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GENERAL ELECTRICAL AND EQUIPMENT NOTES

- ALL ELECTRICAL WORK TO BE PERFORMED SHALL CONFORM TO ALL APPLICABLE CODES OF GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE PROJECT. WHERE THESE CODES DO NOT APPLY, THE WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE 2011. APPLICABLE CODES SHALL INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING:
 - NATIONAL ELECTRICAL CODE (NFPA 70), 2011.
 - INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE).
 - NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA).
 - ELECTRICAL SAFETY IN THE WORKPLACE (2015 NFPA 70E).
 - UNDERWRITER'S LABORATORY (UL).
 - INSULATED CABLE ENGINEERS ASSOCIATION (ICEA).
 - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
 - AMERICAN SOCIETY OF TESTING MATERIALS (ASTM).
 - NATIONAL BUREAU OF STANDARDS.
 - INTERNATIONAL BUILDING CODE.
 - SAFETY ORDERS OF INDUSTRIAL ACCIDENT COMMISSION.
 - RULES OF THE NATIONAL BOARD OF FIRE UNDERWRITERS.
 - LOCAL ORDINANCES OF THE STATE.
 - LOCAL ORDINANCES OF THE COUNTY OR CITY.
 - REQUIREMENTS OF LOCAL UTILITY COMPANY.

- CONTRACTOR SHALL SUBMIT ELECTRICAL EQUIPMENT PRODUCT DATA SHEETS TO ENGINEER FOR REVIEW AND APPROVAL.
- PROPOSED DEVIATIONS FROM DESIGN DOCUMENTS SHALL BE REVIEWED AND APPROVED BY ENGINEER.
- CONTRACTOR SHALL INSTALL ELECTRICAL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ELECTRIC UTILITY LINES WHICH ARE TO REMAIN IN USE DURING CONSTRUCTION.
- ALL MAJOR EQUIPMENT INTENDED FOR USE IN THE PV SYSTEM SHALL BE IDENTIFIED AND LISTED FOR THE APPLICATION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND EQUIPMENT THROUGHOUT THE JOBSITE TO ENSURE THEY ARE PROTECTED IN PLACE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THEIR EMPLOYEES, PERSONNEL, SUBCONTRACTORS, AND EQUIPMENT CONTINUOUSLY DURING ALL TIMES DURING CONSTRUCTION, INCLUDING AFTER HOURS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT ADEQUATE SAFETY MEASURES AND TO ENFORCE THOSE MEASURES.

IDENTIFICATION/MARKINGS

- CONTRACTOR MUST SUPPLY ALL REQUIRED SAFETY SIGNS AND LABELS, WHICH SHALL BE PERMANENTLY ATTACHED BY MECHANICAL MEANS. LABELS SHALL COMPLY WITH NEC ARTICLES 690 AND 705.12, AND OTHER APPLICABLE LOCAL CODES.
- INVERTER IDENTIFICATION MARKINGS SHALL INDICATE INVERTER NUMBER AND BE PLACED ON THE FRONT OF THE INVERTER ENCLOSURE.
- CONTRACTOR SHALL ASSIGN TO EACH WIRE AND CABLE A UNIQUE IDENTIFICATION NUMBER. NUMBERS SHALL BE ASSIGNED TO ALL CONDUCTORS HAVING COMMON TERMINALS.
- AT A MINIMUM, IDENTIFICATION NUMBERING SHALL INCLUDE ORIGIN LOCATION & TERMINAL LOCATION.
- APPLY ALL CONDUCTOR AND CABLE MARKERS BEFORE TERMINATION.
- APPLY ALL CONDUCTORS' IDENTIFICATION MARKING WITH HEAT SHRINKABLE TUBING. TUBING SHALL BE TIGHT ON THE WIRE AFTER INSTALLATION AND CHARACTERS SHALL FACE THE OPENING PANEL AND READ LEFT TO RIGHT OR TOP TO BOTTOM.

- TORQUE MARKS SHALL BE PLACED ON ALL TERMINATION LUGS USING A COLOR DIFFERENT THAN MANUFACTURER.
- ALL EQUIPMENT ANCHORS SHALL BE TORQUED MARKED BASED ON MANUFACTURER'S OR STRUCTURAL ENGINEER'S RECOMMENDATION.
- DC CONDUIT AND RACEWAYS SHALL BE MARKED WITH "WARNING: PHOTOVOLTAIC POWER SOURCE" AT 10' INTERVALS.

WIRING & WIRING METHODS

- EXPOSED PV MODULE WIRING SHALL BE TYPE PV WIRE, SUNLIGHT (UV) RESISTANT, 90° C, WET RATED. ALL EXPOSED CABLES SHALL BE SECURED WITH MECHANICAL OR OTHER SUN-LIGHT RESISTANT MEANS. ARRAY PV WIRE SHALL BE BLACK FOR NEGATIVE AND RED FOR POSITIVE.
- PV WIRE SHALL NOT BE PLACED BETWEEN THE MODULE AND ZEE PURLIN.
- CONDUCTOR INSULATION VOLTAGE RATING FOR 600V STRINGS SHALL BE EQUAL OR GREATER THAN 600V.
- BENDING RADIUS SHALL BE PROVIDED BASED ON THE NEC. PROPER BENDING RADIUS MUST BE APPLIED BASED ON CONDUCTOR DIAMETER.
- FIELD WIRING LARGER THAN 6 AWG THAT IS NOT COLOR CODED SHALL BE COLOR CODED AT BOTH ENDS WITH COLORED TAPE TO IDENTIFY ITSELF.
- GROUNDING CONDUCTORS SHALL BE COLOR CODED IN COMPLIANCE WITH NEC ARTICLE 200.6.
- ALL GROUND CONDUCTORS SHALL BE COPPER, UNLESS NOTED OTHERWISE.
- ALL LINE CONDUCTORS SHALL BE COPPER, UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS. CONTRACTOR SHALL CONFIRM WIRE SIZING WITH ENGINEER PRIOR TO USING A WIRE TYPE AND/OR SIZE DIFFERENT THAN WHAT IS SHOWN ON THESE PLANS (UNLESS SPECIFICALLY NOTED OTHERWISE).
- ALL CONNECTORS SHALL BE TORQUED PER DEVICE LISTING OR MANUFACTURER'S RECOMMENDATIONS.
- WHERE NECESSARY TO PREVENT PHYSICAL DAMAGE TO RACEWAY OR CABLE, UNDERGROUND INSTALLATIONS SHALL HAVE BACKFILL PROTECTION IN THE FORM OF GRANULAR OR SELECTED MATERIAL, OR OTHER APPROVED MEANS.
- EDGE PROTECTION MUST BE PRESENT IF A CONDUCTOR HAS A POTENTIAL OF BEING DAMAGED.
- DIRECT-BURIED CONDUCTORS MUST BE PROTECTED FROM EARTH MOVEMENT AT ALL TRANSITIONS FROM CONDUIT TO DIRECT BURIAL VIA BELL ENDS, OAE, PER NEC 300.5.
- PROPERLY COAT WIRES AND CABLES WITH PULLING COMPOUND BEFORE PULLING INTO CONDUITS AND PREVENT MECHANICAL DAMAGE TO CONDUCTORS DURING INSTALLATION.
- ALL CAT 5 OR CAT 6 CABLES SHALL BE SHIELDED AND CONTAIN SHIELDED TERMINATION ENDS.
- SPARE CONDUITS SHALL BE CAPPED, TAGGED WITH DESTINATION MARKER, AND PULL WIRES SHALL BE IN PLACE WITH A MINIMUM OF 250LBS TENSILE STRENGTH.
- CONDUIT CONNECTORS SHALL BE WATER-TIGHT, COMPRESSION STYLE FITTINGS.

GROUNDING

- A GROUNDING ELECTRODE SYSTEM SHALL BE PROVIDED. UNLESS OTHERWISE NOTED.
- EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDING.
- EQUIPMENT GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH NEC 250.122.
- WHERE GROUNDING ELECTRODE CONDUCTORS ARE SPLICED THEY SHALL BE IRREVERSIBLE.

ELECTRICAL ABBREVIATIONS

AF	AMPERES FRAME OF BREAKER	PNLBD	PANEL BOARD
AIC	AMPS INTERRUPTING CAPACITY	POI	POINT OF INTERCONNECTION
AMP, A	AMPERES	PRI	PRIMARY
AT	AMPERE TRIP RATING OF BREAKER	PS	PRESSURE SWITCH
AUTO	AUTOMATIC	PT	POTENTIAL TRANSFORMER
ATS	AUTOMATIC TRANSFER SWITCH	PV	PHOTOVOLTAIC
AUX	AUXILIARY	PVC	POLYVINYL CHLORIDE
AWG	AMERICAN WIRE GAUGE	PWR	POWER
BKR	BREAKER	REC	RECEPTACLE
C	CELSIUS	RECPTS	RECEPTACLES
CAB	CABINET	REQD	REQUIRED
CB	COMBINER BOX	SCH	SCHEDULE
CC	CENTER TO CENTER	SECT	SECTION
CKT	CIRCUIT	SHT	SHEET
CND	CONDUIT	SIG	SIGNAL
COM	COMMUNICATION	SM	START CONTACTOR COIL
CPT	CONTROL POWER	SP HTR	SPACE HEATER
CR	CONTROL RELAY (MAGNETICALLY HELD UNLESS NOTED OTHERWISE)	ST	SHUNT TRIP
CT	CURRENT TRANSFORMER	STA	STATION
CTRL	CONTROL	STD	STANDARD
CU	COPPER	STL	STEEL
DAS	DATA ACQUISITION SYSTEM	STR	STRING
DB	DIRECT BURIAL	SW	SWITCH
DISC	DISCONNECT	SWBD	SWITCHBOARD
DISTR	DISTRIBUTION	SWGR	SWITCHGEAR
DWG	DRAWING	SYS	SYSTEM
EGC	EQUIPMENT GROUND CONDUCTOR	SYM	SYMMETRICAL
ELEV	ELEVATION	TEMP	TEMPERATURE
EMERG	EMERGENCY	TERM	TERMINAL
ENCL	ENCLOSURE	TKR	TRACKER
EQPT	EQUIPMENT	TS	TAMPER SWITCH
(E)	EXISTING	TSTAT	THERMOSTAT
FDR	FEEDER	TYP	TYPICAL
FS	FLOW SWITCH	U/G	UNDERGROUND
FLEX	FLEXIBLE	UNO	UNLESS NOTED OTHERWISE
FUT	FUTURE	UGPS	UNDERGROUND PULL SECTION
FUP	FUSE, CPT PRIMARY	Voc	OPEN CIRCUIT VOLTAGE
FUS	FUSE, CPT SECONDARY	W	WATTS
GEC	GROUNDING ELECTRODE CONDUCTOR	WHM	METER (WATT HOUR METER)
GND	GROUND	WP	WEATHERPROOF
HH	HAND HOLE	XFMR	TRANSFORMER
HOA	HAND-OFF-AUTOMATIC		
HTR	HEATER		
Hz	HERTZ		
IG	ISOLATED GROUND		
IND	INDICATION		
INSTR	INSTRUMENT		
INV.	INVERTER		
Isc	SHORT CIRCUIT CURRENT		
JB	JUNCTION BOX		
k	THOUSAND (KILO)		
kV	KILOVOLTS		
kW	KILOWATTS		
kVA	KILOVOLT AMPERES		
kVAR	KILOVOLT AMPERES REACTIVE		
kWH	KILOWATT-HOURS		
kWHD	KILOWATT HOUR DEMAND METER		
LC	LOAD CENTER		
LT, LTS	LIGHT, LIGHTS		
LTC	LIGHTING		
MAX	MAXIMUM		
MET	METEOROLOGICAL STATION		
MCB	MAIN CIRCUIT BREAKER		
MCM, Kcmil	THOUSAND CIRCULAR MILS		
MH	MANHOLE		
MLO	MAIN LUGS ONLY		
MIN	MINIMUM		
MT	MOUNT		
MTD	MOUNTED		
MTG	MOUNTING		
NO, NOS	NUMBER, NUMBERS		
NP	NAMEPLATE		
NTS	NOT TO SCALE		
OC	ON CENTER		
PB	PULL BOX		
PCS	POWER CONVERSION STATION		
PLC	PROGRAMMABLE LOGIC CONTROLLER		
PNL	PANEL		

ELECTRICAL SYMBOLS

	DISCONNECT
	CIRCUIT BREAKER
	INVERTER
	FUSE W/ CURRENT RATING
	PV MODULE
	METER
	CONTACTOR
	MOV LIGHTNING ARRESTOR
	EARTH GROUND
	THREE PHASE WYE CONNECTED SOLIDLY GROUNDING NEUTRAL
	THREE PHASE DELTA CONNECTED
	POTENTIAL TRANSFORMER
	CURRENT TRANSFORMER
	TRANSFORMER
	COMBINER BOX
	JUNCTION BOX
	BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, SURFACE MOUNTED
	BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, FLUSH MOUNTED
	BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS, FLUSH MOUNTED
	BRANCH CIRCUIT PANELBOARD, OVER 250 VOLTS, FLUSH MOUNTED
	BRANCH CIRCUIT CONDUIT CONCEALED ABOVE CEILING OR IN WALL. CONDUIT SHALL INCLUDE PHASE, NEUTRAL AND GROUND CONDUCTORS AS REQUIRED FOR CIRCUITS (UNLESS OTHERWISE NOTED).
	BRANCH CIRCUIT CONDUIT CONCEALED IN SLAB, UNDERGROUND OR UNDER FLOOR.
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT STUB
	CONDUIT CONTINUED
	FLEXIBLE CONDUIT
	EXISTING TO REMAIN



SOLARWORLD, 25300 NW EVERGREEN RD, HILLSBORO, OR 97124

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ANDREW HUMPHREY ENGINEERING, LLC
 ANDREW HUMPHREY PE
 PO BOX 18436, GOLDEN, CO 80402
 PE NO: 81140
 CA LIC NO: 31853



PROJECT:
 SELMON EXPRESSWAY
 TAMPA, FL
 33619

ISSUED FOR: AS-BUILT

MARK	DATE	DESCRIPTION
A	5/8/18	XFMR CONNECTION DIAGRAM
B	5/15/18	ELECTRICAL DIAGRAM

ISSUE DATE: 5-15-18
 ISSUED FOR: AS-BUILT

PROJECT NO: - - - -

DRAWN BY: MY

CHECKED BY: AH

SHEET TITLE:

LEGEND SHEET & GENERAL NOTES

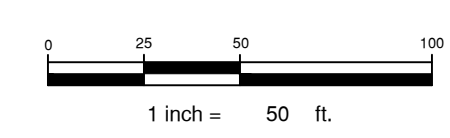
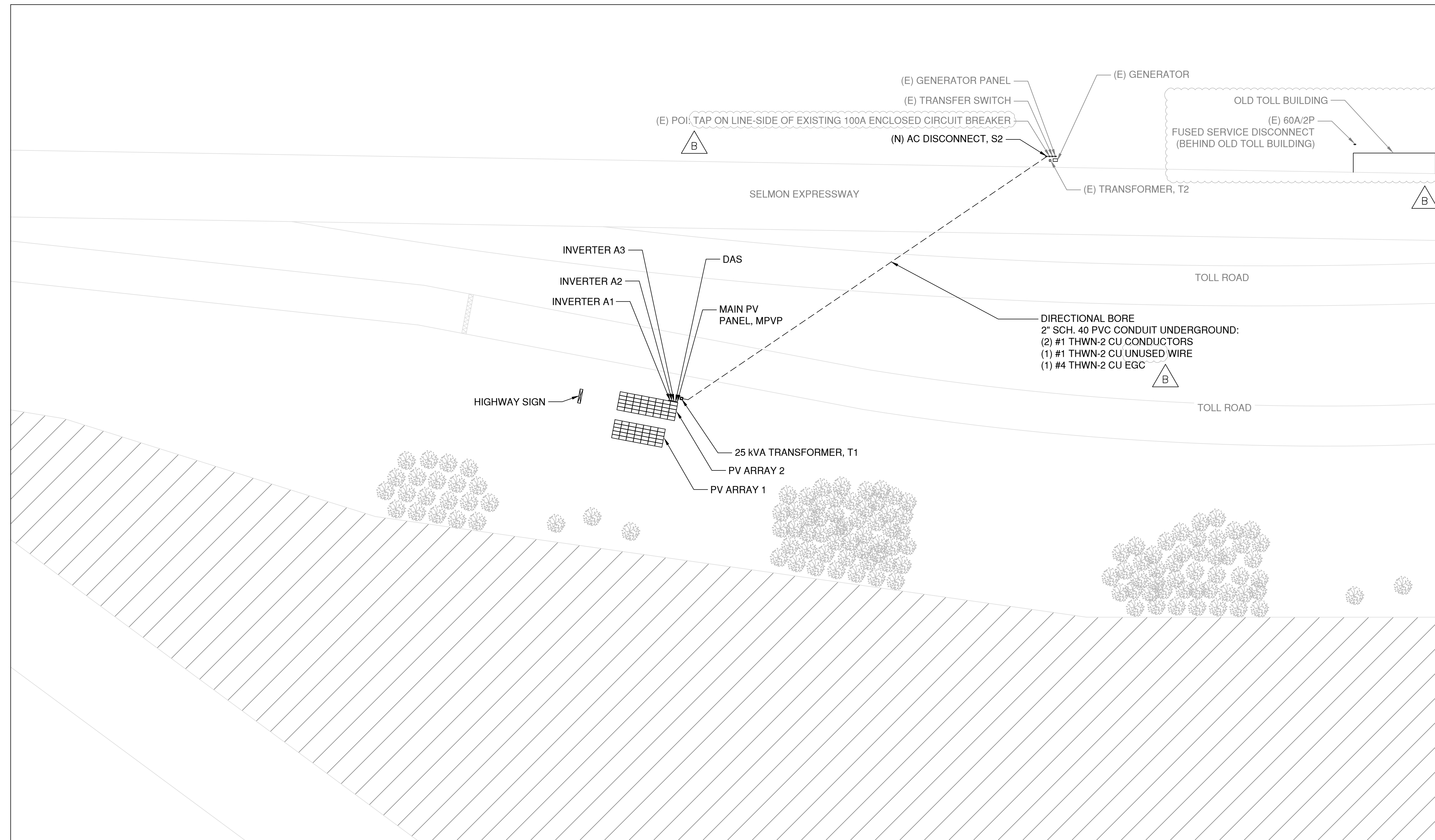
SHEET

E-001

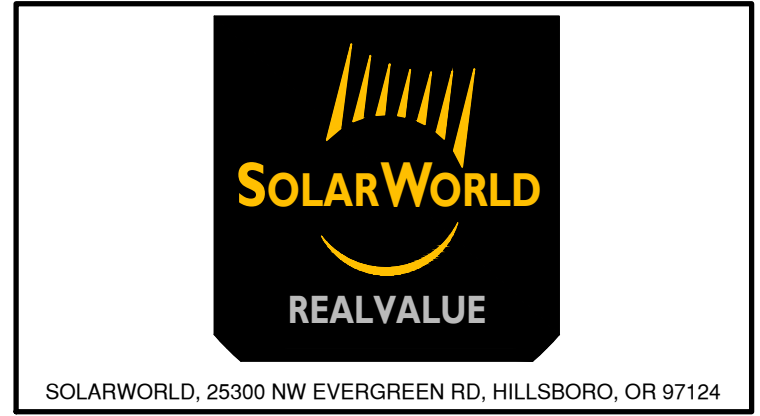
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GENERAL NOTES

1. FIELD VERIFY PROPOSED ARRAY LOCATIONS.
2. (75) SW 325 XL MONO MODULES AT 15° TILT MOUNTED TO IRONRIDGE RACKING.

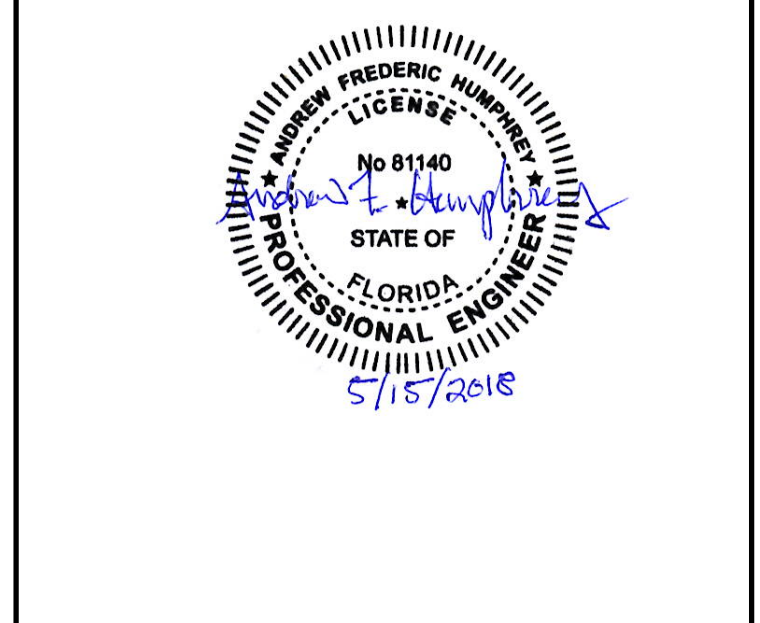


SITE PLAN
 Scale: 1" = 50'



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 CHECKED BY: AH
 SHEET TITLE:

SITE PLAN

SHEET
M-100

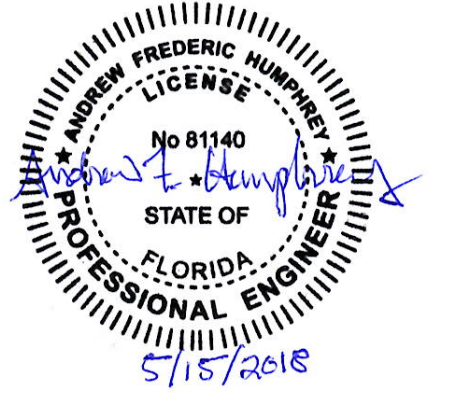
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PROJECT:

SELMON EXPRESSWAY
 TAMPA, FL
 33619

ISSUED FOR: AS-BUILT

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		AS-BUILT

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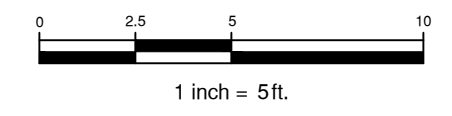
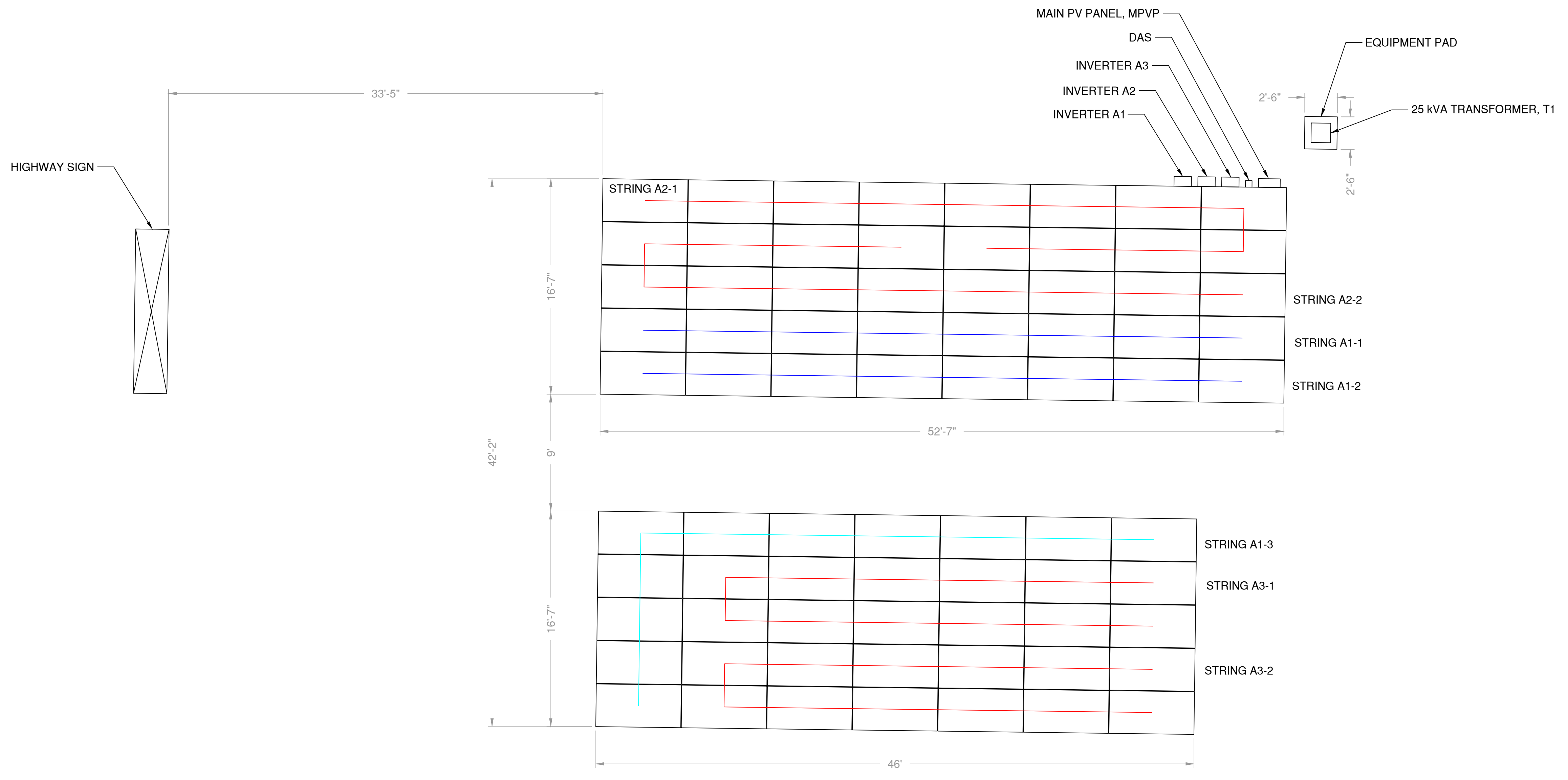
CHECKED BY: AH

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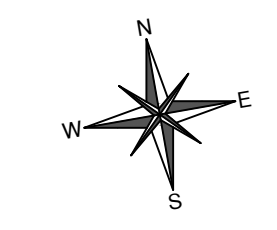
ARRAY ELECTRICAL PLAN VIEW

SHEET

E-100



ELECTRICAL PLAN
 Scale: 1" = 5'



ARRAY ORIENTATION IS 190°

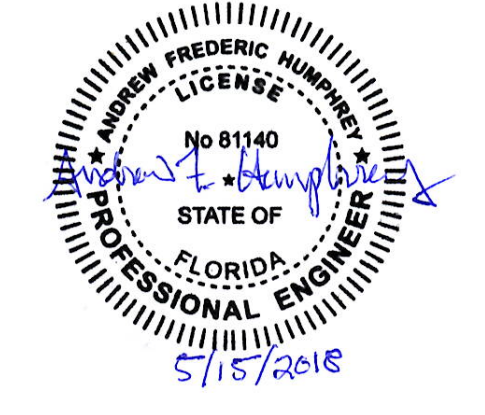
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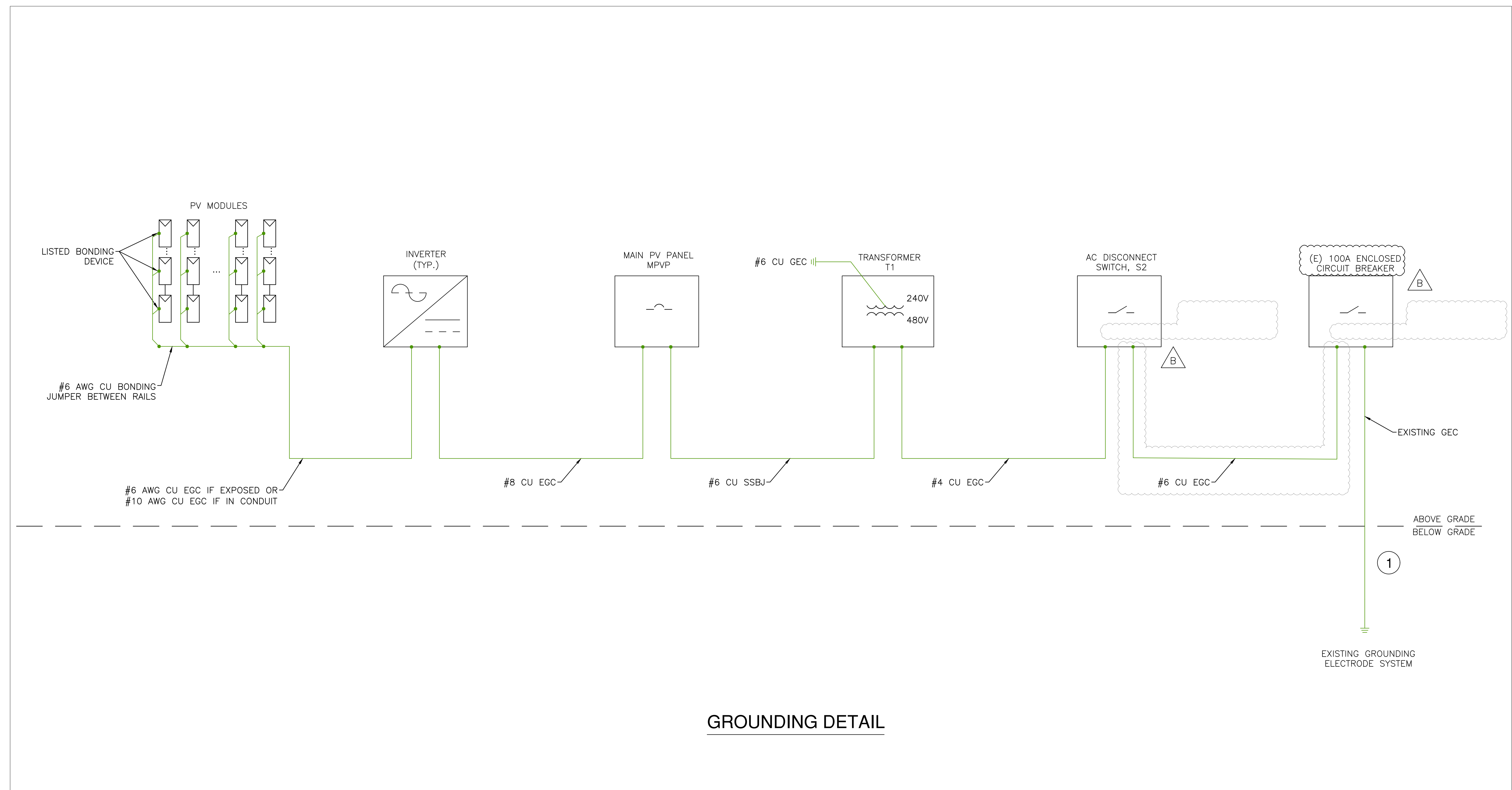
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 SHEET TITLE:

**GROUNDING
 DETAIL**

SHEET

E-300



GROUNDING DETAIL

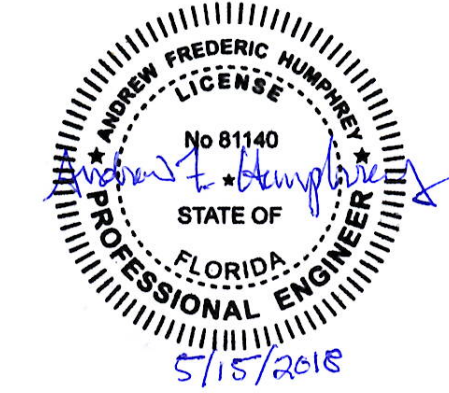
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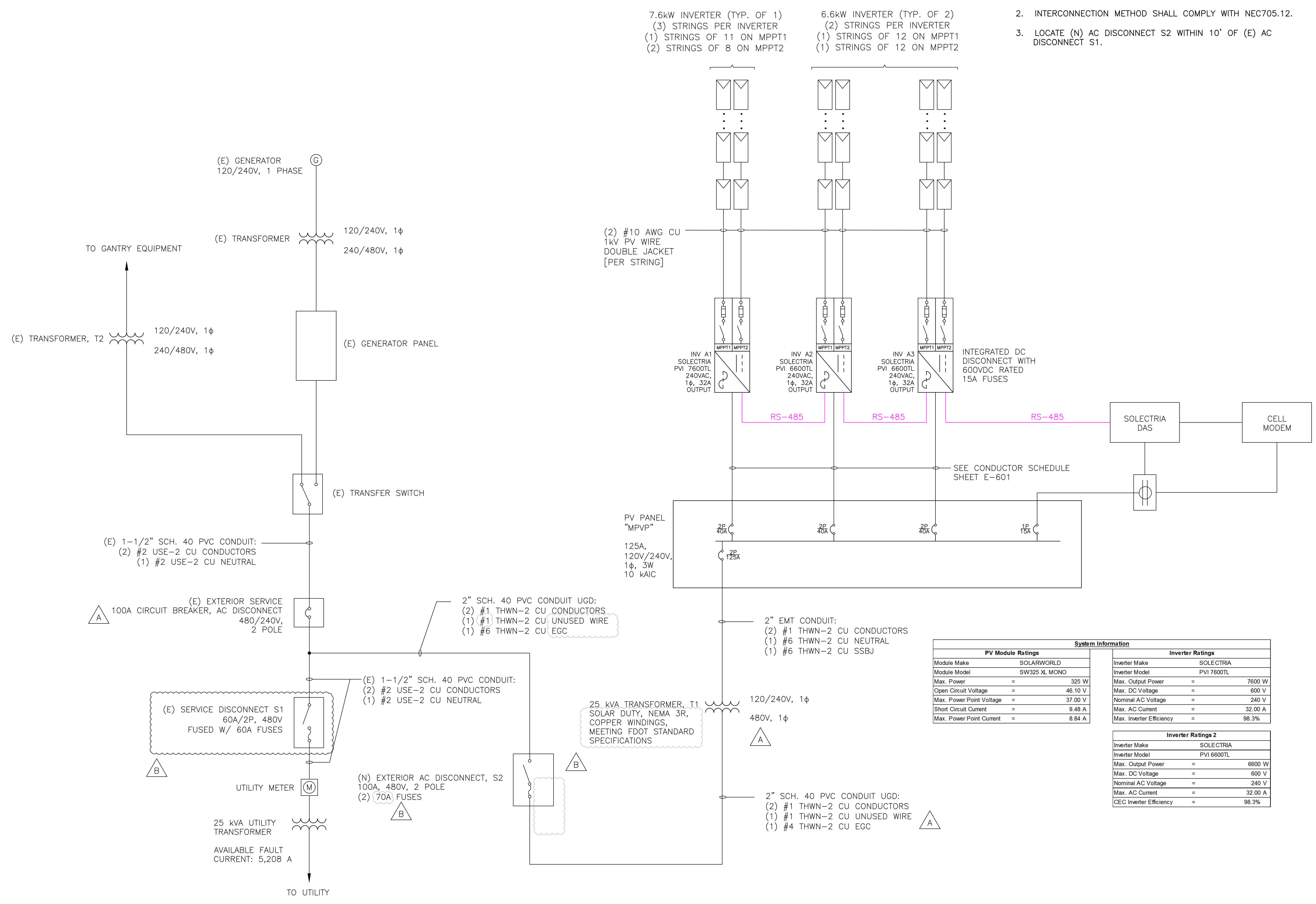
**ONE-LINE
 DIAGRAM**

SHEET

E-600

ELECTRICAL NOTES:

- INTERCONNECT PV SYSTEM TO LOAD SIDE OF 480V, 1PH, 3W, AC DISCONNECT SWITCH S1.
- INTERCONNECTION METHOD SHALL COMPLY WITH NEC705.12.
- LOCATE (N) AC DISCONNECT S2 WITHIN 10' OF (E) AC DISCONNECT S1.



PV Module Ratings		System Information		Inverter Ratings	
Module Make	SOLARWORLD	Inverter Make	SOLECTRIA	Max. Output Power	= 7600 W
Module Model	SW325 XL MONO	Inverter Model	PVI 6600TL	Max. DC Voltage	= 600 V
Max. Power	= 325 W	Max. Output Power	= 7600 W	Nominal AC Voltage	= 240 V
Open Circuit Voltage	= 46.10 V	Max. DC Voltage	= 600 V	Max. AC Current	= 32.00 A
Max. Power Point Voltage	= 37.00 V	Nominal AC Voltage	= 240 V	Max. Inverter Efficiency	= 98.3%
Short Circuit Current	= 9.48 A	Max. AC Current	= 32.00 A		
Max. Power Point Current	= 8.84 A	Max. Inverter Efficiency	= 98.3%		

Inverter Ratings 2	
Inverter Make	SOLECTRIA
Inverter Model	PVI 6600TL
Max. Output Power	= 6600 W
Max. DC Voltage	= 600 V
Nominal AC Voltage	= 240 V
Max. AC Current	= 32.00 A
CEC Inverter Efficiency	= 98.3%

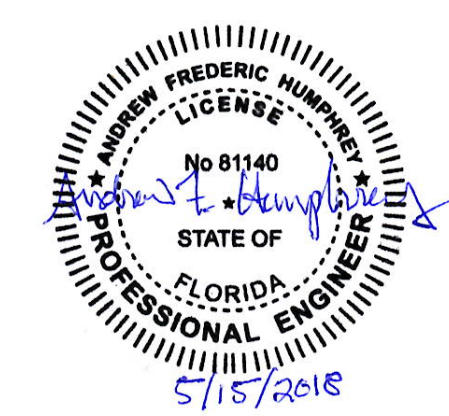
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ELECTICAL NOTES:

1. ALL LISTED BREAKERS RATED 125A AND LESS ARE MARKED 60°C/75°C.
2. ALL LISTED ELECTRICAL DISTRIBUTION EQUIPMENT RATED 1000VAC AND LESS HAS A MAXIMUM CABLE TERMINATION RATING OF 75°C.

Location Description		VOLTAGE DROP, CONDUCTOR RATING, FUSE RATING																			
From	To	Current (A)			STC Operating Voltage (V)	# of Parallel Runs	Wire Size	Neutral Size	Wire Type	Conductor Material	Rating (A)	Temp	# Cond	Derated (A)	Rdc or Rac ohms/1000ft	1-Way Length (ft.)	VD Volts	VD %	OCPD Rating	EGC Size	Conduit Size
LONGEST PV STRING	INVERTER A1	8.84	9.48	14.79	296	1	10 AWG		PV Wire	Cu	40	0.96	0.50	19.2	1.2900	110	2.5	0.85%	15 A	10 AWG CU	FREE AIR/1-1/2" EMT
INVERTER A1	MAIN PV PANEL, MPVP	32.0		40.00	240	1	8 AWG	8 AWG	THWN-2	Cu	55	1.00	1.00	55	0.7800	5	0.2	0.10%	40 A	8 AWG CU	3/4" EMT
INVERTER A2	MAIN PV PANEL, MPVP	32.0		40.00	240	1	8 AWG	8 AWG	THWN-2	Cu	55	1.00	1.00	55	0.7800	10	0.5	0.21%	40 A	8 AWG CU	3/4" EMT
INVERTER A3	MAIN PV PANEL, MPVP	32.0		40.00	240	1	8 AWG	8 AWG	THWN-2	Cu	55	1.00	1.00	55	0.7800	15	0.7	0.31%	40 A	8 AWG CU	3/4" EMT
MAIN PV PANEL, MPVP	TRANSFORMER, T1	96.0		120.00	240	1	1 AWG	6 AWG	THWN-2	Cu	145	1.00	1.00	145	0.1600	5	0.2	0.06%	125 A	6 AWG CU	2" EMT
TRANSFORMER, T1	AC DISCONNECT, S2	48.0		60.00	480	1	1 AWG	1 AWG	THWN-2	Cu	145	1.00	1.00	145	0.1600	400	6.1	1.28%	70 A	4 AWG CU	2" SCH 40 PVC
AC DISCONNECT, S2	INTERCONNECTION	48.0		60.00	480	1	1 AWG	6 AWG	THWN-2	Cu	145	1.00	1.00	145	0.1600	5	0.1	0.02%	60 A	6 AWG CU EGC	2" SCH 40 PVC

B

1 CALCULATIONS TABLE

PROJECT:

SELMON EXPRESSWAY
 TAMPA, FL
 33619

ISSUED FOR: AS-BUILT

A	5/8/18	XFMR CONNECTION DIAGRAM
B	5/15/18	ELECTRICAL DIAGRAM

MARK	DATE	DESCRIPTION
ISSUE DATE:	5-15-18	ISSUED FOR: AS-BUILT

PROJECT NO: - - - -

DRAWN BY: MY

CHECKED BY: AH

SHEET TITLE:

CONDUCTOR SCHEDULE

SHEET

E-601

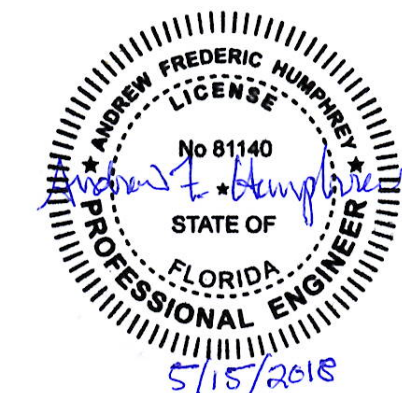
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SOLARWORLD, 25300 NW EVERGREEN RD, HILLSBORO, OR 97124

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ANDREW HUMPHREY ENGINEERING, LLC
 ANDREW HUMPHREY PE
 PO BOX 18436, GOLDEN, CO 80402
 PE NO: 81140
 CA LIC NO: 31853



PROJECT:

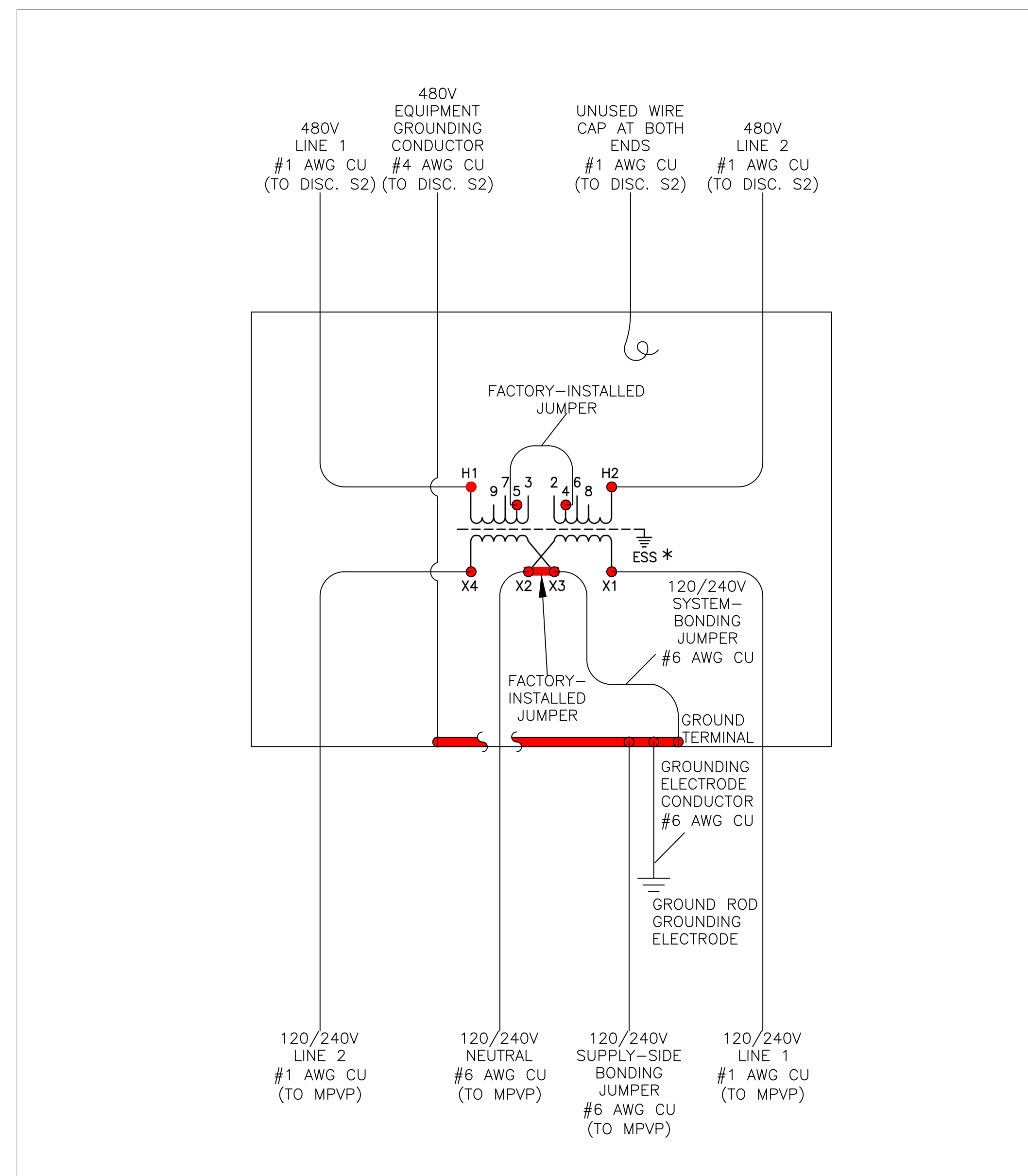
SELMON EXPRESSWAY

TAMPA, FL
 33619

ISSUED FOR: AS-BUILT

A	5/8/18	XFMR CONNECTION DIAGRAM
B	5/15/18	ELECTRICAL DIAGRAM

MARK	DATE	DESCRIPTION
ISSUE DATE:	ISSUED FOR:	
5-15-18	AS-BUILT	
PROJECT NO:	-----	
DRAWN BY:	MY	
CHECKED BY:	AH	
SHEET TITLE:		
TRANSFORMER CONNECTION DIAGRAM		
SHEET		
E-602		



1 TRANSFORMER CONNECTION DIAGRAM

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POWER PANEL SCHEDULE: MPVP												
SERVICE: 1 Ph - 3 Wire, 240V			POWER TYPE: PV POWER			DATE: 11/20/2017			FED FROM: STRING INVERTERS (A1-A3)			
PANEL LOCATION: SEE M-100						MAIN: 125A			SC RMS: 10 kAIC			
						MOUNTING: SURFACE MOUNTED						
PANEL DESCRIPTION: SWITCHBOARD 125A, 240V, 1 PHASE, 3W, BOTTOM FED												
CKTR	LOAD DESCRIPTION	CB	POLES	AMPS	VA	PH	CKTR	LOAD DESCRIPTION	CB	POLES	AMPS	VA
1	INVERTER A1	40	2	32.0	7680	A	2					
3	-			32.0	7680	B	4					
5	INVERTER A2	40	2	32.0	7680	A	6					
7	-			32.0	7680	B	8					
9	INVERTER A3	40	2	32.0	7680	A	10					
11	-			32.0	7680	B	12					
13						A	14					
15						B	16					
CONNECTED AMPS:		PHASE A		PHASE B								
		96.0		96.0								
CONNECTED VA:		23040		23040								
CONNECTED KVA/AMPS:		KVA		AMPS								
		23.04		96.0								
NEC 690.8(B)(1) & (2) AMPS:		AMPS										
		120.00										

1 PANEL SCHEDULE

INVERTER SCHEDULE																
INVERTER ID	MAKE	MODEL	AC Ratings					DC Ratings								NOTES
			A	V	OCPD	PHASE	kWAC	MPPT	A (Imp)/ MPPT	A (Isc)/ MPPT	Max (kW)/ MPPT	Voltage Input (V)	# Strings	kWDC		
A1	SOLECTRIA	PVI 7600TL	32	240	40	1	7.6	2	20	24	5.32	200-500	3	8.775	1	
A2	SOLECTRIA	PVI 6600TL	32	240	40	1	6.6	2	18	24	4.62	200-500	2	7.8	2	
A3	SOLECTRIA	PVI 6600TL	32	240	40	1	6.6	2	18	24	4.62	200-500	2	7.8	2	
							20.8				24.375					
NOTES:																
1 (1) STRING OF 11 AND (2) STRINGS OF 8																
2 (2) STRINGS OF 12																

2 INVERTER SCHEDULE

PROJECT:
 SELMON EXPRESSWAY
 TAMPA, FL
 33619

ISSUED FOR: AS-BUILT

A	5/8/18	XFMR CONNECTION DIAGRAM
B	5/15/18	ELECTRICAL DIAGRAM

MARK	DATE	DESCRIPTION
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ISSUE DATE:	ISSUED FOR:
5-15-18	AS-BUILT

PROJECT NO: - - - -

DRAWN BY: MY

CHECKED BY: AH

SHEET TITLE:

PANEL & INVERTER SCHEDULE

SHEET

E-800

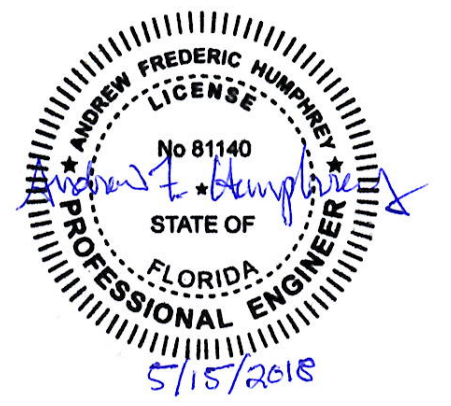
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 PE NO: 81140
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PROJECT:

SELMON EXPRESSWAY

TAMPA, FL
 33619

ISSUED FOR: AS-BUILT

A	5/8/18	XFMR CONNECTION DIAGRAM
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MARK DATE DESCRIPTION

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PROJECT NO: - - - -

DRAWN BY: MY

CHECKED BY: AH

SHEET TITLE:

DATA SHEETS

SHEET

E-801

Sunmodule[®] SW 320-325 XL MONO (33mm frame)

PERFORMANCE UNDER STANDARD TEST CONDITIONS (STC)*

	SW 320	SW 325
Maximum power	320 Wp	325 Wp
Open circuit voltage	45.9 V	46.1 V
Maximum power point voltage	36.7 V	37.0 V
Short circuit current	9.41 A	9.48 A
Maximum power point current	8.78 A	8.84 A
Module efficiency	16.04%	16.29%

*STC: 1000W/m², 25°C, AM 1.5

PERFORMANCE AT 800 W/M², NOCT, AM 1.5

	SW 320	SW 325
Maximum power	244.4 Wp	247.7 Wp
Open circuit voltage	40.1 V	40.2 V
Maximum power point voltage	33.8 V	34.0 V
Short circuit current	7.82 A	7.88 A
Maximum power point current	7.23 A	7.28 A

Minor reduction in efficiency under partial load conditions at 25° C at 200 W/m². 100% of the STC efficiency (1000 W/m²) is achieved.

COMPONENT MATERIALS

Cells per module	72	Front	Low-iron tempered glass with ARC (EN 12150)
Cell type	Mono crystalline	Frame	Clear anodized aluminum
Cell dimensions	6.17 in x 6.17 in (156.75 x 156.75 mm)	Weight	47.6 lbs (21.6 kg)

THERMAL CHARACTERISTICS

NOCT	46°C
TC _v	0.042 %/K
TC _v	-0.304 %/K
TC _{mp}	-0.43 %/K
Operating temp	-40° C to +85° C

ADDITIONAL DATA

Power sorting	-0 Wp/+5 Wp
J-Box	IP65
Connector	PV wire per UL4703 with 114 connectors
Module fire performance	(UL 1703) Type 1

PARAMETERS FOR OPTIMAL SYSTEM INTEGRATION

Maximum system voltage SC II / NEC	1000 V
Maximum reverse current	25 A
Number of bypass diodes	3
Design loads*	Two rail system 113 psf downward, 64 psf upward
Design loads*	Edge mounting 178 psf downward, 23 psf upward

*Please refer to the Sunmodule installation instructions for the details associated with these load cases.

• Compatible with both "Top-Down" and "Bottom" mounting methods
 • Grounding Locations: - 4 locations along the length of the module in the extended flange.

SW-017541US-G 07-2015

1 MODULE DATASHEET

SPECIFICATIONS	PVI 3800TL	PVI 5200TL	PVI 6600TL	PVI 7600TL
DC Input				
Absolute Maximum Open Circuit Voltage	600 VDC			
Operating Voltage Range	120-550 VDC			
MPPT Input Voltage Range	200-500 VDC			
MPPT Trackers	1	2		
Maximum Operating Input Current	20 A	15 A per MPPT	18 A per MPPT	20 A per MPPT
Maximum Input Short Circuit Current (I _{sc} x 1.25)	24 A	48 A (24 A per MPPT)		
Maximum PV Power (per MPPT)	5.32 kW	3.64 kW	4.62 kW	5.32 kW
Start Voltage	150 V			
AC Output				
Nominal Output Voltage	208 or 240 VAC, 1ø+PE			
AC Voltage Range	-12%/+10%			
Continuous Output Power	208 VAC 3328 W	5000 W	6600 W	6656 W
	240 VAC 3800 W	5200 W	6600 W	7600 W
Maximum Continuous Output Current	16 A	24 A	32 A	
Maximum Backfeed Current	0 A			
Nominal Output Frequency	60 Hz			
Output Frequency Range	59.3-60.5 Hz			
Power Factor	Unity, > 0.99			
Fault Current Contribution (RMS)	4.7 A	11.8 A		
Total Harmonic Distortion (THD) @ Rated Load	< 3%			
Performance				
Peak Efficiency	98.3%			
CEC Efficiency	97.5%			
Tare Loss	0 W			
Ambient Temperature Range (full power)	-13°F to +122°F (-25°C to +50°C)			
Storage Temperature Range	-40°F to +185°F (-40°C to +85°C)			
Relative Humidity (non-condensing)	0-100%			
Audible Noise	< 45 dBA @ 3 m			
Operating Altitude	6,562 ft/2000 m			
Safety Listings & Certifications	UL 1741/IEEE 1547, UL 1699B, CSA C22.2#107.1, FCC part 15 A&B			
Testing Agency	CSA			
Mechanical				
DC Disconnect	Standard, fully-integrated			
Dimensions (H x W x D)	17.5 x 15.8 x 8.5 in. (445 x 402 x 216 mm)	26.8 x 15.8 x 8.5 in. (681 x 402 x 216 mm)		
Weight	43 lbs (19.5 kg)	65 lbs (29.5 kg)		
Enclosure Rating	Type 4 + Salt Mist Corrosion Protection			
Enclosure Finish	Aluminum			
Communications				
Data Logger Hardware	Optional, External			
SolnView Monitoring Service	Optional			
Revenue Grade Meter/Monitoring	Optional, External			
Communication Interface	RS-485			
Warranty				
Standard	10 year			
Optional	Extended warranty not available			

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YASKAWA SOLECTRIA SOLAR www.solectria.com | inverters@solectria.com | 978.683.9700

2 INVERTER DATA SHEET

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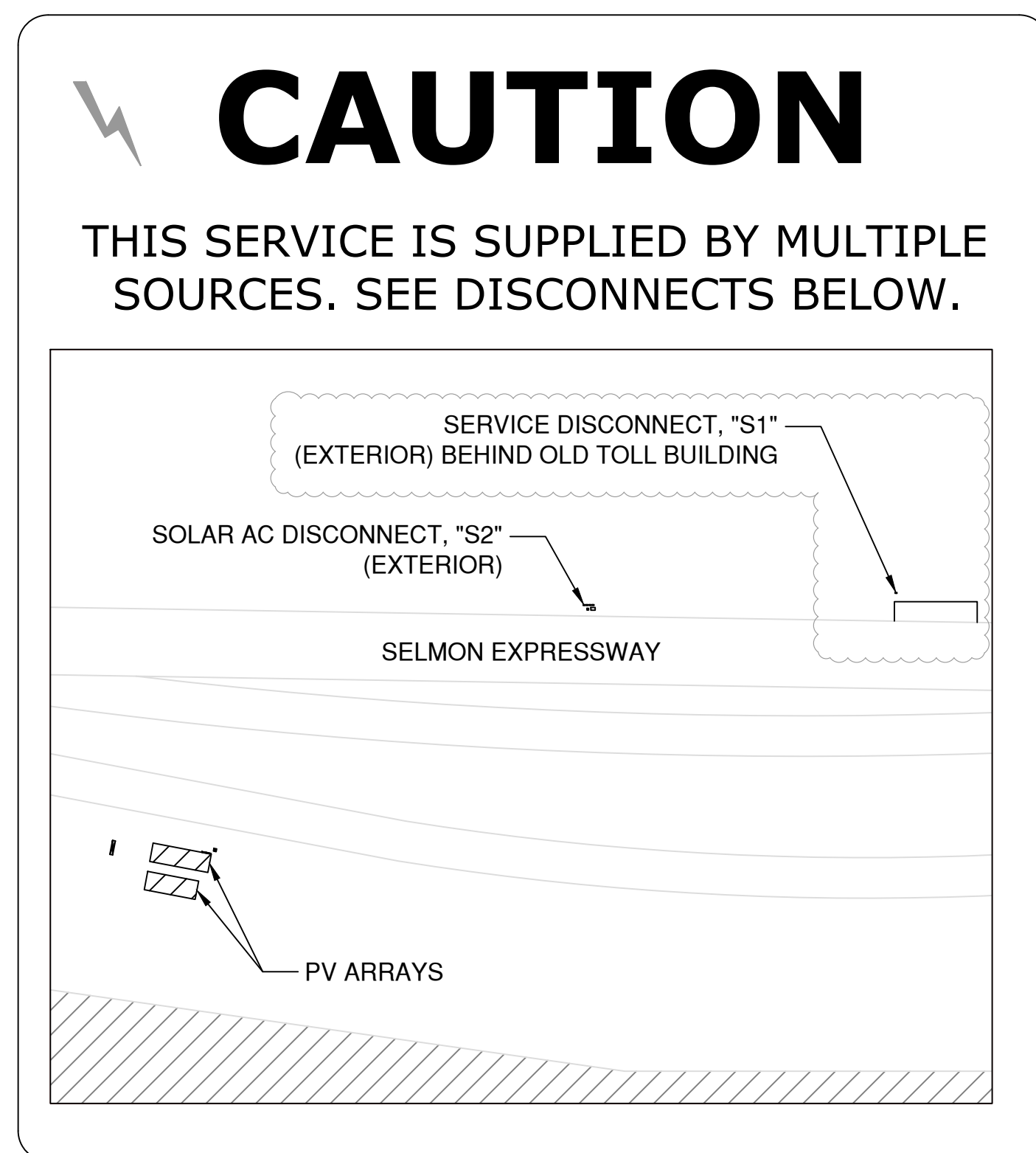
SAFETY LABELS AND MARKINGS GENERAL NOTES:

- EQUIPMENT SUCH AS INVERTERS AND SOLAR MODULES HAVE PRE-APPLIED LABELING TO MEET REQUIREMENTS OF THE NEC. ADDITIONAL LABELS FOUND HEREIN SHALL BE APPLIED TO SUCH EQUIPMENT FOR INFORMATIONAL PURPOSES.
- LABELS AND MARKINGS SHALL BE APPLIED TO COMPONENTS IN ACCORDANCE WITH NEC.
- LABELS SHALL BE ENGRAVED WITH MINIMUM 1/8" TALL BLACK OR WHITE TEXT ONTO RED PLASTIC PLACARDS OF 1/16" THICKNESS. LABELS SHALL BE ATTACHED TO THE APPROPRIATE COMPONENT ENCLOSURES IN CONSPICUOUS LOCATIONS USING TWO PART EPOXY.
- IN ADDITION TO LABELS SHOWN, INSTALLER SHALL LABEL ALL COMPONENTS LISTED IN 690.31(E)(3) WITH THE LEGEND "PHOTOVOLTAIC POWER SOURCE"

SAFETY LABELS AND MARKINGS LEGEND

- A. LOCATION OF SERVICE DISCONNECTING MEANS. APPLY TO MAIN SERVICE DISCONNECTING MEANS AND PV DISCONNECTING MEANS AT POCC.

A



LOCATION: AT AC DISCONNECTS S1 & S2

B

SOLAR PHOTOVOLTAIC SYSTEM

- WARNING -
AUTHORIZED PERSONNEL ONLY

RATED AC CURRENT: 96 A
NOMINAL AC VOLTAGE: 240 V

LOCATION: MAIN PV PANEL, MPVP

- WARNING -
ELECTRIC SHOCK HAZARD. THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED
AUTHORIZED PERSONNEL ONLY

LOCATION: DISCONNECTS, INVERTERS, JUNCTION BOXES, OTHER ENCLOSURES HOLDING DC CONDUCTORS

PHOTOVOLTAIC DISCONNECT

- WARNING -
ELECTRIC SHOCK HAZARD
 DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

LOCATION: AC DISCONNECT(S)

DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE

- WARNING -
AUTHORIZED PERSONNEL ONLY

RATED MAXIMUM POWER-POINT CURRENT: 26.52 A
RATED MAXIMUM POWER-POINT VOLTAGE: 407 V
MAXIMUM SYSTEM VOLTAGE: 547.18 V
SHORT CIRCUIT CURRENT: 28.44 A

LOCATION: INVERTER A1

DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE

- WARNING -
AUTHORIZED PERSONNEL ONLY

RATED MAXIMUM POWER-POINT CURRENT: 17.68 A
RATED MAXIMUM POWER-POINT VOLTAGE: 444 V
MAXIMUM SYSTEM VOLTAGE: 596.9 V
SHORT CIRCUIT CURRENT: 18.96 A

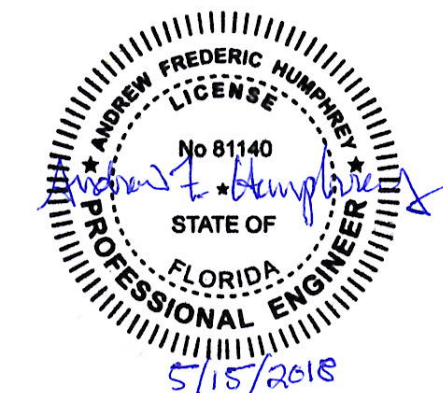
LOCATION: INVERTERS A2, A3



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PROJECT:

SELMON EXPRESSWAY

TAMPA, FL 33619

ISSUED FOR: AS-BUILT

A	5/8/18	XFMR CONNECTION DIAGRAM
B	5/15/18	ELECTRICAL DIAGRAM

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5-15-18	AS-BUILT

PROJECT NO: - - - -

DRAWN BY: MY

CHECKED BY: AH

SHEET TITLE:

LABELS

SHEET

E-802