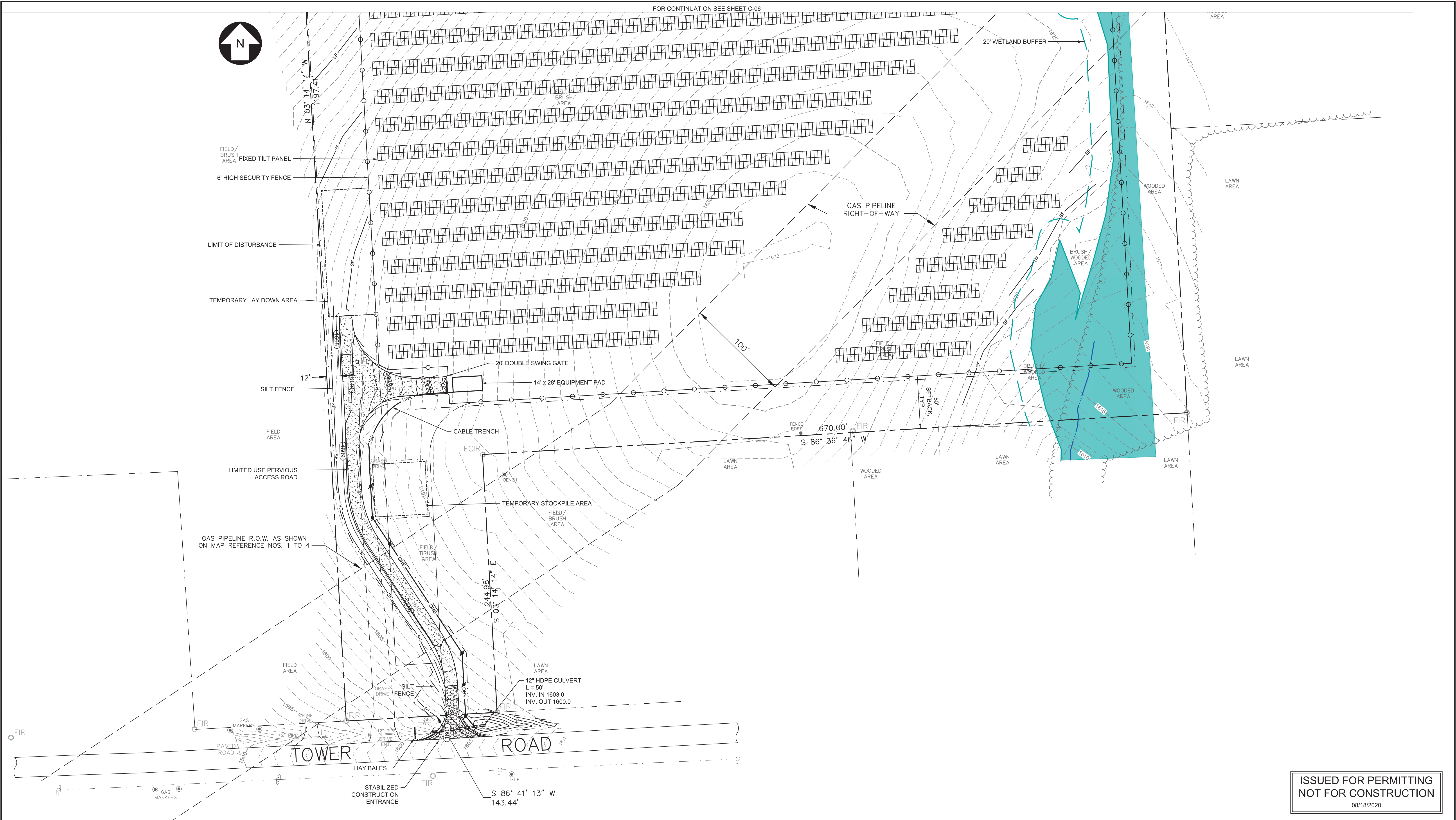


DED DESIGNED	
DED DRAWN	
PMM CHECKED	
APPROVED	
RAY REVIEW 1	08/17/20
REVIEW 2	DATE
	1" = 40'
	SCALE

CIPRIANI ENERGY GROUP		CORTLAND COUNTY 2 SOLAR ENERGY FACILITY	
SITE LAYOUT PLAN - NORTH		NEW YORK	
CORTLAND			
	C-04		REV. 1



FOR CONTINUATION SEE SHEET C-06



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08/18/2020

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249 Western Avenue
Augusta, ME 04330

PROJECT NO: 395300



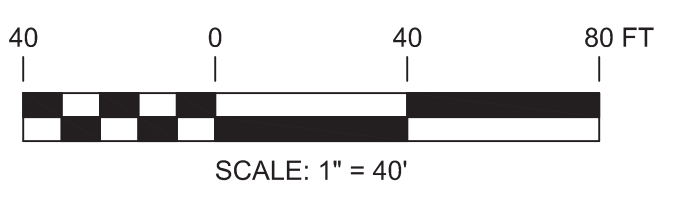
DED DESIGNED
DED DRAWN
PMM CHECKED
APPROVED
RAY REVIEW 1
REVIEW 2

CIPRIANI ENERGY GROUP
CORTLAND COUNTY 2 SOLAR ENERGY FACILITY
GRADING, DRAINAGE & EROSION CONTROL PLAN - SOUTH CORTLAND NEW YORK

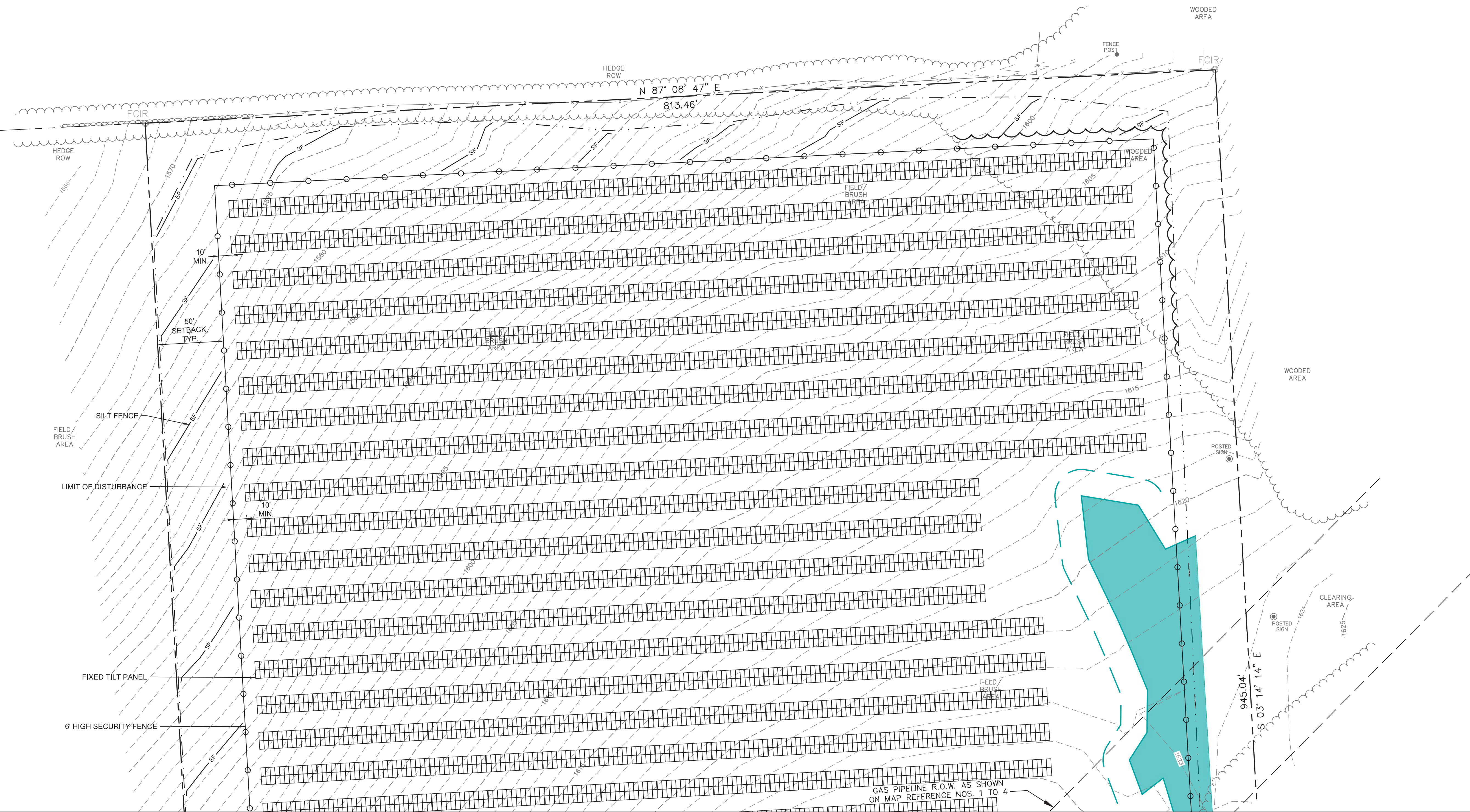
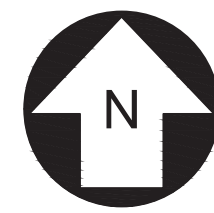


C-05

REV. 1



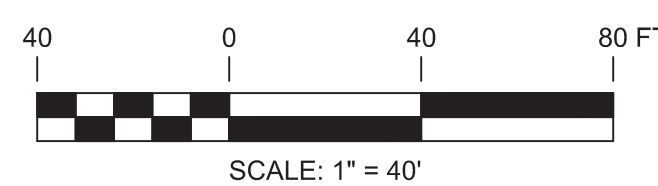
REV	DESCRIPTION	DATE	DES	CHK	APP
1	ISSUED FOR PERMITTING	08/18/20	DED	RAY	PMM



FOR CONTINUATION SEE SHEET C-05

ISSUED FOR PERMITTING
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08/18/2020

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1	ISSUED FOR PERMITTING	08/18/20	DED	RAY	PMM	



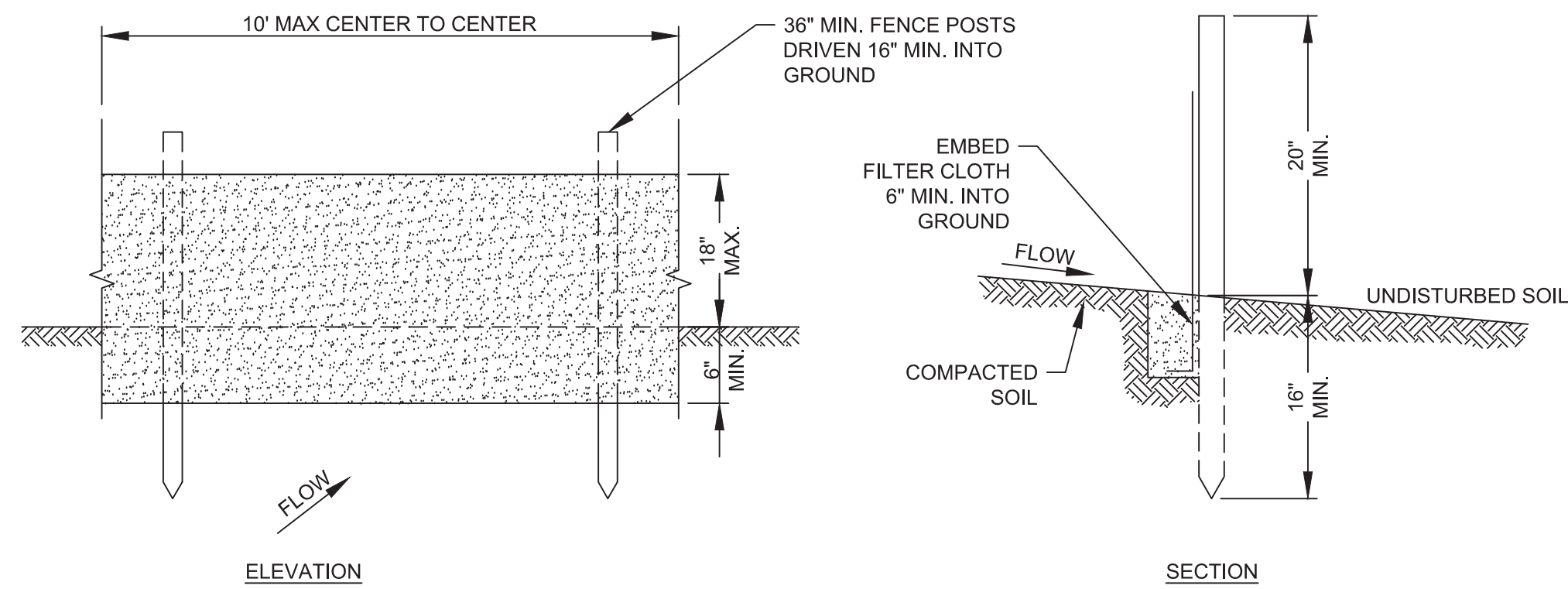
DED DESIGNED	
DED DRAWN	
PMM CHECKED	
APPROVED	
RAY REVIEW 1	08/17/20 DATE
REVIEW 2	1" = 40' SCALE

CIPRIANI ENERGY GROUP
CORTLAND COUNTY 2 SOLAR ENERGY FACILITY

GRADING, DRAINAGE & EROSION CONTROL PLAN - NORTH
CORTLAND NEW YORK

C-06

REV. 1

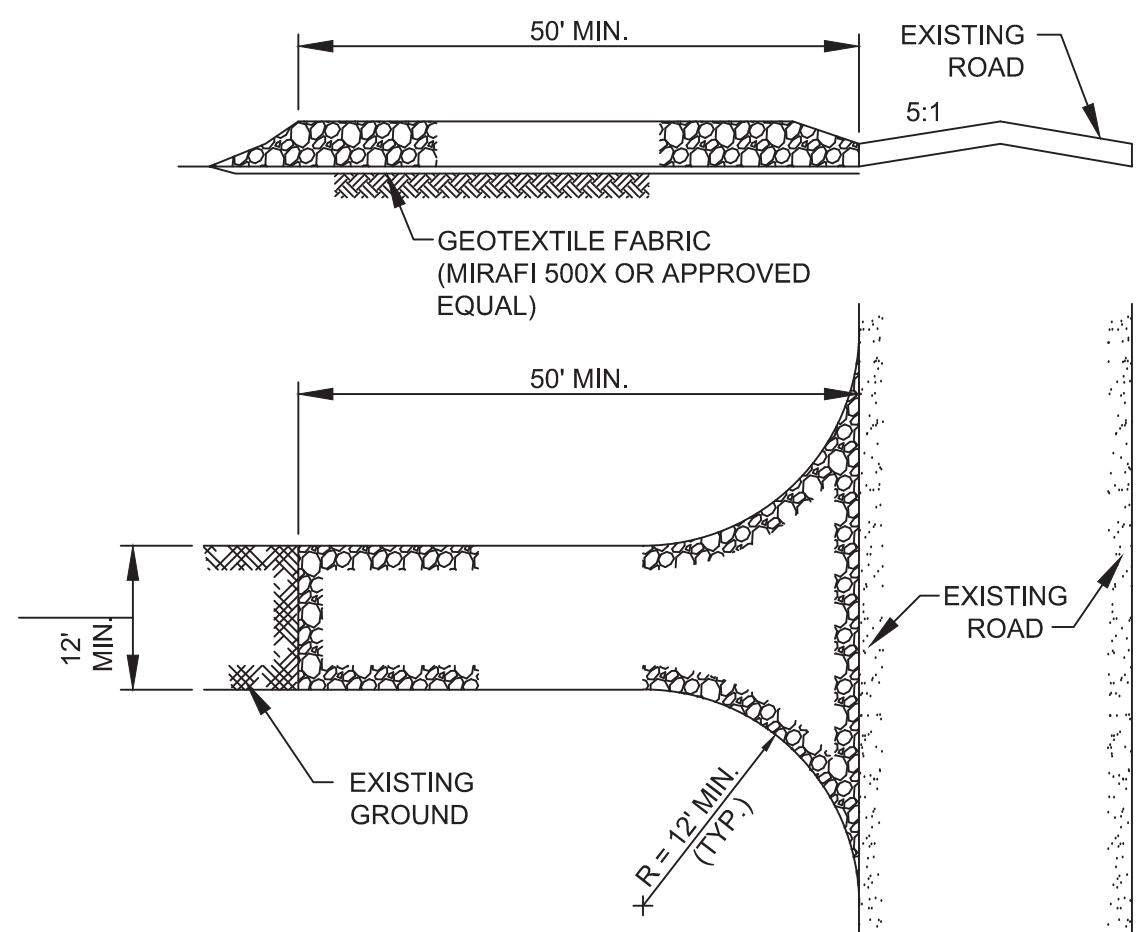


- FILTER FABRIC SHALL BE FASTENED TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE OR BUILD-UP REACHES 1/2 THE HEIGHT OF THE FENCE.
- POSTS: STEEL "T" OR "U" TYPE OR 2" HARDWOOD
 FILTER CLOTH: FILTER X, MIRAFI 100X, STABLINKA T140N, OR APPROVED EQUAL
 PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL

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 DETAILS

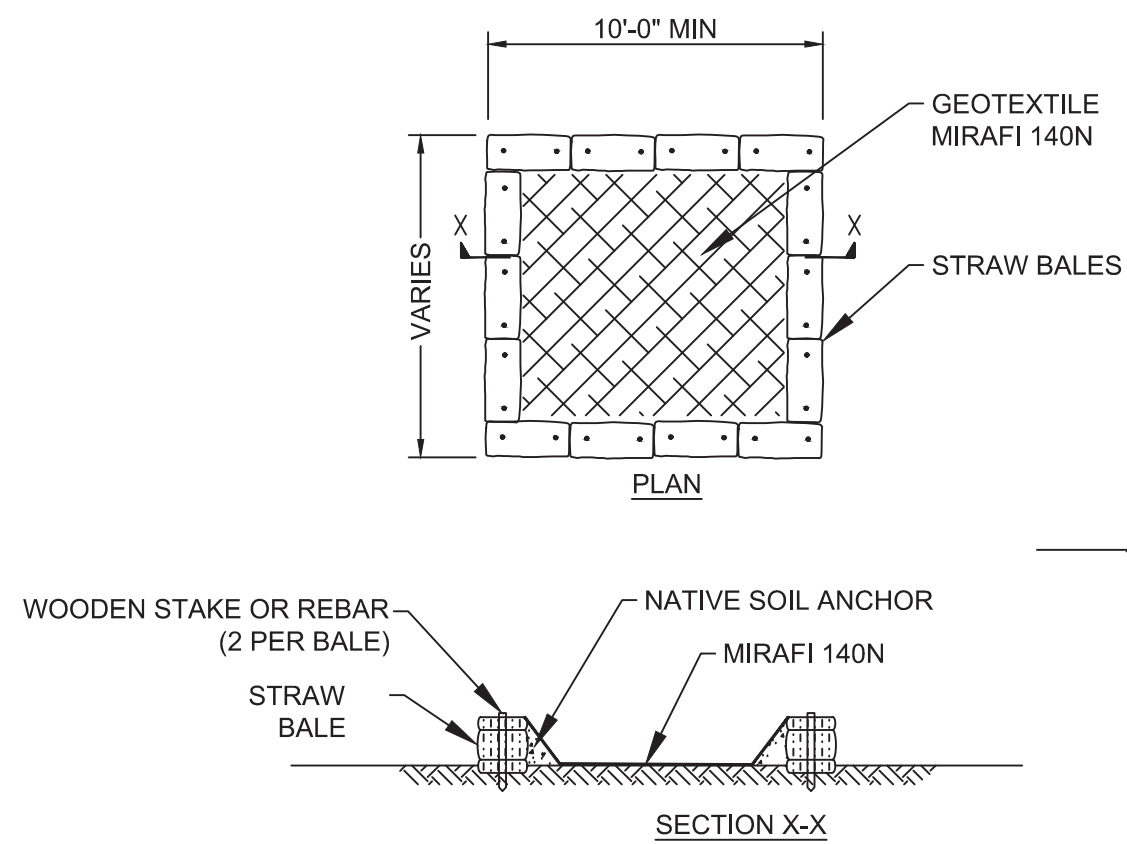
SCALE: N.T.S.



- STONE SIZE - USE 1" - 4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH - NOT LESS THAN 50 FEET.
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - TWELVE (12) FOOT MIN. BUT NOT LESS THAN THE FULL ROAD WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. PROVIDE TWENTY-FOUR (24) FOOT WIDTH IF THERE IS ONLY A SINGLE ENTRANCE TO SITE.
- GEOTEXTILE - SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING THE STONE.
- SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCE 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 AN AREA STABILIZED WITH STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

STABILIZED CONSTRUCTION ENTRANCE

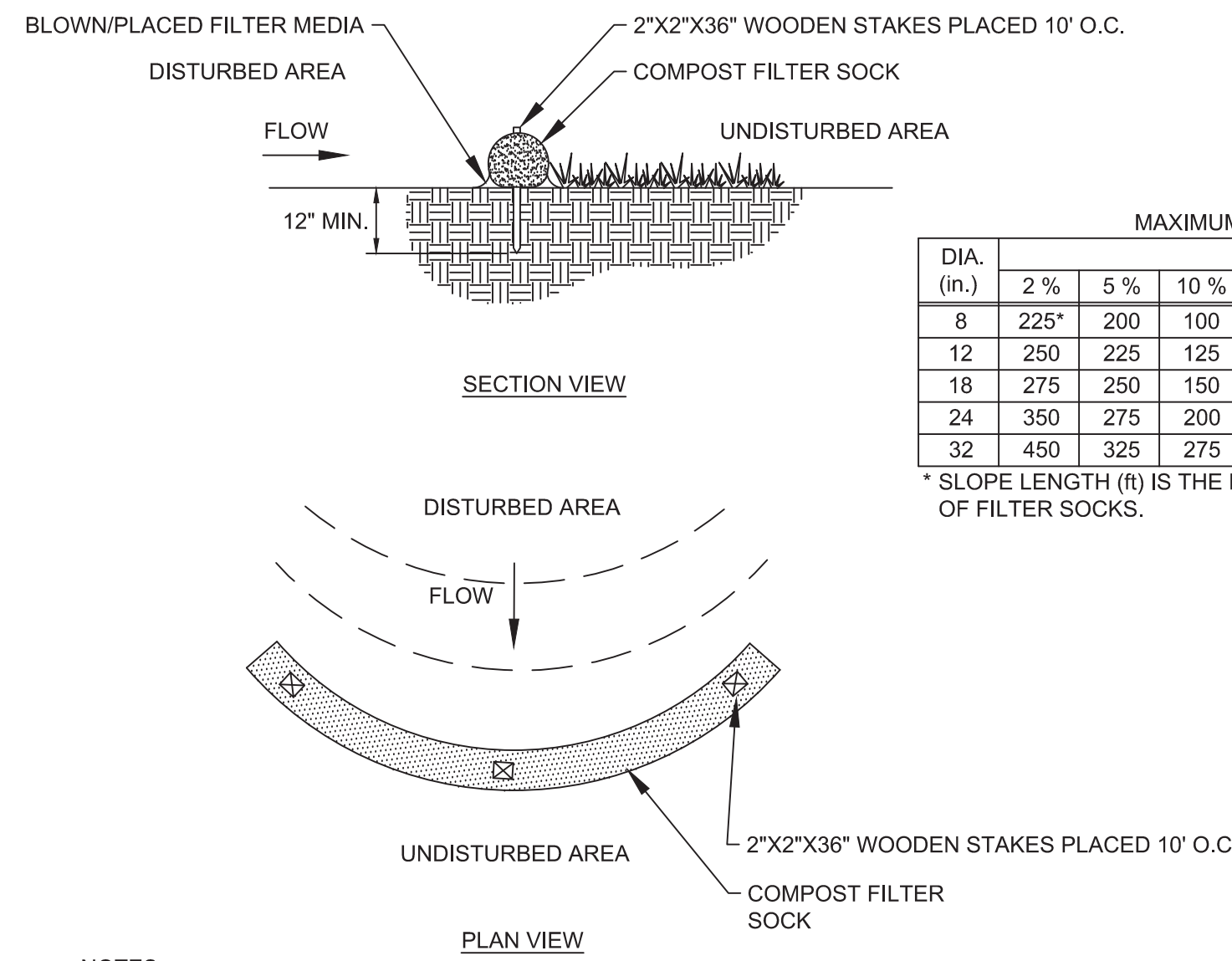
SCALE: N.T.S.



- NOTES:
- SUMP(S) SHALL BE LOCATED NEAR WORK SITES BUT SHALL BE PLACED AS FAR AWAY FROM WETLANDS, BUFFERS AND DRAINAGE SWALES AS PRACTICAL.
 - SUMP(S) SHALL BE CLEANED AND WASTE CONCRETE REMOVED AND PROPERLY DISPOSED OF PERIODICALLY AND UPON COMPLETION OF WORK.

TYPICAL CONCRETE WASHOUT

SCALE: N.T.S.



DIA. (in.)	SLOPE						
	2%	5%	10%	20%	25%	33%	50%
8	225*	200	100	50	20	--	--
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50

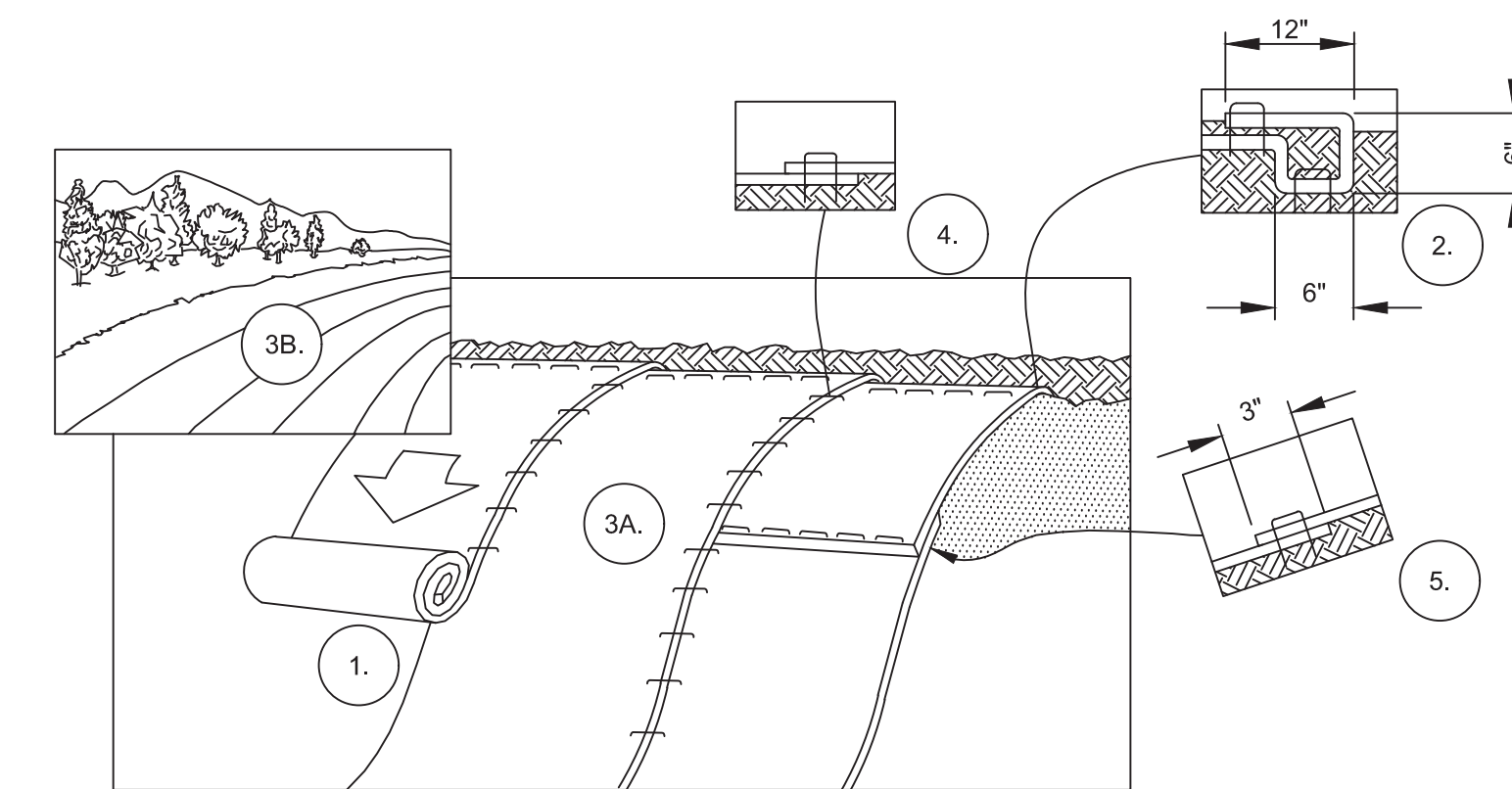
* SLOPE LENGTH (ft) IS THE DISTANCE BETWEEN ROWS OF FILTER SOCKS.

NOTES:

- COMPOST FILTER SOCK MATERIALS, INSTALLATION, AND MAINTENANCE SHALL CONFORM TO SPECIFICATIONS PROVIDED IN NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (LATEST EDITION).
- ENDS OF FILTER SOCK SHALL EXTEND UP-SLOPE 8 FEET (MIN.) AT AN ANGLE OF 45°.

TYPICAL COMPOST FILTER SOCK

SCALE: N.T.S.



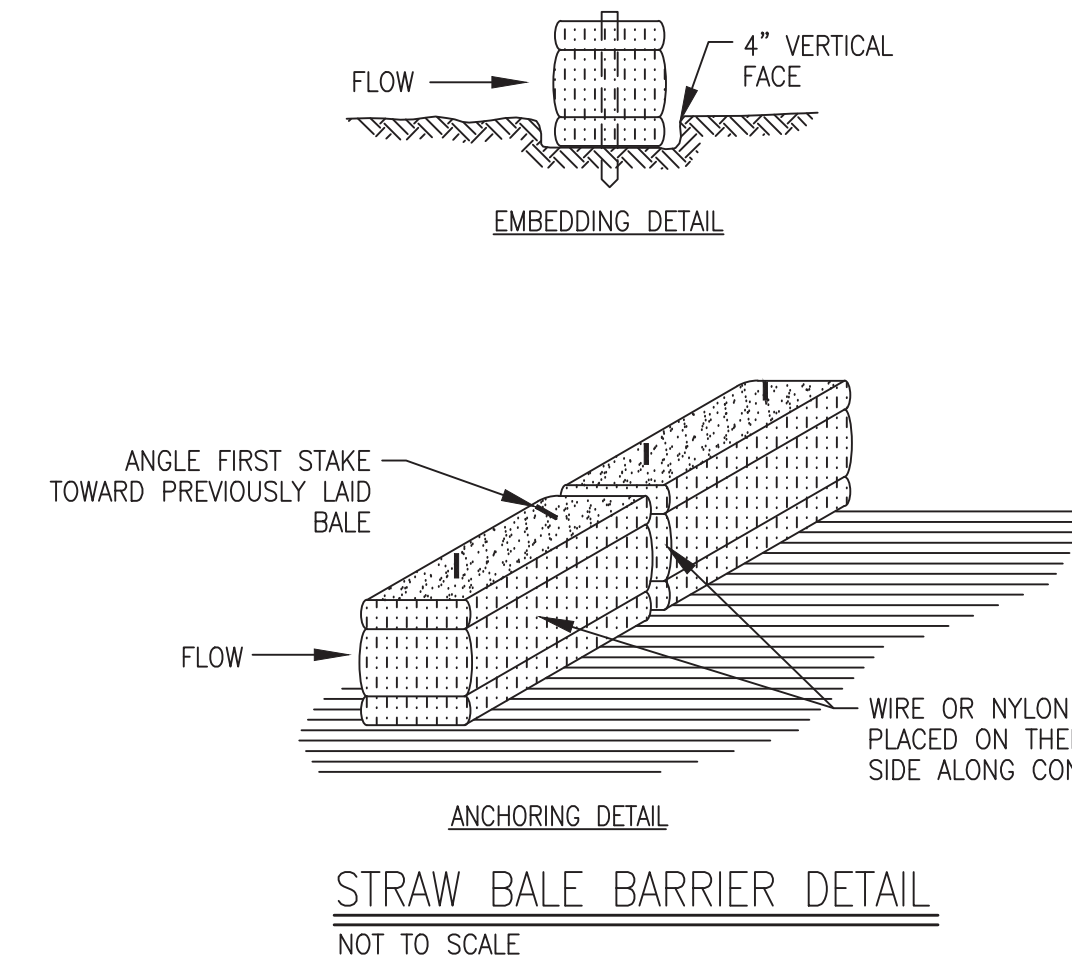
EROSION CONTROL BLANKET SHALL BE NORTH AMERICAN GREEN S150 OR APPROVED EQUAL.

- PREPARE SOIL BEFORE INSTALLING BLANKETS BY SMOOTHING THE SURFACE, REMOVING DEBRIS AND LARGE STONES, AND APPLICATION OF ANY NECESSARY LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
- BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
- ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
- THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
- CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
 *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

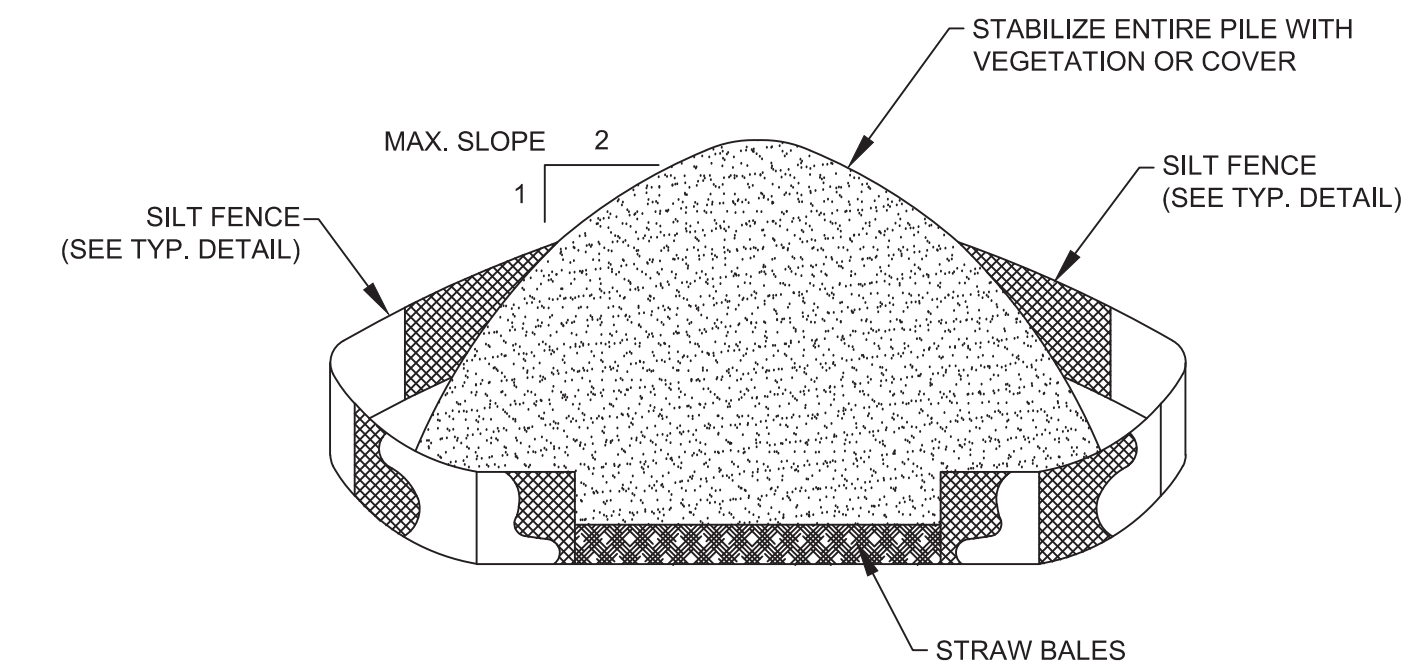
EROSION CONTROL BLANKET INSTALLATION

SCALE: N.T.S.



STRAW BALE BARRIER DETAIL

NOT TO SCALE



INSTALLATION NOTES:

- AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
- MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
- UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAW BALES, THEN STABILIZED WITH VEGETATION OR COVERED.

TYPICAL TOPSOIL STOCKPILE

SCALE: N.T.S.

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REV	DESCRIPTION	DATE	DES	CHK	APP	



TRC DESIGNED	
PMM DRAWN	
PMM CHECKED	
APPROVED	
RAY REVIEW 1	
REVIEW 2	

CIPRIANI ENERGY GROUP CORTLAND COUNTY 2 SOLAR ENERGY FACILITY EROSION & SEDIMENT CONTROL NOTES & DETAILS SHEET 1 OF 2		CORTLAND 	NEW YORK C-07 REV. 1
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PERMANENT CONSTRUCTION AREA PLANTING

FINAL STABILIZATION SHOULD BE IMPLEMENTED AT THE COMPLETION OF EACH PHASE. ONCE CONSTRUCTION IS COMPLETE, EXPOSED SOILS REQUIRE FINAL AND PERMANENT STABILIZATION. ACCORDING TO FINAL DESIGN OF THE CONSTRUCTION AREA AND ACCESS, SOILS SHOULD BE GRADED SMOOTH AND LEVEL TO ELIMINATE RUTTING AND CONCENTRATED FLOWS, PUDDLING AND UNEVEN SURFACES FOR FUTURE MAINTENANCE ACTIVITIES. UNIMPROVED AREAS SHOULD BE RESTORED TO ORIGINAL GRADE UNLESS PERMITTED AND PLANNED FOR REQUIRED FUTURE MAINTENANCE. CONSERVED STOCKPILED TOPSOIL SHOULD BE UTILIZED FOR TOP DRESSING GRADED SUB-SOILS AT EXCAVATION LOCATIONS. ANY SEVERELY COMPACTED SECTIONS WILL REQUIRE CHISELING OR DISKING TO PROVIDE AN ADEQUATE ROOTING ZONE, TO A MINIMUM DEPTH OF 12". THE SEEDBED MUST BE PREPARED TO ALLOW GOOD SOIL TO SEED CONTACT, WITH THE SOIL NOT TOO SOFT AND NOT TOO COMPACT. ADEQUATE SOIL MOISTURE MUST BE PRESENT TO ACCOMPLISH THIS. IF SURFACE IS POWDER DRY OR STICKY WET, POSTPONE OPERATIONS UNTIL MOISTURE CHANGES TO A FAVORABLE CONDITION. REMOVE ALL STONES AND OTHER DEBRIS FROM THE SURFACE THAT ARE GREATER THAN 4 INCHES, OR THAT WILL INTERFERE WITH FUTURE MOWING OR MAINTENANCE.

SOIL AMENDMENTS SHOULD BE INCORPORATED INTO THE UPPER 2 INCHES OF SOIL WHEN FEASIBLE. THE SOIL SHOULD BE TESTED TO DETERMINE THE AMOUNTS OF AMENDMENTS NEEDED. APPLY GROUND AGRICULTURAL LIMESTONE TO ATTAIN A PH OF 6.0 IN THE UPPER 2 INCHES OF SOIL. IF SOIL MUST BE FERTILIZED BEFORE RESULTS OF A SOIL TEST CAN BE OBTAINED TO DETERMINE FERTILIZER NEEDS, APPLY COMMERCIAL FERTILIZER AT 600 LBS. PER ACRE OF 5-5 -10 OR EQUIVALENT.

IF SOILS ARE SOFT, MECHANICAL MULCHING MAY NOT BE AVAILABLE DUE TO THE INEVITABLE RUTTING WITH MULCHING EQUIPMENT.

ANY UPLAND AREAS THAT ARE DISTURBED SHALL BE STABILIZED USING PERMANENT SEED MIX AS SPECIFIED IN THE SDESC, UNLESS DIRECTED OTHERWISE IN ASSOCIATED PERMITTING.

ACCEPTABLE PERMANENT SEED MIXTURES (ADAPTED FROM SDESC)

SEED MIXTURE	VARIETY	RATE IN LBS. PER ACRE	RATE IN LBS PER 1000 SQ. FT.
MIX #1			
CREEPING RED FESCUE	ENSYLVA, PENNLAWN, BOREAL	10	0.25
PERENNIAL RYEGRASS	PENNFINE, LINN	10	0.25
*THIS MIX IS USED EXTENSIVELY FOR SHADED AREAS.			
MIX #2			
SWITCHGRASS	SHELTER, PATHFINDER, TRAILBLAZER, OR BLACKWELL	20	0.5
*THIS RATE IS IN PURE LIVE SEED. THIS WOULD BE AN EXCELLENT CHOICE ALONG THE UPLAND EDGE OF A WETLAND TO FILTER RUNOFF AND PROVIDE WILDLIFE BENEFITS. IN AREAS WHERE EROSION MAY BE A PROBLEM, A COMPANION SEEDING OF SAND LOVEGRASS SHOULD BE ADDED TO PROVIDE QUICK COVER AT A RATE OF 2 LBS. PER ACRE (0.05 LBS. PER 1000 SQ. FT.).			
MIX #3			
SWITCHGRASS	SHELTER, PATHFINDER, TRAILBLAZER, OR BLACKWELL	4	0.1
BIG BLUESTEM	NIAGARA	4	0.1
LITTLE BLUESTEM	ALDOUS OR CAMPER	2	0.05
INDIANGRASS	RUMSEY	4	0.1
COASTAL PANICGRASS	ATLANTIC	2	0.05
SIDEOATS GRAMA	EL RENO OR TRAILWAY	2	0.05
WILDFLOWER MIX		0.5	0.01
*THIS MIX HAS BEEN SUCCESSFUL ON SAND AND GRAVEL PLANTINGS, IT IS VERY DIFFICULT TO SEED WITHOUT A WARM SEASON GRASS SEEDER SUCH AS A TRUAX SEED DRILL. BROADCASTING THIS SEED IS VERY DIFFICULT DUE TO THE FLUFFY NATURE OF SOME OF THE SEED, SUCH AS BLUESTEMS AND INDIANGRASS.			
MIX #4			
SWITCHGRASS	SHELTER, PATHFINDER, TRAILBLAZER, OR BLACKWELL	10	0.25
COASTAL PANICGRASS	ATLANTIC	10	0.25
*THIS MIX IS SALT TOLERANT, A GOOD CHOICE ALONG THE UPLAND EDGE OF TIDAL AREAS AND ROADSIDES.			
MIX #6			
CREEPING RED FESCUE	ENSYLVA, PENNLAWN, BOREAL	20	0.45
CHEWINGS FESCUE	COMMON	20	0.45
PERENNIAL RYEGRASS	PENNFINE, LINN	5	0.10
RED CLOVER	COMMON	10	0.45
*GENERAL PURPOSE EROSION CONTROL MIX. NOT TO BE USED FOR A TURF PLANTING OR PLAY GROUNDS.			

TEMPORARY STABILIZATION FOR FROZEN CONDITIONS

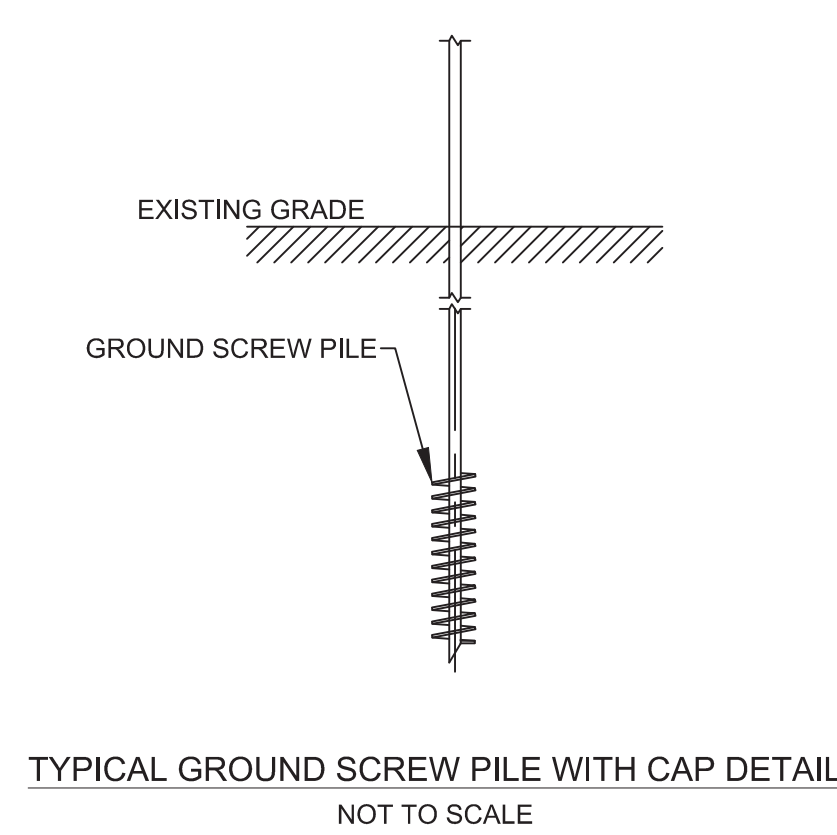
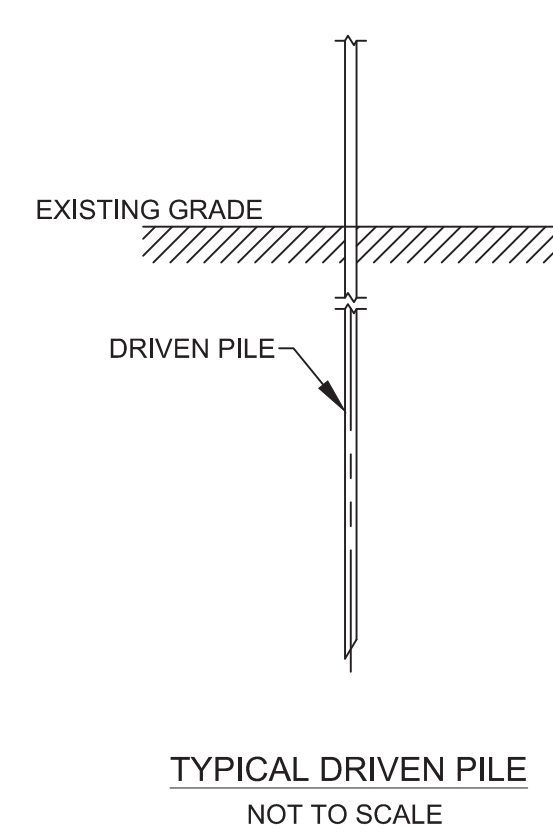
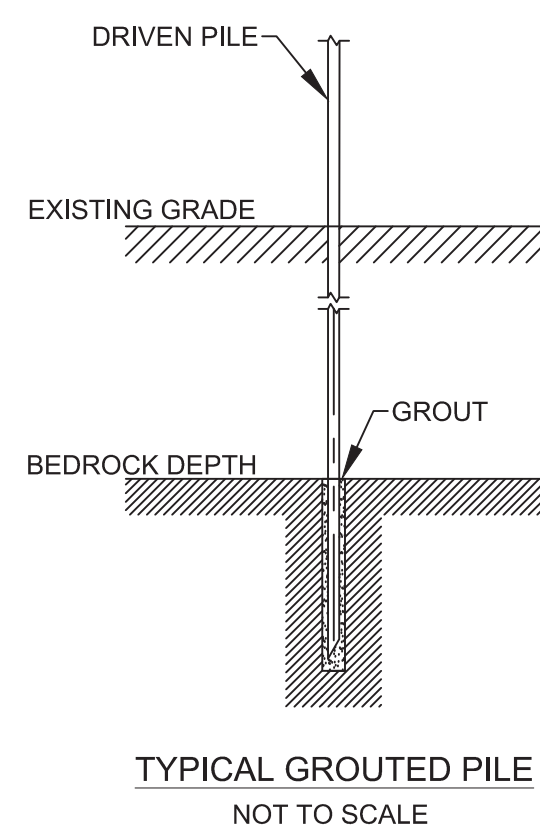
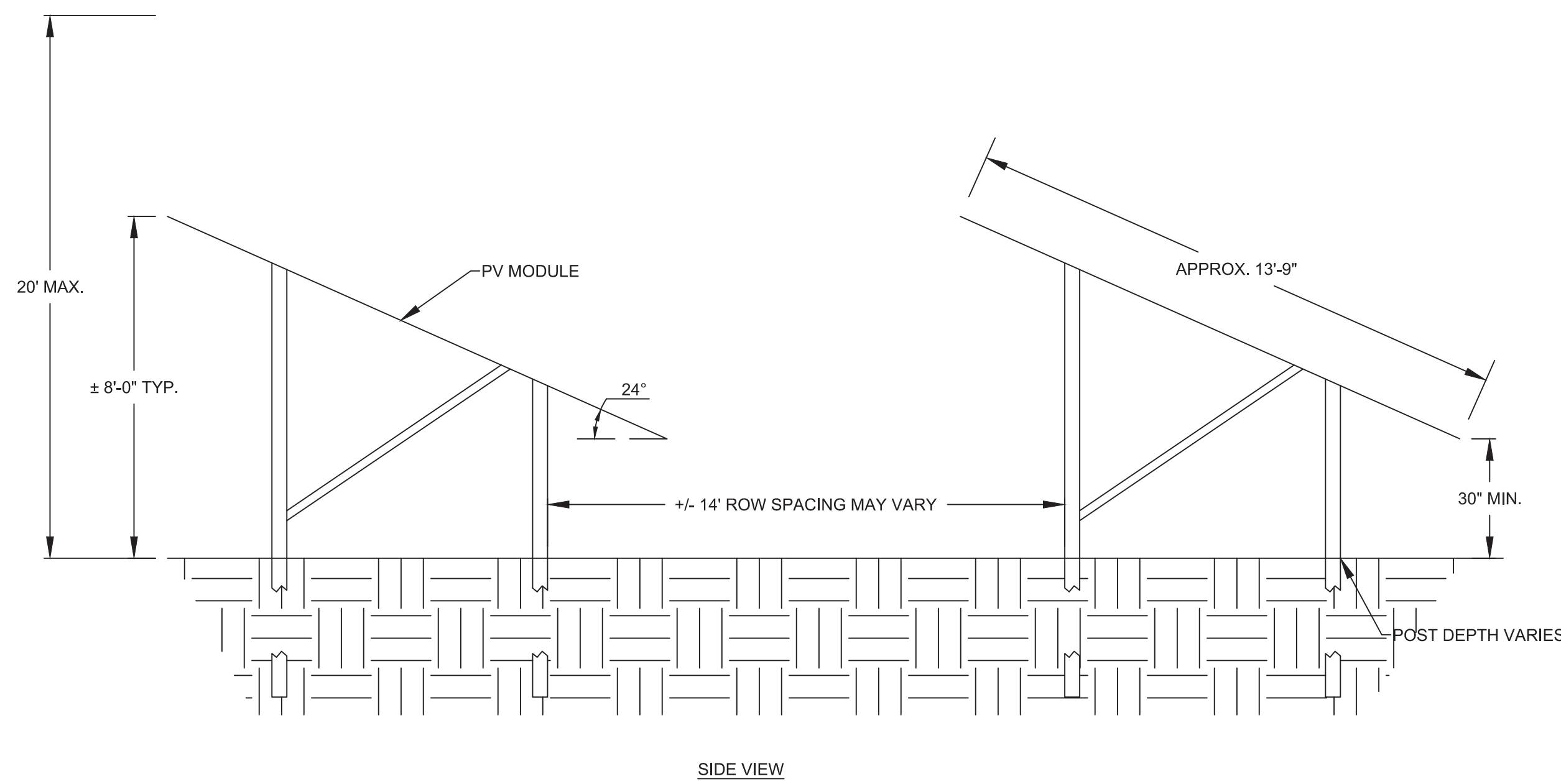
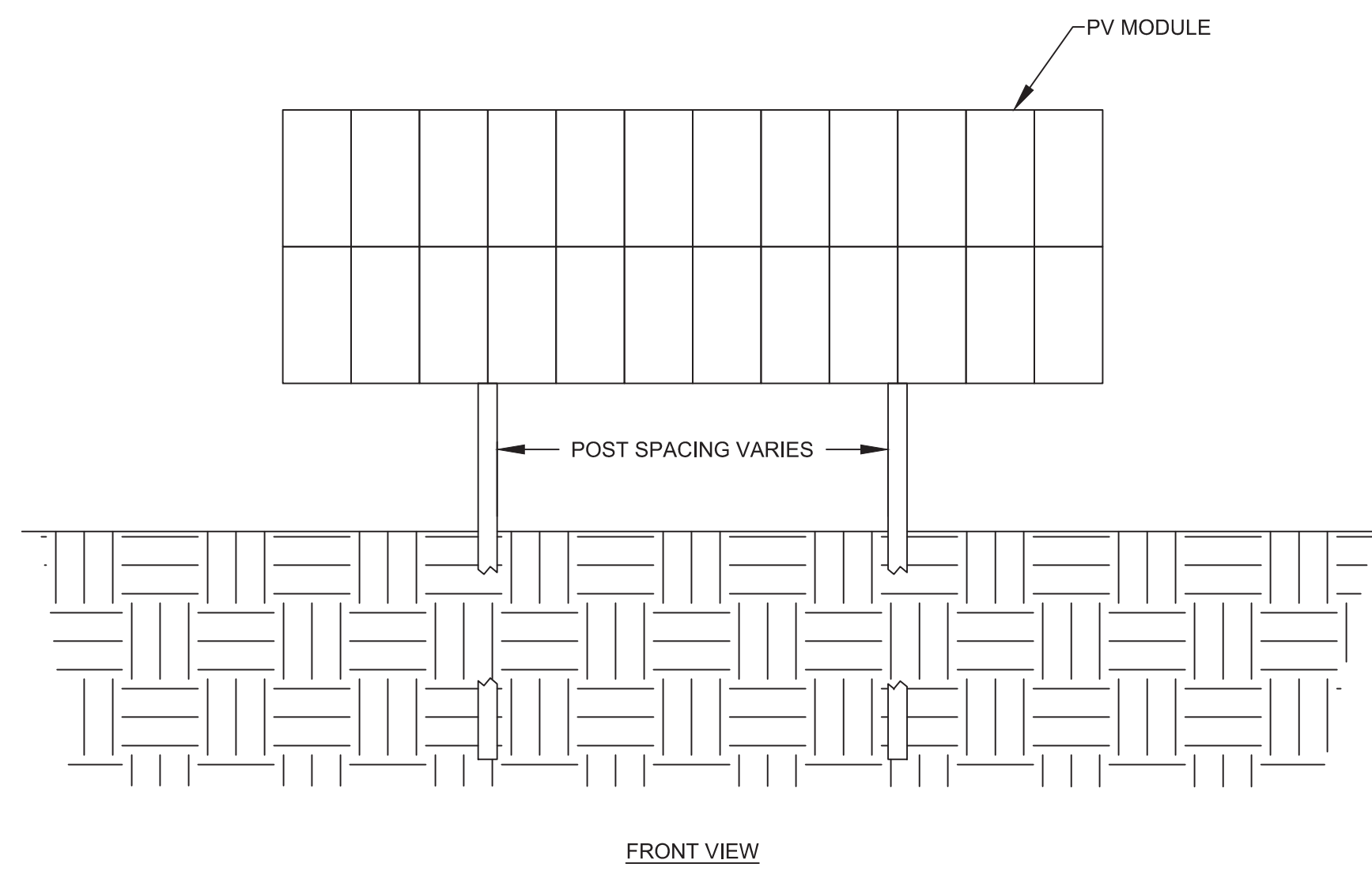
- ALL EROSION AND SEDIMENT CONTROLS MUST BE INSTALLED AND MAINTAINED ACCORDING TO THE NEW YORK STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL. THE WINTER STABILIZATION STANDARD APPLIES TO ALL CONSTRUCTION ACTIVITIES INVOLVED WITH ONGOING LAND DISTURBANCE AND EXPOSURE BETWEEN NOVEMBER 15TH TO THE FOLLOWING APRIL 1ST. THE ADDITIONAL ITEMS FOR FROZEN CONDITIONS TO CONSIDER ARE:
- SITE STABILIZATION - MULCHING SHOULD BE TRACKED INTO THE SOIL PRIOR TO FROZEN CONDITIONS, OR ANCHORED WITH NATURAL FIBER NETTING. APPLICATION OF MULCHING SHOULD BE PERFORMED PRIOR TO SIGNIFICANT SNOW FALL. IF STRAW MULCH ALONE IS USED FOR TEMPORARY STABILIZATION, IT SHALL BE APPLIED AT DOUBLE THE STANDARD RATE OF 2 TONS PER ACRE, MAKING THE APPLICATION RATE 4 TONS PER ACRE. OTHER MANUFACTURED MULCHES SHOULD BE APPLIED AT DOUBLE THE MANUFACTURER'S RECOMMENDED RATE. IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED, THE APPLICATION OF SOIL STABILIZATION MEASURES SHOULD BE INITIATED BY THE END OF THE NEXT BUSINESS DAY AND COMPLETED WITHIN THREE (3) DAYS. ACCUMULATED SNOW AND FROZEN CONDITIONS ALONE ARE NOT CONSIDERED STABILIZATION.
- SLOPES - ALL SLOPES AND GRADES MUST BE PROPERLY STABILIZED WITH APPROVED METHODS. ROLLED EROSION CONTROL PRODUCTS MUST BE USED ON ALL SLOPES GREATER THAN 3:1, OR WHERE CONDITIONS FOR EROSION DICTATE SUCH MEASURES.
- A MINIMUM 25 FOOT BUFFER SHALL BE MAINTAINED FROM ALL PERIMETER CONTROLS SUCH AS SILT FENCE. MARK SILT FENCE WITH TALL STAKES THAT ARE VISIBLE ABOVE THE SNOW PACK. EDGES OF DISTURBED AREAS THAT DRAIN TO A WATERBODY WITHIN 100 FEET WILL HAVE 2 ROWS OF SILT FENCE, 5 FEET APART, INSTALLED ON THE CONTOUR.
- SOIL STOCKPILES - STOCKPILED SOILS MUST BE PROTECTED BY THE USE OF ESTABLISHED VEGETATION, ANCHORED-DOWN MULCH, ROLLED EROSION CONTROL PRODUCTS, OR OTHER DURABLE COVERING. SEDIMENT CONTROLS MUST BE INSTALLED DOWNSLOPE OF THE PILE TO CONTROL SEDIMENTATION TO UNDISTURBED LOCATIONS.
- CONSTRUCTION ENTRANCE - ALL ENTRANCE AND EXIT LOCATIONS TO THE SITE MUST BE PROPERLY STABILIZED AND MUST BE MAINTAINED TO ACCOMMODATE SNOW MANAGEMENT AS SET FORTH IN THE SDESC.
- SNOW MANAGEMENT - SNOW MANAGEMENT MUST NOT DESTROY OR DEGRADE EROSION AND SEDIMENT CONTROL PRACTICES. PLOWING PERFORMED SHOULD NOT MIGRATE PLACED CRUSHED STONE OR ACCUMULATED MATTING DEBRIS WITHIN WATERBODIES, CONVEYANCES OR PROTECTED AREAS. PREPARE A SNOW MANAGEMENT PLAN WITH ADEQUATE STORAGE FOR SNOW AND CONTROL OF MELT WATER, REQUIRING CLEARED SNOW TO BE STORED IN A MANNER NOT AFFECTING ONGOING CONSTRUCTION ACTIVITIES. ENLARGE AND STABILIZE ACCESS POINTS TO PROVIDE FOR SNOW MANAGEMENT AND STOCKPILING. SNOW MANAGEMENT ACTIVITIES MUST NOT DESTROY OR DEGRADE INSTALLED EROSION AND SEDIMENT CONTROL PRACTICES. DRAINAGE STRUCTURES MUST BE KEPT OPEN AND FREE OF SNOW AND ICE DAMS. ALL DEBRIS, ICE DAMS, OR DEBRIS FROM PLOWING OPERATIONS, THAT RESTRICT THE FLOW OF RUNOFF AND MELTWATER, SHALL BE REMOVED.
- HEAVING FROST, FROZEN GROUND WINTER CONDITIONS, AND EQUIPMENT CAN AFFECT EROSION AND SEDIMENT CONTROL PRACTICES, EROSION AND SEDIMENT CONTROL DEVICES MUST BE CHECKED FOR DAMAGE REQUIRED TRAINED CONTRACTOR AND QUALIFIED INSPECTOR'S INSPECTIONS, AND REPAIRS MADE AS NECESSARY. THIS IS ESPECIALLY IMPORTANT DURING THAWS AND PRIOR TO SPRING RAIN EVENTS.
- SHOULD WINTER SHUTDOWN OR A TEMPORARY CEASE IN SOIL DISTURBING ACTIVITIES BE REQUIRE TEMPORARY STABILIZATION METHODS SHALL BE APPLIED TO ALL DISTURBED AREAS, AND SWPPP INSPECTIONS CAN BE REDUCED TO A MINIMUM (EVERY 30 DAYS). CONTRACTOR AND/OR RESPONSIBLE PARTY SHOULD REFER TO SOIL STABILIZATION MEASURES IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL (NOVEMBER 2016) AND SPDES GENERAL PERMIT GP-0-15-002.

ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION
08/18/2020

UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.



249 Western Avenue Augusta, ME 04330		PROJECT NO: 395300				Patrick M. Martin, P.E. <small>Digitally signed by Patrick M. Martin, DN: cn=US, email=patrick@trcinc.com, ou=TRC, cn=Patrick M. Martin</small>	TRC DESIGNED	CIPRIANI ENERGY GROUP		
REV	DESCRIPTION	DATE	DES	CHK	APP		PMM DRAWN PMM CHECKED APPROVED	CORTLAND COUNTY 2 SOLAR ENERGY FACILITY		
							EROSION & SEDIMENT CONTROL NOTES & DETAILS			
							SHEET 2 OF 2			
							CORTLAND	NEW YORK		
1	ISSUED FOR PERMITTING	08/18/20	PMM	RAY	PMM	RAY REVIEW 1 REVIEW 2	08/17/20 DATE AS NOTED SCALE		C-08	REV. 1



PV ARRAY RACKING
SCALE: N.T.S.

LR4-72HBD 425~455M

Design (mm) **Mechanical Parameters** **Operating Parameters**

Cell Orientation: 144 (6x24)
Junction Box: IP68, three diodes
Output Cable: 4mm², 300mm in length, length can be customized
Glass: Dual glass
2.0mm coated tempered glass
Frame: Anodized aluminum alloy frame
Weight: 27.5kg
Dimension: 2054x1038x35mm
Packaging: 30pcs per pallet
150pcs per 20GP
660pcs per 40HC

Operational Temperature: -40°C ~ +85°C
Power Output Tolerance: 0 ~ +5W
Voc and Isc Tolerance: ±3%
Maximum System Voltage: DC1500V (IEC/UL)
Maximum Series Fuse Rating: 25A
Nominal Operating Cell Temperature: ±5±2°C
Safety Class: Class II
Fire Rating: UL type 3
Bifaciality: Glazing 70±5%

Electrical Characteristics Test uncertainty for Pmax: ±3%

Model Number	LR4-72HBD-425M	LR4-72HBD-430M	LR4-72HBD-435M	LR4-72HBD-440M	LR4-72HBD-445M	LR4-72HBD-450M	LR4-72HBD-455M
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC
Maximum Power (Pmax/W)	425	317.4	430	321.1	435	324.9	440
Open Circuit Voltage (Voc/V)	48.7	45.6	48.9	45.8	49.1	45.9	49.2
Short Circuit Current (Isc/A)	11.22	9.06	11.30	9.13	11.36	9.18	11.45
Voltage at Maximum Power (Vmp/V)	40.4	37.7	40.6	37.9	40.8	38.0	41.0
Current at Maximum Power (Imp/A)	10.52	8.42	10.60	8.49	10.66	8.54	10.73
Module Efficiency(%)	19.6	19.8	20.0	20.2	20.5	20.7	20.9

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25°C, Spectra at AM1.5
NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20°C, Spectra at AM1.5, Wind at 1m/s

Electrical characteristics with different rear side power gain (reference to 445W front)

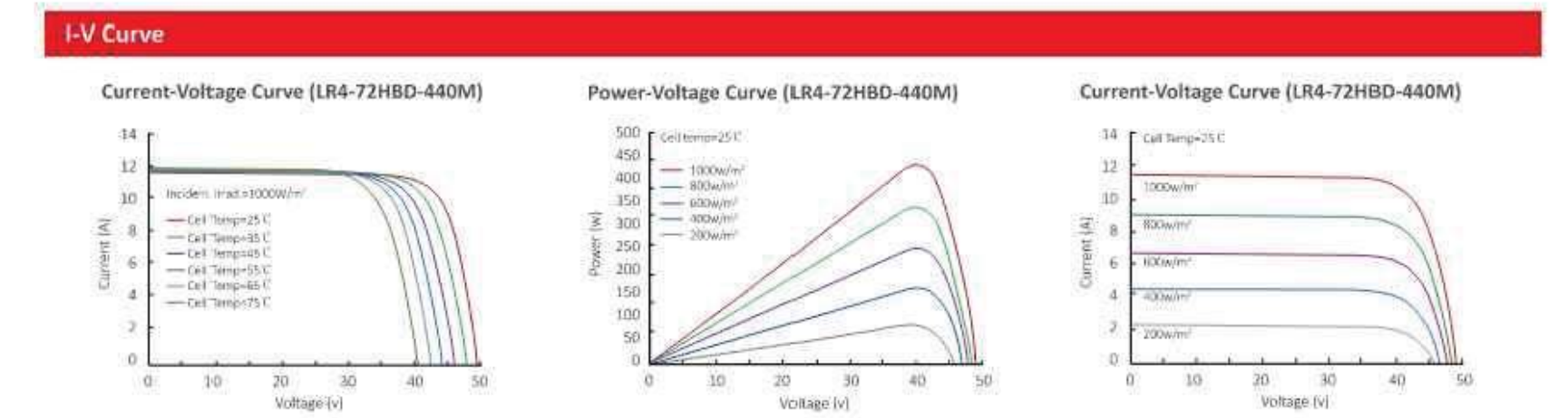
Pmax/W	Voc/V	Isc/A	Vmp/V	Imp/A	Pmax gain
467	49.4	12.09	41.2	11.34	5%
490	49.4	12.67	41.2	11.88	10%
512	49.5	13.24	41.3	12.42	15%
534	49.5	13.82	41.3	12.96	20%
556	49.5	14.40	41.3	13.50	25%

Temperature Ratings (STC)

Temperature Coefficient of Isc: +0.050%/C
Temperature Coefficient of Voc: -0.284%/C
Temperature Coefficient of Pmax: -0.350%/C

Mechanical Loading

Front Side Maximum Static Loading: 5400Pa
Rear Side Maximum Static Loading: 2400Pa
Hallstone Test: 25mm Hallstone at the speed of 23m/s



LONGI

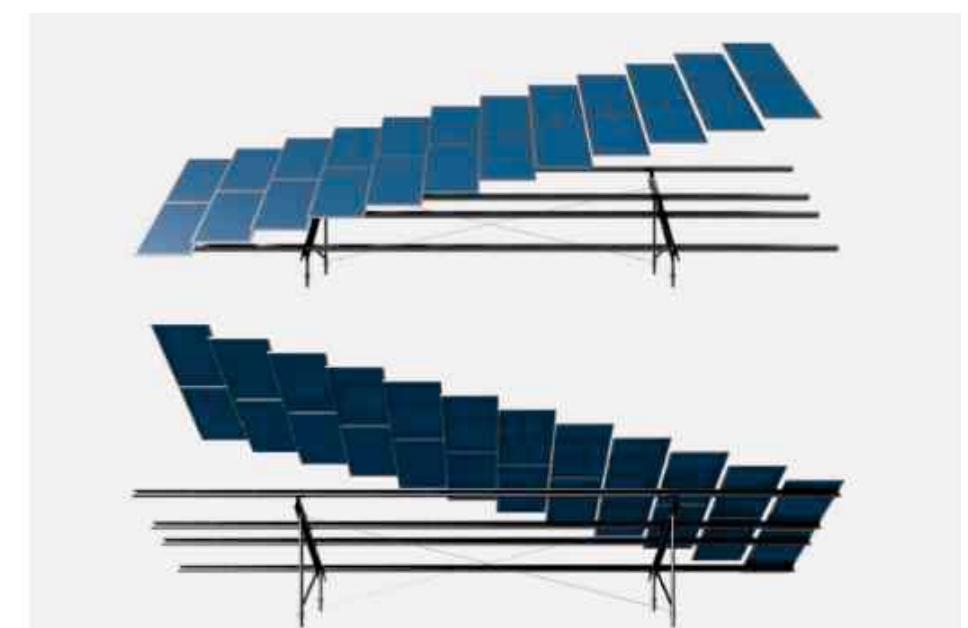
Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China
Tel: +86-21-30167606 E-mail: module@longi-solar.com Facebook: www.facebook.com/LONGI Solar

PANEL SPECIFICATIONS
SCALE: N.T.S.

START SMART. BUILD SMART.

SPECS

Specifications Member Material	ASTM A1011 Cold Rolled Steel, Hot Dip Galvanized to ASTM A653 (G90 min) ASTM A 500 Hollow Structural Steel, Hot Dip Galvanized to ASTM A123 (3.0 mils min)
Hardware Material	316 Stainless Steel for Module Mounting Hardware Carbon Steel Alloy, Magni Coated to ASTM F2833 for all Structural Hardware
Foundation Options	Ground Screw Portrait
Module Orientation	Portrait
Module Mounting	Bottom Mount Integrated Electrical Bonding
Tilt Angle	5 to 40 degrees
Wire Management	Incorporated in Structure - NEC Compliant
Configuration	Portrait: Up to 2 high x up to 12 wide
Slopes	East or West facing, up to 30%, north or south facing, up to 36%
Load Capacities	Project Specific; Up to 170 MPH wind speed and 100 PSF Ground Snow Load
Certifications	UL 2703, Edition 1; CPP Wind Tunnel Tested
Warranty	20 - year limited warranty



FAST

- Exponentially Less Hardware
- Integrated Electrical Bonding
- Included Wire Management

COMPLIANT

- UL 2703, Edition 1 Listed
- NEC Compliant
- Wind Tunnel Tested

VERSATILE

- Numerous Configurations
- Adapts to Steep Slopes
- Accommodates Arduous Soils

LIGHT

- Lighter / Stiffer Components
- Less Freight Costs

RACK SPECIFICATIONS
SCALE: N.T.S.

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ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION
08/18/2020



TRC 249 Western Avenue
Augusta, ME 04330

PROJECT NO: 395300

REV	DESCRIPTION	DATE	DES	CHK	APP
---	ISSUED FOR PERMITTING	08/18/20	PMM	RAY	PMM



TRC DESIGNED	
PMM DRAWN	
PMM CHECKED	
APPROVED	
RAY REVIEW 1	08/18/20
RAY REVIEW 2	AS NOTED

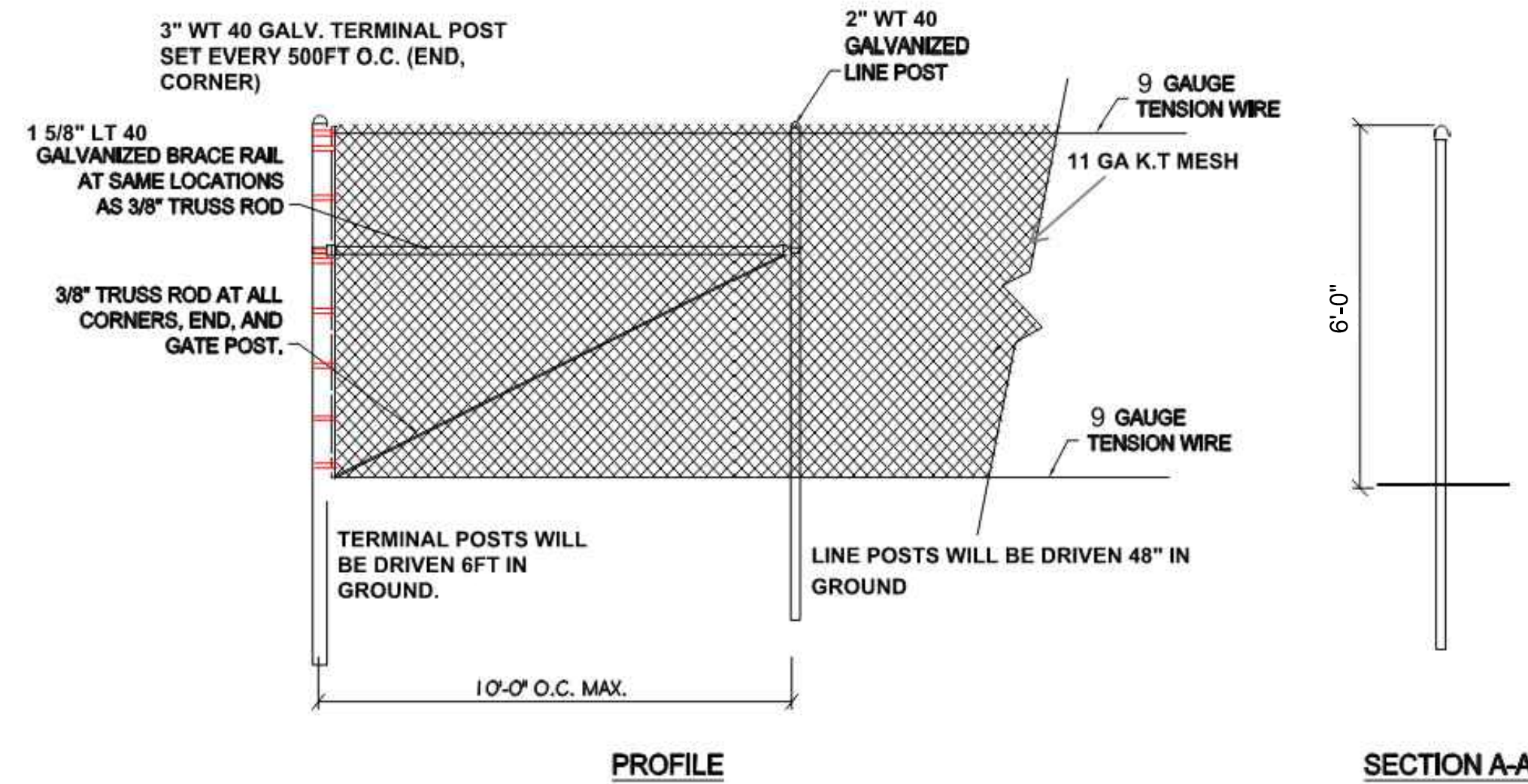
CIPRIANI ENERGY GROUP
CORTLAND COUNTY 2 SOLAR ENERGY FACILITY
CONSTRUCTION DETAILS
SHEET 1 OF 3

CORTLAND NEW YORK

DATE: 08/18/20
SCALE: AS NOTED

TRC

C-09

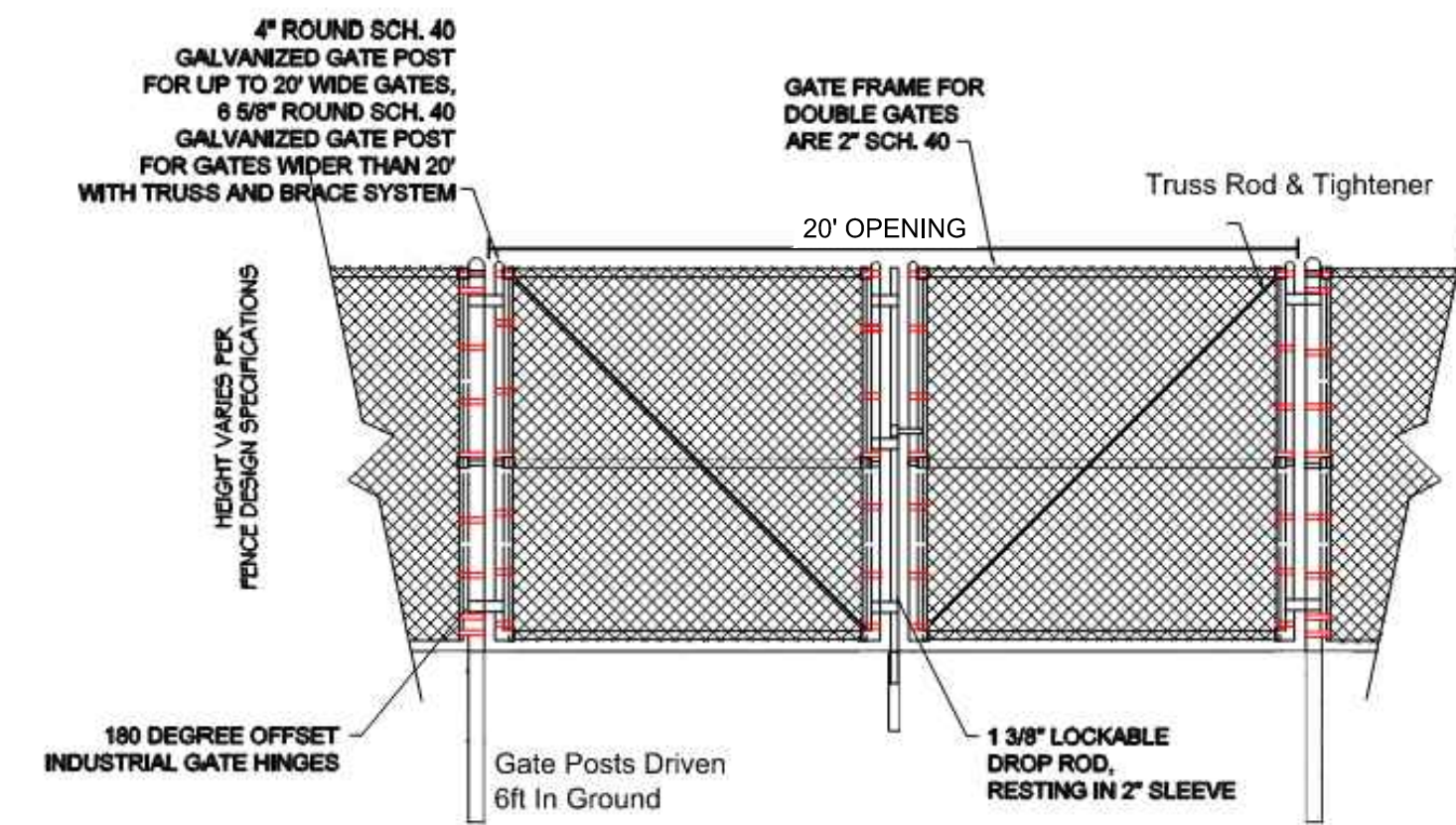


7 YEAR WARRANTY INCLUDED AT NO COST
ENGINEERED LOAD CALCULATIONS AT NO COST

- NOTES:**
- 1) ALL TENSION WIRE TO BE HOG RINGED TO FENCE AT 18 INCHES ON CENTER.
 - 2) ALL CONCRETE FOOTINGS DOMED FOR WATER SHED.
 - 3) NO GROUNDING INCLUDED IN SCOPE.
 - 4) ALL MATERIAL HAVE GALVANIZED FINISH.
 - 5) BUILT TO STANDARD COMMERCIAL GRADE SPECIFICATIONS.

6ft Perimeter Fence With Driven Posts

1330 OLD KIMBRO ROAD, BLD. A • MANOR, TEXAS 78653
 (512) 255-5416 • FAX (512) 255-7096
 WWW.ALLIEDFENCECONSTRUCTORS.COM



Double Drive Gate Detail

1330 OLD KIMBRO ROAD, BLD. A • MANOR, TEXAS 78653
 (512) 255-5416 • FAX (512) 255-7096
 WWW.ALLIEDFENCECONSTRUCTORS.COM

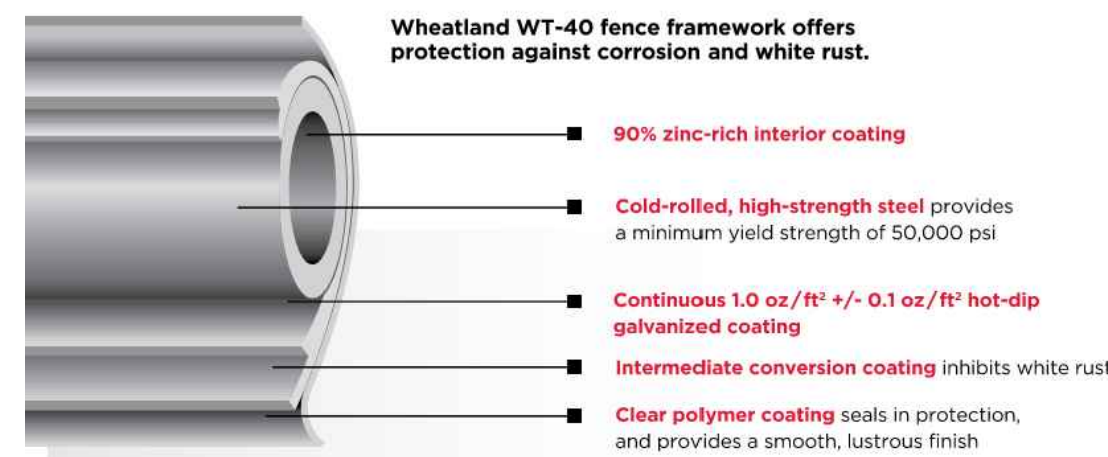
DATE:

SCALE:

WT-40: Heavy Industrial/Security Framework

High-strength Spec Fence Framework

The strength and corrosion characteristics of Wheatland WT-40 fence pipe have been tested, documented and certified by independent testing agencies to ensure complete compliance with ASTM F1043, Group IC, and AASHTO M181. Wheatland WT-40 fence framework meets or exceeds the most demanding specifications and codes imposed by private, independent and government agencies.



Materials

- 1. Steel**—Steel strip used in the manufacture of Wheatland WT-40 fence pipe shall conform to ASTM A1011 and will meet or exceed all performance criteria set forth in this standard specification.
- 2. Zinc**—Zinc used in Wheatland WT-40 fence pipe shall conform to ASTM B6. Galvanizing shall be continuous hot-dipped on COO.
- 3. Conversion Coating**—An intermediate conversion coating shall be applied in-line over the continuous hot-dip galvanizing coating to inhibit white rust and enhance corrosion resistance.
- 4. Clear Polymer Coating**—A clear polymer coating shall be applied over the intermediate conversion coating. This polymer coating provides a smooth, lustrous protective finish.
- 5. Heat-set Internal Coating**—A heat-set zinc-rich HD coating shall have a minimum zinc loading of 90%.

Weight of Coatings

- 1. Zinc**—Weight of zinc shall be 1.0 oz./ft² +/- 0.1 oz./ft² and shall be determined by the method described in ASTM A90.
- 2. Intermediate Coating**—Intermediate conversion coatings shall be 30 micrograms/in.² +/- 10 micrograms/in.² and shall be determined by a strip and weigh method utilizing an atomic absorption spectrophotometer or X-ray fluorescence spectrophotometer.
- 3. Polymer Coating**—Thickness of the clear polymer coating shall be 5 mils +/- 0.2 mils and shall be determined by measurement with a suitable magnetic or eddy current coating thickness tester.

Strength Characteristics

- 1. Load Strength**—The strength of line, end, corner and pull posts shall be determined by the use of 4" or 6" cantilevered beam test. The top rail shall be determined by a 10' free-supported beam test.
- 2. Bending Moment**—Pipe strength may be determined via the alternative method of calculating bending moment. (See table.) Conformance can be demonstrated by measuring the yield strength multiplied by the section modulus. The yield strength shall be determined according to the methods described in ASTM E8. For materials under this specification, the 0.2 offset method shall be used in determining yield strength.

Corrosion Resistance

- 1. Salt Spray**
 - a. **Exterior Surface**—The exterior clear polymer coating shall have a demonstrated ability to resist 1,000 hours or more of exposure to salt fog with a maximum of 5% red rust. Tests shall be conducted in accordance with ASTM B117.
 - b. **Interior Surface**—The interior zinc-rich surface coating shall withstand no less than 650 hours of exposure to salt fog with a maximum of 5% red rust. Tests shall be conducted in accordance with ASTM B117.
- 2. Humidity**—The exterior clear polymer coating of Wheatland WT-40 fence pipe shall resist 500 hours of exposure to 100% relative humidity without signs of blistering or peeling. Tests shall be performed in accordance with ASTM D4585 (D2247).
- 3. Weatherometer**—The clear polymer coating of Wheatland WT-40 fence pipe shall resist failure for no less than 500 hours at a black panel temperature of no less than 145°F. Tests shall be performed in accordance with ASTM G155 Xenon Type BH apparatus (formerly G26) or ASTM G153 Carbon ArcType HH apparatus (formerly G23).

Specifying Agencies

- American Association of State Highway and Transportation Officials (AASHTO) M181, Grade 2
- Federal specifications RR-F-191/2E and RR-F-191/3E
- U.S. Army Corps of Engineers UFGS-32 31 13
- Department of the Navy
- Federal Highway Administration
- Federal Aviation Administration AC 150/5370-10 Item 162
- U.S. Department of Justice—Federal Bureau of Prisons
- ASTM Specification F1043 Group IC Standard Specification for Strength and Protective Coatings on Steel Industrial Chain Link Fence Framework
- American Institute of Architects (AIA) MasterSpec

Availability

Wheatland Tube is committed to a full complement of finished inventory. Our high-speed material-handling capabilities enable us to react to special length requests with exceptional order fill rates.

WT-40 DIMENSIONS AND STRENGTH CHARACTERISTICS

FENCE INDUSTRY EQUIVALENT	DECIMAL OD		PIPE WALL THICKNESS		WEIGHT		SECTION MODULUS	X	MIN. YIELD STRENGTH	MAX. BENDING MOMENT	CALCULATED LOAD (LBS.)	
	IN.	MM	IN.	MM	LBS./FT.	(KG/M)					10' Free Supported	Cantilever
1 1/4"	1.660	42.16	0.111	2.82	1.84	2.74	0.1962	4.98	x 50000 345 =	9810	327	204 136
1 1/2"	1.900	48.26	0.120	3.05	2.28	3.39	0.2810	7.14	x 50000 345 =	14050	468	293 195
2"	2.375	60.33	0.130	3.30	3.12	4.64	0.4881	12.40	x 50000 345 =	24405	814	508 339
2 1/4"	2.875	73.03	0.160	4.06	4.64	6.91	0.8778	22.30	x 50000 345 =	43890	1463	914 610
3 1/4"	3.500	88.90	0.160	4.06	5.71	8.50	1.3408	34.06	x 50000 345 =	67042	2235	1397 931
4"	4.000	101.60	0.160	4.06	6.56	9.76	1.7820	45.26	x 50000 345 =	89098	2970	1856 1237

6 1/4" and 8 1/4" full-weight Schedule 40 per ASTM F1083 is available for terminal post applications. Specifications, illustrated material and dimensions are accurate as known at time of publication and are subject to change without notice.

NOTE:
 SECURITY FENCE DESIGN PREPARED AND PROVIDED BY ALLIED FENCE & SECURITY.

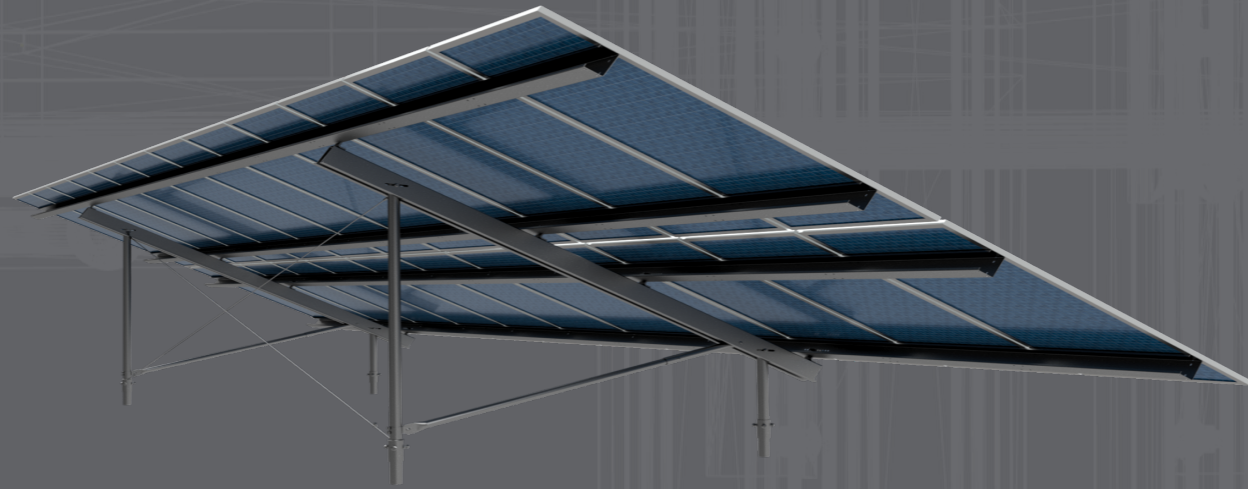
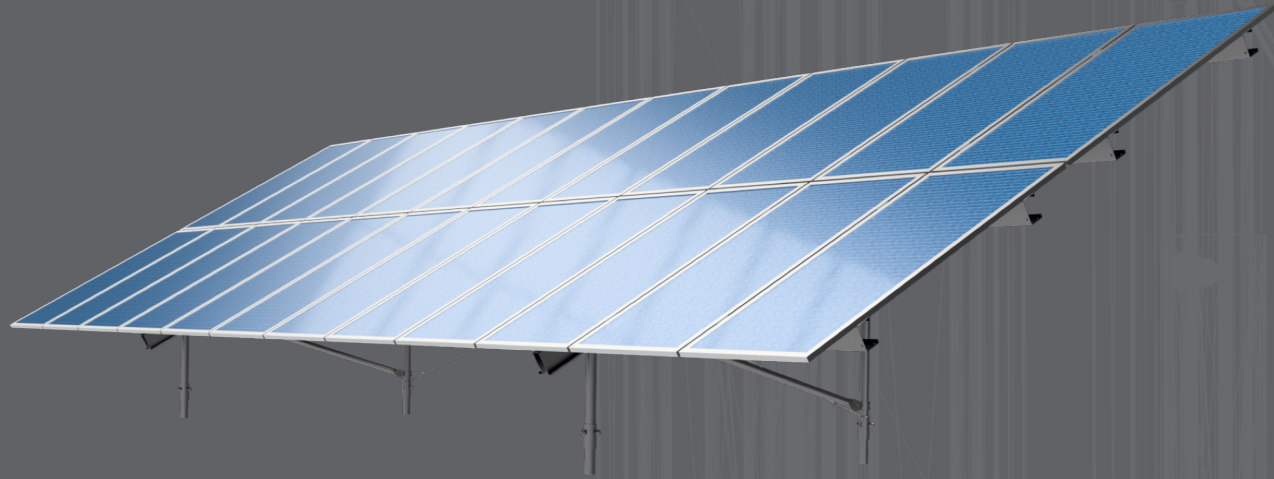
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249 Western Avenue Augusta, ME 04330		PROJECT NO: 395300			TRC DESIGNED PMM DRAWN PMM CHECKED APPROVED		CIPRIANI ENERGY GROUP CORTLAND COUNTY 2 SOLAR ENERGY FACILITY CONSTRUCTION DETAILS SHEET 3 OF 3		CORTLAND NEW YORK	
REV	DESCRIPTION	DATE	DES	CHK	APP	RAY	08/17/20		C-11	REV. 1
1	ISSUED FOR PERMITTING	08/18/20	PMM	RAY	PMM	REVIEW 1	DATE AS NOTED SCALE			

Attachment 7
Specification Sheets



GLIDE - TGP

Fixed-Tilt Ground Mount

OVERVIEW

GLIDE Portrait (TGP) is TerraSmart's next generation fixed-tilt ground mount racking solution. TGP is the culmination of ten years and over 3 gigawatts of installed-capacity experience in engineering, manufacturing and construction. As a result, GLIDE is currently the most economical racking system in TerraSmart's fixed-tilt ground mount racking portfolio. Leveraging the benefits of TerraSmart's widely deployed proprietary ground screw foundation, TGP is designed to work in any soil condition.

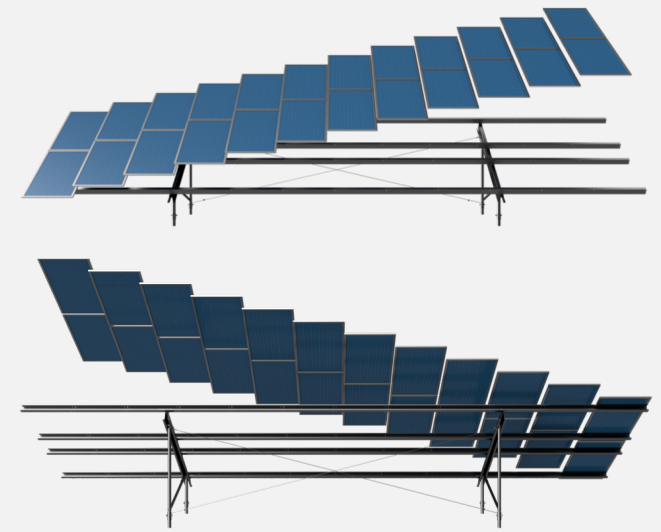
TerraSmart's state-of-the-art surveying, rock drilling and installation equipment removes project risks and provides post-installation documentation for increased project bankability. All of these benefits improve upon TerraSmart's industry-leading construction efficiency and raise the bar by offering customers increased install efficiency, reduced labor hours and tenders significant savings in material costs.



START SMART. BUILD SMART.

SPECS

Specifications Member Material	ASTM A1011 Cold Rolled Steel, Hot Dip Galvanized to ASTM A653 (G90 min) ASTM A 500 Hollow Structural Steel, Hot Dip Galvanized to ASTM A123 (3.0 mils min)
Hardware Material	316 Stainless Steel for Module Mounting Hardware Carbon Steel Alloy, Magni Coated to ASTM F2833 for all Structural Hardware
Foundation Options	Ground Screw Portrait
Module Orientation	Portrait
Module Mounting	Bottom Mount Integrated Electrical Bonding
Tilt Angle	5 to 40 degrees
Wire Management	Incorporated in Structure - NEC Compliant
Configuration	Portrait: Up to 2 high x up to 12 wide
Slopes	East or West facing, up to 30%, north or south facing, up to 36%
Load Capacities	Project Specific; Up to 170 MPH wind speed and 100 PSF Ground Snow Load
Certifications	UL 2703, Edition 1; CPP Wind Tunnel Tested
Warranty	20 - year limited warranty



FAST

- Exponentially Less Hardware
- Integrated Electrical Bonding
- Included Wire Management

COMPLIANT

- UL 2703, Edition 1 Listed
- NEC Compliant
- Wind Tunnel Tested

VERSATILE

- Numerous Configurations
- Adapts to Steep Slopes
- Accommodates Arduous Soils

LIGHT

- Lighter / Stiffer Components
- Less Freight Costs

TERRAS^{SMART}.

GLIDE



SPEED REDEFINED

GLIDE is TerraSmart's latest ground screw-based racking designed for utility-scale solar projects. GLIDE is infused with bifacial module compatibility allowing complete exposure of the module to maximize potential backside power yield. GLIDE offers module compatibility in portrait and landscape of which both fixed-tilt racking systems are designed to work in any soil condition.

Carrying forward TerraSmart's long tradition of accommodating slope tolerances up to 36%, GLIDE's intuitive design pulls forward 10 years of direct field experience to improve install velocity with simplified connections, agile parts and a significant reduction in hardware. With the combination of an installer-friendly design and value engineered steel members, TerraSmart has significantly reduced the price per watt making GLIDE one of the most competitive racking systems available.

FAST | COMPLIANT | VERSATILE | LIGHT

239.362.0211



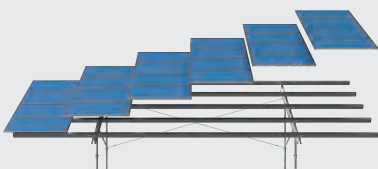
TERRASMART.COM



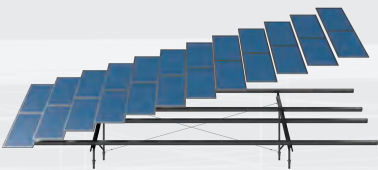
GLIDE LANDSCAPE - TGL



GLIDE PORTRAIT - TGP



GLIDE LANDSCAPE - TGL



GLIDE PORTRAIT - TGP



SPECIFICATIONS MEMBER MATERIAL

ASTM A1011 Cold Rolled Steel, Hot Dip Galvanized to ASTM A653 (G90 min)

ASTM A 500 Hollow Structural Steel, Hot Dip Galvanized to ASTM A123 (3.0 mils min)

HARDWARE MATERIAL

316 Stainless Steel for Module Mounting Hardware
Carbon Steel Alloy, Magni Coated to ASTM F2833 for all Structural Hardware

FOUNDATION OPTIONS

Ground Screw

MODULE ORIENTATION

Portrait and Landscape

MODULE MOUNTING

Bottom Mount
Integrated Electrical Bonding
TGL - Bifacial Compatibility (Shadow Free Backside)

TILT ANGLE

5 to 40 degrees

WIRE MANAGEMENT

Incorporated in Structure - NEC Compliant

CONFIGURATION

Portrait: Up to 2 high x up to 12 wide
Landscape: Up to 4 high x 6 wide

SLOPES

East or West facing, up to 30%, north or south facing, up to 36%

LOAD CAPACITIES

Project Specific; Up to 170 MPH wind speed and 100 PSF Ground Snow Load

CERTIFICATIONS

UL 2703, Edition 1; CPP Wind Tunnel Tested

WARRANTY

20 - year limited warranty

COMPLIANCE   



Certificate of Compliance

Certificate: 70172159

Master Contract: 255045

Project: 70172160

Date Issued: 2018-06-08

Issued to: SHANGHAI CHINT POWER SYSTEMS CO.,LTD
3255 Si Xian Rd
Songjiang District,
Shanghai, 201614
CHINA
Attention: Huan Cai

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.



Issued by: *Michael Tong*
Michael Tong

PRODUCTS

CLASS - C531109 - POWER SUPPLIES-Distributed Generation Power Systems Equipment

CLASS - C531189 - POWER SUPPLIES - Distributed Generation-Power Systems Equipment - Certified to U.S. Standards

Grid Support Transformerless Utility Interactive Inverter, Models CPS SCH100KTL-DO/US-600 and CPS SCH125KTL-DO/US-600, permanently connected.

Notes:

For details related to rating, size, configuration, etc., reference should be made to the CSA Certification Record, Certificate of Compliance Annex A, or the Descriptive Report.



Certificate: 70172159

Project: 70172160

Master Contract: 255045

Date Issued: 2018-06-08

APPLICABLE REQUIREMENTS

CSA-C22.2 No.107.1-01 - General Use Power Supplies

*UL Std No. 1741-Second Edition - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Sources (Second Edition, Revision February 15, 2018)

UL 1699B - Outline of Investigation for Photovoltaic (PV) DC Arc-Fault Circuit Protection (Issue Number 2, January 14, 2013)

CSA TIL M-07 - Interim Certification Requirements for Photovoltaic (PV) DC Arc-Fault Protection (Issue Number 1, March 11, 2013)

*Note: Conformity to UL 1741 (Second Edition, Revision February 15, 2018) includes compliance with applicable requirements of IEEE 1547-2003 (R2008), IEEE 1547a-2014, IEEE 1547.1-2005(R2011), IEEE 1547.1a-2015, California Rule 21 and Supplement SA.



Supplement to Certificate of Compliance

Certificate: 70172159

Master Contract: 255045

*The products listed, including the latest revision described below,
are eligible to be marked in accordance with the referenced Certificate.*

Product Certification History

Project	Date	Description
70172160	2018-06-08	Update report 70172159 to including grid support function for models CPS SCH100KTL-DO/US-600 and CPS SCH125KTL-DO/US-600.
70172159	2018-04-24	Models CPS SCH100KTL-DO/US-600 and CPS SCH125KTL-DO/US-600.(C/US)

100/125kW, 1500Vdc String Inverters for North America



CPS SCH100/125KTL-DO/US-600

The 100 & 125kW high power CPS three phase string inverters are designed for ground mount applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125kW products ship with the Standard or Centralized Wire-box, each fully integrated and separable with AC and DC disconnect switches. The Standard Wire-box includes touch safe fusing for up to 20 strings. The CPS Flex Gateway enables communication, controls and remote product upgrades.

Key Features

- NFPA 70, NEC 2014 and 2017 compliant
- Touch safe DC Fuse holders adds convenience and safety
- CPS Flex Gateway enables remote FW upgrades
- Integrated AC & DC disconnect switches
- 1 MPPT with 20 fused inputs for maximum flexibility
- Copper and Aluminum compatible AC connections
- NEMA Type 4X outdoor rated, tough tested enclosure
- Advanced Smart-Grid features (CA Rule 21 certified)
- kVA Headroom yields 100kW @ 0.9PF and 125kW @ 0.95PF
- Generous 1.5 DC/AC Inverter Load Ratio
- Separable wire-box design for fast service
- Standard 5 year warranty with extensions to 20 years



100/125KTL Standard Wire-box



100/125KTL Centralized Wire-box



Model Name	CPS SCH100KTL-DO/US-600	CPS SCH125KTL-DO/US-600
DC Input		
Max. PV Power	150kW	187.5kW
Max. DC Input Voltage	1500V	
Operating DC Input Voltage Range	860-1450Vdc	
Start-up DC Input Voltage / Power	900V / 250W	
Number of MPP Trackers	1	
MPPT Voltage Range ¹	870-1300Vdc	
Max. PV Input Current (Isc x1.25)	220A	275A
Number of DC Inputs	20 PV source circuits, pos. & neg. fused (Standard Wire-box) 1 PV output circuit, 1-2 terminations per pole, non-fused (Centralized Wire-box)	
DC Disconnection Type	Load-break rated DC switch	
DC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
AC Output		
Rated AC Output Power	100kW	125kW
Max. AC Output Power ²	100kVA (111KVA @ PF>0.9)	125kVA (132KVA @ PF>0.95)
Rated Output Voltage	600Vac	
Output Voltage Range ³	528-660Vac	
Grid Connection Type ⁴	3Φ / PE / N (Neutral optional)	
Max. AC Output Current @600Vac	96.2/106.8A	120.3/127.2A
Rated Output Frequency	60Hz	
Output Frequency Range ³	57-63Hz	
Power Factor	>0.99 (±0.8 adjustable)	>0.99 (±0.8 adjustable)
Current THD	<3%	
Max. Fault Current Contribution (1-cycle RMS)	41.47A	
Max. OCPD Rating	150A	175A
AC Disconnection Type	AC Maintenance switch	
AC Surge Protection	Type II MOV (with indicator/remote signaling), Up=2.5kV, In=20kA (8/20uS)	
System		
Topology	Transformerless	
Max. Efficiency	99.1%	
CEC Efficiency	98.5%	
Stand-by / Night Consumption	<4W	
Environment		
Enclosure Protection Degree	NEMA Type 4X	
Cooling Method	Variable speed cooling fans	
Operating Temperature Range	-22°F to +140°F / -30°C to +60°C (derating from +113°F / +45°C)	
Non-Operating Temperature Range ⁵	-40°F to +158°F / -40°C to +70°C maximum	
Operating Humidity	0-100%	
Operating Altitude	8202ft / 2500m (no derating)	
Audible Noise	<65dBA@1m and 25°C	
Display and Communication		
User Interface and Display	LED Indicators, WiFi + APP	
Inverter Monitoring	Modbus RS485	
Site Level Monitoring	CPS Flex Gateway (1 per 32 inverters)	
Modbus Data Mapping	SunSpec/CPS	
Remote Diagnostics / FW Upgrade Functions	Standard / (with Flex Gateway)	
Mechanical		
Dimensions (WxHxD)	45.28x24.25x9.84in (1150x616x250mm) with Standard Wire-box 39.37x24.25x9.84in (1000x616x250mm) with Centralized Wire-box	
Weight	Inverter: 121lbs / 55kg; Wire-box: 55lbs / 25kg (Standard Wire-box); 33lbs / 15kg (Centralized Wire-box)	
Mounting / Installation Angle	15 - 90 degrees from horizontal (vertical or angled)	
AC Termination	M8 Stud Type Terminal Block (Wire range: #6 - 3/0AWG CU/AL, Lugs not supplied)	
DC Termination	Screw Clamp Fuse Holder (Wire range: #12 - #6AWG CU) - Standard Wire-box Busbar, M8 PEMserts (Wire range: #1AWG - 250kcmil CU/AL, Lugs not supplied) - Centralized Wire-box	
Fused String Inputs	15A fuses provided (Fuse values of 15 or 20A allowed)	
Safety		
Safety and EMC Standard	UL1741-SA-2016, CSA-C22.2 NO.107.1-01, IEEE1547a-2014; FCC PART15	
Selectable Grid Standard	IEEE 1547a-2014, CA Rule 21, ISO-NE	
Smart-Grid Features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Volt-Watt	
Warranty		
Standard ⁶	5 years	
Extended Terms	10, 15 and 20 years	

1) See user manual for further information regarding MPPT Voltage Range when operating at non-unity PF

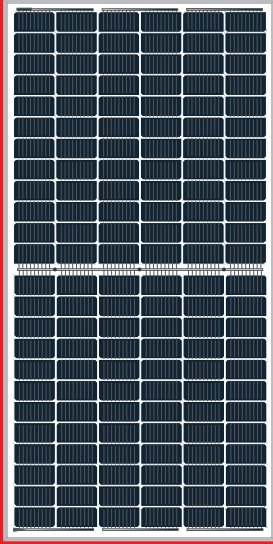
2) *Max. AC Apparent Power* rating valid within MPPT voltage range and temperature range of -30°C to +40°C (-22°F to +104°F) for 100KW PF ≥0.9 and 125KW PF ≥0.95

3) The "Output Voltage Range" and "Output Frequency Range" may differ according to the specific grid standard.

4) Wye neutral-grounded, Delta may not be corner-grounded.

5) See user manual for further requirements regarding non-operating conditions.

6) 5 year warranty effective for units purchased after October 1st, 2019.



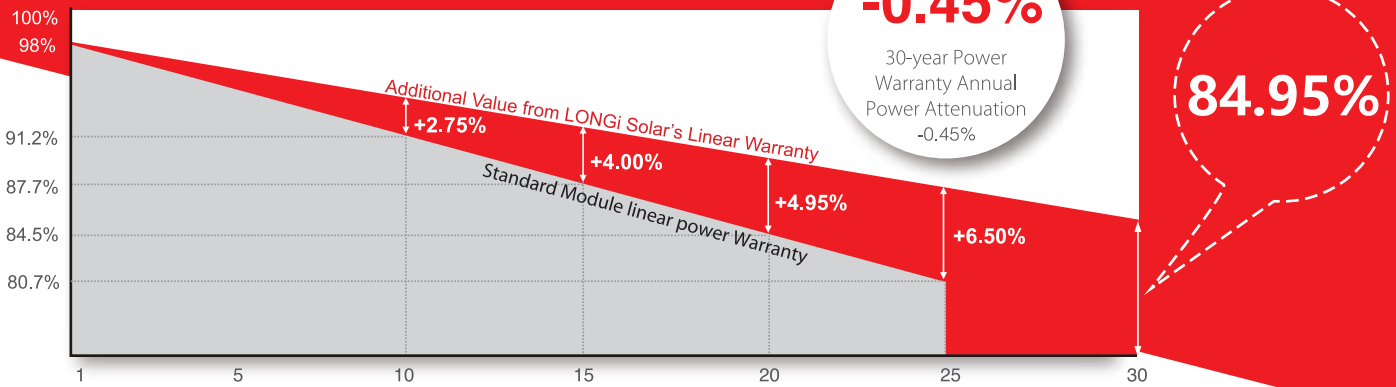
LR4-72HBD 425~455M



**High Efficiency
Low LID Bifacial PERC with
Half-cut Technology**

*Both 6BB & 9BB are available

12-year Warranty for Materials and Processing;
30-year Warranty for Extra Linear Power Output



Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730
 ISO 9001:2008: ISO Quality Management System
 ISO 14001: 2004: ISO Environment Management System
 TS62941: Guideline for module design qualification and type approval
 OHSAS 18001: 2007 Occupational Health and Safety



* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation.

Front side performance equivalent to conventional low LID mono PERC:

- High module conversion efficiency (up to 20.9%)
- Better energy yield with excellent low irradiance performance and temperature coefficient
- First year power degradation <2%

Bifacial technology enables additional energy harvesting from rear side (up to 25%)

Glass/glass lamination ensures 30 year product lifetime, with annual power degradation < 0.45%, 1500V compatible to reduce BOS cost

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

Reduced hot spot risk with optimized electrical design and lower operating current

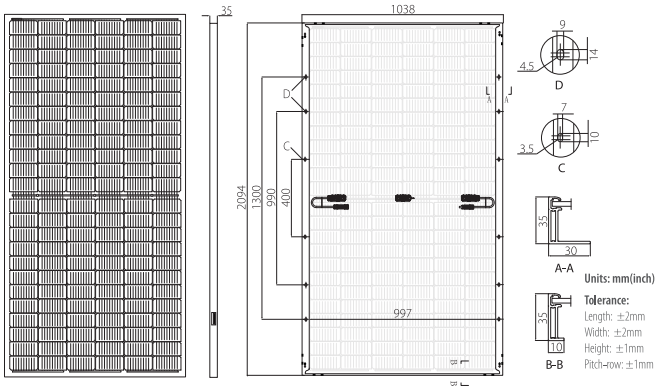


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Note: Due to continuous technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi have the sole right to make such modification at anytime without further notice; Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.

LR4-72HBD 425~455M

Design (mm)



Mechanical Parameters

Cell Orientation: 144 (6×24)
 Junction Box: IP68, three diodes
 Output Cable: 4mm², 300mm in length,
 length can be customized
 Glass: Dual glass
 2.0mm coated tempered glass
 Frame: Anodized aluminum alloy frame
 Weight: 27.5kg
 Dimension: 2094×1038×35mm
 Packaging: 30pcs per pallet
 150pcs per 20'GP
 660pcs per 40'HC

Operating Parameters

Operational Temperature: -40 C ~ +85 C
 Power Output Tolerance: 0 ~ +5 W
 Voc and Isc Tolerance: ±3%
 Maximum System Voltage: DC1500V (IEC/UL)
 Maximum Series Fuse Rating: 25A
 Nominal Operating Cell Temperature: 45±2 C
 Safety Class: Class II
 Fire Rating: UL type 3
 Bifaciality: Glazing 70±5%

Electrical Characteristics

Test uncertainty for Pmax: ±3%

Model Number	LR4-72HBD-425M		LR4-72HBD-430M		LR4-72HBD-435M		LR4-72HBD-440M		LR4-72HBD-445M		LR4-72HBD-450M		LR4-72HBD-455M	
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	425	317.4	430	321.1	435	324.9	440	328.6	445	332.3	450	336.1	455	339.8
Open Circuit Voltage (Voc/V)	48.7	45.6	48.9	45.8	49.1	45.9	49.2	46.0	49.4	46.2	49.6	46.4	49.8	46.6
Short Circuit Current (Isc/A)	11.22	9.06	11.30	9.13	11.36	9.18	11.45	9.25	11.52	9.30	11.58	9.36	11.65	9.41
Voltage at Maximum Power (Vmp/V)	40.4	37.7	40.6	37.9	40.8	38.0	41.0	38.2	41.2	38.4	41.4	38.6	41.6	38.8
Current at Maximum Power (Imp/A)	10.52	8.42	10.60	8.49	10.66	8.54	10.73	8.60	10.80	8.65	10.87	8.70	10.93	8.76
Module Efficiency(%)	19.6		19.8		20.0		20.2		20.5		20.7		20.9	

STC (Standard Testing Conditions): Irradiance 1000W/m², Cell Temperature 25 C, Spectra at AM1.5

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20 C, Spectra at AM1.5, Wind at 1m/s

Electrical characteristics with different rear side power gain (reference to 445W front)

Pmax /W	Voc/V	Isc /A	Vmp/V	Imp /A	Pmax gain
467	49.4	12.09	41.2	11.34	5%
490	49.4	12.67	41.2	11.88	10%
512	49.5	13.24	41.3	12.42	15%
534	49.5	13.82	41.3	12.96	20%
556	49.5	14.40	41.3	13.50	25%

Temperature Ratings (STC)

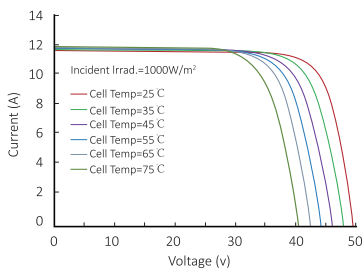
Temperature Coefficient of Isc: +0.050%/C
 Temperature Coefficient of Voc: -0.284%/C
 Temperature Coefficient of Pmax: -0.350%/C

Mechanical Loading

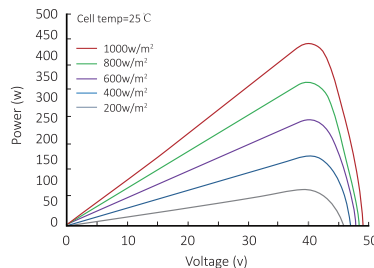
Front Side Maximum Static Loading: 5400Pa
 Rear Side Maximum Static Loading: 2400Pa
 Hailstone Test: 25mm Hailstone at the speed of 23m/s

I-V Curve

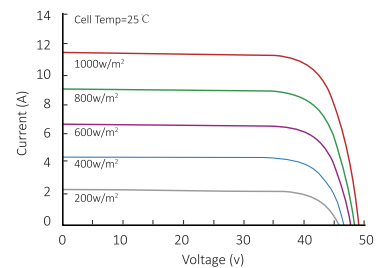
Current-Voltage Curve (LR4-72HBD-440M)



Power-Voltage Curve (LR4-72HBD-440M)



Current-Voltage Curve (LR4-72HBD-440M)



LONGI

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