
Town of Leicester Site Plan Review

1.339 MW Solar Energy Generating Facility

Submitted By:

Borrego Solar Systems, Inc.
55 Technology Drive, Suite 102
Lowell, MA 01851

Submitted to:

Town of Leicester
Planning Board
3 Washburn Square
Leicester, MA 01524

January 19, 2018

**1.339 MW Solar Energy Generating Facility
515 Henshaw Street Leicester, MA**

Project Narrative

The project site is located along the east side of Henshaw Street and north side of Stafford Street at Assessor's Map 45 Block A Lot 8. The site is 33.63 acres in size and is zoned BR-1 (Business-Residential-1) and SA (Suburban-Agricultural). The solar project is located within the BR-1 zoned portion of the parcel. Refer to Figure 1-Zoning Map and Figure 2-Aerial Map.

ZONING SUMMARY TABLE

Suburban Agricultural District – SA, and Business Residential BR-1. See note 1.

Use: Large-scale ground-mounted solar photovoltaic installation is an allowed use in the SA and BR-1 zoning districts. Under Section 5.2.02.1.g Large-scale ground-mounted solar photovoltaic installations require Site Plan Review by the Planning Board.

		Required (SA Structure)	Required (BR-1 Structure)	Provided	Notes
Minimum Lot Area	sf	80,000	20,000	>>500,000	
Frontage	feet	200/50*	150/50*	290	Along Stafford Street
Front Yard	feet	40	50	65	to array
Side Yard	feet	40	40	44	to array
Rear Yard	feet	40	40	42	to array
Setback from Residential District (SA,R1,R2)	feet	100	-	104	to array
Max. Height of Buildings	Feet	35	15**	12	To top of array
Maximum building coverage	%	30	30	N/A	

*Minimum frontage in the Zoning Bylaw for Leicester is 50 feet in Section 5.14.5.2.

**Section 5.14 Ground-Mounted Solar Energy Systems 6.2 B

Note 1:

2.3.04 Where a district boundary line divides any lot existing at the time such line is adopted, the regulations for the less restricted portion of such lot may extend not more than thirty (30) feet into the more restricted portion, provided only that such lot has the required minimum frontage on a street in the less restricted portion for the existing or intended use of the premises.

The solar power generating facility is a ground-mounted facility generating approximately 990 kW of electricity (AC rated). The solar system will consist of:

- Approximately 3,348 - 400 watt solar panels
- TerraSmart Terrafarm racking at 25° racking tilt angle. Racking is approx. 14 feet apart and modules placed in a 2 x 9 portrait layout. Refer to Figures 1 and 2 for typical racking installation. However, the racking will be installed with a 6' high leading edge and maximum height will be less than 15'.
- 8 Inverters
- Data Acquisition System (DAS) for remote monitoring
- Transformer and switchgear
- Underground trenching
- Overhead power lines to interconnection point on Stafford Street (determined by NGrid)
- Gravel access driveways
- Perimeter security fence (6 ft high with 3 strands of barb wire = total height of 7 feet)
 - Total Fenced area = 4.83 acres ±
- Access gates
- Warning signage on security fence (in accordance with NEC)

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Figure 1 - Racking



Figure 2 - Racking

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In accordance with Section 5.2.05 Standards for Site Plan Approval as outlined in the Zoning Bylaws for the Town of Leicester as amended through May 2, 2017, we have the following responses to items A-G.

5.2.05 STANDARDS FOR SITE PLAN APPROVAL:

The Planning Board shall approve a site plan when the following standards are met:

- A. The use complies with all the provisions of the Leicester Zoning By-Law;

Response: *The ground-mounted solar system use is an allowed use in the SA and BR-1 zoning districts and the dimensional regulations have been met.*

- B. The use will not materially endanger or constitute a hazard to the public health and safety;

Response: *The project does not pose any hazard or endanger the public health and safety. See responses to items C-G below.*

- C. The use will not create undue traffic congestion or unduly impair pedestrian safety;

Response: *The project does not generate traffic. Approximately 2 times annually, operations and maintenance personnel will mow inside the fence and keep large woody plants from growing in the cleared areas. O & M personnel may also be visiting the site to maintain the equipment.*

The project is private and un-manned. There will be no pedestrian access allowed. There are no sidewalks or paths along Stafford Street or Henshaw Street.

We will coordinate with the Leicester DPW regarding a Driveway Permit for access onto Stafford Street and/or Henshaw Street.

- D. Sufficient off-street parking exists or will be provided to serve the use;

Response: *The solar project is un-manned and does not require off-street parking. Adequate space is provided on and alongside the internal gravel access road for O & M personnel.*

- E. The use can be adequately served by water, sewer, and other necessary utilities, or if these are unavailable, that they will be brought to the site at the owner's expense; or, the Planning Board is satisfied that the proposed alternatives will comply with all applicable regulations; and,

Responses: *See below.*

Water: The project is un-manned and will not consume any water and will not require connection to any public or private water supply.

Sewer: The project is un-manned and does not generate any wastewater and will not require connection to any public or private wastewater system.

Other Utilities: *The project will not require connections to cable TV, gas mains or telephone lines.*

There will be an electrical interconnection to a power pole in Stafford Street. The on-site portion of the interconnection will consist of: 1) customer recloser pole; 2) utility meter pole, 3) customer disconnect pole; 4) a customer recloser pole and 5) existing pole.

Within the fenced area electrical lines will be buried.

- F. The use will not result in a substantial increase of volume or rate of surface water runoff to neighboring properties and streets, nor will result in pollution or degradation to surface water or groundwater;

Response: *The project will not result in a substantial increase in the volume of surface water runoff. The project will not result in any increase in the post-development condition. Refer to the Drainage Report dated January 19, 2018. In accordance with the MA DEP Stormwater Regulations, the quality of runoff will not change and the recharge to groundwater will be similar. During construction, silt fences, mulch tubes and other erosion control and sedimentation measures will be employed.*

- G. The use will not result in any undue disturbance to adjoining property owners or the Town caused by excessive or unreasonable noise, smoke, vapors, fumes, dust, glare, etc.

Responses: *See below.*

Noise: *The projects string inverters do make minimal noise, only when generating electricity (when the sun is shining). During early morning and evening the system will not make noise. The nearest residence to a string inverter is 220 feet. In a typical quiet rural area the background noise levels during the daylight hours is approximately 45-50 dB. The noise level associated with the string inverters is approximately 50 dB (@1 meter). At 220 feet the noise associated with the string inverters is less than the ambient noise levels and therefore will not be heard.*

Smoke: *Solar photovoltaic systems do not generate emissions or smoke. There are no mechanical devices or equipment and no combustible engines. There are no buildings.*

Vapors/fumes: *The solar photovoltaic systems do not generate fumes or vapors. There are no emissions or exhausts and there is no condensation associated with the electrical equipment.*

Dust: *The project will fully vegetated aside from the gravel roads and the electrical equipment area. Dust during construction will be controlled (when necessary) using water trucks.*

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Glare: Motion-activated lighting (approximately 8 feet high) is proposed at the electrical equipment area. It is necessary for maintenance purposes.

Lighting will be directed downward and towards the equipment. The lighting for system A will be located approximately 520 from the nearest residence on Strafford Street. The lighting is also screened by the proposed vegetation, 6 to 8 native evergreens, the system fence, and the racking.

Glare from the solar modules is minimized through anti-glare coatings.

Waivers

In accordance with Section IIA of the Town of Leicester Planning Board's Plan Review Rules and Regulations the following waivers are being requested.

Location, height, size and design of signage/lighting: The project will include signage as required by the National Electric Code. They will be mounted on the fence at specific locations as well as on the electrical equipment. There will be a motion-activated light also at the equipment area and it will be directed away from residences.

Location/Description of existing/proposed utilities: The project does not require connections/extensions or improvement to any water, sewer, storm drain, gas or telephone utilities. There are no underground utilities proposed in public or private streets. The project will interconnect to the power grid adjacent to parcel limits.

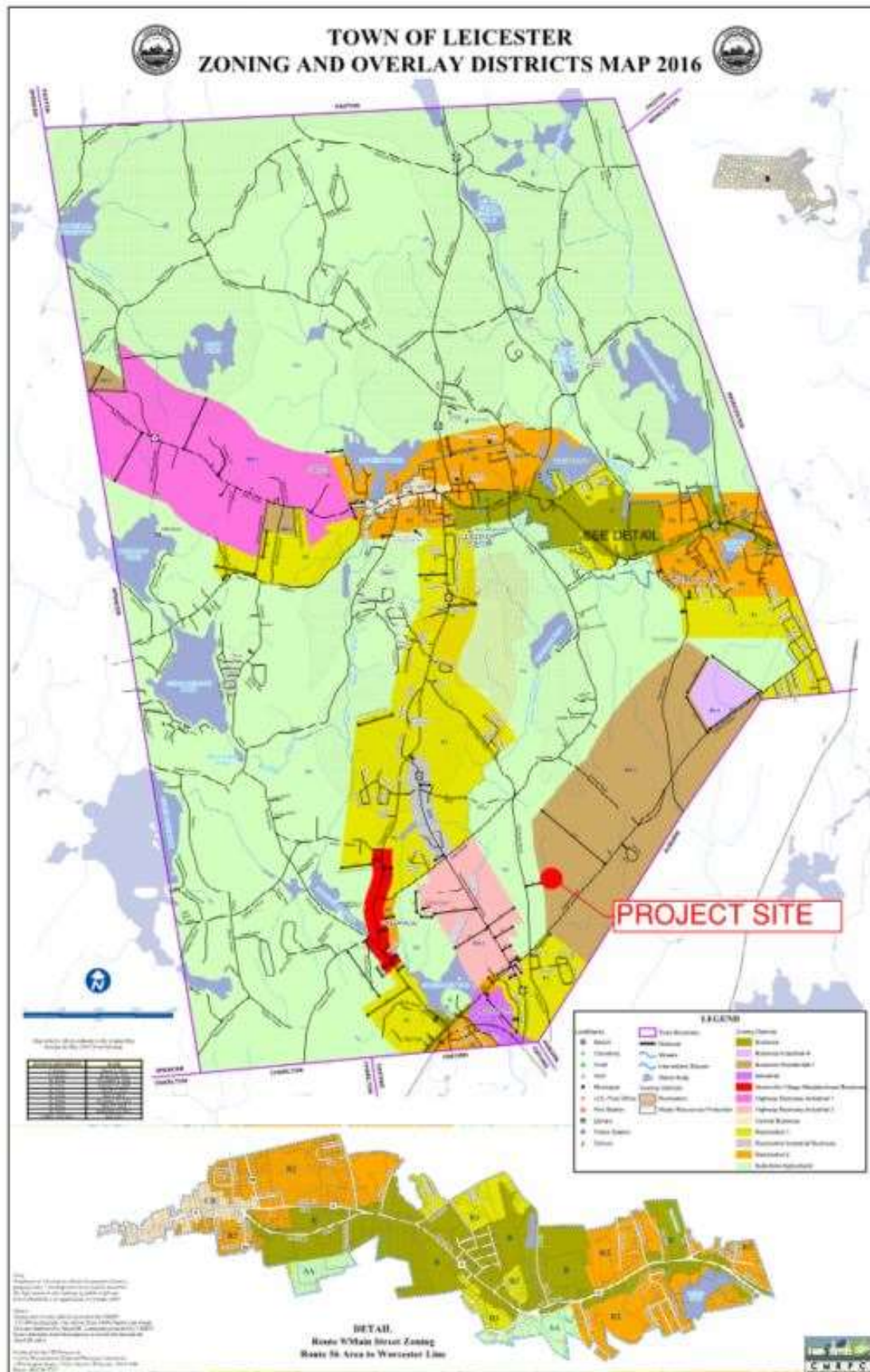


Figure 1-Zoning Map

**1.339 MW Solar Energy Generating Facility
515 Henshaw Street Leicester, MA**



Figure 2 - Aerial Map

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515 Henshaw Street Leicester, MA

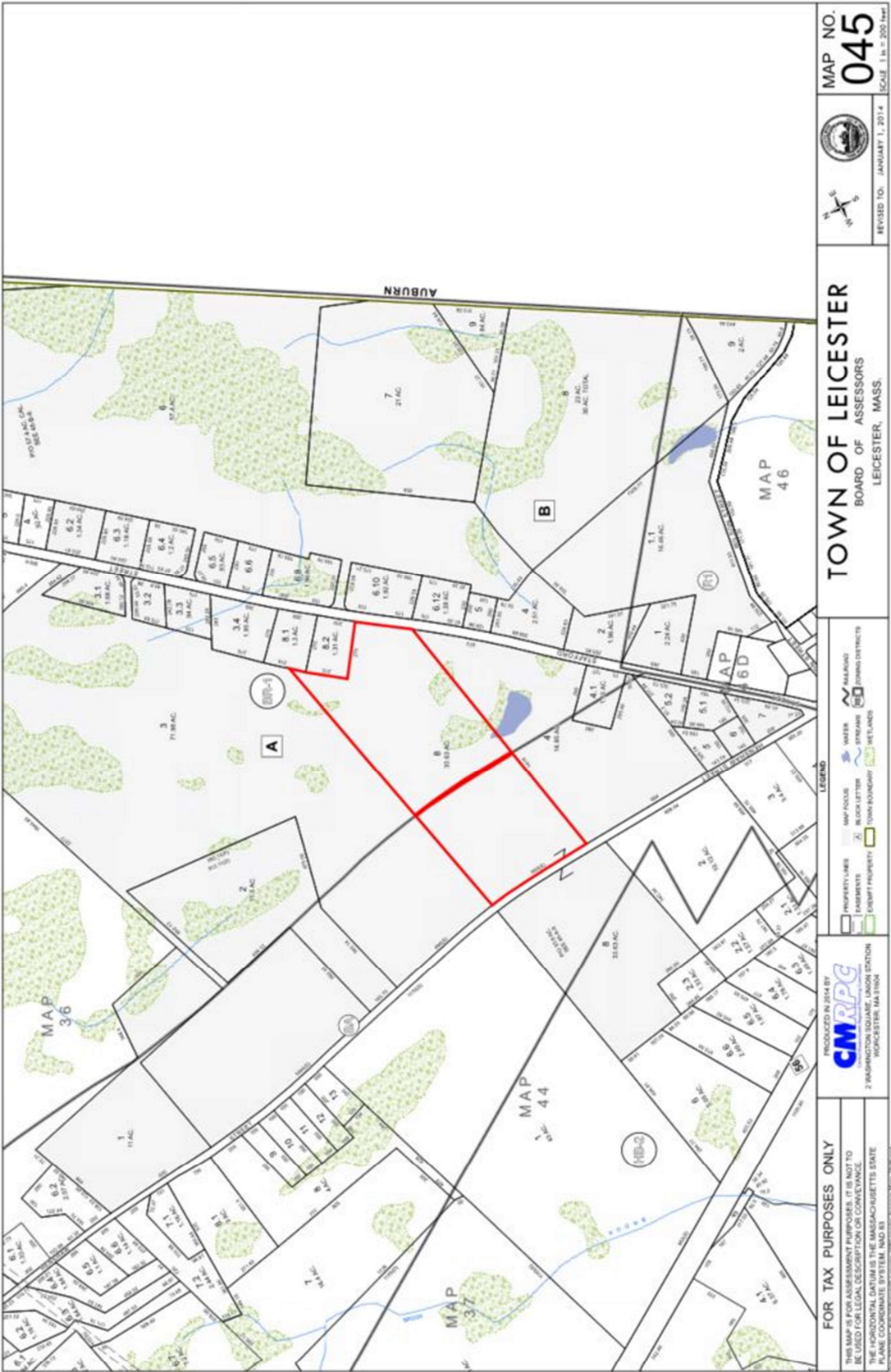


Figure 3 - Assessors Map

MAP SCALE 1" = 500'

250 0 500 1000 FEET

NFP

PANEL 0784E

FIRM

FLOOD INSURANCE RATE MAP

WORCESTER COUNTY,

MASSACHUSETTS

(ALL JURISDICTIONS)

PANEL 784 OF 1075

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

SUBURBAN	COMMUNITY	NAME	NUMBER	DATE
WORCESTER	WORCESTER	WORCESTER	25027C0784E	7/4/11
WORCESTER	WORCESTER	WORCESTER	25027C0784E	7/4/11
WORCESTER	WORCESTER	WORCESTER	25027C0784E	7/4/11

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
25027C0784E

EFFECTIVE DATE
JULY 4, 2011

Federal Emergency Management Agency

TOWN OF LEICESTER
250313

HENSHAW STREET

STAFFORD STREET

HENSHAW STREET


Figure 4a – FEMA Map

For Planning Office Use: File #: _____

Leicester Planning Board Site Plan Review & Special Permit Application Form

PERMIT TYPE: ☐ Special Permit ☐ Site Plan Review

CONTACT INFORMATION

Owner Information			
Name:		Company Name:	
Signature:	Please see attached authorization letter.		
Address:			
Phone:		Email:	
Applicant Information			
Name:		Company Name:	
Signature:			
Address:			
Phone:		Email:	
Primary Contact Person <i>(The person that will be contacted by Planning Board staff during the application process.)</i>			
Name:		Company Name:	
Address:			
Phone:		Email:	

PROJECT INFORMATION

Project Address:		Zoning District:	
Assessors Map & Parcel #		Deed Reference (Book & Page):	
Applicable Zoning Bylaw Section(s):			
Proposed Land Use:			
Existing Land Use:			

PROJECT INFORMATION, Continued

Size of Proposed Structure(s):		
Total Lot Area:		
Water Source: (Select One)	<input type="checkbox"/> Private Well	<input type="checkbox"/> Cherry Valley & Rochdale Water District
	<input type="checkbox"/> Hillcrest Water District	<input type="checkbox"/> Leicester Water Supply District
Sewer Source: (Select One)	<input type="checkbox"/> Private Septic System	<input type="checkbox"/> Cherry Valley Sewer District
	<input type="checkbox"/> Hillcrest Water District	<input type="checkbox"/> Leicester Water Supply District
	<input type="checkbox"/> Oxford Rochdale Sewer District	
Brief Project Description: Please include a brief description on this form (i.e. do not write "see attached"). [Examples: New construction of a 20,000s.f. retail building and associated parking; Use of a 1,000s.f. portion of an existing structure for a proposed pet grooming clinic.]		

Application Checklist

Use this checklist to ensure you have provided all required information. See Planning Board Site Plan Review & Special Permit Regulations for details. 13 copies are required except where noted.

<input type="checkbox"/> Plans (2-full-size & 11-11"x17")	<input type="checkbox"/> Detailed Project Narrative including any waiver requests ¹	<input type="checkbox"/> Drainage Analysis/ Stormwater Report, (3 copies) <input type="checkbox"/> n/a
<input type="checkbox"/> Documentation of Availability of Water & Sewer <input type="checkbox"/> n/a	<input type="checkbox"/> Certified Abutters List (1 copy) ² <input type="checkbox"/> n/a	<input type="checkbox"/> Traffic Study (3 copies) <input type="checkbox"/> n/a
<input type="checkbox"/> Fees ³	<input type="checkbox"/> .pdf copy of all required submittals (CD or USB Drive)	

¹ See Planning Board Site Plan Regulations for details on what should be included in a Project Narrative. For special permits that don't require conformance with Site Plan Review submittal requirements, submit a narrative explaining conformance with special permit approval criteria (see Special Permit Regulations for details).

² certified abutters lists are required for all Special Permits applications and for Major Site Plan Review Applications (new construction over 30,000 s.f. and ground-mounted solar over 250,000 s.f or 2 acres or more of tree clearing)

³ Please refer to the Planning Board's Fee Regulations. Checks must be made out to the Town of Leicester

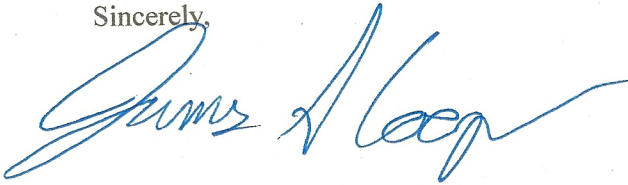
For Planning Board Use:			
Date of Submittal:			
Public Hearing/Meeting Date(s):			
Date of Planning Board Vote:			
Date Decision Filed with Town Clerk:			

1/18/18

To Whom It May Concern

Borrego Solar Systems, Inc. and its employees and affiliates are hereby authorized to act as our agent for submission of applications and related plans and documents, and to appear before boards and other officials, with respect to obtaining approvals for solar installations to be constructed on my property located at 515 Henshaw Street in Leicester, MA.

Sincerely,

A handwritten signature in blue ink, appearing to read "James Cooper", with a stylized, flowing script.

James Cooper

Town of Leicester

Abutters List

ParcelID	Location	Owner	Co-Owner	Mailing Address	City	State	Zip
44 B1 0	HENSHAW ST	COOPER'S HILLTOP FARM		515 HENSHAW ST	ROCHDALE	MA	01542
44 B2 0	HENSHAW ST	COOPER MARJORIE JAMES RICH/	COOPERS HILLTOP FARM	515 HENSHAW ST	ROCHDALE	MA	01542
44 B2.2 0	REAR HUNTOON MEM HW	101 HUNTOON LLC		101 HUNTOON HWY	ROCHDALE	MA	01542
44 B2.3 0	HENSHAW ST	COOPER MARJORIE JAMES RICH/	COOPERS HILLTOP FARM	515 HENSHAW ST	ROCHDALE	MA	01542
44 B6 0	93 HUNTOON MEMORIAL HW	CKB REALTY LLC		447 RAWSON ST	LEICESTER	MA	01524
44 B6.4 0	99 HUNTOON MEMORIAL HW	FONTAINE PAUL A		P O BOX 313	LEICESTER	MA	01524-0313
44 B6.5 0	HUNTOON MEMORIAL HW	FONTAINE PAUL A		450 BOND ST	LEICESTER	MA	01524
44 B6.6 0	HUNTOON MEMORIAL HW	MISSIEWICZ JOHN M	MISSIEWICZ SHARON M	PO BOX 461	LEICESTER	MA	01524
45 A3 0	515 HENSHAW ST	COOPER MARJORIE JAMES RICH/	COOPERS HILLTOP FARM	515 HENSHAW ST	ROCHDALE	MA	01542
45 A3.4 0	768 STAFFORD ST	COOPERS HILLTOP FARM		515 HENSHAW ST	ROCHDALE	MA	01542
45 A4 0	HENSHAW ST	COOPER MARJORIE JAMES RICH/	COOPERS HILLTOP FARM	515 HENSHAW ST	ROCHDALE	MA	01542
45 A8.1 0	772 STAFFORD ST	COOPERS HILLTOP FARM		515 HENSHAW ST	ROCHDALE	MA	01542
45 A8.2 0	776 STAFFORD ST	COOPER'S HILLTOP FARM		515 HENSHAW ST	ROCHDALE	MA	01542
45 B5 0	845 STAFFORD ST	FERDINAND DENISE A	FERDINAND BENSON	515 HENSHAW ST	ROCHDALE	MA	01542
45 B6 0	STAFFORD ST	GEMME GEORGE J		845 STAFFORD STREET	ROCHDALE	MA	01542-0312
45 B6.10 0	777 STAFFORD ST	LAGNEUX HEIDIE L	BEDARD PAUL D	291 PROSPECT ST	AUBURN	MA	01501
45 B6.6 0	769 STAFFORD ST	WILKICKI CHARLES H	WILKICKI SUSAN L	777 STAFFORD ST	CHERRY VALLEY	MA	01611
45 B6.8 0	773 STAFFORD ST	PREST JOHN F	PREST GAYLE E	769 STAFFORD ST	ROCHDALE	MA	01542
				773 STAFFORD ST	ROCHDALE	MA	01542

End of Report

Above is a certified list of abutters and abutters to abutters within 300 feet of subject.
 Subject property: 515 Henshaw Street, Assessors Map 45-A8-0, Deed Ref. 3943/175
 Subject owner(s): Coopers Hilltop Farm

John Prescott, Principal Assessor

Prepared by: Kathleen Asquith, Assistant

EXHIBIT E

MEMORANDUM OF OPTION AND LEASE

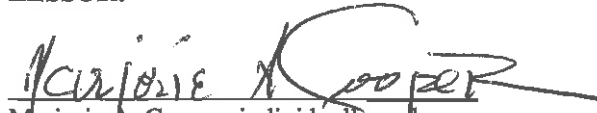
THIS MEMORANDUM OF LEASE (this "Memorandum") is made as of _____, 2017 by and between Cooper's Hilltop Farm, an LLC with its principal place of business located at 515 Henshaw Street, Leicester, Massachusetts ("Lessor") and 978 Solar Development LLC, a Delaware limited liability company with its principal place of business located at 360 22nd Street, Suite 600, Oakland, California 94612 ("Lessee").

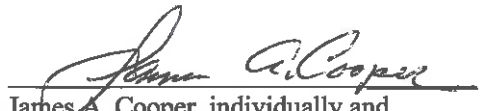
1. Lessor and Lessee are parties to that certain Option and Lease Agreement (the "Option and Lease"), dated as of _____ (the "Effective Date") covering that certain parcel of land and the improvements thereon described in **Schedule A** annexed hereto, and identified on the current Tax Map of the City of Leicester, County of Worcester, Commonwealth of Massachusetts as 45-A8 and 45A4 (the "Premises").
2. Under the Option and Lease, Lessee has an option to lease the Premises, which option commences on the Effective Date and lasts for 365 days thereafter. The option term may be extended for an addition term of 365.
3. The commencement date of Lessor's lease of the Premises shall be the date of Lessor's exercise of the option.
4. If the option is exercised, the initial term of the lease will be for twenty years, and Lessee shall have the option to extend the lease for up to four additional five-year terms, subject to earlier termination or extension pursuant to the terms of the Option and Lease or applicable law.
5. All of the terms, covenants and conditions of the Option and Lease are incorporated herein and made a part hereof. The purpose of this Memorandum is to give notice of the existence of the tenancy created by the Option and Lease; and shall not be construed to vary or otherwise affect the rights or obligations of the parties under the Option and Lease as it may be amended.
6. In the event the Lessee fails to exercise its Option or the Option and Lease is terminated at any time during the Lease Term or an extension thereof according to the terms of the Option and Lease, the Lessee shall within thirty (30) days after written request from the Lessor, sent certified mail to the Lessee's notice address as stated in the Option and Lease, execute a termination of this Option and Lease in recordable form to be recorded in the Worcester County District Registry of Deeds ("Termination of Option"). In the event the Lessee fails to execute and provide the Lessor said Termination of Option, the Lessor shall have the unilateral right to execute the Termination of Option on behalf of the Lessee together with a supporting affidavit which will effectively terminate the Lessee's Option Rights under the Option and Lease upon recording the such Termination of Option and supporting affidavit.

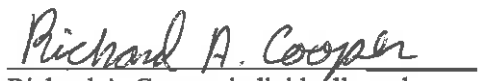
[*Signature page follows*]

IN WITNESS WHEREOF, the parties have duly executed this Memorandum of Option and Lease as of the date first above written.

LESSOR:

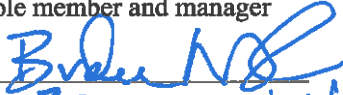

Marjorie A. Cooper, individually and
as Co-Partner d/b/a Cooper's Hilltop Farm


James A. Cooper, individually and
as Co-Partner d/b/a Cooper's Hilltop Farm


Richard A. Cooper, individually and
as Co-Partner d/b/a Cooper's Hilltop Farm

LESSEE: 978 SOLAR DEVELOPMENT, LLC

By: Borrego Solar Systems, Inc.,
its sole member and manager

By: 
Name: BRENDAN NEAGLE
Title: EVD

COMMONWEALTH OF MASSACHUSETTS)
) ss.
COUNTY OF Worcester)

On this 27 day of December, 2017, before me, the undersigned notary public, personally appeared Malcolm James (name of document signer), proved to me through satisfactory evidence of identification, which were MA License (source of identification) to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

Deborah K Davis
Notary Public
Print Name Deborah K Davis
My commission expires _____
Notary Public



DEBORAH K. DAVIS
Notary Public
Commonwealth of Massachusetts
My Commission Expires Feb. 25, 2022

COMMONWEALTH OF MASSACHUSETTS)
) ss.
COUNTY OF _____)

On this _____ day of _____, _____, before me, the undersigned notary public, personally appeared _____ (name of document signer), proved to me through satisfactory evidence of identification, which were _____ (source of identification) to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he/she signed it voluntarily for its stated purpose.

Notary Public
Print Name _____
My commission expires _____

Interconnecting Customer:	510 PV Project Development, LLC	Application(s):	Const. WR(s):
900	kW(AC) Inverter Based Interconnection, 0 Henshaw St.	25206492	24996123
900	kW(AC) Inverter Based Interconnection 515 Henshaw St	25206649	24995738
1,800	kW(AC) Inverter Based Combined Interconnection Project		
Project Address:	0 Henshaw Street & 515 Henshaw Street, Rochdale MA 01542		

I. Executive Summary:

- A. The Interconnecting Customer has submitted an application for the interconnection of the generating system described herein to the National Grid (Company) Electric Power System (EPS). Reviewed as outlined in:

M.D.P.U. 1320 & National Grid's Electric Service Bulletin (ESB) 756 Appendix C
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The application requires further study based on the results of this review.

- B. Study Cost: \$ 34,000 (see Exhibit E provided by National Grid for terms & conditions)

This cost must be paid in full before National Grid initiates the impact study. The study agreement must be signed and returned within 15 business days of its issuance to the Interconnecting Customer. The impact study will be completed in 55 business days. An additional 5 business day maybe required if substantial modifications are required. The Company will inform the Interconnecting Customer about incremental study time after the Company commences the impact study.

The need for 3V0 Ground Fault Detection may be required on the substation transformer and will be evaluated during the study. Unintentional islanding on the circuit may occur and will be evaluated during the study.

II. The Company's Electric Power System (EPS):

A. Table of Information for Nearest Feeder

Feeder Number:	01-406L1	Radial or Network?	Radial
Substation Name:	N. Oxford	Feeder Voltage at Substation:	13.2 kV
Substation Transformer Number:	2 TR		
Feeder Phase & Voltage at/near Site of Proposed DG:			
Voltage:	13.2 kV	Feeder extension or upgrade required to serve the site?	Yes
Phase:	3Φ		

- B. Is the existing service equipment compatible with the proposed generating system? Yes

C. Interconnected and In-Process DG

The following describes the interconnected and in-process DG on the subject feeder, as of the time of this report. Note that the following values are provided for informational purposes, based on the current status of the feeder and available information at the time of writing of this report, and are not binding.

Total Interconnected DG on the Subject Feeder:	5006
Total In-Process DG on the Subject Feeder:	19687

D. Additional Interconnection Details

This combined interconnection project consists of two separate primary metered stand alone interconnection applications proposed to be installed on two separate vacant parcels of land with no existing utility service.

13.2 kV three phase 406L1 feeder is adjacent to each proposed site with the customer proposed POI for 25206492 site near existing Pole#35 from Huntoon Memorial Hwy and for 25206649 site with the proposed POI near existing Pole#88 from Stafford Street. The daytime peak load recorded on 406L1 proposed feeder is 12.3MVA which occurred on 10/06/2016 at 09:45 AM. There is one recloser in line between both proposed sites and substation location installed on Pole#135 from Stafford Street. When combined with the interconnected and in-process DG in the queue, the proposed Facility size exceeds the rating of the 406L1 feeder, which is near the proposed Facility. Be advised that this feeder may not be viable for interconnection or may require substantial system modifications, effecting the Customer's desired project schedule and budget.

Additional feeder in physical proximity is feeder 21W2 from Leicester Substation, (available at approximate circuit distance of 1,500 ft north from 24996123 site on Pole#28 from Huntoon Memorial Hwy, and 1.3 miles from 25206649 site) whose feeder ratings would also be exceeded with the addition of the proposed generation capacity. Please be advised that the proposed generation capacity may not be viable for interconnection or may require substantial system modifications, effecting the Customer's desired project schedule and budget. Further National Grid engineering review will be required in form of system impact study.

III. The Description of Interconnecting Customer's Facility:

The proposed design of the generating Facility described herein is subject to change based on the requirements identified by National Grid prior to the execution of the Interconnection Service Agreement.

A. Description of Generating Facility

The proposed 1,800kW system consists of:

UL1741 certified equipment

Quantity	Manufacturer	Model	Generator Type	WAC Nameplate	Phase/VAC
30	SunGrow	60KU-M	Inverter	60	three 480/277

Refer to the attached line diagram for system configuration and protection equipment details.

B. Point of Common Coupling (PCC)

The point of common coupling (PCC) for this interconnection application will be the

That point where customer-owned cables connect to the bidirectional utility primary meter. This interconnection project will be capable of exporting power beyond the PCC onto the Company's Electric Power System (EPS).

C. Corrections to Proposed Design

The proposed design documentation **does not require** corrections before the next step in the process. Further design changes may be identified during the study (if applicable).

IV. Requirements:

A. General Requirements

1. In addition to any specific requirements identified herein, the Interconnecting Customer is required to comply with all applicable requirements described in the Interconnection Tariff & National Grid's Electric Service Bulletin 750 Series.
2. The Customer shall provide documentation from the inverter manufacturer for the islanding detection method to be used by the inverter(s). The documentation shall be sufficient to determine whether the islanding detection method is active (perturbing the utility system and looking for a response), or passive (monitoring grid parameters without perturbing the system), and describe how the islanding detection method functions, including what parameters (i.e. phase, frequency, VARs,) are perturbed and monitored.
3. The Company recommends installing surge arrestors on the Customer side of the Point of Common Coupling for the protection of Customer-owned equipment during possible overvoltage conditions.

B. Specific Requirements

1. Net Metering Eligibility

Although each system meets certain eligibility requirements, National Grid's Net Metering Tariff is closed to new applicants at this time. Although Net Metering Service is not available now, additional Net Metering capacity may or may not become available in the future. Please consult www.massaca.org for Net Metering

V. References:

National Grid's Massachusetts Distributed Generation Website:

http://www.nationalgridus.com/masselectric/business/energyeff/distributed_generation.asp

Additional guidance documents and information can be found on the National Grid Distributed Generation Website.

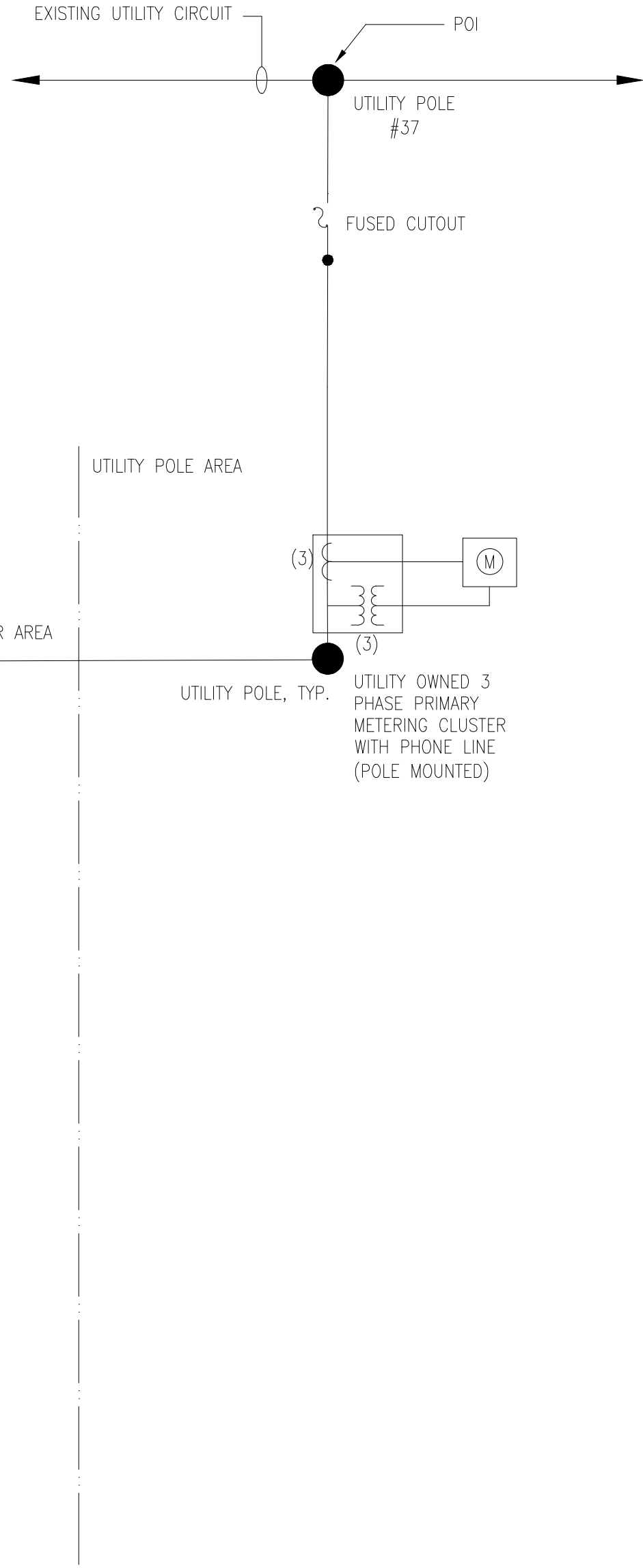
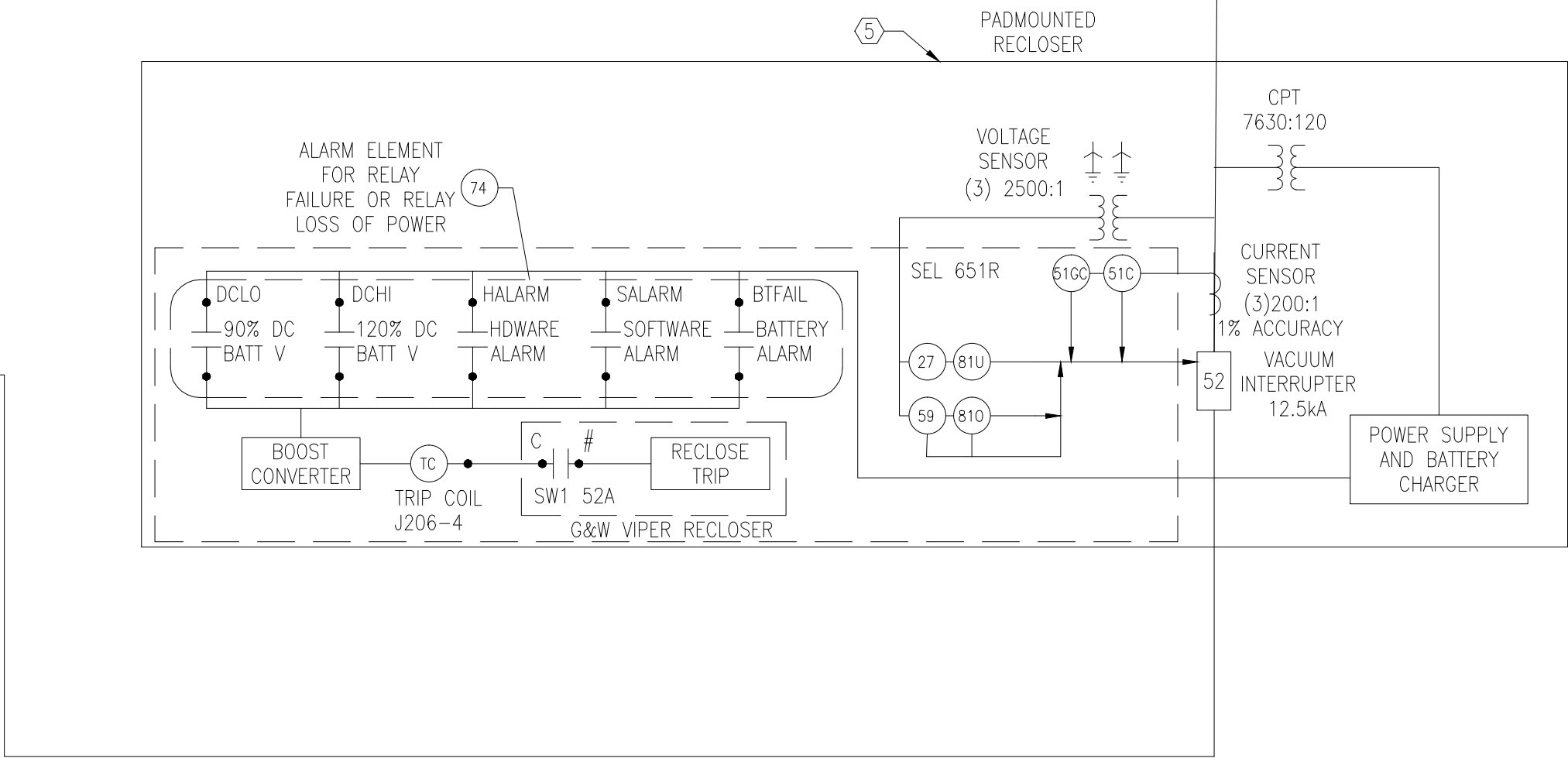
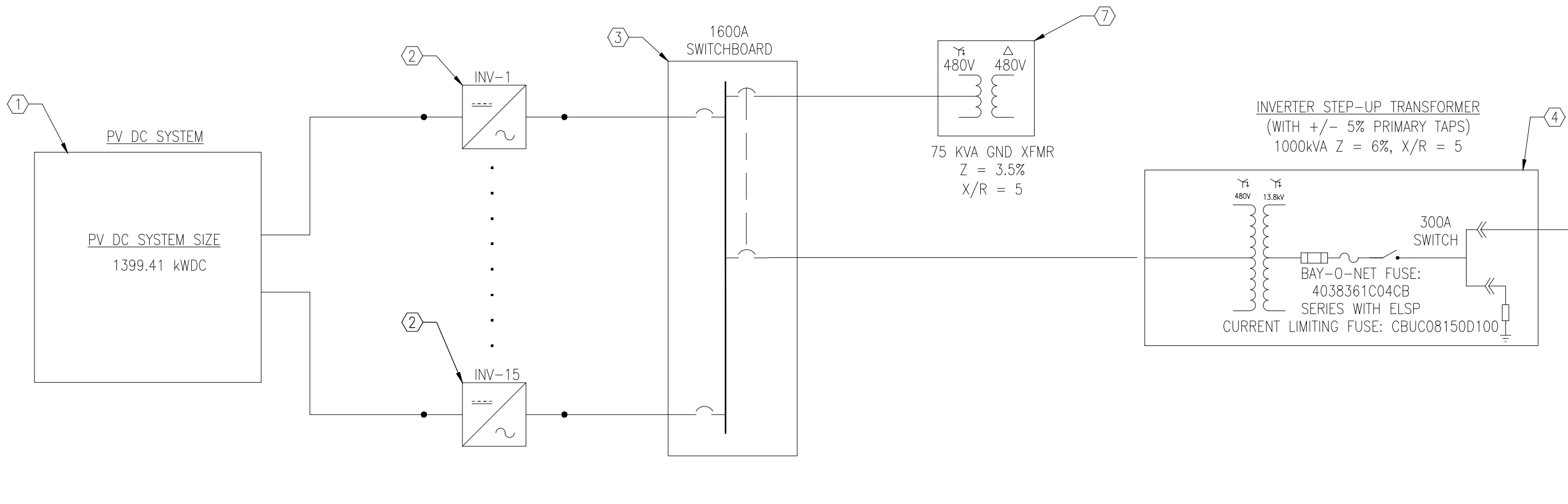
VI. Attachments:

- A. Interconnecting Customer's proposed design diagram(s) at the time of the review
- B. Customer Documentation Checklist (if corrections have been identified)

--- End of main document - Refer to any attachments on the following pages ---

0 HENSHAW ST. ROCHDALE, MA - (990KW PV)

SCALE: NTS

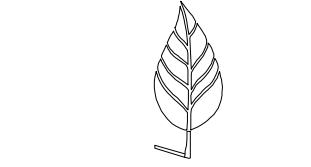


ELECTRICAL EQUIPMENT SCHEDULE		
REF. #	TOTAL	DESCRIPTION
①	3942	JA355W MODULES (STRINGS OF 18)
②	15	SUNGROW SG 60KU-M (66kWAC RATING) STRING INVERTER (13 OR 14 STRINGS PER INVERTER)
③	1	1600A SWITCHBOARD, 480VAC
④	1	1000KVA TRANSFORMER, 3 PHASE
⑤	1	G&W PAD MOUNTED RECLOSER, VACUUM INTERRUPTER, WITH INTEGRATED SEL 651R MULTIFUNCTION RELAY
⑥	1	15kV POLE MOUNTED, 900A, 25KAIC, DISCONNECT LOAD BREAK SWITCH, GANG OPERATED, LOCKABLE
⑦	1	GROUNDING TRANSFORMER, 75KVA, 3PH, 480D/480GWYE

PROPOSED INVERTER SETTINGS				
DEVICE	PICKUP	TIME DELAY	DESCRIPTION	NOTE
27-1	139	0.16 SEC	UNDervOLTAGE RELAY	SETTING INCLUDES 3 CYCLE ESTIMATED BREAKER OPENING TIME
27-2	244	2.0 SEC	UNDervOLTAGE RELAY	
59-1	305	1 SEC	OVERVOLTAGE RELAY	
59-2	333	0.16 SEC	OVERVOLTAGE RELAY	
81U-1	57.0 HZ	0.16 SEC	OVER/UNDERFREQUENCY	
81U-2	58.5 HZ	100 SEC	OVER/UNDERFREQUENCY	
810-1	60.5 HZ	0.16 SEC	OVER/UNDERFREQUENCY	

PROPOSED RELAY SETTINGS				
DEVICE	PRIMARY PICKUP	TIME DELAY	DESCRIPTION	NOTE
27-1	3894	0.16 SEC	UNDervOLTAGE RELAY	SETTING INCLUDES 3 CYCLE ESTIMATED TRIP DEVICE OPENING TIME
27-2	7011	2.0 SEC	UNDervOLTAGE RELAY	
59-1	8764	1 SEC	OVERVOLTAGE RELAY	
59-2	9561	0.16 SEC	OVERVOLTAGE RELAY	
81U-1	57.0 HZ	0.16 SEC	UNDERFREQUENCY	
81U-2	58.5 HZ	100 SEC	UNDERFREQUENCY	
810-1	60.5 HZ	0.16 SEC	OVERFREQUENCY	
51C	50	2.0 SEC	VOLTAGE CONTROLLED INVERSE OVERCURRENT	CURVE: U4
51GC	25	1.5 SEC	VOLTAGE CONTROLLED INVERSE GROUND OVERCURRENT	CURVE: U4

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55 TECHNOLOGY DRIVE
SUITE 102
LOWELL, MA 01851
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FAX: (888) 943-6775
WWW.BORREGOSOLAR.COM



11/15/2017

0 HENSHAW ST.
ROCHDALE, MA 01542

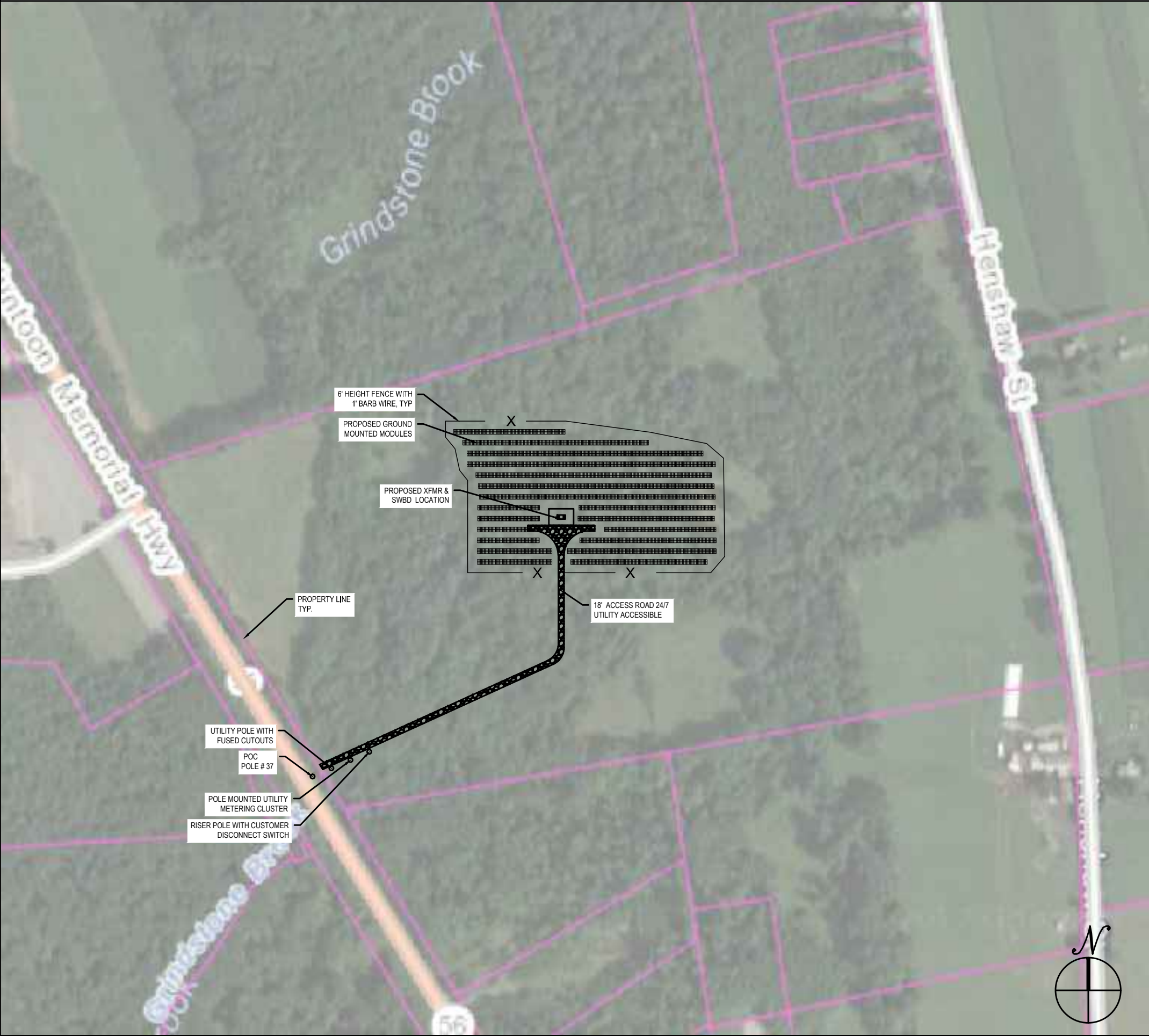
PROJECT NUMBER:

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
1	9/20/17	BFM		INTERCONNECTION APPLICATION SLD
2	10/6/17	BFM		INTERCONNECTION APPLICATION SLD v2
3	11/13/17	BFM		INTERCONNECTION APPLICATION SLD v3
4	11/14/17	BFM		INTERCONNECTION APPLICATION SLD v4

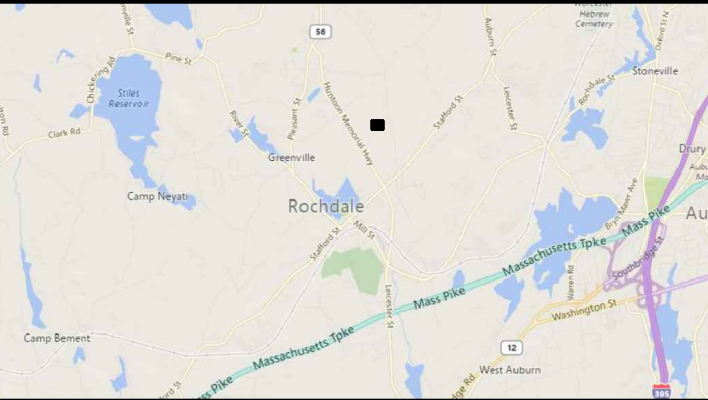
SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" x 36"

E-0.0
INTERCONNECTION
SINGLE LINE

0 HENSHAW ST. ROCHDALE, MA - PV PROJECT



PROJECT INFORMATION



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WWW.BORREGOSOLAR.COM

0 HENSHAW ST.
ROCHDALE, MA 01542

PROPOSAL SPECIFICATION

SYSTEM SIZE DC (kW)	1399.41		
SYSTEM SIZE AC (kW)	990		
DC TO AC RATIO	1.41		
MODULE INFORMATION	(3942) JA355		
STRING INFORMATION	(219) PARALLELED STRINGS OF (18)		
INVERTER INFORMATION	(15) SG60KU-M (66 kW)		
TRANSFORMER INFORMATION	(1) 1000 KVA		
INTERCONNECTION VOLTAGE	13.8 KV		
RACKING DETAILS	GROUND MOUNTED TERRASSMART		
ROW TO ROW SPACING	14.50 Ft	SITE LATITUDE	42.54 N
ASCE7-05 WIND SPEED (MPH)	N/A	GROUND SNOW LOAD (PSF)	N/A

ARRAY INFORMATION

ARRAY NO.	AZIMUTH	TILT ANGLE	NO. OF MODULES	NO. OF STRINGS	KW DC	INV - # CONNECTED
1	180°	25°	3,942	219	1,399.410	(15) 60KU-M (66KW)
TOTAL	-	-	3,942	219	1,399.410	-

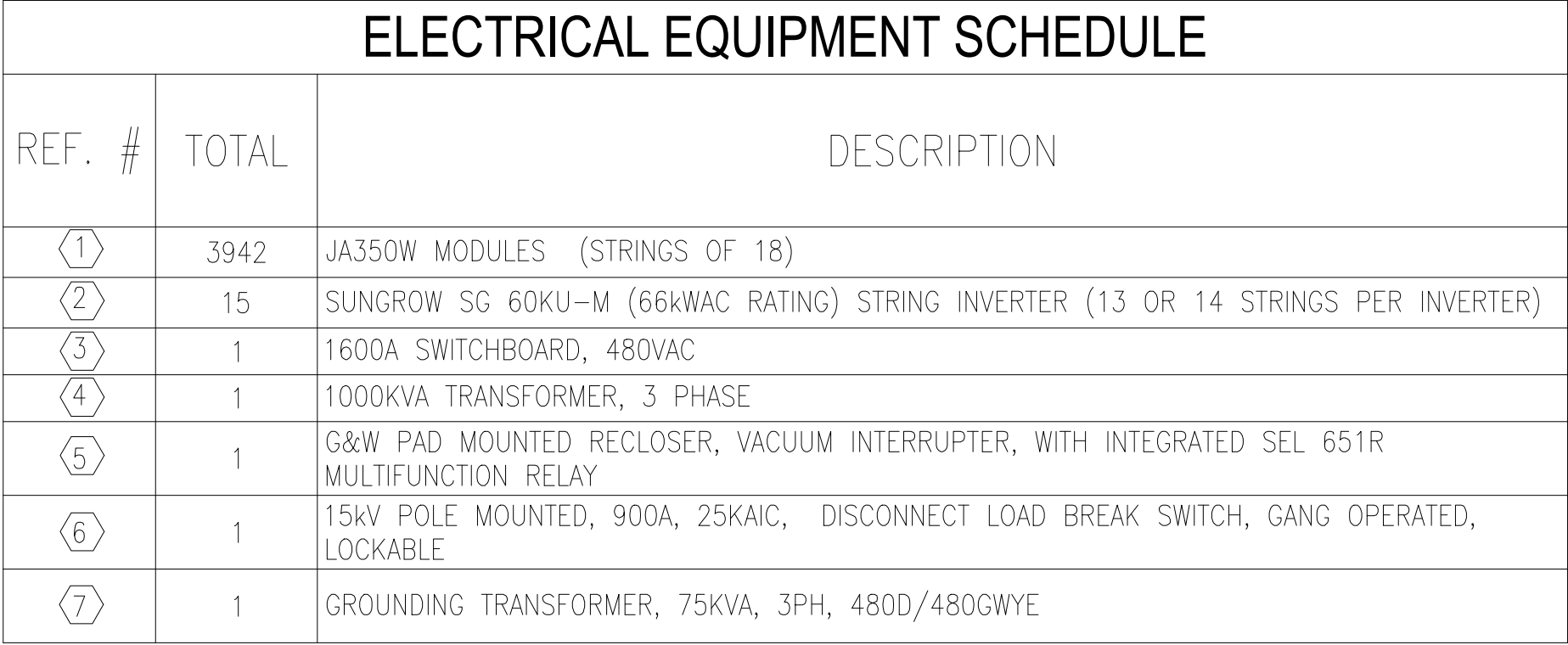
PROJECT NUMBER:
P-SD-005987

RELEASE LEVEL	IX LAYOUT	IX LAYOUT V2	IX LAYOUT V3				
CHECKED							
DRAWN	BFM	BFM	BFM				
DATE	9/20/17	10/6/17	11/13/17				
REV	1	2	3				

SCALE: 1" = 150'
VALID ONLY WHEN PLOTTED
ANSI FULL BLEED B 11" X 17"

PV-1
L1 PROPOSAL LAYOUT

SCALE: NTS



PROPOSED RELAY SETTINGS				
DEVICE	PRIMARY PICKUP	TIME DELAY	DESCRIPTION	NOTE
27-1	3894	0.16 SEC	UNDERVOLTAGE RELAY	SETTING INCLUDES 3 CYCLE ESTIMATED TRIP DEVICE OPENING TIME
27-2	7011	2.0 SEC		
59-1	8764	1 SEC	OVERVOLTAGE RELAY	
59-2	9561	0.16 SEC		
81U-1	57.0 HZ	0.16 SEC	UNDERFREQUENCY	
81U-2	58.5 HZ	100 SEC	UNDERFREQUENCY	
81O-1	60.5 HZ	0.16 SEC	OVERFREQUENCY	
51C	50	2.0 SEC	VOLTAGE CONTROLLED INVERSE OVERCURRENT	CURVE: U4
51GC	25	1.5 SEC	VOLTAGE CONTROLLED INVERSE GROUND OVERCURRENT	CURVE: U4

515 HENSHAW ST.
ROCHDALE, MA 01542

PROJECT NUMBER:

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
1	9/20/17	BFM		INTERCONNECTION APPLICATION SLD
2	11/13/17	BFM		INTERCONNECTION APPLICATION SLD v2
3	11/14/17	BFM		INTERCONNECTION APPLICATION SLD v3

SCALES STATED ON DRAWINGS
ARE VALID ONLY WHEN PLOTTED
ARCH D 24" X 36"

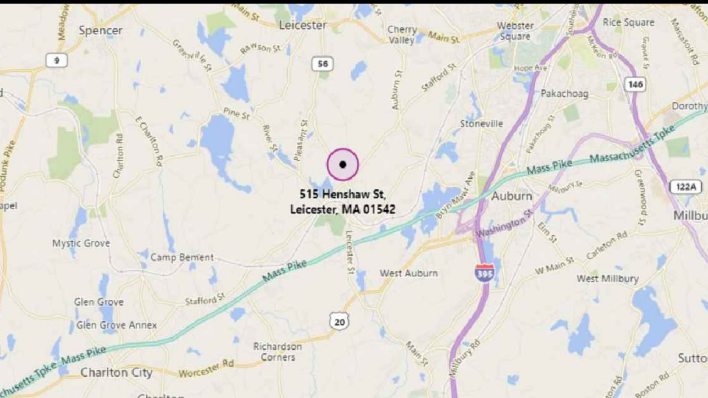
E-0.0

INTERCONNECTION
SINGLE LINE

515 HENSHAW ST. ROCHDALE, MA - PV PROJECT



PROJECT INFORMATION



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PROPOSAL SPECIFICATION

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STRING INFORMATION	(219) PARALLELED STRINGS OF (18)		
INVERTER INFORMATION	(15) SG60KU-M (66 kW)		
TRANSFORMER INFORMATION	(1) 1000 KVA		
INTERCONNECTION VOLTAGE	13.8 KV		
RACKING DETAILS	GROUND MOUNTED TERRASMART		
ROW TO ROW SPACING	14.50 Ft	SITE LATITUDE	42.54 N
ASCE7-05 WIND SPEED (MPH)	N/A	GROUND SNOW LOAD (PSF)	N/A

ARRAY INFORMATION

ARRAY NO.	AZIMUTH	TILT ANGLE	NO. OF MODULES	NO. OF STRINGS	KW DC	INV - # CONNECTED
1	180°	25°	3,942	219	1,399.410	(15) 60KU-M (66KW)
TOTAL	-	-	3,942	219	1,399.410	-

PROJECT NUMBER:
P-SD-005987

RELEASE LEVEL	IX LAYOUT	IX LAYOUT v2					
CHECKED							
DRAWN	BFM	BFM					
DATE	9/20/17	11/13/17					
REV	1	2					

SCALE: 1" = 150'
VALID ONLY WHEN PLOTTED
ANSI FULL BLEED B 11" X 17"

PV-1

L1 PROPOSAL LAYOUT



Solar Decommissioning

Key assumptions include the fact that the fencing, electrical cabinetry, solar racks, solar panels, wiring and all other equipment are all one hundred percent recyclable, therefore, the primary cost of decommissioning is the labor to dismantle and load as well as the cost of trucking. The concrete pads will be broken up at the site and hauled to Oxford Transfer Station where it will be accepted without a charge.

The following items from the 1339.2kilowatt (kW) array will be recycled:

- 3348 solar panels
- 124 inverters
- 1 transformers
- 186 racks
- 2224 linear feet of fencing
- 4 poles

This decommissioning estimate is based on the following costs:

Labor rate = 28/hour
Bobcat cost = 25/hour
Trucking cost = 72/hour
Backhoe cost = 100/hour
Grader cost = 1000/day
Front End Loader/Excavator cost = 1500/day

Labor / Materials / Equipment Costs:

1 . Remove Panels:

The panels are clamped in. They slide in a track. A laborer needs only unclamp the panel and reach over and slide the panel out of the track.

Panel Removal Rate · Total Number of Solar Panels · Labor Rate = Panel Removal Cost

$$1 \text{ min/panel} * 3,348 \text{ solar panels} * 1\text{hr}/60\text{min} * \$28/\text{hr} = \$1,562$$

Total = \$1,562

2 . Remove Rack Wiring:

The panels are plugged together in the same manner as an electrical cord from a light is plugged into a wall socket. A laborer needs only reach over and pull the plug. The string wires lie in a tray. A laborer needs only reach into the tray and remove the strands of wire.

Wire Removal Rate · Total Number of Solar Panels · Labor Rate = Rack Wiring Removal Cost

$$1 \text{ min/panel} * 3,348 \text{ solar panels} * 1\text{hr}/60\text{min} * \$28/\text{hr} = \$1,562$$

Total = \$1,562

3 . Dismantle Racks:

Total Number of Racks · Rack Removal Rate · Labor Rate = Rack Dismantling Cost

$$186 \text{ racks} * 30 \text{ min/rack} * \$28/\text{hr} = \$2,604$$

Total = \$2,604

4 . Remove and Load Electrical Equipment (includes transformer and inverters):

Total number of units: 1 transformers + 124 inverters = 133 units

$$\text{Elec. Equip. Removal rate} \cdot \text{Total Number of Units} \cdot (\text{Labor Rate} + \text{Bobcat Cost} + \text{Trucking Cost}) \\ = \text{Total Elec. Equip. Removal Cost}$$

$$1 \text{ hr/unit} * 133 \text{ units} * [\$28/\text{hr} + \$25/\text{hr} + \$72/\text{hr}] = \$16,625$$

Total = \$16,625

5 . Break Up Concrete Pads:

Using an excavator and jackhammer:

$$2 \text{ days} \cdot (\text{Front end loader and excavator cost} + \text{Labor Cost}) = \text{Total Concrete Pad Removal}$$

$$2 \text{ days} * [\$1500/\text{day} * [1\text{day}/8\text{hr}] + \$28/\text{hr}] = \$3,448$$

Total = \$3,448

6 . Load Racks: 20mins/rack

$$\text{Total racks} \cdot \text{Rack Loading Rate} (\text{Labor Cost} + \text{Bobcat Cost} + \text{Trucking Cost}) = \text{Total Rack Removal Cost}$$

$$186 \text{ racks} * 20\text{min/rack} * 1\text{hr}/60\text{min} * [\$28/\text{hr} + \$25/\text{hr} + \$72/\text{hr}] = \$7,750$$

Total = \$7,750

7 . Remove Cable:

$$\text{Total Cable Linear Footage} \cdot \text{Cable Removal Rate} \cdot (\text{Labor Cost} + \text{Backhoe Cost}) = \text{Total Cable Removal Cost}$$

$$940 \text{ ft} * 3\text{min/ft} * 1\text{hr}/60\text{min} * [\$28/\text{hr} + \$100/\text{hr}] = \$6,016$$

Total = \$6,016

8 . Remove Screws and Power Poles:

$$\left[\frac{\text{Total Number of Rack-Rack Screw Removal Rate}}{\text{Daily Screw Removal Rate}} \cdot (\text{Labor Cost} + \text{Excavator Cost}) \right] + [\text{Total Number of Poles} \cdot \text{Pole Removal Rate}] = \text{Total Screw and Power Pole Removal Cost}$$

$$[186 \text{ racks} * 4 \text{ screws/rack}] / [400 \text{ screws/day}] * [\$28/\text{hr} + (\$1500/\text{day} * 1\text{day}/8\text{hr})] + [4 \text{ poles} * \$1500/\text{pole}] = \$9,207$$

Total = \$9,207

9 . Remove Fence: 2 min/LF

$$\text{Total Fence Length} \cdot \text{Fence Removal Rate} \cdot (\text{Labor Cost} + \text{Bobcat Cost} + \text{Trucking Cost}) = \text{Total Fence Removal Cost}$$

$$2,224 \text{ ft} * 2 \text{ min/ft} * 1\text{hr}/60\text{min} * [\$28/\text{hr} + \$25/\text{hr} + \$72/\text{hr}] = \$9,267$$

Total = \$9,267

10 . Grading:

$$\text{Rough Grading (days} \cdot \text{Grader Cost)} + \text{Fine Grading (days} \cdot \text{Grader Cost)} = \text{Total Grading Cost}$$

$$[1 \text{ day} * \$1000/\text{day}] + [1 \text{ day} * \$1000/\text{day}] = \$1,000$$

Total = \$1,000

11 . Truck to Oxford Transfer Station (all except modules, fencing and piles):

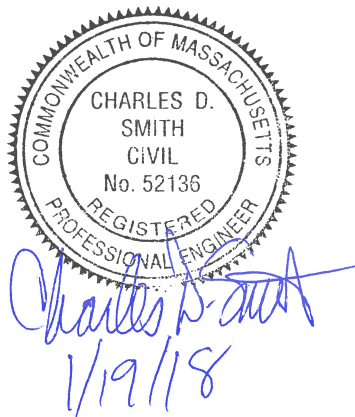
*Total Truckloads · Round trip – Site to Transfer Station Distance · (Fuel Cost) + Total Truckloads · Round Trip Time
· Trucking Cost = Total Trucking to Transfer Cost*

[11 trips * 2.4 miles/trip * \$5/mile] + [11 trips * 0.0666666666666667 hrs * \$72/hr] = \$185
Total = \$185

The resultant projected costs:

Task	Cost
Remove Panels	\$1,562
Remove Rack Wiring	\$1,562
Dismantle Racks	\$2,604
Remove and Load Electrical Equipment	\$16,625
Break up concrete pad	\$3,448
Load Racks	\$7,750
Remove cable	\$6,016
Remove screws and power poles	\$9,207
Remove fence	\$9,267
Grading	\$1,000
Truck to Transfer station	\$185
Total Cost	\$59,226
Total Cost @125% =	\$74,032.38

Total Cost after 20 Years (2% inflation rate) = **\$88,007**





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
8/2/2017

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Arthur J. Gallagher & Co. Insurance Brokers of CA, Inc. LIC #0726293 1255 Battery Street #450 San Francisco CA 94111		CONTACT NAME: Lily Liang PHONE (A/C, No, Ext): 415-536-8622 E-MAIL ADDRESS: Lily_liang@AJG.com FAX (A/C, No):	
		INSURER(S) AFFORDING COVERAGE	
		INSURER A: Berkley National Insurance Company	
		INSURER B: Berkley Regional Insurance Company	
		INSURER C: StarNet Insurance Company	
		INSURER D: Tri-State Insurance Company of Minnesota	
		INSURER E: Indian Harbor Insurance Company	
		INSURER F:	

COVERAGES

CERTIFICATE NUMBER: 2081249791

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
C	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Empl Brnt Liab <input checked="" type="checkbox"/> \$1M Ea Claim/Agg GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:			RGL8016305	4/1/2017	4/1/2018	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$1,000,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$2,000,000 Per Project Agg. \$6,000,000
A B	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY			RCA8016232 RCA8016237	4/1/2017 4/1/2017	4/1/2018 4/1/2018	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$0			RUL8016859	4/1/2017	4/1/2018	EACH OCCURRENCE \$10,000,000 AGGREGATE \$10,000,000 \$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y <input checked="" type="checkbox"/> N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			RWC8016242	4/1/2017	4/1/2018	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
E	Professional Liability			CEO7446446	8/4/2017	4/1/2018	\$5,000,000 Occ./Agg. \$250,000 SIR

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Evidence of insurance.

CERTIFICATE HOLDER

CANCELLATION

Evidence of insurance

...

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Paul Quail

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Fidelity and Deposit Company of Maryland

Home Office: 1400 American Ln., Tower I, 18th Flr., Schaumburg, IL 60196

Bond No. [REDACTED]

DECOMMISSIONING BOND

KNOW ALL MEN BY THESE PRESENTS:

That Borrego Solar Systems, Inc. (hereinafter called Principal), as Principal and Fidelity and Deposit Company of Maryland, a corporation of the State of Maryland, with its Home Office in Schaumburg, IL, and duly authorized and licensed to do business in the State of [REDACTED] (hereinafter called Surety), as Surety, are held and firmly bound unto The Town of [REDACTED] (hereinafter called Town), in the full and just sum of [REDACTED] Dollars (\$[REDACTED]), to the payment of which sum, well and truly to be made, the Principal and Surety bind themselves, their and each of their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Town accepted Principal's estimate for decommissioning of [REDACTED] which estimate is or may be attached hereto for reference.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH, That, if the Principal shall well and truly perform and carry out the covenants, terms and conditions of said agreement, then this obligation to be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that the term of this bond shall be for the period from [REDACTED] through [REDACTED] and any annual extensions of this bond shall be executed via Certificate of Continuation. The failure of the Surety to extend this bond at any annual anniversary shall not in itself be the basis for a claim against the bond. Any and all claims by the Obligor shall be reimbursed by the Surety on the basis of reasonable, actual costs incurred of takeover by the Obligor. The Obligor, with the acceptance of this bond, acknowledges that the provision and conditions of this bond are specifically incorporated in the Contract as an amendment thereto and that the language of this bond shall supersede and preempt any Contract language to the contrary. Surety may cancel this bond at any time, without notice or demand, for failure to pay premium, collateral or other amounts due under this bond. Regardless of the number of extensions of this bond, the aggregate liability of the Surety is limited to the penal amount and shall not be cumulative.

No right of action shall accrue on this bond to or for the use of any person, governmental entity or corporation other than the Obligor. Any suit under this bond must be instituted before the expiration of one (1) year from the first occurrence date of any event that forms the basis for the material service default underlying the Conditions Precedent unless such limitation is prohibited by the law controlling the construction hereof, such limitation shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by such law.

Signed and sealed on [REDACTED]

ATTEST:

[REDACTED]

(If Corporate)

Borrego Solar Systems, Inc.

(SEAL)

[REDACTED]

Fidelity and Deposit Company of Maryland

By

[REDACTED]

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **THOMAS O. MCCLELLAN, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Richard HALLETT, Aidan SMOCK, Tim MCCLELLAN and Marta COLLETT, all of San Diego, California, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said **ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND**, this 19th day of August, A.D. 2015.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



By _____

*Secretary
Eric D. Barnes*

Vice President

State of Maryland
County of Baltimore

On this 19th day of August, A.D. 2015, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **THOMAS O. MCCLELLAN, Vice President, and ERIC D. BARNES, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

My Commission Expires: July 3, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies,
this ____ day of _____, 20____.



[Redacted Signature Block]

ALL-PURPOSE ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF _____

County of _____

On _____

Date

before me, _____

Insert Name of Notary exactly as it appears on the official seal

, Notary Public,

personally appeared _____

Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

Signature _____

Signature of Notary Public



Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of the form to another document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____

Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer is Representing: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Signer's Name: _____

- ☐ Individual
☐ Corporate Officer — Title(s): _____
☐ Partner ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other: _____

Signer is Representing: _____

RIGHT THUMBPRINT
OF SIGNER

Top of thumb here

Annual Site Inspection Protocol

Operation & Maintenance Department

SERVICES

During the Term, Contractor shall perform the following services on each System:

Each System will be installed with an Internet-based Data Acquisition System (DAS). The DAS will have the capability to send alarms identifying communication and power generation issues.

Description of Work	Frequency of Inspection
On-Call System Service Technician	Per request
Full System Electrical Inspection & Maintenance	One time per year
Module Washing	Optional (maximum once per year)
Vegetation Management	Minimum of once per year
Landscaping	Minimum of once per year
Gravel Access Road	Minimum of once per year

In the event that the Town of Hubbardston finds the facility owner failing to properly maintain the facility in working order, the town may issue a notice of violation. If after notice by the Permit Granting Authority to correct a violation requiring maintenance work, satisfactory corrections are not made by the owner(s) within thirty days, the Town may perform all necessary work to place the facility in proper working condition and place a municipal lien on the affected property as security for all of the costs assumed by the town to perform the work. The owner(s) of the facility shall be assessed the cost of the work and any penalties.

Scope of Work

1. On-call Service Technician:

In response to an automated DAS alarm or request by Customer, a Service Technician will be required to visit the site within three (3) business days of notification to trouble shoot and resolve the issue. Emergency situations may require faster response.

2. System Electrical Inspection & Maintenance:

a. Electrical Maintenance

The technician will:

- Perform a visual inspection of PV modules and array wiring, strain relief, mounting system, trackers, inverters, switchgear, transformers, combiner boxes, wireways and conduit, data acquisition system, weather sensors and outdoor lighting.
- Check pyranometers and reference cells.
- Record operational data from inverters and meters.
- IR Thermography may be used as part of the visual inspection process.

b. Inspect External and/or Internal DC Disconnects and Combiner Boxes

During the inspection, the technician will:

- Ensure that Imp testing is performed on all DC strings, and values are logged on the Borrego provided form.

- ii. Spot check torque values and tighten loose electrical connections.
 - c. Inverter and Transformer
 - The technician will:
 - i. Clean out all electrical enclosures
 - ii. Clean inverter air filters
 - iii. Perform Preventive Maintenance per manufacturer protocol as required to maintain inverter manufacturer's warranty.
 - d. AC Disconnects
 - i. The technician will check for proper operation.
 - e. DAS
 - i. Verify with Borrego O&M representative before leaving site that the DAS system is functioning properly.
 - f. Fencing, Gates, Civil
 - i. Annual visit will include a visual inspection of any fences, gates, equipment pads, etc. Facility improvements installed by Borrego Solar such as gravel access roads, etc. shall be inspected on a periodic basis per Borrego Solar.
 - g. Service Report
 - i. A report must be filed with Borrego noting results of the annual inspection.
3. **Module Washing.** At a maximum, modules might be washed once per year. Only clean water will be used. No chemical additives or cleaners will be used. Additional washings may be requested by Borrego based upon system performance objectives and site-specific environmental conditions.
4. **Vegetation Management.** The site shall be inspected for evidence of erosion and rilling in any slopes. Any such conditions shall be noted in the annual report for re-vegetating.
- Growth of trees or other vegetation that is having a shade impact on the arrays should be noted in the annual report. Vegetation growth (saplings, bush, large weeds, etc.) within any array fences or inverter enclosures shall be removed.
5. **Gravel Access Road.** The road and roadside swales shall be inspected for evidence of erosion, rilling and clogging. These conditions shall be noted and supported with photographs and locations as part of the annual report.

PV Engineers/Borrego Solar System, Inc.
Joe Thorpe, Director of Operations & Maintenance

Signature

Date

Long Term Pollution Prevention Plan

Hours of Operation

The hours of operation on site during construction will be as follows:

7AM – 5PM Monday – Friday

8AM – 12PM Saturday (No heavy equipment work or other significant noise generating activities permitted on Saturday)

Following construction completion, work on site will be infrequent. Maintenance activities will be conducted during the above specified hours, except in the case of emergency.

Good Housekeeping Practices

The Owner/Operator shall employ the use of good housekeeping practices by adhering to the maintenance schedules and procedures described in Appendix B - Operations and Maintenance Plan of this report.

Provisions for storing materials/waste products

The storing of hazardous materials and waste is not anticipated with this project. Materials Safety Data Sheets (MSDS) are not required since no materials or substances will be permanently stored on site.

Vehicle Washing

On site washing of vehicles is not anticipated with this project. Vehicles will be washed off site. Only clean vehicles are permitted on site. A concrete wash-out will be provided during construction for washing vehicles on entrance and exit from project, if necessary. Wash-out area to be reclaimed following construction.

Solar Panel Washing

The washing of panels is not typically required in the Northeast, as the average monthly rainfall amounts are sufficient to clean the panels. If it is determined that local conditions warrant cleaning of the panels, only clean water will be used.

Requirements for routine inspections and maintenance of stormwater BMP's

The Operator shall adhere to the maintenance schedules and procedures described in Appendix B - Operations and Maintenance Plan of this report.

Spill Prevention and Response Plans

There is a minimal risk of a large spill requiring action on this project. Hazardous materials (such as, pesticides, petroleum products, fertilizers, detergents, acids, paints, cleaning solvents, etc.) will not be stored on-site.

In the event of a spill of hazardous substances or oil, the following procedures must be followed:

- All measures must be taken to contain and abate the spill and to prevent the discharge of hazardous substances or oil to storm water or off-site
- For spills less than five (5) gallons of material, proceed with source control and containment, clean-up with absorbent materials or other applicable means unless and imminent hazard or other circumstances dictate that the spill should be treated by a professional emergency response contractor.
- For spills greater than five (5) gallons of material, immediately contact the MassDEP Emergency Response Program at (1-888-304-1133) and an approved emergency response contractor. Provide information to emergency response contractor (or coordinator) on the type of material that spilled, the location, the estimated quantity and the time of the spill.

If there is a Reportable Quantity (RQ) release, notify the National Response Center immediately at (800) 424-8802. Within 14 days a report must be submitted to the EPA Regional Office describing the release, the date and circumstances of the release and the steps taken to prevent another release. This Long Term Pollution Prevention Plan must be updated to reflect any changes or steps taken to prevent the same for reoccurring.

Provisions for maintenance of landscaped areas.

Ground cover shall be mowed a minimum of once per year. Additional mowing may be necessary.

Provisions for solid waste management

A solid waste management program during construction (including dumpster, trash receptacles) shall be implemented, inspected and maintained in accordance with local and state requirements. During construction a properly sized dumpster will be on-site. No permanent dumpsters are proposed.

Emergency Contacts

Borrego Solar

Joe Busch, Director of Operations

55 Technology Drive, Suite 2

Lowell, MA 01851

Mobile: 978-602-0630

Office: 978-513-2637

jbusch@borregosolar.com

Joe Thorpe, Director of Operations and Maintenance

55 Technology Drive, Suite 2

Lowell, MA 01851

Mobile: 617-820-8885

Office: 978-513-2608

jthorpe@borregosolar.com

MassDEP Western Regional Office

(413) 784-1100

United States Environmental Protection Agency

(800) 424-8802

SG125HV

String Inverter for 1500 V_{dc} System



High Yield

- Patent five-level topology, max. efficiency 98.9 %, CEC efficiency 98.5 %
- Full power operation without derating at 50 °C



Easy O&M

- Virtual central solution, easy for O&M
- Compact design and light weight for easy installation



Saved Investment

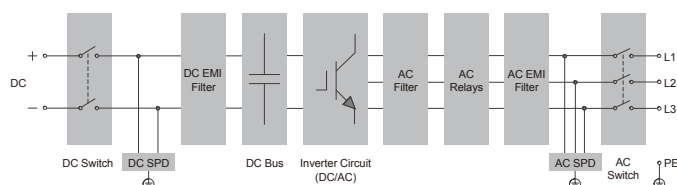
- DC 1500 V, AC 600 V, low system initial investment
- 1 to 5 MW power block design for lower AC transformer and labor cost
- Max. DC/AC ratio up to 1.5



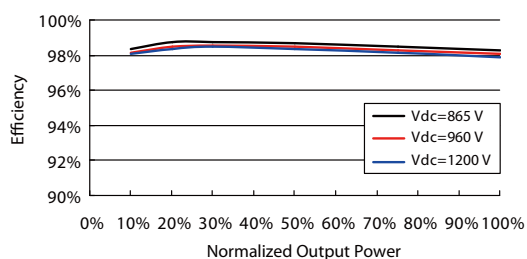
Grid Support

- Compliance with standards: UL 1741, UL 1741 SA, IEEE 1547, IEEE 1547.1 and California Rule 21
- Low/High voltage ride through (L/HVRT)
- Active & reactive power control and power ramp rate control

Circuit Diagram



CEC Efficiency Curve



Input (DC)
SG125HV

Max. PV input voltage	1500 V
Min. PV input voltage / Startup input voltage	860 V / 920 V
MPP voltage range	860 – 1450 V
MPP voltage range for nominal power	860 – 1250 V
No. of independent MPP inputs	1
Max. number of PV strings per MPPT	1
Max. PV input current	148 A
Max. DC short-circuit current	240 A

Output (AC)

Nominal AC power (at 50 °C)	125000 W
Max. AC output power at PF=1 (at 50 °C)	125000 W
Max. AC apparent power (at 50 °C)	125000 VA
Max. AC output current	120 A
Nominal AC voltage	3 / PE, 600 V
AC voltage range	480 - 690 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % I _n
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading to 0.8 lagging
Feed-in phases / Connection phases	3 / 3

Efficiency

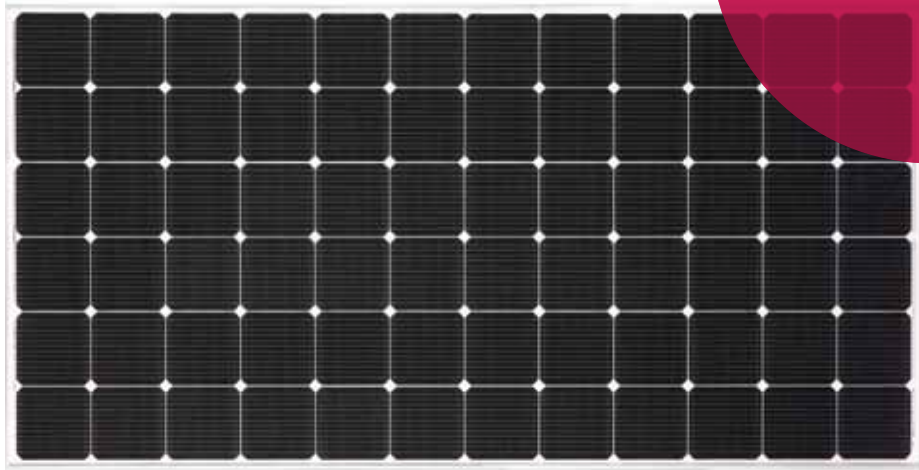
Max. efficiency / CEC efficiency	98.9 % / 98.5 %
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Protection

DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch / AC switch	Yes / Yes
Overvoltage protection	DC Type II / AC Type II

General Data

Dimensions (W*H*D)	26.4"*35.0"*11.7" 670*890*296 mm
Weight	158.7 lb 72 kg
Isolation method	Transformerless
Degree of protection	NEMA 4X
Night power consumption	< 4 W
Operating ambient temperature range	-13 to 140 °F (> 122 °F derating) -25 to 60 °C (> 50 °C derating)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	13123 ft (> 9843 ft derating) 4000 m (> 3000 m derating)
Display / Communication	LED / RS485, Bluetooth + APP
DC connection type	OT or DT terminal (Max. 350 Kcmil)
AC connection type	OT or DT terminal (Max. 350 Kcmil)
Compliance	UL 1741, UL 1741 SA, IEEE 1547, IEEE 1547.1, CSA C22.2 No.107.1-01 and California Rule 21
Grid support	LVRT, HVRT, active & reactive power control and power ramp rate control



LG NeON™ 2 72cell

LG410N2W-A5

LG405N2W-A5

LG400N2W-A5

LG395N2W-A5

72 cell

LG's new module, LG NeON™ 2, adopts Cello technology. Cello technology replaces 3 busbars with 12 thin wires to enhance power output and reliability. LG NeON™ 2 demonstrates LG's efforts to increase customer's value beyond efficiency. It features enhanced warranty, durability, performance under real environment, and aesthetic design suitable for roofs.



Enhanced Performance Warranty

LG NeON™ 2 has an enhanced performance warranty. The annual degradation has fallen from -0.6%/yr to -0.55%/yr. Even after 25 years, the cell guarantees 1.2%p more output than the previous LG NeON™ 2 modules.



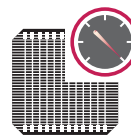
High Power Output

Compared with previous models, the LG NeON™ 2 has been designed to significantly enhance its output efficiency, thereby making it efficient even in limited space.



Aesthetic Roof

LG NeON™ 2 has been designed with aesthetics in mind; thinner wires that appear all black at a distance. The product may help increase the value of a property with its modern design.



Outstanding Durability

With its newly reinforced frame design, LG has extended the warranty of the LG NeON™ 2 for an additional 2 years. Additionally, LG NeON™ 2 can endure a front load up to 5400 Pa, and a rear load up to 4300 Pa.



Better Performance on a Sunny Day

LG NeON™ 2 now performs better on sunny days thanks to its improved temperature coefficient.



Double-Sided Cell Structure

The rear of the cell used in LG NeON™ 2 will contribute to generation, just like the front; the light beam reflected from the rear of the module is reabsorbed to generate a great amount of additional power.

About LG Electronics

LG Electronics is a global player who has been committed to expanding its operations with the solar market. The company first embarked on a solar energy source research programs in 1985, supported by LG Group's vast experience in the semi-conductor, LCD, chemistry, and materials industries. In 2010, LG Solar successfully released its first Mono X® series to the market, which is now available in 32 countries. The LG NeON™ (previously known as Mono X® NeON) and the LG NeON™2 won the "Intersolar Award" in 2013 and 2015, which demonstrates LG Solar's lead, innovations and commitment to the industry.

Mechanical Properties

Cells	6 x 12
Cell Vendor	LG
Cell Type	Monocrystalline / N-type
Cell Dimensions	161.7 x 161.7 mm / 6 inches
# of Busbar	12 (Multi Wire Busbar)
Dimensions (L x W x H)	2024 x 1024 x 40 mm 79.69 x 40.31 x 1.57 inch
Front Load	5400Pa
Rear Load	4300Pa
Weight	21.7 kg
Connector Type	MC4
Junction Box	IP68 with 3 Bypass Diodes
Cables	1200 mm x 2 ea
Glass	High Transmission Tempered Glass
Frame	Anodized Aluminium

Certifications and Warranty

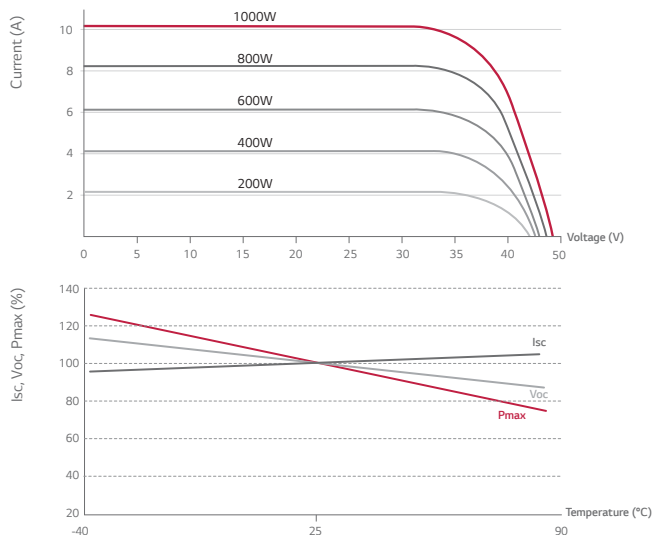
Certifications	IEC 61215, IEC 61730-1/-2 UL 1703 IEC 61701 (Salt mist corrosion test) IEC 62716 (Ammonia corrosion test) ISO 9001
Module Fire Performance (USA)	Type 1
Fire Rating (CANADA)	Class C (ULC / ORD C1703)
Product Warranty	12 years
Output Warranty of Pmax	Linear warranty**

** 1) 1st year : 98%, 2) After 2nd year : 0.55% annual degradation, 3) 25 years : 84.8%

Temperature Characteristics

NOCT	45 ± 3 °C
Pmpp	-0.36%/°C
Voc	-0.26%/°C
Isc	0.02 %/°C

Characteristic Curves



Electrical Properties (STC *)

Module	410W	405W	400W	395W
Maximum Power (Pmax)	410	405	400	395
MPP Voltage (Vmpp)	41.4	41.0	40.6	40.2
MPP Current (Impp)	9.91	9.89	9.86	9.83
Open Circuit Voltage (Voc)	49.5	49.4	49.3	49.2
Short Circuit Current (Isc)	10.55	10.51	10.47	10.43
Module Efficiency	19.8	19.5	19.3	19.1
Operating Temperature	-40 ~ +90			
Maximum System Voltage	1500 (UL)			
Maximum Series Fuse Rating	20			
Power Tolerance (%)	0 ~ +3			

* STC (Standard Test Condition): Irradiance 1,000 W/m², Ambient Temperature 25 °C, AM 1.5

* The nameplate power output is measured and determined by LG Electronics at its sole and absolute discretion.

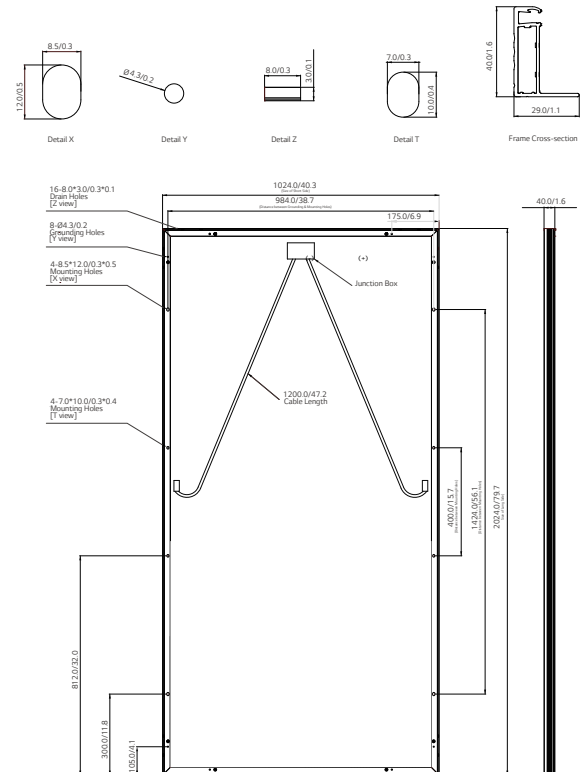
* The Typical change in module efficiency at 200W/m² in relation to 1000W/m² is -2.0%.

Electrical Properties (NOCT*)

Module	410W	405W	400W	395W
Maximum Power (Pmax)	304	300	296	293
MPP Voltage (Vmpp)	38.3	38.0	37.6	37.2
MPP Current (Impp)	7.92	7.91	7.88	7.86
Open Circuit Voltage (Voc)	46.3	46.2	46.1	46.0
Short Circuit Current (Isc)	8.47	8.44	8.41	8.38

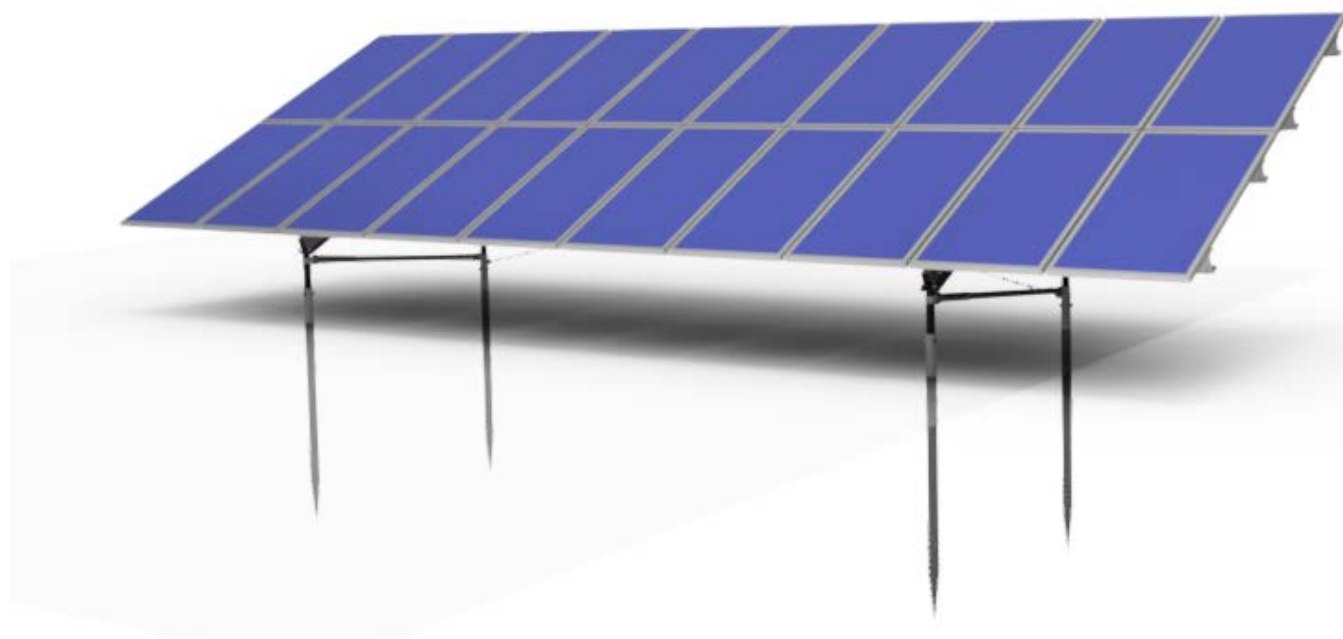
* NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², ambient temperature 20 °C, wind speed 1m/s

Dimensions (mm/in)



* The distance between the center of the mounting/grounding holes.





Overview

TF2 is the latest generation of the TerraFarm fixed tilt ground mount rack. The improvements over the previous version are many and compared to the competition, TF2's benefits are staggering. Specifically, TF2 features the same time tested, versatile, and forward thinking ground screw foundation. The ground screw installation process has been enhanced to deliver a more accurate foundation through the use of state of the art surveying, rock drilling, and installation equipment. With more accurately installed foundations, the racking interface was improved to allow for connections that require less adjustability and therefore a much improved racking installation rate with reduction in installation man-hours of up to 30%.

Specifications

- Member Material: ASTM A 1011 Cold Rolled Steel, Hot Dip Galvanized to ASTM A 653 (G90 min)
ASTM A 500 Hollow Structural Steel, Hot Dip Galvanized to ASTM A 123 (3.0 mils min)
- Hardware Material: 316 Stainless Steel for all Module Mounting Hardware
Carbon Steel Alloy, Mechanically Galvanized to ASTM F2833 for all Structural Hardware
- Foundation Options: Ground Screw
- Module Orientation: Portrait and Landscape
- Module Mounting: Bottom Mount
Integrated Electrical Bonding
- Tilt Angle: 5° to 40°
- Wire Management: Incorporated in Structure
NEC Compliant
- Configurations: Portrait: Up to 3 high x up to 12 wide
Landscape: Up to 6 high x up to 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: UL2703, Edition 1; CPP Wind Tunnel Tested
- Warranty: 20-year Limited Warranty



Fast

- 66% less hardware
- Integrated Electrical Bonding
- Included Wire Management

Compliant

- UL 2703 Listed
- NEC Compliant
- Wind Tunnel Tested

Versatile

- Numerous configurations
- Adapts to steep slopes
- Accommodates arduous soils

Light

- Lighter/stiffer components
- Safer to handle
- Less freight costs