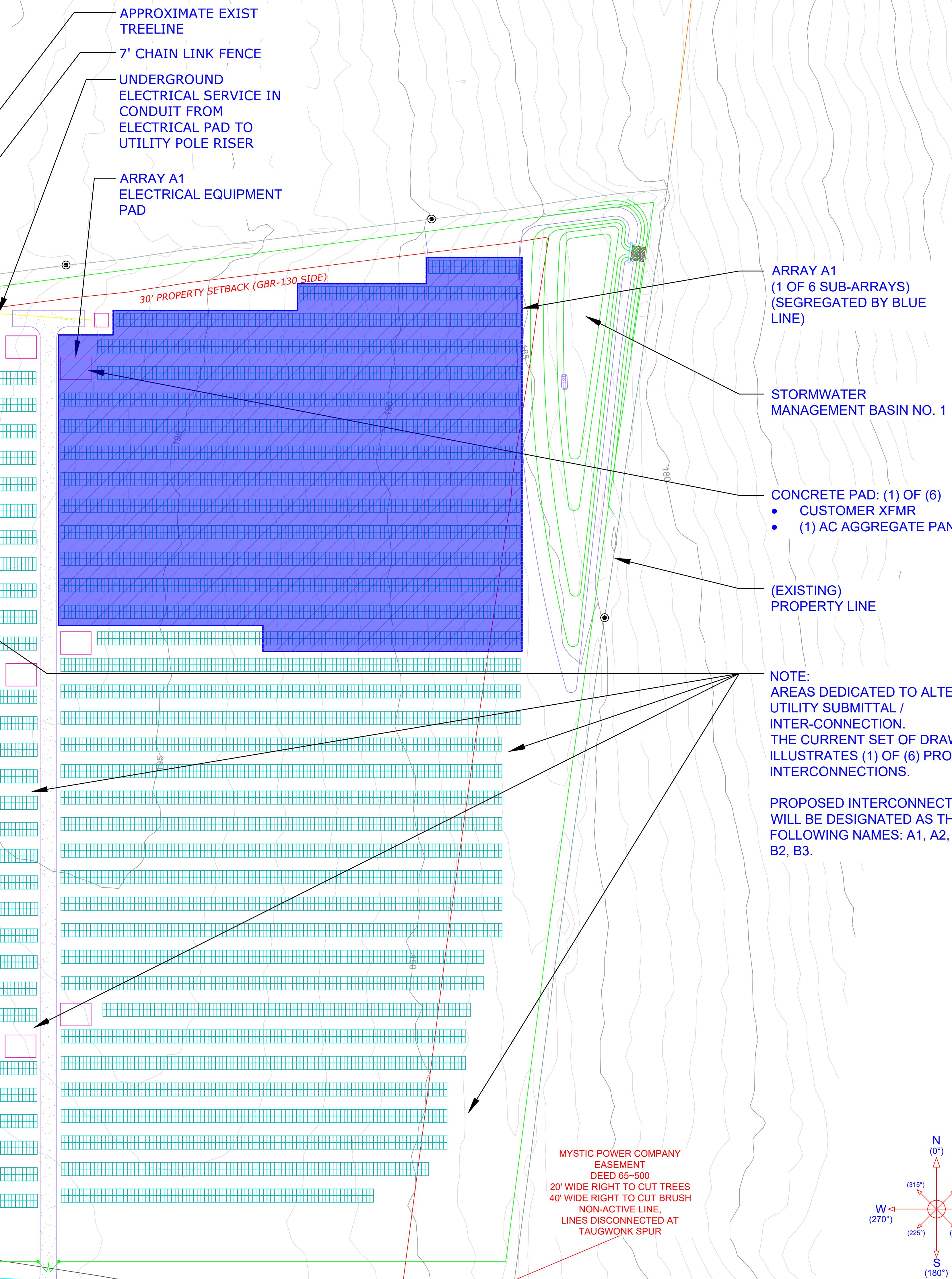


**PV ARRAY:** 1,279.80 KW (DC) / 1,000.00 KW (AC)  
**MODULES:** (3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES  
**STRING DESIGN:** (27) MODULES PER SOURCE CIRCUIT  
**INVERTERS:** (8) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS  
**RACKING:** RBI FIXED TILT RACKING SYSTEM  
**TIPT ANGLE:** 25° DEG.  
**AZIMUTH:** 180° DEG. - DUE SOLAR SOUTH  
**INTER-ROW SPACING:** 12'-0"  
**DC / AC RATIO:** 1.28 : 1

**7' CLF SWING GATE**  
**OVERHEAD ELECTRICAL SERVICE AND UTILITY POLES (TYP)**  
**12" RCP**  
**75' PROPERTY SETBACK (GBR-130 FRONT)**  
**100' PROPERTY SETBACK (GBR-130 SIDE)**  
**200'**



**PHOTOVOLTAIC PROJECT INFORMATION:**  
 1,279.80 KW (DC) / 1,000.00 KW (AC)  
 PV UTILITY INTERACTIVE SYSTEM  
 STONINGTON - A1 PROJECT  
 35 TAUGWONK SPUR RD.  
 STONINGTON, CT 06378  
 AHJ: STONINGTON  
 UTILITY: EVERSOURCE  
 LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
 ELEVATION: ±195 FT  
 IRRADIANCE: 4.77 KWH / M<sup>2</sup> / DAY  
 ASHRAE AVG LOW TEMP: -9.4°F / -23°C  
 ASHRAE AVG HIGH TEMP: 89.6°F / 32°C

PROJECT NUMBER: 446-14

PROJECT SHEET: L-1B

sheet title:  
site plan & array layout (enlarged)



PROJECT DEVELOPER:  
 GREEN SKIES  
 (A CLEAN FOCUS COMPANY)  
 180 JOHNSON ST  
 MIDDLETON, CT 06457  
 PHONE: 860.398.5408  
 EMAIL: INFO@GREENSKIES.COM



SOLAR PV CONSULTANT:  
 RENEWABLE DESIGN SOLUTIONS  
 10945 ESTATE LANE  
 SUITE E-105  
 DALLAS, TX 75238  
 PHONE: 214.564.9535  
 WWW.RENEWABLEDESIGNSOLUTIONS.COM

ELECTRICAL ENGINEER:  
 JOE GIGANTIELLO PE (ELECTRICAL)  
 PHONE: 267.882.5393  
 EMAIL: JGIGANTIELLO@RDSSOLAR.COM



10/04/19

10% DESIGN PHASE  
 DOCUMENTS. NOT FOR  
 CONSTRUCTION OR BIDDING  
 PURPOSES. FOR UTILITY  
 SUBMITTAL ONLY

REVIEWED BY: J. GIGANTIELLO

DATE: 09 / 25 / 2019

REVISED:  
 1. N/A  
 2. N/A  
 3. N/A  
 4. N/A  
 5. N/A

SCALE: 1" = 50'-0"

PAPER SIZE: 24" x 36"

PV ARRAY:	1,279.80 kW (DC) / 1,000.00 kW (AC)
MODULES:	(3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES
STRING DESIGN:	(27) MODULES PER SOURCE CIRCUIT
INVERTERS	(8) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS
RACKING:	RBI FIXED TILT RACKING SYSTEM
TILT ANGLE:	25° DEG.
AZIMUTH:	180° DEG. - DUE SOLAR SOUTH
INTER-ROW SPACING:	12'-0"
DC / AC RATIO:	1.28 : 1

DESCRIPTION	QTY	MANUFACTURER	MODEL	VOLTAGE RATING	CURRENT RATING	NOTES
CUSTOMER METER, PTS, CTS	(1)	TBD	TBD	TBD	TBD	TBD
GANG OPERATED SWITCH	(1)	S&C	TBD	15KV	200A	TBD
FUSED CUTOUT	(1)	S&C	TBD	15KV	200A	TBD
POWER POLE	(2)	TBD	TBD	TBD	TBD	TBD
SURGE ARRESTOR	(6)	TBD	TBD	TBD	TBD	TBD

PHOTOVOLTAIC PROJECT INFORMATION:  
 1,279.80 kW (DC) / 1,000.00 kW (AC)  
 PV UTILITY INTERACTIVE SYSTEM  
 STONINGTON - A1 PROJECT  
 35 TAUGWONK SPUR RD.  
 STONINGTON, CT 06378  
 AHJ: STONINGTON  
 UTILITY: EVERSOURCE  
 LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
 ELEVATION: ±195 FT  
 IRRADIANCE: ±4.77 kWh / M<sup>2</sup> / DAY  
 ASHRAE AVG LOW TEMP: -9.4°F / -23°C  
 ASHRAE AVG HIGH TEMP: 89.6°F / 32°C

PROJECT NUMBER:

446-14

PROJECT SHEET:

E-3

SHEET TITLE:

AC COLLECTION SYSTEM  
(1-LINE DIAGRAM)



PROJECT DEVELOPER:

GREEN SKIES  
(A CLEAN FOCUS COMPANY)  
180 JOHNSON ST  
MIDDLETON, CT 06457  
PHONE: 860.398.5408  
EMAIL: INFO@GREENSKIES.COM



SOLAR PV CONSULTANT:

RENEWABLE DESIGN SOLUTIONS  
10945 ESTATE LANE  
SUITE E-105  
DALLAS, TX 75238  
PHONE: 214.564.9535  
WWW.RENEWABLEDESIGNSOLUTIONS.COM

ELECTRICAL ENGINEER:

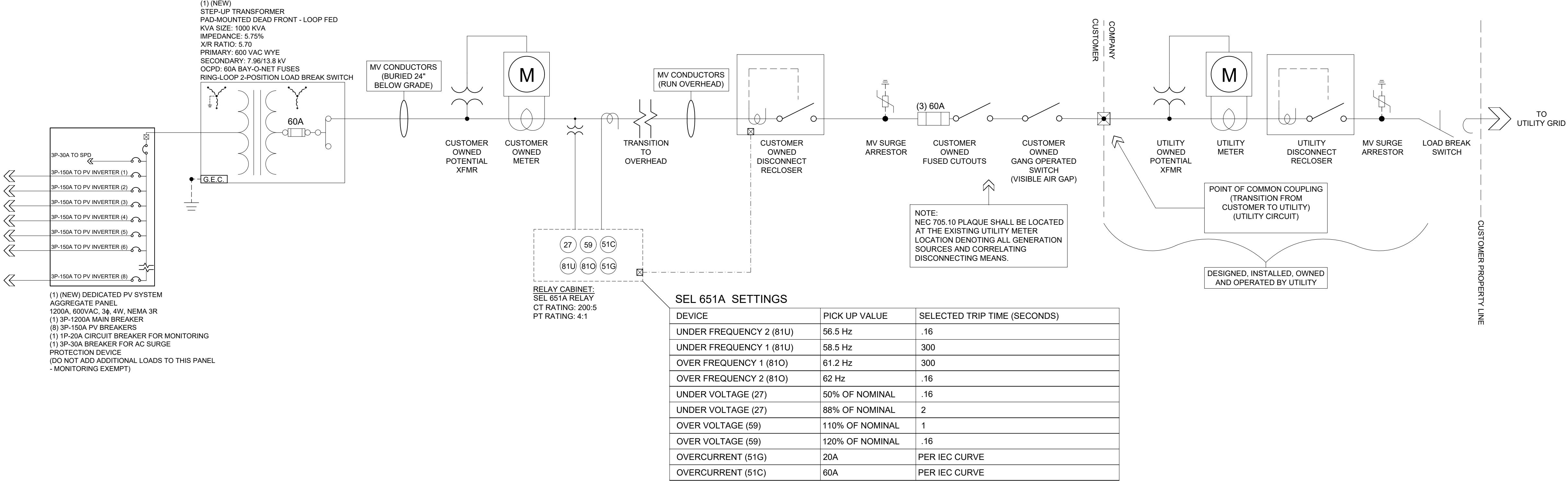
JOE GIGANTIETTO PE (ELECTRICAL)  
PHONE: 267.882.5393  
EMAIL: JGIGANTIETTO@RDSSOLAR.COM



10/04/19

(NEW) PHOTOVOLTAIC DC COLLECTION SYSTEM

PV ARRAY: 1,279.80 kW (DC) / 1,000.00 kW (AC)  
MODULES: (3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES  
INVERTERS: (8) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS



ANTI-ISLANDING LETTER:



June 25, 2018

XGI 1500 – National Grid Anti-Islanding Information

Identify the manufacturer:	Yaskawa – Solectria Solar
Identify the model:	XGI 1500-166, XGI 1500-125
Contact information for manufacturer contact:	
Eric Every	Product Manager Solectria Renewables, LLC 978-683-9700 x137 eric.every@solectria.com
Identify if the inverter is 3-phase or 1-phase:	3 Phase
Provide brief description of island detection method proposed:	Perturbation is applied by injecting a small amount of reactive power (or phase angle) into its output current during every cycle. The magnitude of the perturbation increases if the inverter detects an island condition.
Does the inverter employ active or passive islanding detection? Provide documentation confirming that the islanding detection is "turned on" in the proposed inverter:	Active. The anti-islanding detection algorithm is hardcoded into the inverter operating firmware and cannot be disabled or "turned off" by the user.
For active islanding detection, various methods are available in the market. Identify the type of detection proposed. Is the method based on Sandia Frequency Shift, Sandia Voltage Shift, Sandia Impedance Detection, or Other? If Other, specify:	The active islanding detection algorithm is based on the Sandia Frequency Shift Detection methodology.
Does the active islanding detection utilize positive feedback?	Yes
If utilizing positive feedback, does the island detection employ a uni-directional or bi-directional perturbation?	Bi-directional
Does the inverter use an isolation transformer?	No
If yes, what is the low voltage phase to neutral voltage?	N/A
How is the AC output voltage limited? Specifically, how do the inverter controls limit the AC output voltage when generation exceeds available load?	The inverter detects the AC voltage and converts available DC power to AC when the AC voltage is in normal range. Inverters do not limit the AC output voltage. Instead, if the AC voltage is higher than threshold, inverters stop operation (cease to energize) according to IEEE1547 standards.

SOLECTRIA SOLAR

Yaskawa Solectria Solar  
300 Merrimack Street  
Lawrence, MA 01843  
solectria.com

INVERTER SETTINGS:



January 16, 2019

RE: Voltage and Frequency Setpoints for XGI 1500-125/125-UL, XGI 1500-125/150-UL, XGI 1500-150/166-UL and XGI 1500-166/166-UL

To Whom It May Concern:  
 Selectria XGI 1500-125/125-UL, XGI 1500-125/150-UL, XGI 1500-150/166-UL and XGI 1500-166/166-UL utility interactive Inverters will cease power production in the event of abnormal grid conditions. These voltage and frequency setpoints adhere to IEEE1547-2014, which has the default setpoints and range of adjustability specified below:

Voltage Range (p.u.)	Default Clearing Time (s)	Clearing Time: adjustable up to and including (s)
V < 0.45	0.16	0.16
0.45 <= V < 0.60	1	11
0.60 <= V < 0.88	2	21
1.1 < V < 1.2	1	13
V >= 1.2	0.16	0.16

Response to Abnormal AC Voltage

Protective Function	Default Settings	Ranges of Adjustability
81U-1	f < 57.0	0.16
81U-2	f > 59.5	2
81O-1	f > 60.5	2
81O-2	f > 62	0.16

Response to Abnormal Frequency

At the request of the utility, the adjustable settings specified can be changed through a password-protected menu on the user interface. Upon grid disturbances the inverter will wait 5 minutes after the grid voltage and frequency return to nominal values before attempting to reconnect. Please refer to the XGI 1500 Installation and Operations Manual for additional information.

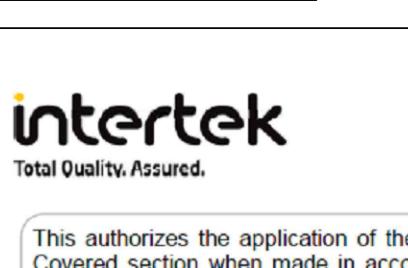
Sincerely,

Emily Hwang | Applications Engineering Manager  
+1 978.683.9700 | emily.hwang@solectria.com

SOLECTRIA SOLAR

Yaskawa Solectria Solar  
300 Merrimack Street  
Lawrence, MA 01843  
solectria.com

UL1741SA LISTING:



AUTHORIZATION TO MARK

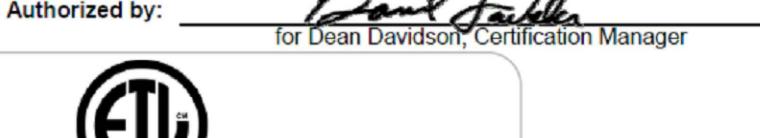
This authorizes the application of the Certification Mark(s) shown below to the model(s) described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.

Applicant: Solectria Renewables LLC  
300 Merrimack Street  
Bldg 9, Floor 2  
LAWRENCE, MA 01843  
Country: USA  
Contact: Wei Zhou (primary)  
Jihua Ma (alternate)  
Phone: (978) 683-9700  
FAX: (978) 683-9702  
Email: wei.zhou@solectria.com  
jihua.ma@solectria.com

Party Authorized To Apply Mark: Same as Manufacturer  
Report Issuing Office: Cortland NY 13045

Control Number: 5010838 Authorized by:



Intertek Testing Services NA Inc.

545 East Algonquin Road, Arlington Heights, IL 60005

Telephone 800-345-8851 or 847-435-6667 Fax 312-283-1672

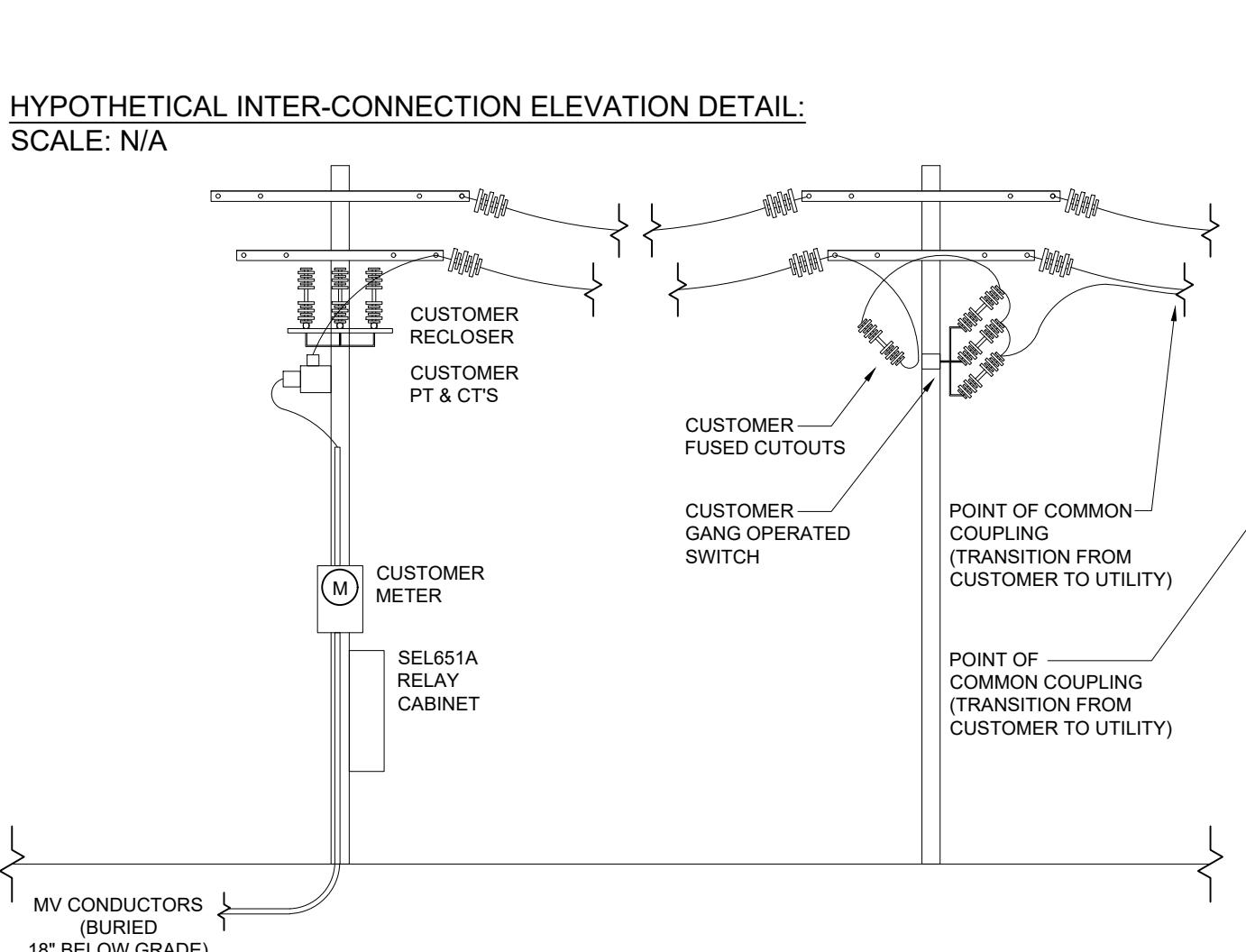
Standard(s): Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources (UL 1741-2010 Ed.2-R 15Feb2018)

Product: Grid interactive PV inverter

Brand Name: Yaskawa Solectria Solar

Models: XGI 1500-125/125, XGI 1500-125/150, XGI 1500-150/166, XGI 1500-166/166

HYPOTHETICAL INTER-CONNECTION ELEVATION DETAIL:



10% DESIGN PHASE DOCUMENTS. NOT FOR CONSTRUCTION OR BIDDING PURPOSES. FOR UTILITY SUBMITTAL ONLY

REVIEWED BY: J. GIGANTIETTO

DATE: 09 / 25 / 2019

REVISED:

1. N/A

2. N/A

3. N/A

4. N/A

5. N/A

SCALE: N/A

PAPER SIZE: 24" x 36"

ATM Issued: 31-Aug-2018

ED 16.3.15 (20-Apr-17) Mandatory

PV ARRAY:	1,279.80 KW (DC) / 1,000.00 KW (AC)
MODULES:	(3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES
STRING DESIGN:	(27) MODULES PER SOURCE CIRCUIT
INVERTERS:	(8) SOLECTRIA XG1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS
RACKING:	RBI FIXED TILT RACKING SYSTEM
TILT ANGLE:	25° DEG.
AZIMUTH:	180° DEG. - DUE SOLAR SOUTH
INTER-ROW SPACING:	12'-0"
DC / AC RATIO:	1.28 : 1

MV EQUIPMENT SCHEDULE						
DESCRIPTION	QTY	MANUFACTURER	MODEL	VOLTAGE RATING	CURRENT RATING	NOTES
CUSTOMER METER, PTS. CTS	(1)	TBD	TBD	TBD	TBD	TBD
GANG OPERATED SWITCH	(1)	S&C	TBD	15KV	200A	TBD
FUSED CUTOUT	(1)	S&C	TBD	15KV	200A	TBD
POWER POLE	(2)	TBD	TBD	TBD	TBD	TBD
SURGE ARRESTOR	(6)	TBD	TBD	TBD	TBD	TBD

PHOTOVOLTAIC PROJECT INFORMATION:	
1,279.80 KW (DC) / 1,000.00 KW (AC)	PV UTILITY INTERACTIVE SYSTEM
STONINGTON - A1 PROJECT	
35 TAUGWONK SPUR RD.	
STONINGTON, CT 06378	
AHJ: STONINGTON	
UTILITY: EVERSOURCE	
LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W	
ELEVATION: ±195 FT	
IRRADIANCE: 4.77 kWh / m² / DAY	
ASHRAE AVG LOW TEMP: -9.4°F / -23°C	
ASHRAE AVG HIGH TEMP: 89.6°F / 32°C	

PROJECT NUMBER: 446-14

PROJECT SHEET: E-4

SHEET TITLE: AC COLLECTION SYSTEM (3-LINE DIAGRAM)



PROJECT DEVELOPER:

GREEN SKIES  
(A CLEAN FOCUS COMPANY)  
180 JOHNSON ST  
MIDDLETON, CT 06457  
PHONE: 860.398.5408  
EMAIL: INFO@GREENSKIES.COM



SOLAR PV CONSULTANT:  
RENEWABLE DESIGN SOLUTIONS  
10945 ESTATE LANE  
SUITE E-105  
DALLAS, TX 75238  
PHONE: 214.564.9535  
WWW.RENEWABLEDESIGNSOLUTIONS.COM

ELECTRICAL ENGINEER:

JOE GIGANTIETTO PE (ELECTRICAL)  
PHONE: 267.882.5393  
EMAIL: JGIGANTIETTO@RDSSOLAR.COM



10/04/19

#### ANTI-ISLANDING LETTER:

**YASKAWA**

June 25, 2018

XGI 1500 – National Grid Anti-Islanding Information

**Identify the manufacturer:** Yaskawa – Solectria Solar

**Identify the model:** XGI 1500-166, XGI 1500-125

**Contact information for manufacturer contact:**

Product Manager  
Solectria Renewables, LLC  
978-683-9700 x137  
eric.everly@solectria.com

**Identify if the inverter is 3-phase or 1-phase:** 3 Phase

**Provide brief description of island detection method proposed:** Perturbation is applied by injecting a small amount of reactive power (or phase angle) into its output current during every cycle. The magnitude of the perturbation increases if the inverter detects an island condition.

**Does the inverter employ active or passive islanding detection? Provide documentation confirming that the islanding detection is “turned on” for the proposed inverter:** Active. The anti-islanding detection algorithm is hardcoded into the inverter operating firmware and cannot be disabled or “turned off” by the user.

**For active islanding detection, various methods are available in the market. Identify the type of detection proposed. Is the method based on Sandia Frequency Shift, Sandia Voltage Shift, Sandia Impedance Detection, or Other? If Other, specify:** The active islanding detection algorithm is based on the Sandia Frequency Shift Detection methodology.

**Does the active islanding detection employ a uni-directional or bi-directional perturbation?** Bi-directional

**Does the inverter use an isolating transformer?** No

**If yes, what is the low voltage phase to neutral voltage?** N/A

**How is the AC output voltage limited? Specifically, how do the inverter controls limit the AC output voltage when generation exceeds available load?** The inverter detects the AC voltage and converts available DC power to AC when the AC voltage is in normal range. Inverters do not limit the AC output voltage. Instead, if the AC voltage is higher than threshold, inverters stop operation (cease to energize) according to IEEE1547 standards.

**SOLECTRIA SOLAR**

Yaskawa Solectria Solar  
380 Merrimack Street  
Lawrence, MA 01843  
solectria.com

1-978-683-5700  
Email: inverters@solectria.com

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**YASKAWA**

#### INVERTER SETTINGS:

**YASKAWA**

January 16, 2019

RE: Voltage and Frequency Setpoints for XGI 1500-125/125-UL, XGI 1500-125/150-UL, XGI 1500-150/166-UL and XGI 1500-166/166-UL

To Whom It May Concern:

XGI 1500-125/125-UL, XGI 1500-125/150-UL, XGI 1500-150/166-UL and XGI 1500-166/166-UL utility interactive inverters will cease power production in the event of abnormal grid conditions. These voltage and frequency setpoints adhere to IEEE1547a-2014, which has the default setpoints and range of adjustability specified below.

Voltage Range (p.u.)	Default Clearing Time (s)	Clearing Time: adjustable up to and including (s)
V < 0.45	0.16	0.16
0.45 <= V < 0.60	1	11
0.60 <= V < 0.88	2	21
1.1 < V < 1.2	1	13
V >= 1.2	0.16	0.16

Response to Abnormal AC Voltage

Protective Function	Default Settings	Ranges of Adjustability		
Frequency (Hz)	Clearing Time (s)	Frequency (Hz)	Clearing Time: adjustable up to and including (s)	
81U-1	f < 57.0	0.16	56 - 60	10
81U-2	f < 59.5	2	56 - 60	300
81D-1	f > 60.5	2	60 - 64	300
81D-2	f > 62	0.16	60 - 64	10

Response to Abnormal Frequency

At the request of the utility, the adjustable settings specified can be changed through a password-protected menu on the user interface. Upon grid disturbances the inverter will wait 5 minutes after the grid voltage and frequency return to nominal values before attempting to reconnect. Please refer to the XGI 1500 Installation and Operations Manual for additional information.

Sincerely,

Emily Hwang | Applications Engineering Manager  
+1 978.636.9700 | emily.hwang@solectria.com

**SOLECTRIA SOLAR**

Yaskawa Solectria Solar  
380 Merrimack Street  
Lawrence, MA 01843  
solectria.com

1-978-683-5700  
Email: inverters@solectria.com

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**YASKAWA**

#### UL1741SA LISTING:

**Intertek**  
TOTAL Quality Assured.

**AUTHORIZATION TO MARK**

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. The authorization also applies to multiple listed model(s) identified on the correlation page of the Listing Report.

This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.

Applicant: Solectria Renewables LLC 380 Merrimack Street Bldg 9, Floor 2 LAWRENCE, MA 01843	Manufacturer: Yaskawa America Inc 1067 Johnson Drive Buffalo Grove, IL 60089
Country: USA	Country: USA
Contact: Wei Zhou (primary) Jihua Ma (alternate)	Contact: Arthur Folta (primary) Joe Kleczkowski (alternate)
Phone: (978) 683-9700	Phone: 847-887-7555 (primary)
FAX: (978) 683-9702	FAX: 414-956-2301
Email: wei.zhou@solectria.com	Email: arthur.folta@yaskawa.com

Party Authorized To Apply Mark: Same as Manufacturer  
Report Issuing Office: Conford NY 13045  
Control Number: 5010538  
Authorized by: *David J. Folta*  
for Dean Davidson, Certification Manager

**ETL US**  
Intertek

This document supersedes all previous Authorizations to Mark for the noted Report Number.

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Intertek Testing Services NA Inc  
645 East Algonquin Road, Schaumburg, IL 60065  
Telephone 800-345-3861 or 847-429-6667, Fax 312-283-1672

Standard(s): Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources (DERS) - UL1741-2010 Ed 2-R15-eb2018

Product: Grid Interactive PV inverter

Brand Name: Yaskawa Solectria Solar

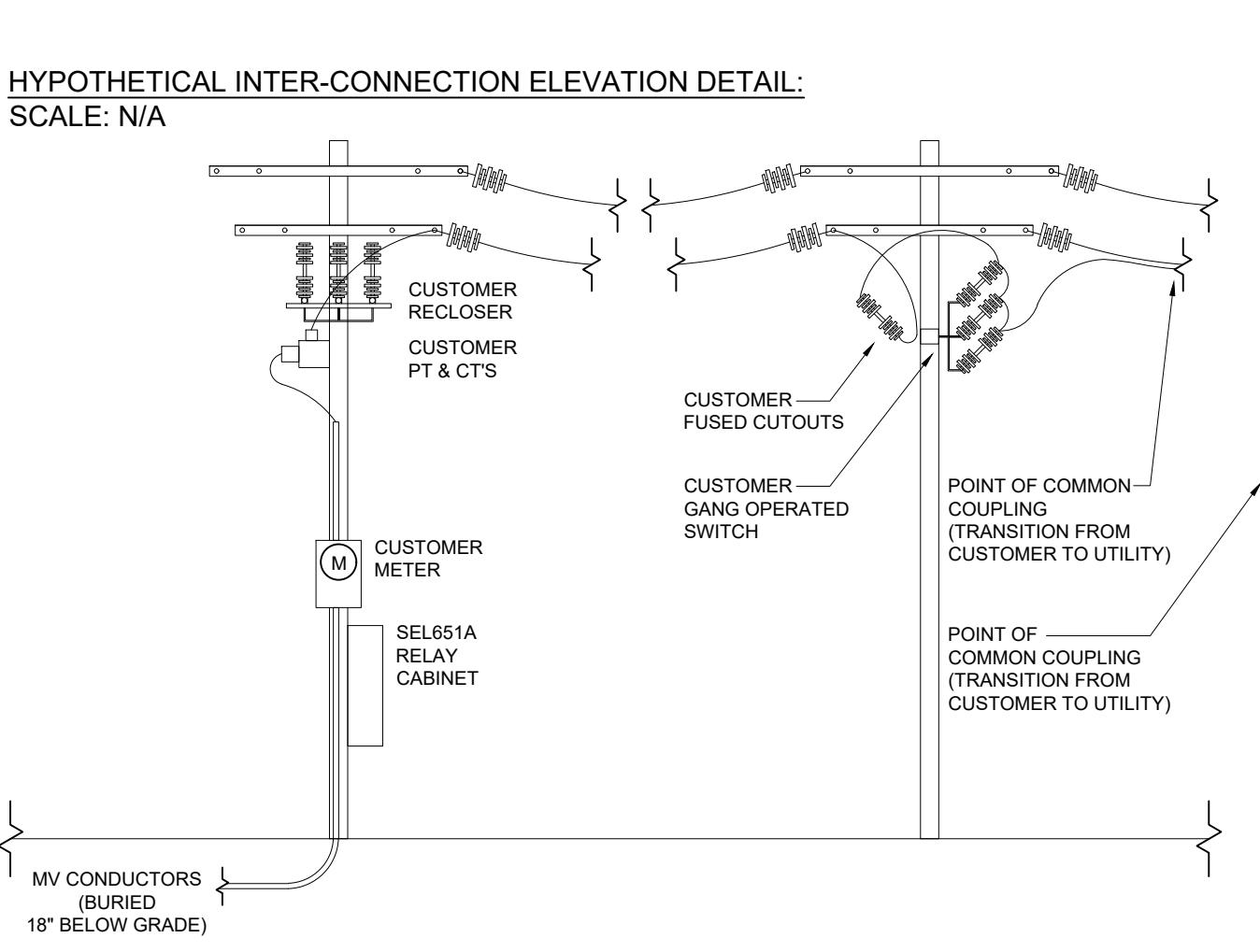
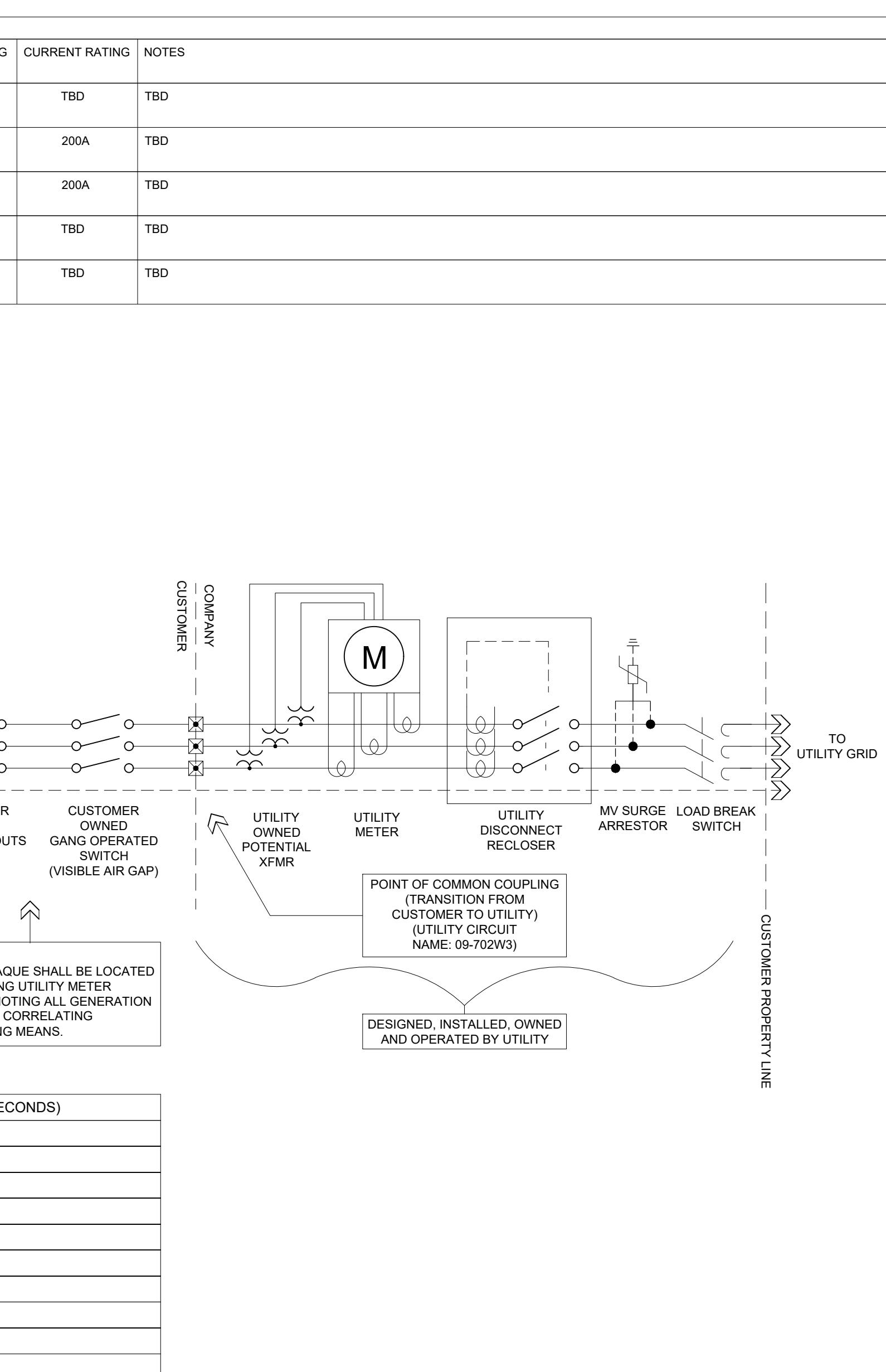
Models: XGI 1500-125/125, XGI 1500-125/150, XGI 1500-150/166, XGI 1500-166/166

ATM for Report 103561512CRT-001c

ATM Issued: 31-Aug-2018  
ED 16.3.15 (20-Apr-17) Mandatory

REVISED:  
1. N/A  
2. N/A  
3. N/A  
4. N/A  
5. N/A

SCALE: N/A  
PAPER SIZE: 24" x 36"



10% DESIGN PHASE DOCUMENTS. NOT FOR CONSTRUCTION OR BIDDING PURPOSES. FOR UTILITY SUBMITTAL ONLY

REVIEWED BY: J. GIGANTIETTO  
DATE: 09 / 25 / 2019

REVISED:  
1. N/A  
2. N/A  
3. N/A  
4. N/A  
5. N/A

SCALE: N/A  
PAPER SIZE: 24" x 36"

## PHOTOVOLTAIC PROJECT INFORMATION:

1,279.80 KW (DC) / 1,000.00 KW (AC)  
PV UTILITY INTERACTIVE SYSTEM

STONINGTON - A2 PROJECT

35 TAUGWONK SPUR RD.

STONINGTON, CT 06378

AHJ: STONINGTON

UTILITY: EVERSOURCE

LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
ELEVATION: ±195 FT  
IRRADIANCE: 4.77 KWH / M<sup>2</sup> / DAYASHRAE AVG LOW TEMP: -9.4°F / -23°C  
ASHRAE AVG HIGH TEMP: 89.6°F / 32°C

PROJECT NUMBER:

446-14

PROJECT SHEET:

L-1A

SHEET TITLE:  
SITE PLAN &  
ARRAY LAYOUT

PROJECT DEVELOPER:

GREEN SKIES

(A CLEAN FOCUS COMPANY)

180 JOHNSON ST

MIDDLETON, CT 06457

PHONE: 860.398.5408

EMAIL: INFO@GREENSKIES.COM



SOLAR PV CONSULTANT:

RENEWABLE DESIGN SOLUTIONS

10945 ESTATE LANE

SUITE E-105

DALLAS, TX 75238

PHONE: 214.564.9535

WWW.RENEWABLEDESIGNSOLUTIONS.COM

ELECTRICAL ENGINEER:

JOE GIGANTIELLO PE (ELECTRICAL)

PHONE: 267.882.5393

EMAIL: JGIGANTIELLO@RDSSOLAR.COM



10/04/19

PV ARRAY: 1,279.80 KW (DC) / 1,000.00 KW (AC)

MODULES: (3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES

STRING DESIGN: (27) MODULES PER SOURCE CIRCUIT

INVERTERS: (8) SOLECTRIA XG1500-125/125 (125KW / 125kVA AC) UTILITY INTERACTIVE INVERTERS

RACKING: RBI FIXED TILT RACKING SYSTEM

TIILT ANGLE: 25° DEG.

AZIMUTH: 180° DEG. - DUE SOLAR SOUTH

INTER-ROW SPACING: 12'-0"

DC / AC RATIO: 1.28 : 1



HAUGWONK HOLLOW

N.F.

ISOBEL M. TOLK &amp;

SUZANNE V. TOOKO

DEED 445-481

OVERHEAD ELECTRICAL  
SERVICE AND UTILITY  
POLES TO FOLLOW SOUTH  
SIDE OF EXIST GRAVEL  
DRIVE. UTILITY POLES  
SHALL SPAN WETLAND  
AREAS WHERE POSSIBLE.

50'-PROPERTY SETBACK (LI-130 SIDE)

100' WETLAND  
BUFFER100' WETLAND  
BUFFER100' WETLAND  
BUFFER100' WETLAND  
BUFFER(EXISTING)  
PROPERTY LINENOTE:  
AREAS DEDICATED TO ALTERNATE  
UTILITY SUBMITTAL  
INTER-CONNECTION.THE FOLLOWING DRAWINGS  
ILLUSTRATES (1) OF (6) PROPOSED  
INTERCONNECTIONS.PROPOSED INTERCONNECTIONS WILL  
BE DESIGNATED AS THE FOLLOWING  
NAMES: A1, A2, A3, B1, B2, B3.

75'-PROPERTY SETBACK (GBR-130 FRONT)

75'-PROPERTY SETBACK (GBR-130 REAR)

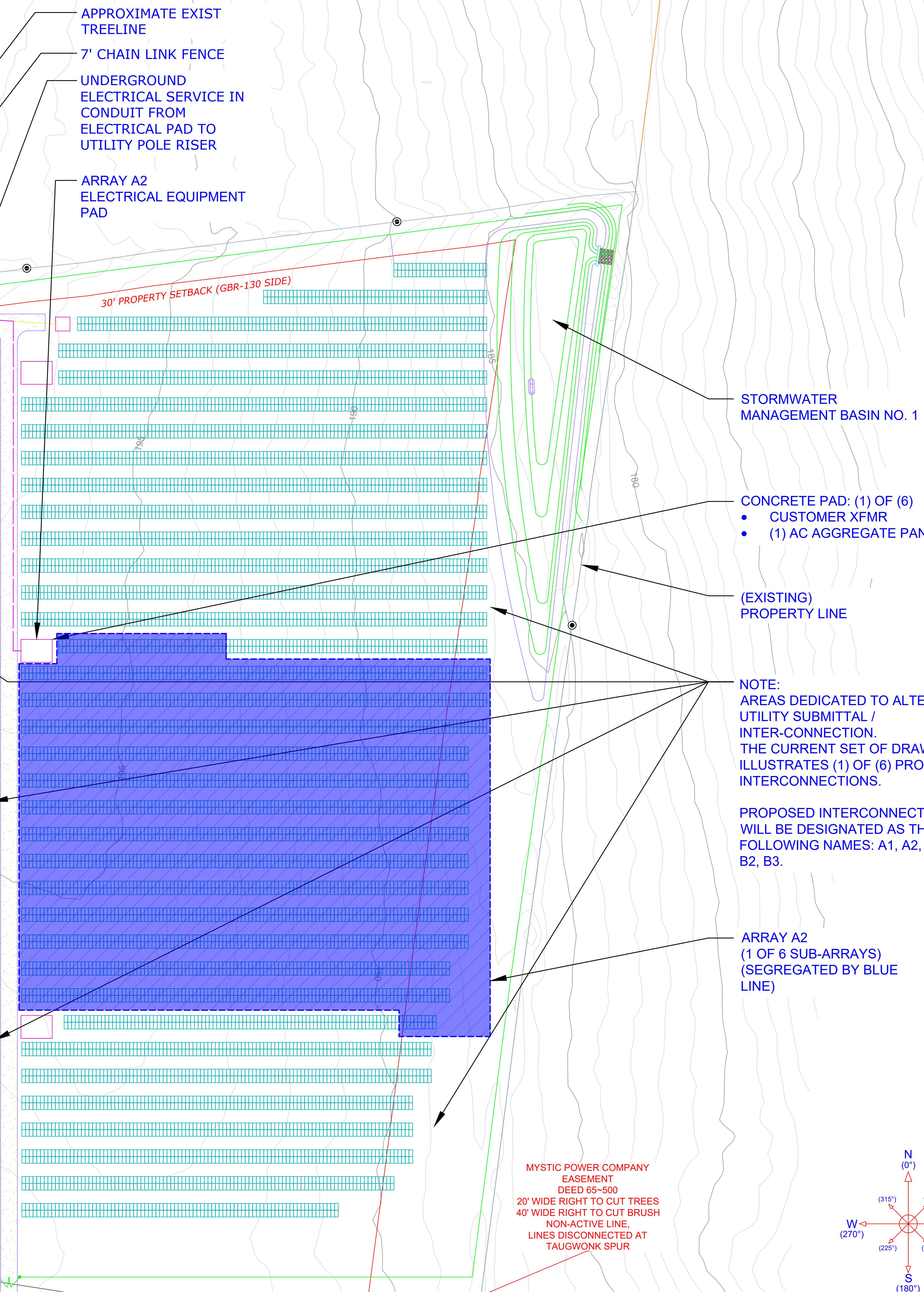
75'-PROPERTY SETBACK (GBR-130 SIDE)

100'-PROPERTY SETBACK (GBR-130 REAR)

100'-PROPERTY SETBACK (GBR-130 SIDE)

**PV ARRAY:** 1,279.80 KW (DC) / 1,000.00 KW (AC)  
**MODULES:** (3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES  
**STRING DESIGN:** (27) MODULES PER SOURCE CIRCUIT  
**INVERTERS:** (8) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS  
**RACKING:** RBI FIXED TILT RACKING SYSTEM  
**TIPT ANGLE:** 25° DEG.  
**AZIMUTH:** 180° DEG. - DUE SOLAR SOUTH  
**INTER-ROW SPACING:** 12'-0"  
**DC / AC RATIO:** 1.28 : 1

**7' CLF SWING GATE**  
**OVERHEAD ELECTRICAL SERVICE AND UTILITY POLES (TYP)**  
**12' RCP**  
**100' WETLAND BUFFER**  
**75' PROPERTY SETBACK (GBR-130 FRONT)**



**PHOTOVOLTAIC PROJECT INFORMATION:**  
 1,279.80 KW (DC) / 1,000.00 KW (AC)  
 PV UTILITY INTERACTIVE SYSTEM  
 STONINGTON - A2 PROJECT  
 35 TAUGWONK SPUR RD.  
 STONINGTON, CT 06378  
 AHJ: STONINGTON  
 UTILITY: EVERSOURCE  
 LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
 ELEVATION: ±195 FT  
 IRRADIANCE: 4.77 KWH / M<sup>2</sup> / DAY  
 ASHRAE AVG LOW TEMP: -9.4°F / -23°C  
 ASHRAE AVG HIGH TEMP: 89.6°F / 32°C

PROJECT NUMBER: 446-14

PROJECT SHEET: L-1B

sheet title:  
site plan &  
array layout  
(enlarged)



PROJECT DEVELOPER:

GREEN SKIES  
(A CLEAN FOCUS COMPANY)  
180 JOHNSON ST  
MIDDLETON, CT 06457  
PHONE: 860.398.5408  
EMAIL: INFO@GREENSKIES.COM



SOLAR PV CONSULTANT:  
RENEWABLE DESIGN SOLUTIONS  
10945 ESTATE LANE  
SUITE E-105  
DALLAS, TX 75238  
PHONE: 214.564.9535  
WWW.RENEWABLEDESIGNSOLUTIONS.COM

ELECTRICAL ENGINEER:

JOE GIGANTIETTO PE (ELECTRICAL)  
PHONE: 267.882.5393  
EMAIL: JGIGANTIETTO@RDSSOLAR.COM



10/04/19

10% DESIGN PHASE  
DOCUMENTS. NOT FOR  
CONSTRUCTION OR BIDDING  
PURPOSES. FOR UTILITY  
SUBMITTAL ONLY

REVIEWED BY: J. GIGANTIETTO

DATE: 09 / 25 / 2019

REVISED:

1. N/A
2. N/A
3. N/A
4. N/A
5. N/A

SCALE: 1" = 50'-0"

PAPER SIZE: 24" x 36"



PV ARRAY: 1,279.80 KW (DC) / 1,000.00 KW (AC)

MODULES: (3240) LG SOLAR LG395N2W-A5 MONO 395W MODULES

STRING DESIGN: (27) MODULES PER SOURCE CIRCUIT

INVERTERS (8) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS

RACKING: RBI FIXED TILT RACKING SYSTEM

TIILT ANGLE: 25° DEG.

AZIMUTH: 180° DEG. - DUE SOLAR SOUTH

INTER-ROW SPACING: 12'-0"

DC / AC RATIO: 1.28 : 1

/ EQUIPMENT SCHEDULE						
DESCRIPTION	QTY	MANUFACTURER	MODEL	VOLTAGE RATING	CURRENT RATING	NOTES
CUSTOMER METER, 'S, CTS	(1)	TBD	TBD	TBD	TBD	TBD
ANG OPERATED ITCH	(1)	S&C	TBD	15KV	200A	TBD
USED CUTOUT	(1)	S&C	TBD	15KV	200A	TBD
OWER POLE	(2)	TBD	TBD	TBD	TBD	TBD
RGE ARRESTOR	(6)	TBD	TBD	TBD	TBD	TBD

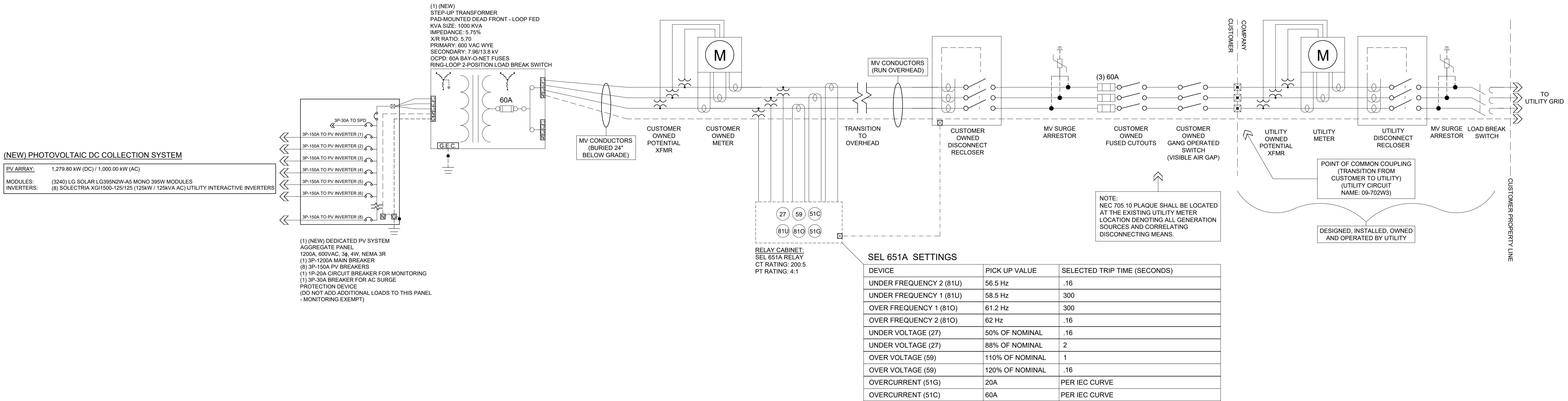
TO VOLTAIC PROJECT INFORMATION:  
9.80 KW (DC) / 1,000.00 KW (AC)  
UTILITY INTERACTIVE SYSTEM  
STONINGTON - A2 PROJECT  
TAUGWONK SPUR RD.  
STONINGTON, CT 06378  
OWNER: STONINGTON  
UTILITY: EVERSOURCE  
LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
ELEVATION: ±195 FT  
IRRADIANCE: ±4.77 KWH / M<sup>2</sup> / DAY

RAE AVG HIGH TEMP. 89

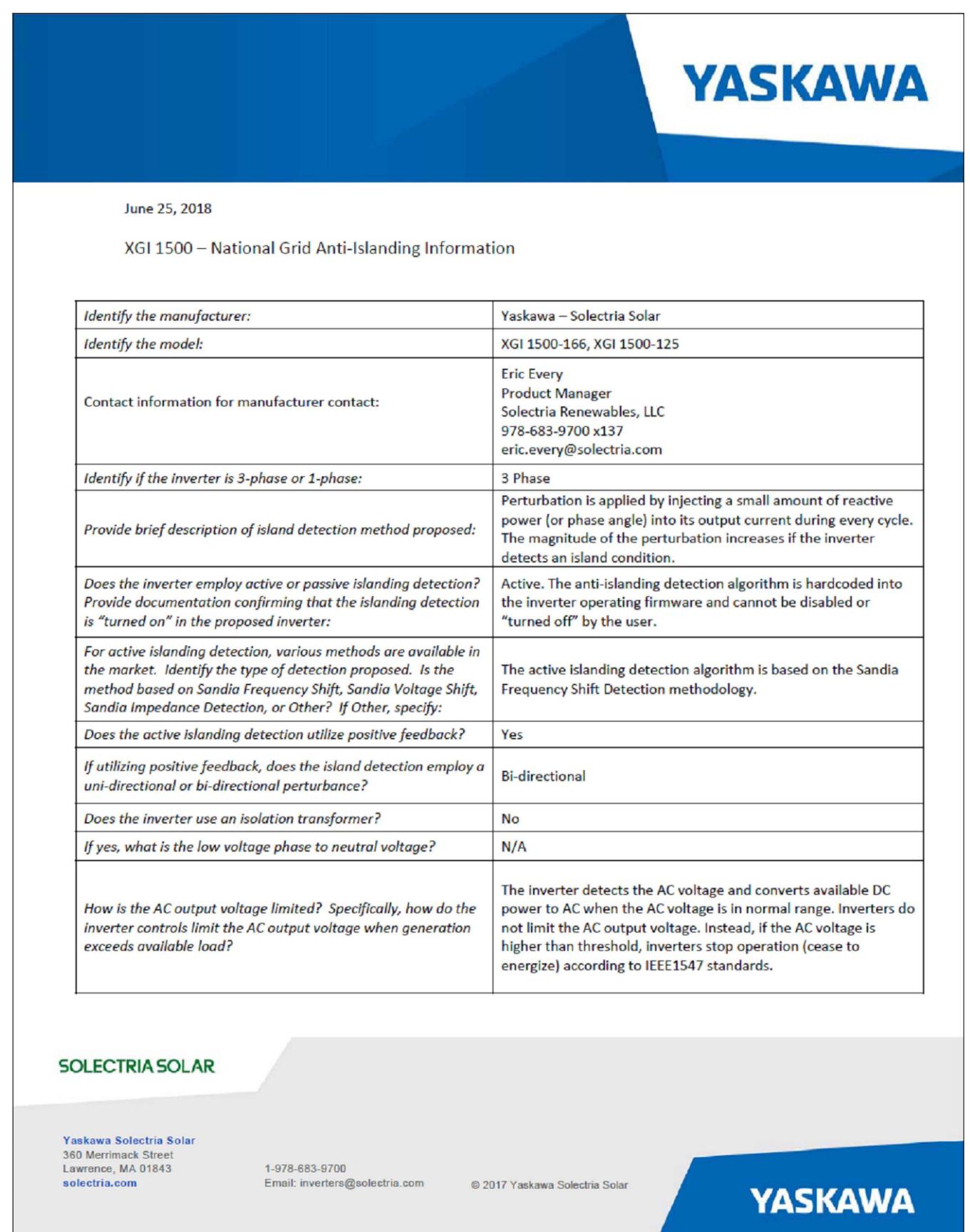
446-14

2

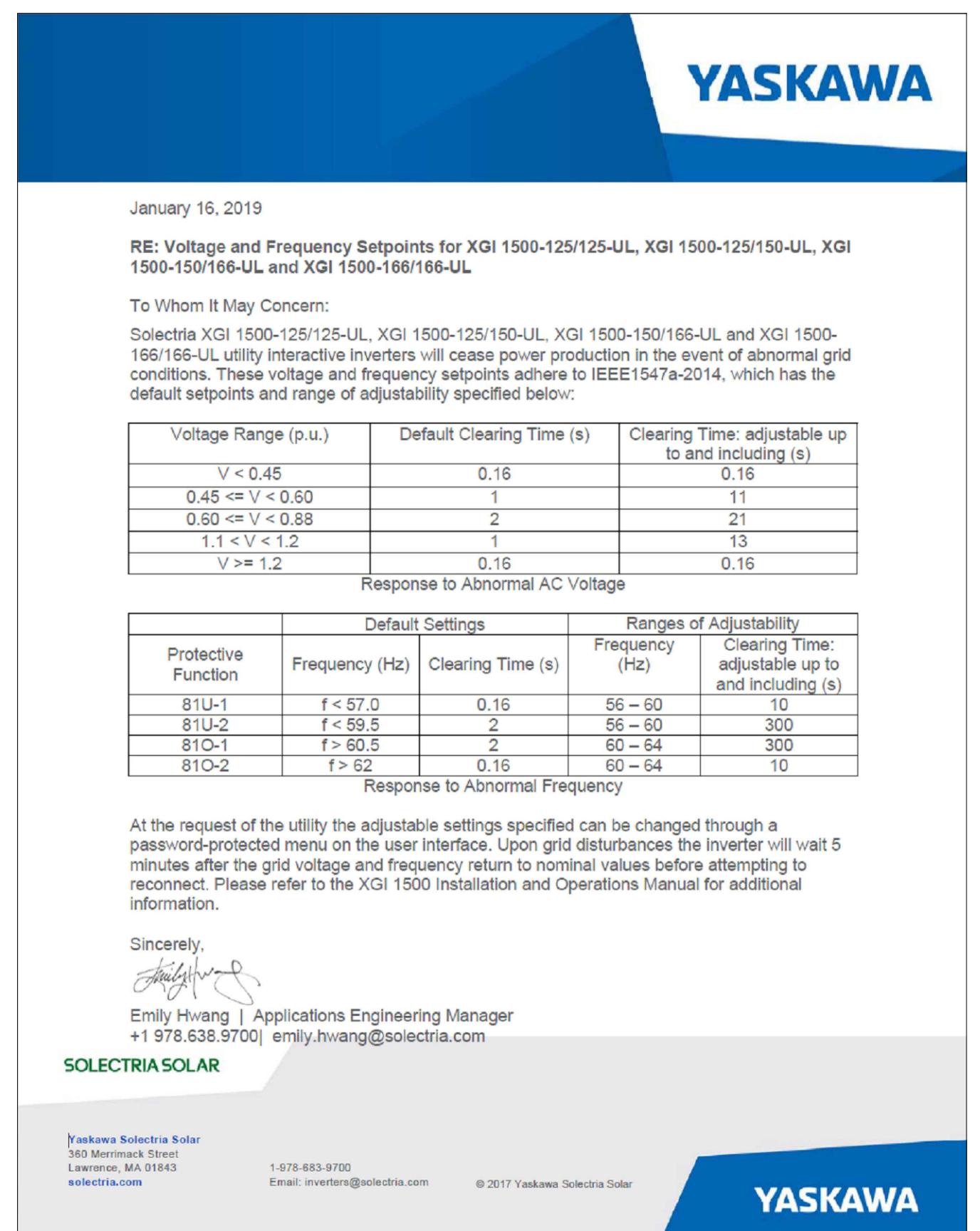
## AC COLLECTION SYSTEM (3-LINE DIAGRAM)



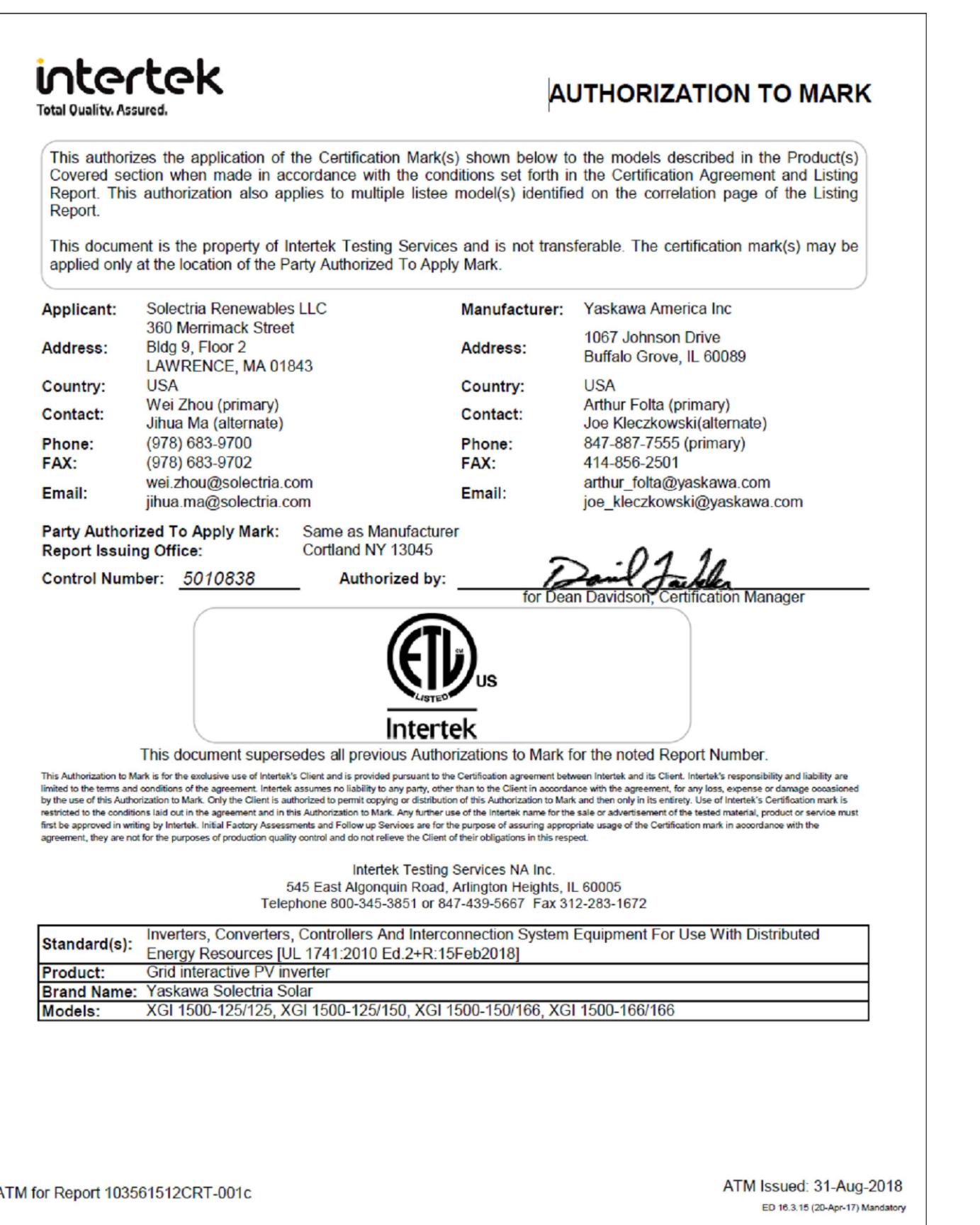
## ANTI-ISLANDING LETTER:



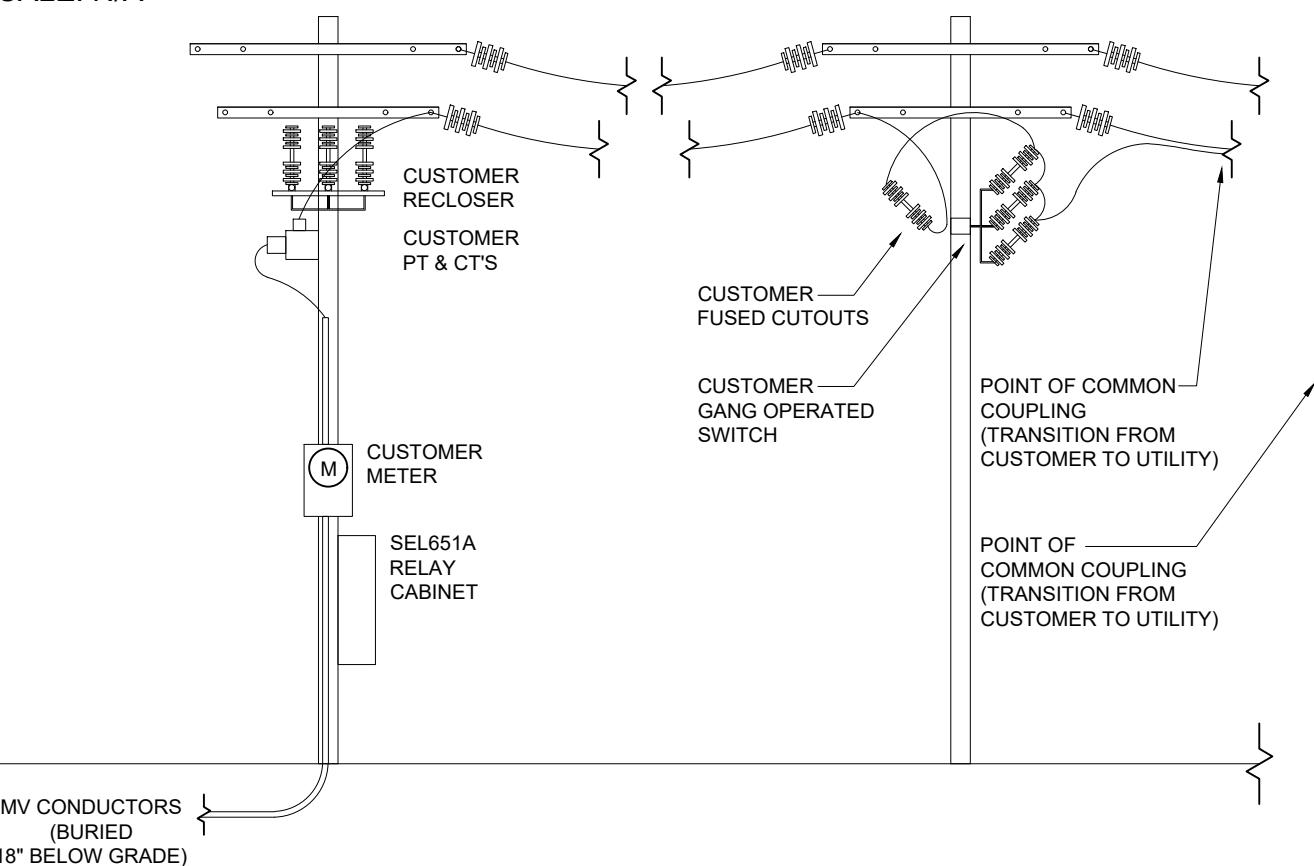
## INVERTER SETTINGS:



## L1741SA LISTING:



HYPOTHETICAL INTER-CONNECTION ELEVATION DETAIL:  
SCALE: N/A



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CONSTRUCTION OR BIDDING  
PURPOSES. FOR UTILITY  
SUBMITTAL ONLY

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REVIEWED BY: J. GIGANTIELLO

DATE: 09 / 25 / 2011

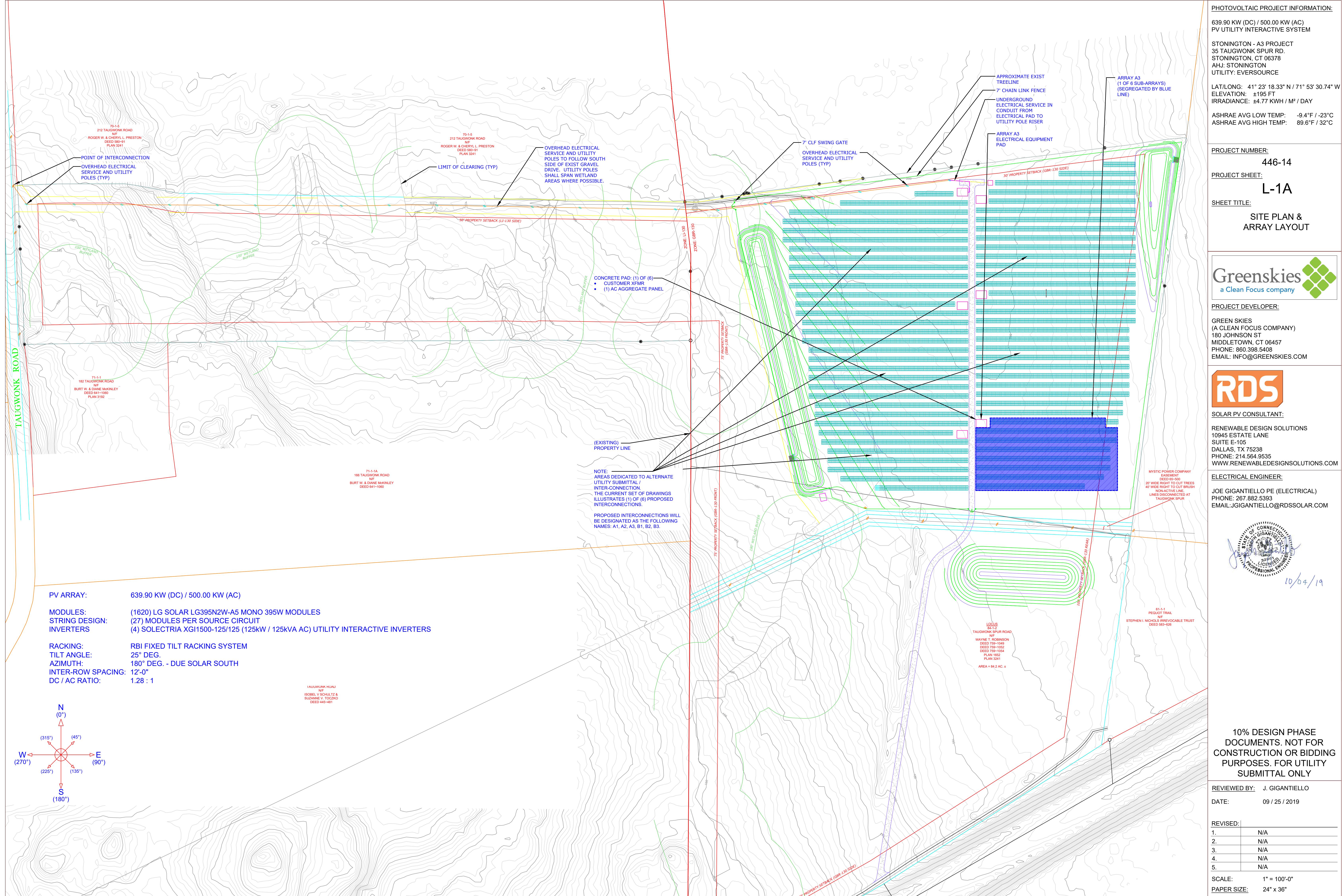
REVISED: N/A

N/A

N/A

N/A

CALE: N/A





PV ARRAY:	639.90 kW (DC) / 500.00 kW (AC)
MODULES:	(1620) LG SOLAR LG395N2W-A5 MONO 395W MODULES
STRING DESIGN:	(27) MODULES PER SOURCE CIRCUIT
INVERTERS	(4) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS
RACKING:	RBI FIXED TILT RACKING SYSTEM
TILT ANGLE:	25° DEG.
AZIMUTH:	180° DEG. - DUE SOLAR SOUTH
INTER-ROW SPACING:	12'-0"
DC / AC RATIO:	1.28 : 1

MV EQUIPMENT SCHEDULE						
DESCRIPTION	QTY	MANUFACTURER	MODEL	VOLTAGE RATING	CURRENT RATING	NOTES
CUSTOMER METER, PTS, CTS	(1)	TBD	TBD	TBD	TBD	TBD
GANG OPERATED SWITCH	(1)	S&C	TBD	15KV	200A	TBD
FUSED CUTOUT	(1)	S&C	TBD	15KV	200A	TBD
POWER POLE	(2)	TBD	TBD	TBD	TBD	TBD
SURGE ARRESTOR	(6)	TBD	TBD	TBD	TBD	TBD

PHOTOVOLTAIC PROJECT INFORMATION:  
 639.90 kW (DC) / 500.00 kW (AC)  
 PV UTILITY INTERACTIVE SYSTEM  
 STONINGTON - A3 PROJECT  
 35 TAUGWONK SPUR RD.  
 STONINGTON, CT 06378  
 AHJ: STONINGTON  
 UTILITY: EVERSOURCE  
 LAT/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
 ELEVATION: ±195 FT  
 IRRADIANCE: 14.77 kWh / m² / DAY  
 ASHRAE AVG LOW TEMP: -9.4°F / -23°C  
 ASHRAE AVG HIGH TEMP: 89.6°F / 32°C

PROJECT NUMBER:

446-14

PROJECT SHEET:

E-3

SHEET TITLE:

AC COLLECTION SYSTEM  
(1-LINE DIAGRAM)



PROJECT DEVELOPER:

GREEN SKIES  
(A CLEAN FOCUS COMPANY)  
180 JOHNSON ST  
MIDDLETON, CT 06457  
PHONE: 860.398.5408  
EMAIL: INFO@GREENSKIES.COM



SOLAR PV CONSULTANT:

RENEWABLE DESIGN SOLUTIONS  
10945 ESTATE LANE  
SUITE E-105  
DALLAS, TX 75238  
PHONE: 214.564.9535  
WWW.RENEWABLEDESIGNSOLUTIONS.COM

ELECTRICAL ENGINEER:

JOE GIGANTIETTO PE (ELECTRICAL)  
PHONE: 267.882.5393  
EMAIL: JGIGANTIETTO@RDSSOLAR.COM



10/04/19

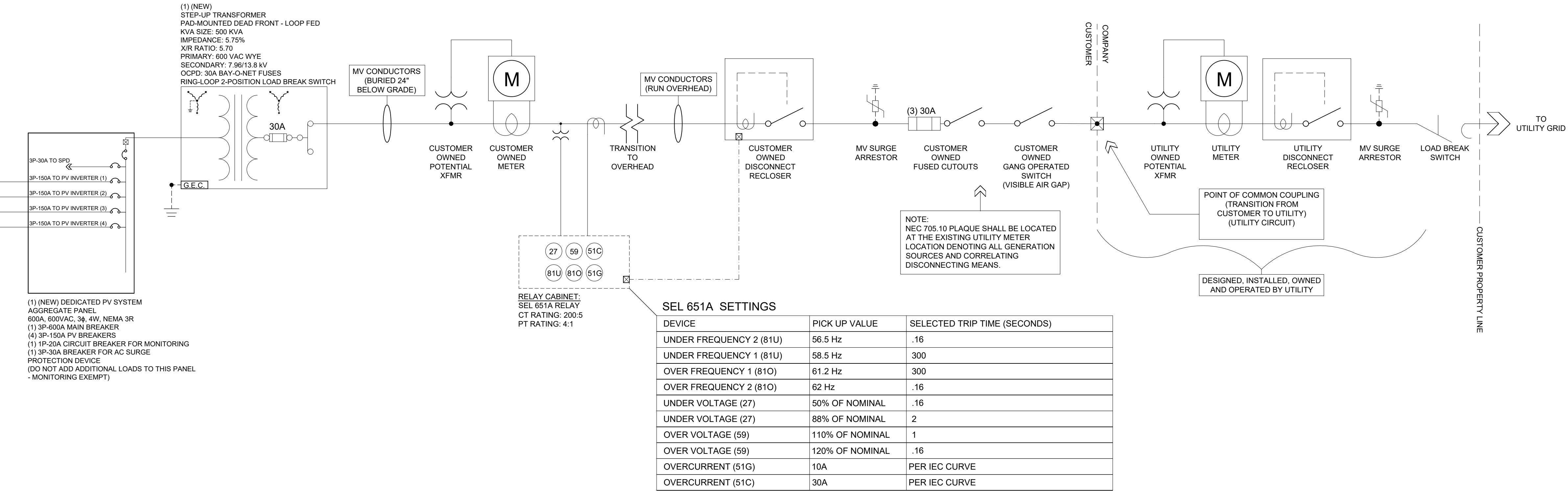
(NEW) PHOTOVOLTAIC DC COLLECTION SYSTEM

PV ARRAY:	639.90 kW (DC) / 500.00 kW (AC)
MODULES:	(1620) LG SOLAR LG395N2W-A5 MONO 395W MODULES
INVERTERS:	(4) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS

POLARITY:

(1) (NEW) DEDICATED PV SYSTEM AGGREGATE PANEL

000A 300VDC 34° NEMA 3R  
 (1) 3P-150A MAIN BREAKER  
 (4) 3P-150A PV BREAKERS  
 (1) 1P-20A CIRCUIT BREAKER FOR MONITORING  
 (1) 3P-30A BREAKER FOR AC SURGE  
 PROTECTION DEVICE  
 (DO NOT ADD ADDITIONAL LOADS TO THIS PANEL  
 - MONITORING EXEMPT)



ANTI-ISLANDING LETTER:



June 25, 2018

XGI 1500 – National Grid Anti-Islanding Information

Identify the manufacturer:	Yaskawa – Solectria Solar
Identify the model:	XGI 1500-166, XGI 1500-125
Contact information for manufacturer contact:	
Eric Every	Product Manager Solectria Renewables, LLC 978-683-9700 x137 eric.every@solectria.com
Identify if the inverter is 3-phase or 1-phase:	3 Phase
Provide brief description of island detection method proposed:	Perturbation is applied by injecting a small amount of reactive power (or phase angle) into its output current during every cycle. The magnitude of the perturbation increases if the inverter detects an island condition.
Does the inverter employ active or passive islanding detection? Provide documentation confirming that the islanding detection is "turned on" in the proposed inverter:	Active. The anti-islanding detection algorithm is hardcoded into the inverter operating firmware and cannot be disabled or "turned off" by the user.
For active islanding detection, various methods are available in the market. Identify the type of detection proposed. Is the method based on Sandia Frequency Shift, Sandia Voltage Shift, Frequency Shift Detection, or Other? If Other, specify:	The active islanding detection algorithm is based on the Sandia Frequency Shift Detection methodology.
Does the active islanding detection utilize positive feedback?	Yes
If utilizing positive feedback, does the island detection employ a uni-directional or bi-directional perturbation?	Bi-directional
Does the inverter use an isolation transformer?	No
If yes, what is the low voltage phase to neutral voltage?	N/A
How is the AC output voltage limited? Specifically, how do the inverter controls limit the AC output voltage when generation exceeds available load?	The inverter detects the AC voltage and converts available DC power to AC when the AC voltage is in normal range. Inverters do not limit the AC output voltage. Instead, if the AC voltage is higher than threshold, inverters stop operation (cease to energize) according to IEEE1547 standards.

SOLECTRIA SOLAR

Yaskawa Solectria Solar  
300 Merrimack Street  
Lawrence, MA 01843  
solectria.com

INVERTER SETTINGS:



January 16, 2019

RE: Voltage and Frequency Setpoints for XGI 1500-125/125-UL, XGI 1500-125/150-UL, XGI 1500-150/166-UL and XGI 1500-166/166-UL

To Whom It May Concern:  
 Selectria XGI 1500-125/125-UL, XGI 1500-125/150-UL, XGI 1500-150/166-UL and XGI 1500-166/166-UL utility interactive Inverters will cease power production in the event of abnormal grid conditions. These voltage and frequency setpoints adhere to IEEE1547-2014, which has the default setpoints and range of adjustability specified below:

Voltage Range (p.u.)	Default Clearing Time (s)	Clearing Time: adjustable up to and including (s)
V < 0.45	0.16	0.16
0.45 <= V < 0.60	1	11
0.60 <= V < 0.88	2	21
1.1 < V < 1.2	1	13
V >= 1.2	0.16	0.16

Response to Abnormal AC Voltage

Protective Function	Default Settings	Ranges of Adjustability
	Frequency (Hz)	Clearing Time (s)
81U-1	f < 57.0	0.16
81U-2	f > 59.5	2
81O-1	f > 60.5	2
81O-2	f > 62	0.16

Response to Abnormal Frequency

At the request of the utility, the adjustable settings specified can be changed through a password-protected menu on the user interface. Upon grid disturbances the inverter will wait 5 minutes after the grid voltage and frequency return to nominal values before attempting to reconnect. Please refer to the XGI 1500 Installation and Operations Manual for additional information.

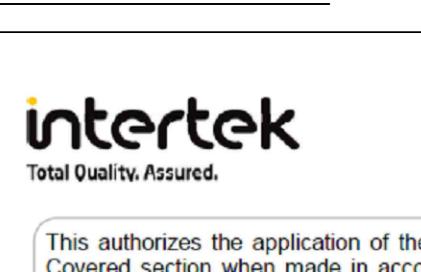
Sincerely,

Emily Hwang | Applications Engineering Manager  
+1 978.683.9700 | emily.hwang@solectria.com

SOLECTRIA SOLAR

Yaskawa Solectria Solar  
300 Merrimack Street  
Lawrence, MA 01843  
solectria.com

UL1741SA LISTING:



AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the model(s) described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

This document is the property of Intertek Testing Services and is not transferable. The certification mark(s) may be applied only at the location of the Party Authorized To Apply Mark.

Applicant: Selectria Renewables LLC  
300 Merrimack Street  
Bldg 9, Floor 2  
LAWRENCE, MA 01843  
Country: USA  
Contact: Wei Zhou (primary)  
Jihua Ma (alternate)  
Phone: (978) 683-9700  
FAX: (978) 683-9702  
Email: wei.zhou@solectria.com  
jihua.ma@solectria.com

Party Authorized To Apply Mark: Same as Manufacturer  
Report Issuing Office: Cortland NY 13045

Control Number: 5010838 Authorized by:



This document supersedes all previous Authorizations to Mark for the noted Report Number.  
 This Authorization to Mark is for the exclusive use of Intertek and is provided pursuant to the Certification agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party other than the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Authorization to Mark. Intertek's liability is limited to the amount of the fees and expenses paid to Intertek for the issuance of this Authorization to Mark. Any further use of the Intertek name for the sale or advertisement of the tested material, product or service must be approved in writing by Intertek. Intertek, Intertek Facility Assessments and Facility Services are the purpose of assuring appropriate usage of the Certification mark in accordance with the agreement. They are not for the purpose of product quality control and do not represent Intertek's quality control system.

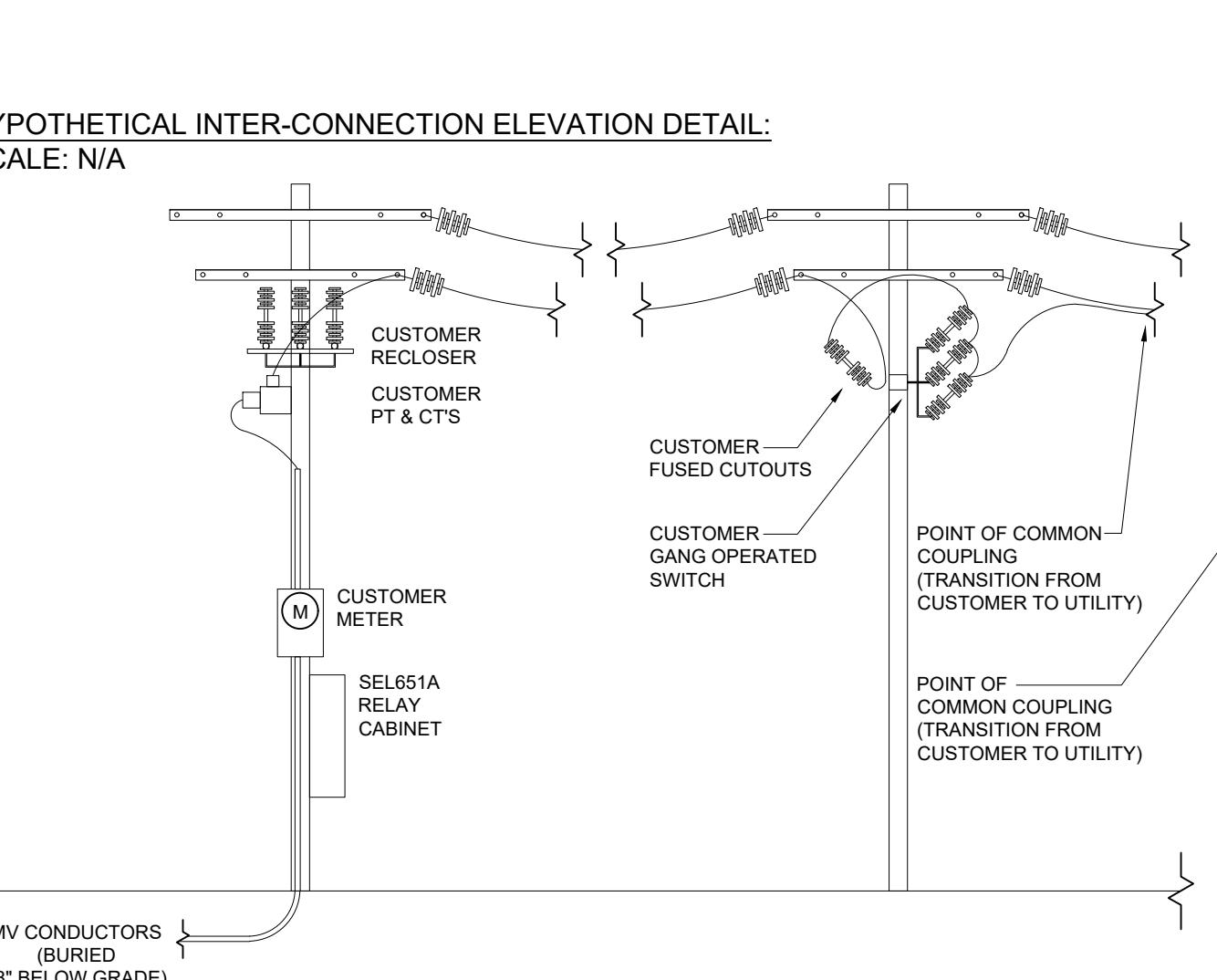
Intertek Testing Services NA Inc.  
545 East Algonquin Road, Arlington Heights, IL 60005  
Telephone 800-345-8851 or 847-435-6667 Fax 312-283-1672

Standard(s): Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources (UL 1741-2010 Ed.2-R 15Feb2018)  
 Product: Grid interactive PV inverter  
 Brand Name: Yaskawa Solectria Solar  
 Models: XGI 1500-125/125, XGI 1500-125/150, XGI 1500-150/166, XGI 1500-166/166

ATM Issued: 31-Aug-2018

ED 16.3.15 (20-Apr-17) Mandatory

HYPOTHETICAL INTER-CONNECTION ELEVATION DETAIL:  
SCALE: N/A



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CONSTRUCTION OR BIDDING  
PURPOSES. FOR UTILITY  
SUBMITTAL ONLY

REVIEWED BY: J. GIGANTIETTO

PV ARRAY: 639.90 KW (DC) / 500.00 KW (AC)

MODULES: (1620) LG SOLAR LG395N2W-A5 MONO 395W MODULES

STRING DESIGN: (27) MODULES PER SOURCE CIRCUIT

INVERTERS (4) SOLECTRIA XGI1500-125/125 (125kW / 125kVA AC) UTILITY INTERACTIVE INVERTERS

RACKING: RBI FIXED TILT RACKING SYSTEM

TIILT ANGLE: 25° DEG.

AZIMUTH: 180° DEG. - DUE SOLAR SOUTH

INTER-ROW SPACING: 12'-0"

DC / AC RATIO: 1.28 : 1

EQUIPMENT SCHEDULE						
DESCRIPTION	QTY	MANUFACTURER	MODEL	VOLTAGE RATING	CURRENT RATING	NOTES
STOMER METER, , CTS	(1)	TBD	TBD	TBD	TBD	TBD
NG OPERATED TCH	(1)	S&C	TBD	15KV	200A	TBD
ED CUTOUT	(1)	S&C	TBD	15KV	200A	TBD
VER POLE	(2)	TBD	TBD	TBD	TBD	TBD
RGE ARRESTOR	(6)	TBD	TBD	TBD	TBD	TBD

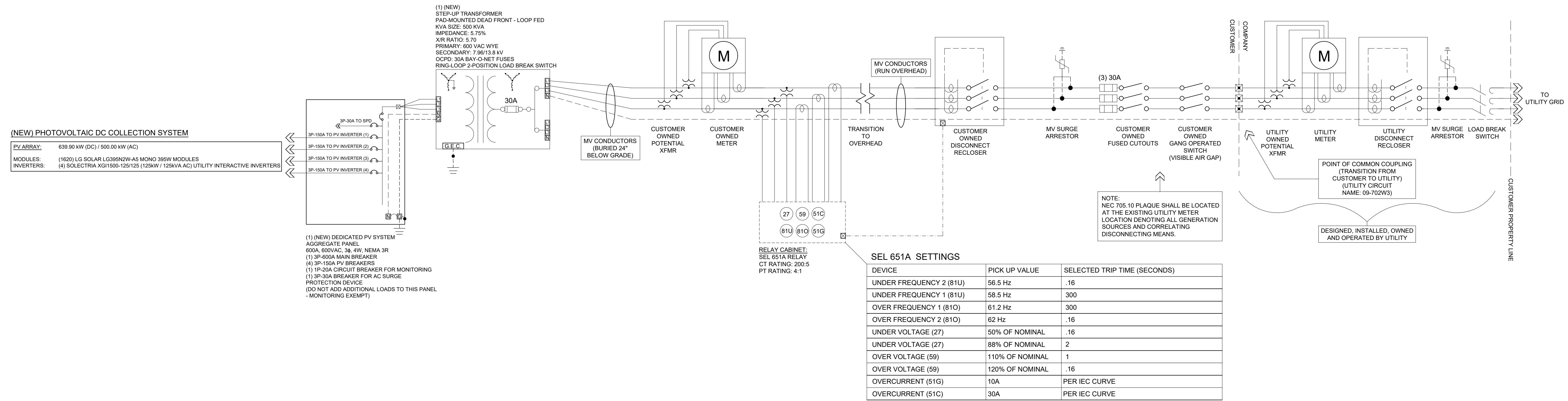
PHOTOVOLTAIC PROJECT INFORMATION:  
90 KW (DC) / 500.00 KW (AC)  
UTILITY INTERACTIVE SYSTEM  
STONINGTON - A3 PROJECT  
TAUGWONK SPUR RD.  
STONINGTON, CT 06378  
STONINGTON  
UTILITY: EVERSOURCE  
/LONG: 41° 23' 18.33" N / 71° 53' 30.74" W  
ELEVATION: ±195 FT  
IADIANCE: ±4.77 KWH / M<sup>2</sup> / DAY

CHRAE AVG HIGH TEMP: 89.6°F / 32°C

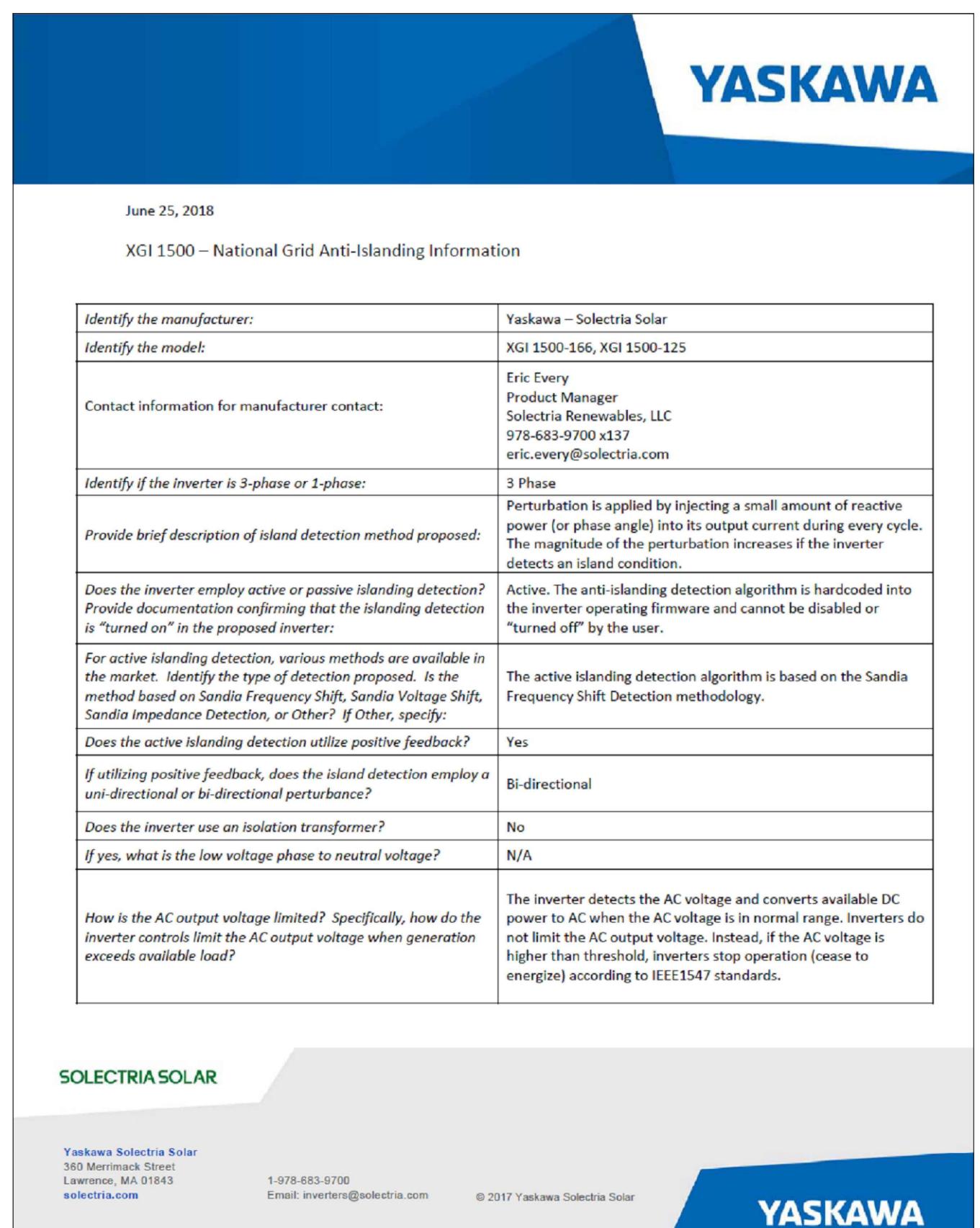
446-14

2

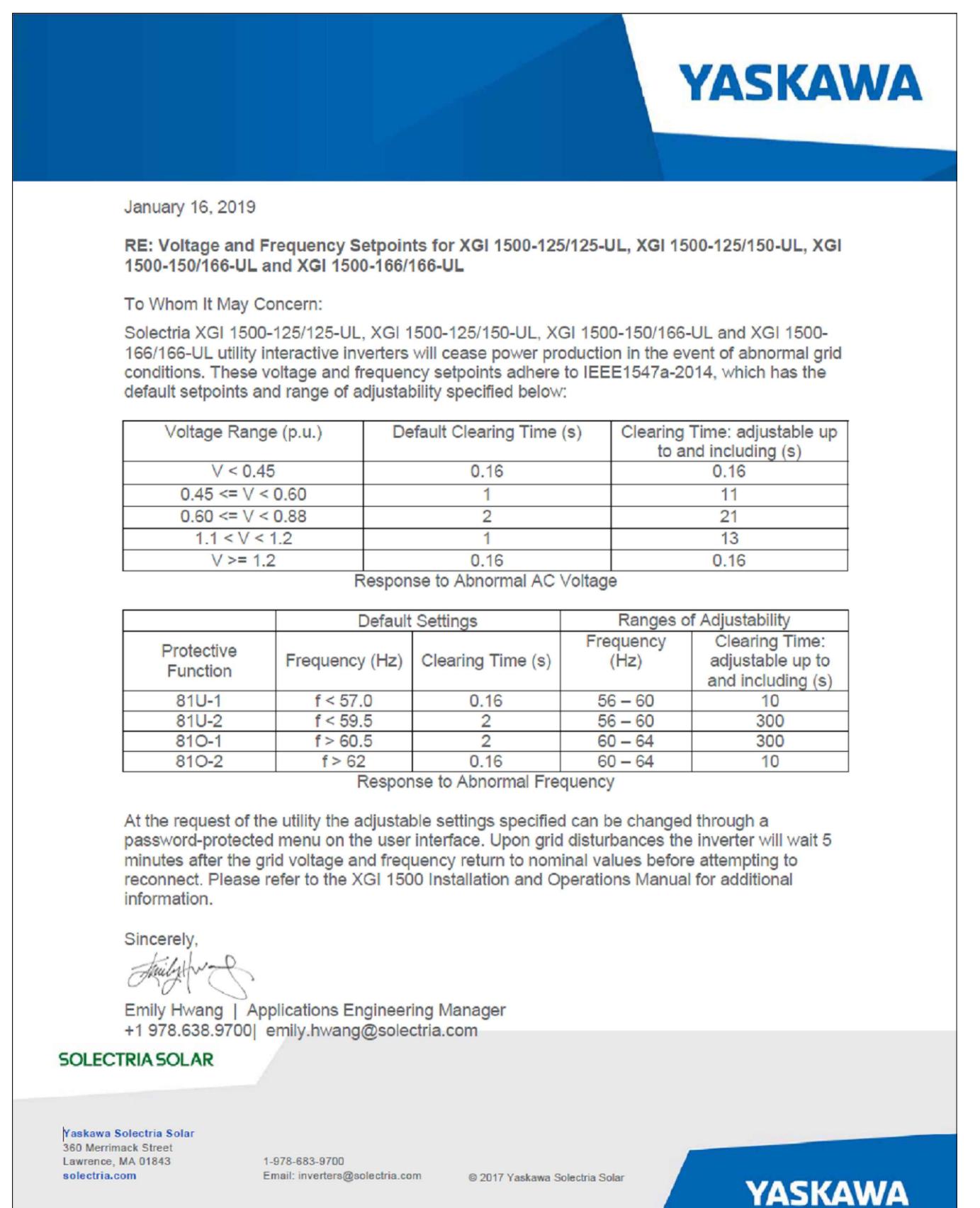
SYSTEM TITLE:  
**AC COLLECTION SYSTEM  
(3-LINE DIAGRAM)**



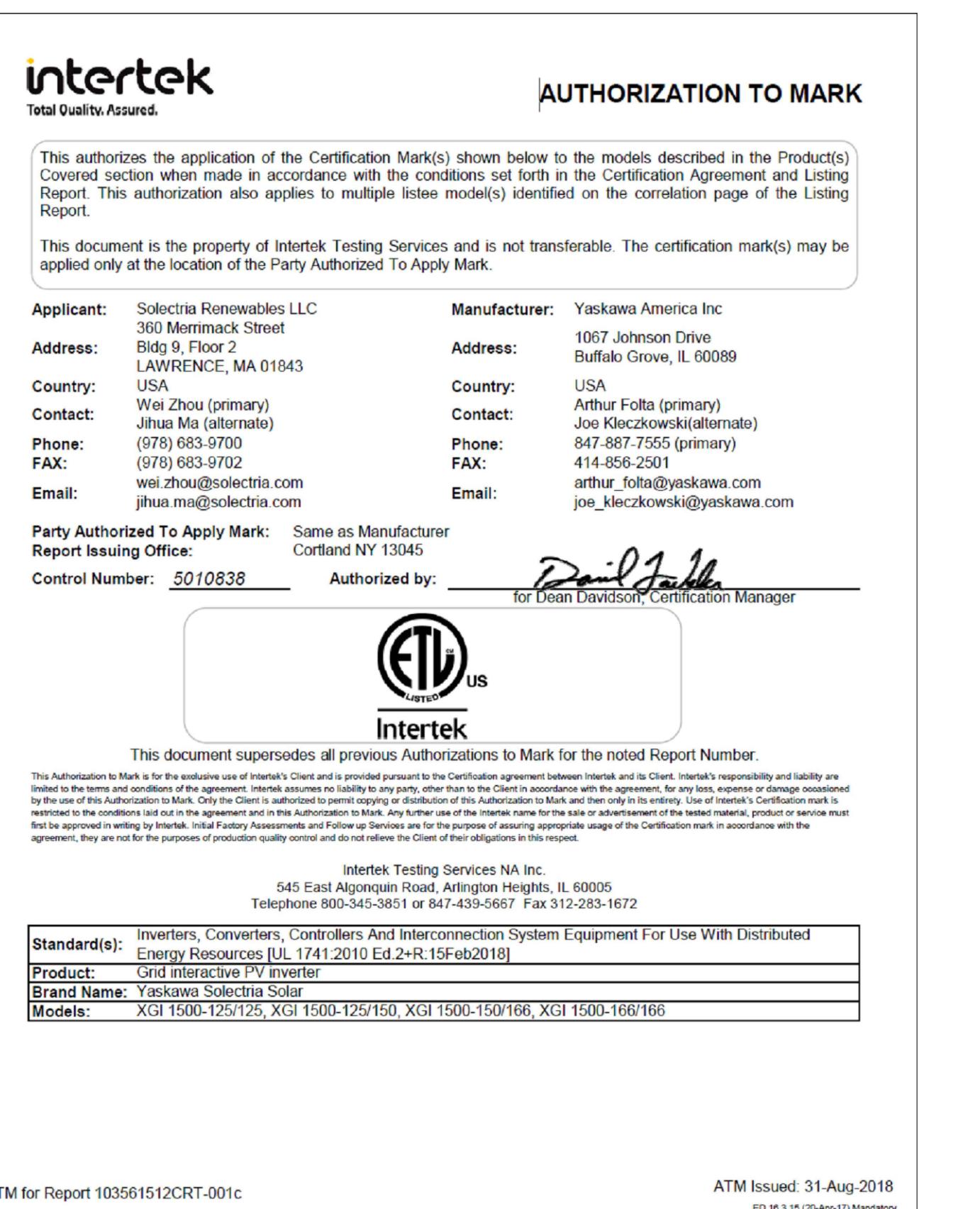
## ANTI-ISLANDING LETTER:



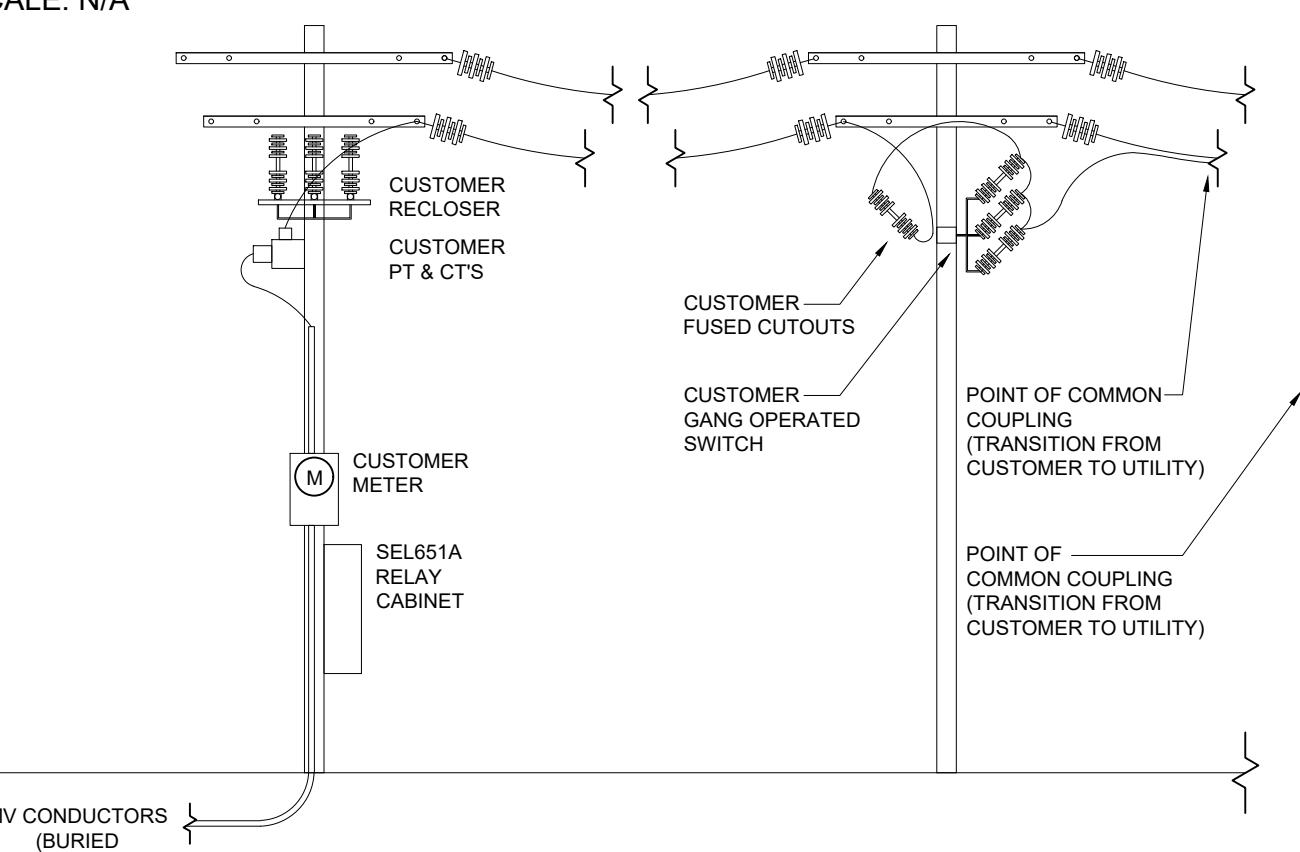
## **INVERTER SETTINGS:**



## 1741SA LISTING:



HYPOTHETICAL INTER-CONNECTION ELEVATION DETAIL:  
SCALE: N/A



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DOCUMENTS. NOT FOR  
CONSTRUCTION OR BIDDING  
PURPOSES. FOR UTILITY  
SUBMITTAL ONLY

REVIEWED BY: J. GIGANTI FELLO

DATE: 09 / 25 / 2019

REVISED: N/A

N/A

N/A

N/A

PAPER SIZE: 24" x 36"