

PROJECT CARPORT

205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

PROJECT SCOPE

THIS PROJECT CONSISTS OF A SOLAR PHOTOVOLTAIC SYSTEM AS PER THE SYSTEM SPECIFICATION SHOWN ON THIS PAGE.
PHOTOVOLTAIC MODULES CONVERT INCIDENT SUNLIGHT TO DIRECT CURRENT WHICH IS COLLECTED AND CONVERTED TO ALTERNATING CURRENT WITH AN INVERTER AT THE ELECTRICAL UTILITY GRID IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE.

SYSTEM DESCRIPTION

SYSTEM DC NAMEPLATE:	205.62 kW
SYSTEM AC NAMEPLATE:	160 kW
MODULES:	(447) JINKO JKM460M-7RL3-TV
MLPE:	(224) SOLAREDGE P1101
INVERTER(S):	(4) SOLAREDGE SE40kUS
MODULE TILT:	5°
AZIMUTH:	100° , 239°

DESIGN CRITERIA

ASHRAE FUNDAMENTALS CH 14
HAGERSTOWN
MEAN ANNUAL EXTREME MIN TEMP: -14.1°C
MEAN ANNUAL EXTREME MAX TEMP: 35.3°C

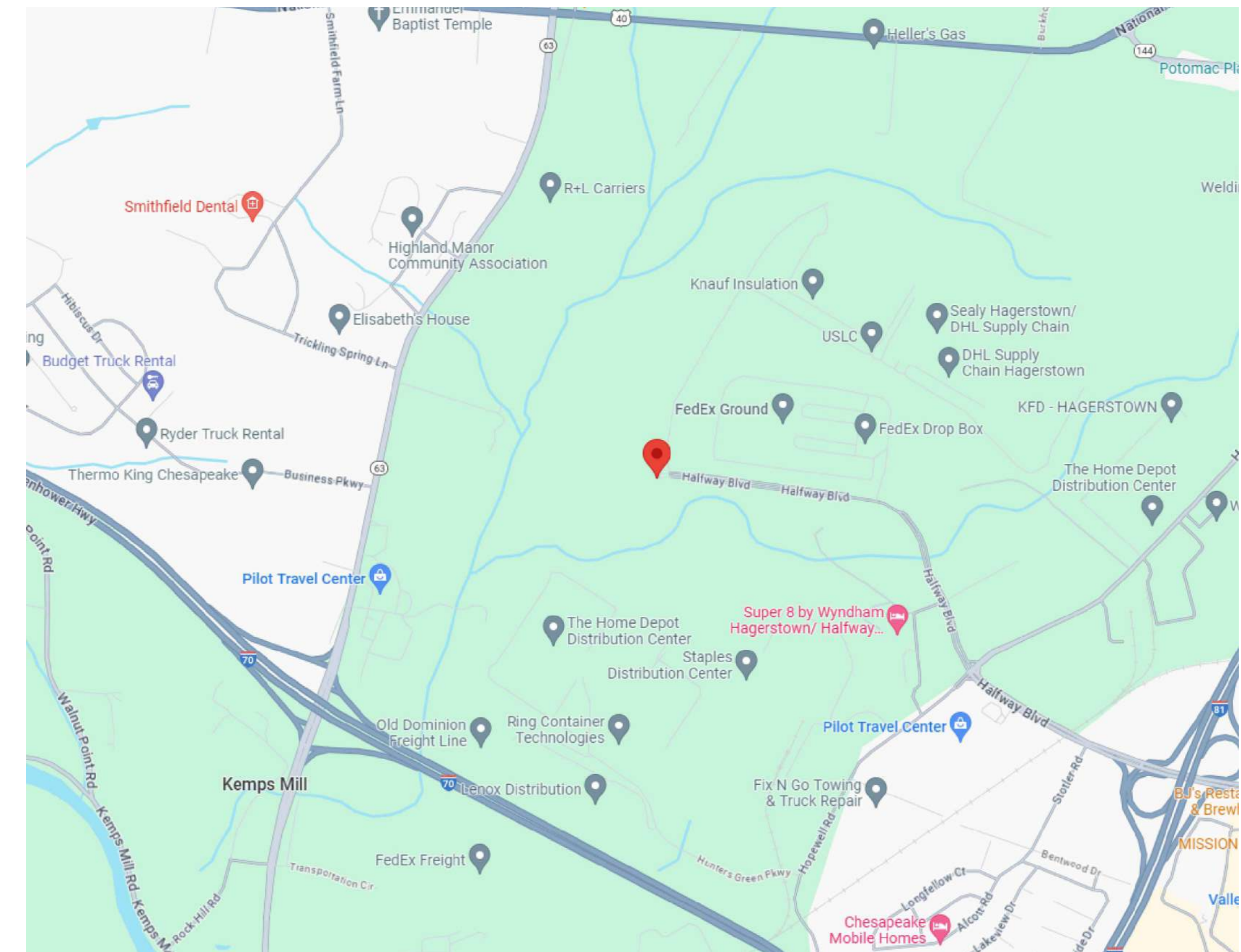
APPLICABLE CODES & STANDARDS

2017 NATIONAL ELECTRICAL CODE
2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL FIRE CODE

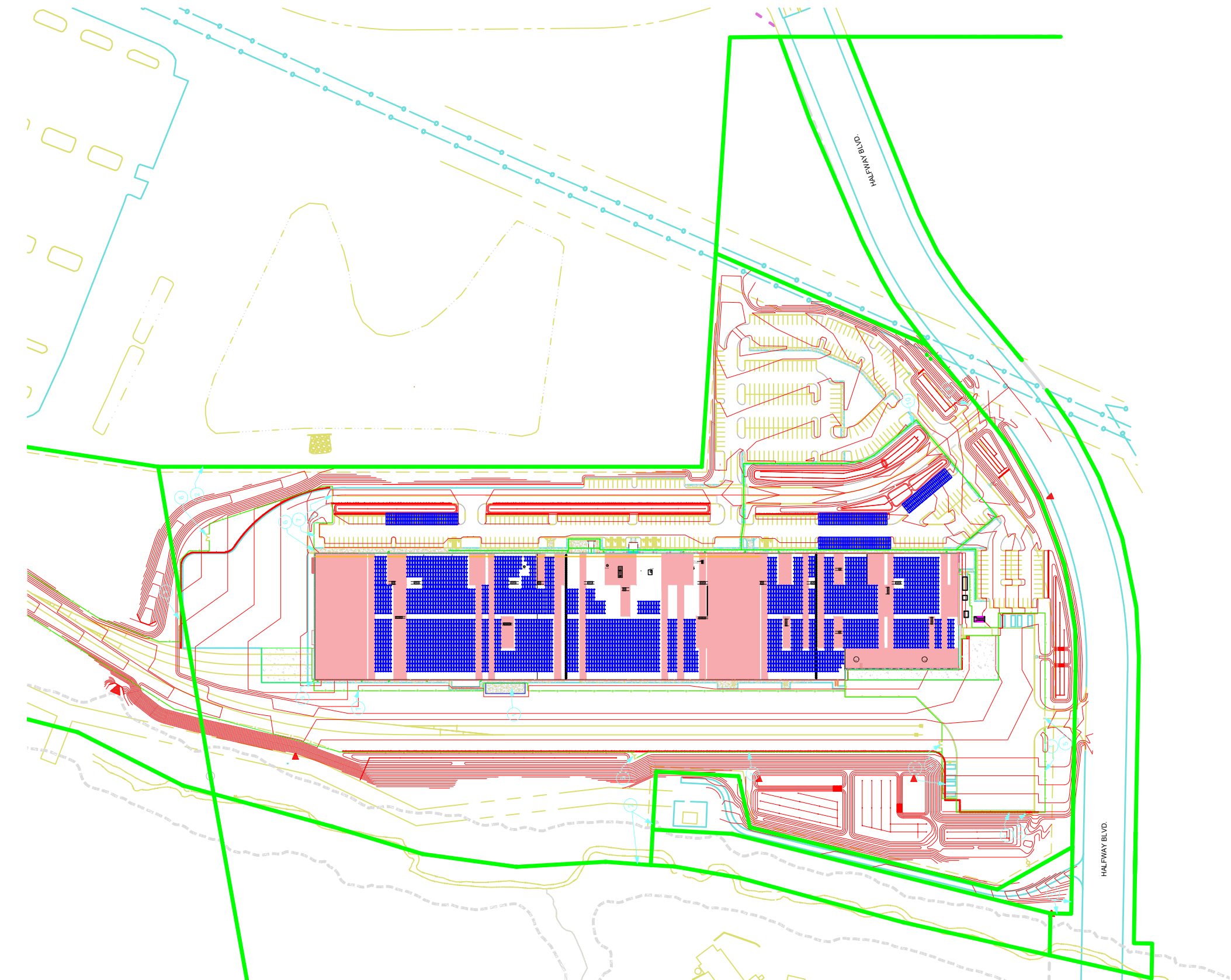
SHEET LIST TABLE

T1.0	TITLE SHEET
G1.0	PROJECT PLAN
G1.1	SECTION VIEW
E0.1	ELECTRICAL NOTES
E0.2	SIGNAGE
E1.0	ELECTRICAL SITE PLAN
E1.1	STRING DIAGRAM SD-1
E1.2	STRING DIAGRAM SD-2
E1.3	STRING DIAGRAM SD-3
E2.0	SINGLE LINE DIAGRAM
E2.1	COMMUNICATIONS
E3.0	ELECTRICAL DETAILS
E4.0	ELECTRICAL SCHEDULES
E5.0	EQUIPMENT DATASHEETS

PROJECT LOCATION



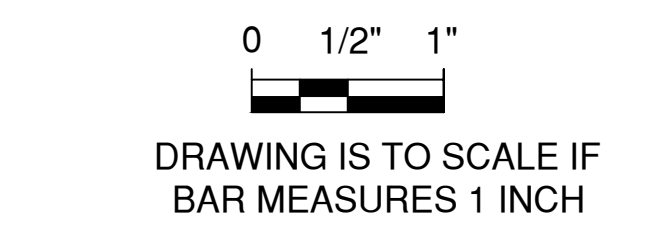
PROJECT RENDERING (Scale: N.T.S)



PROJECT CARPORTS

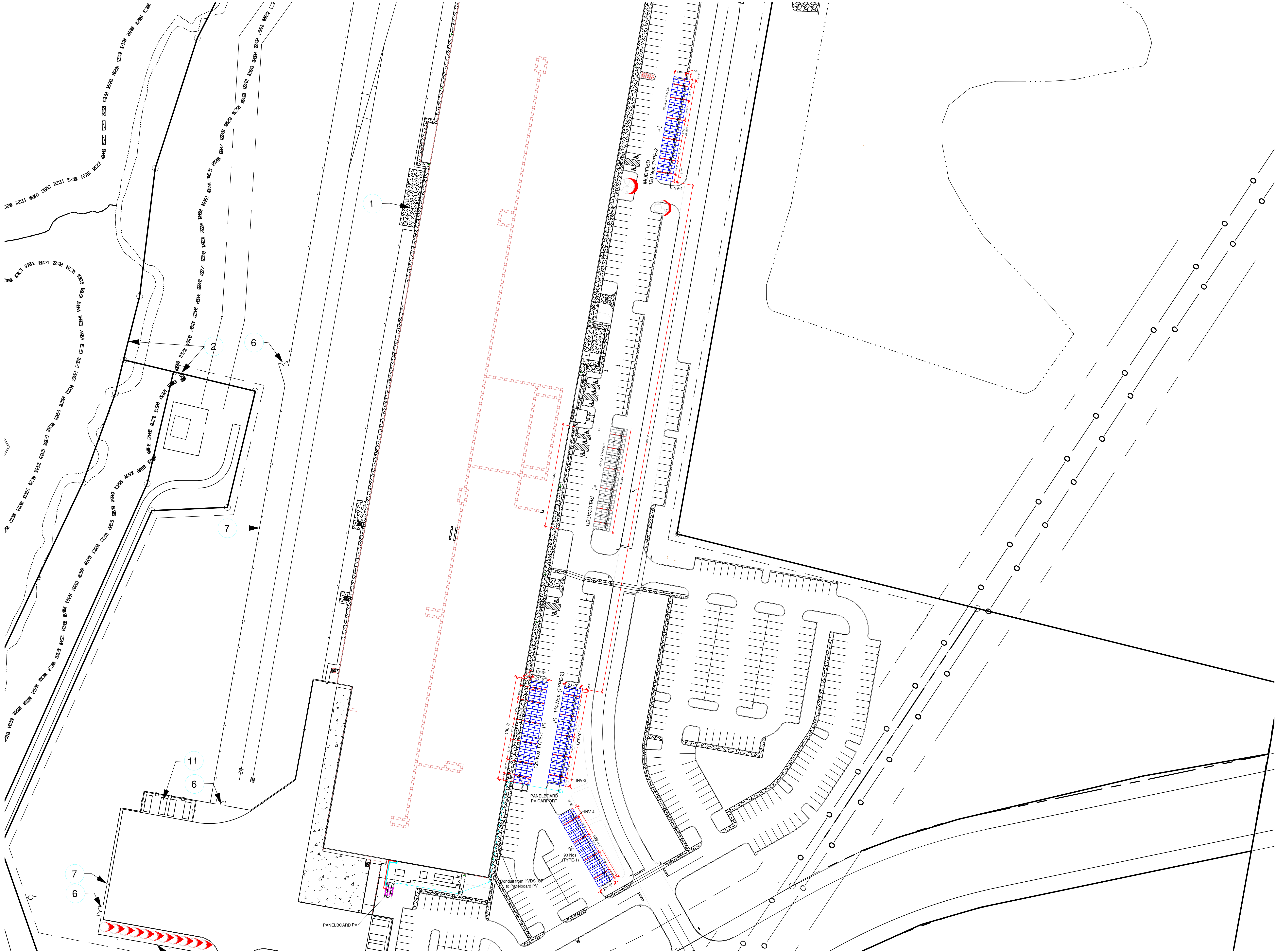
205.62 KW SOLAR PHOTOVOLTAIC SYSTEM

R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG
REV	DESCRIPTION	DATE	BY

DESCRIPTION
TITLE SHEET

T1.0

General Notes:
1. PROPERTY LAND AREA 41.43 ACRES.



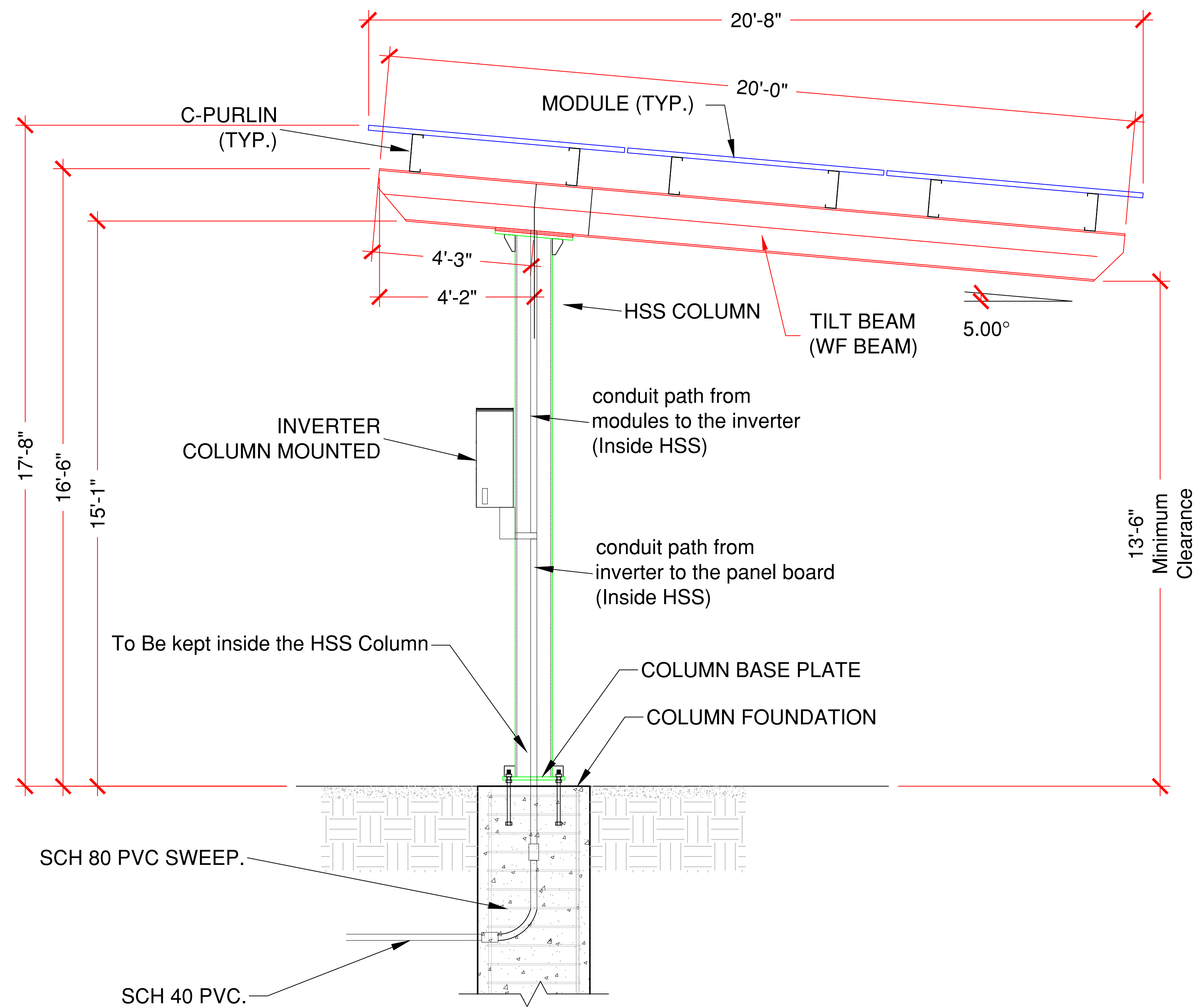
PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

REV	DESCRIPTION	DATE	BY
R5	IFC REVISED-1	05.08.2024	DG
R4	IFC REVISED	04.30.2024	DG
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG

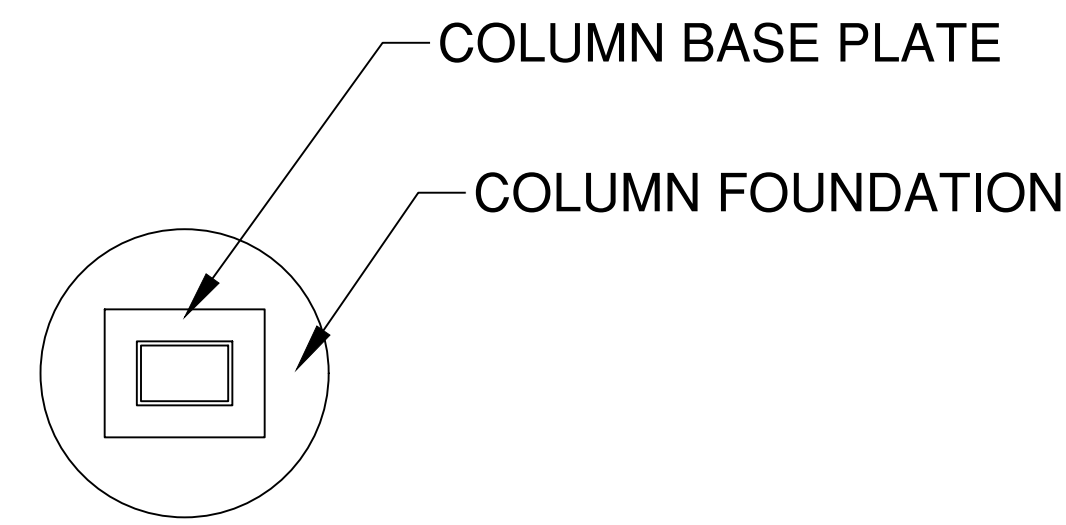
0 1/2" 1"
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
PROJECT PLAN

G1.0



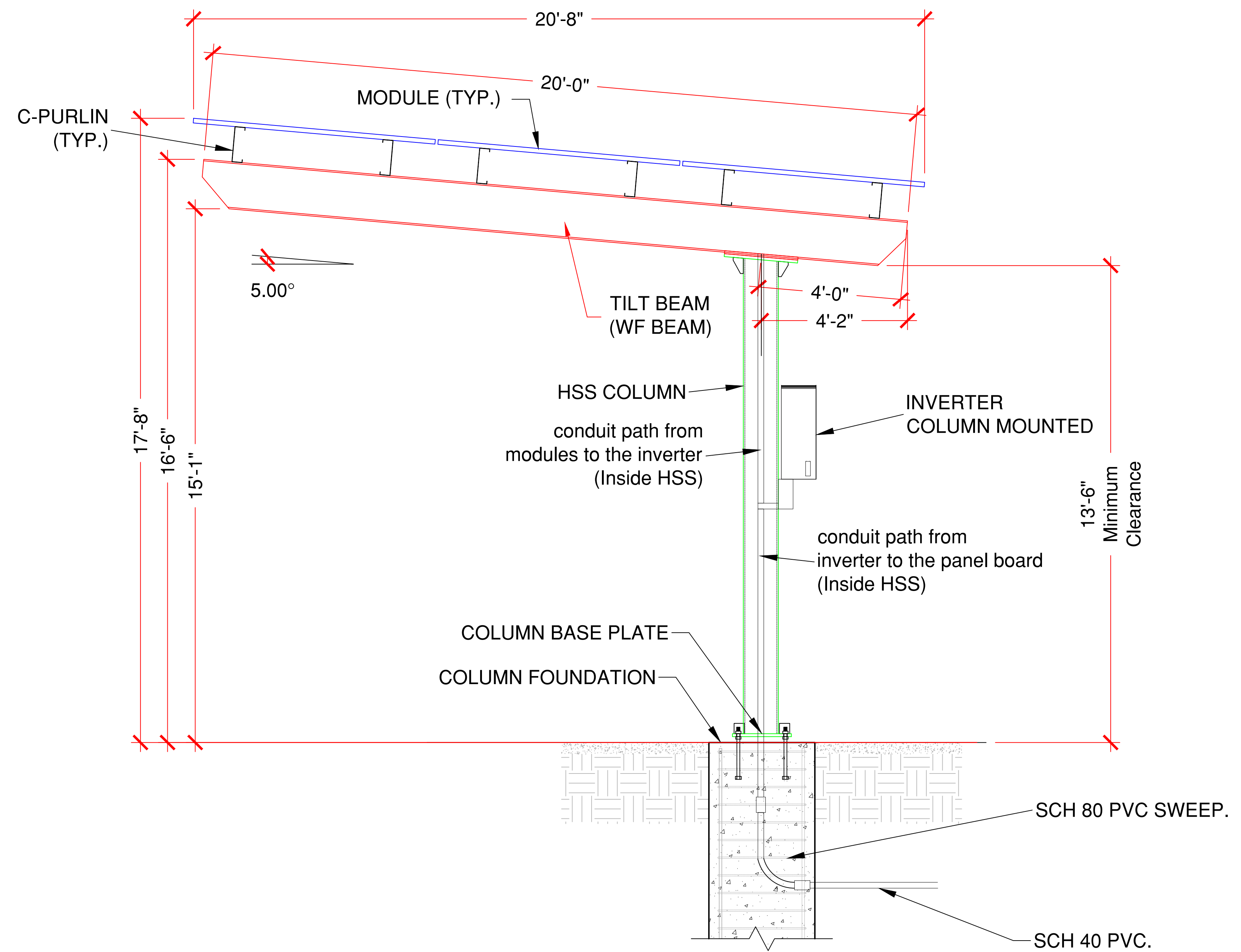
**TYPICAL SECTION
(TYPE-1)**



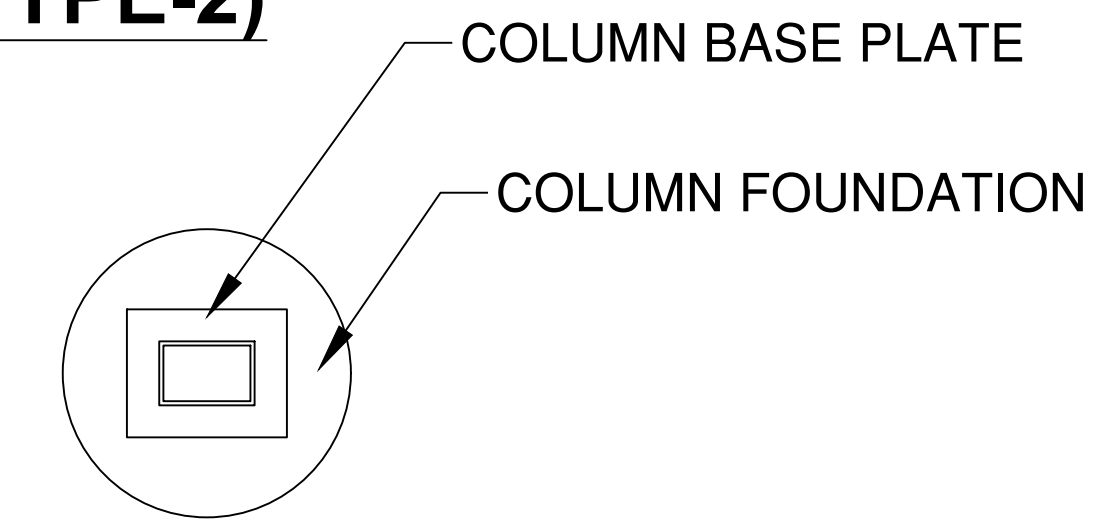
PLAN VIEW

Note:
Canopy superstructure shown diagrammatically. Refer to structural drawings for exact locations, quantities and dimensions.
Conduit path required for 1 Column per Canopies

1 SECTION VIEW
G1.1 Scale: 1" = 2'



**TYPICAL SECTION
(TYPE-2)**



PLAN VIEW

2 SECTION VIEW
G1.1 Scale: 1" = 2'

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

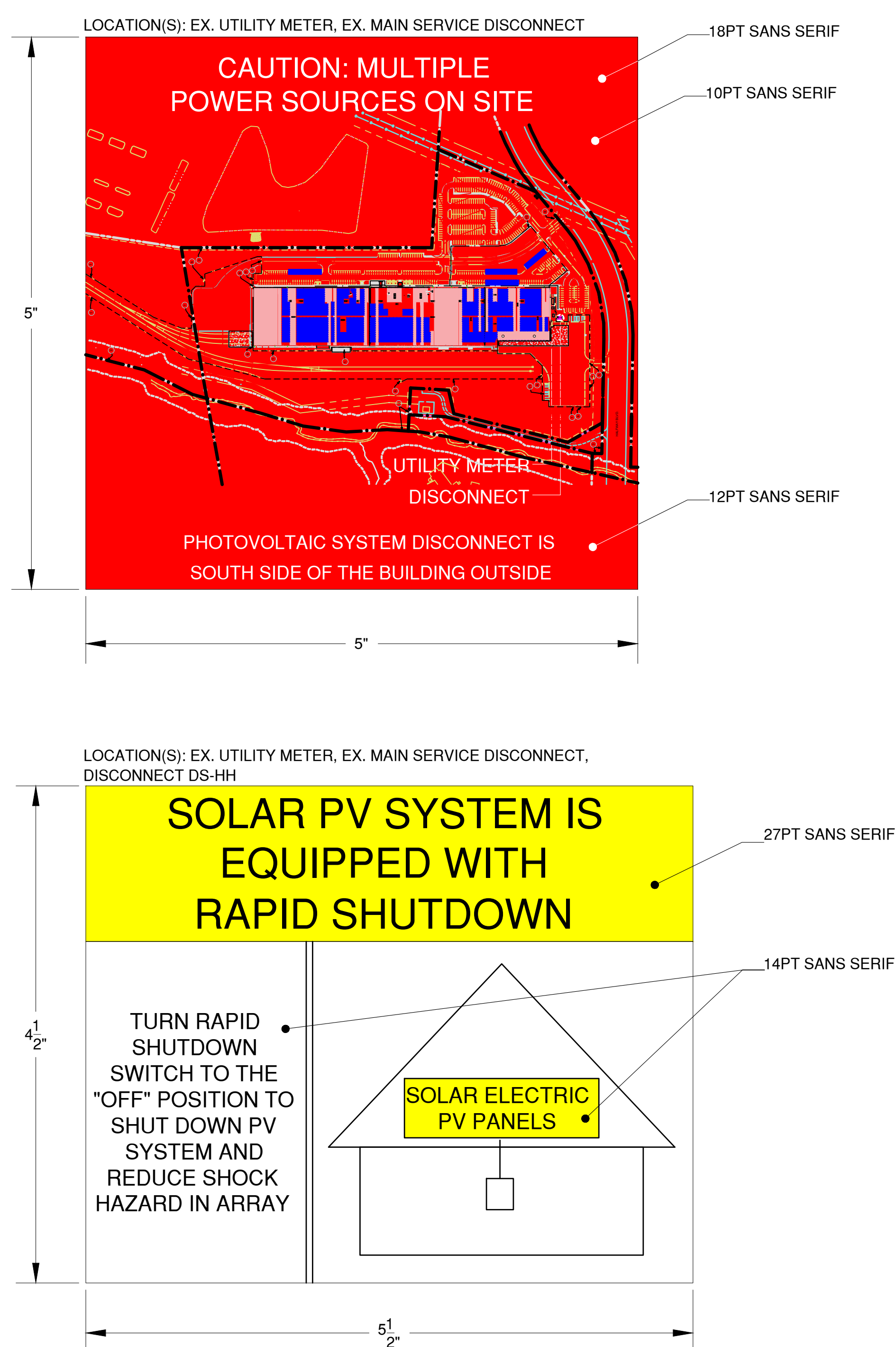
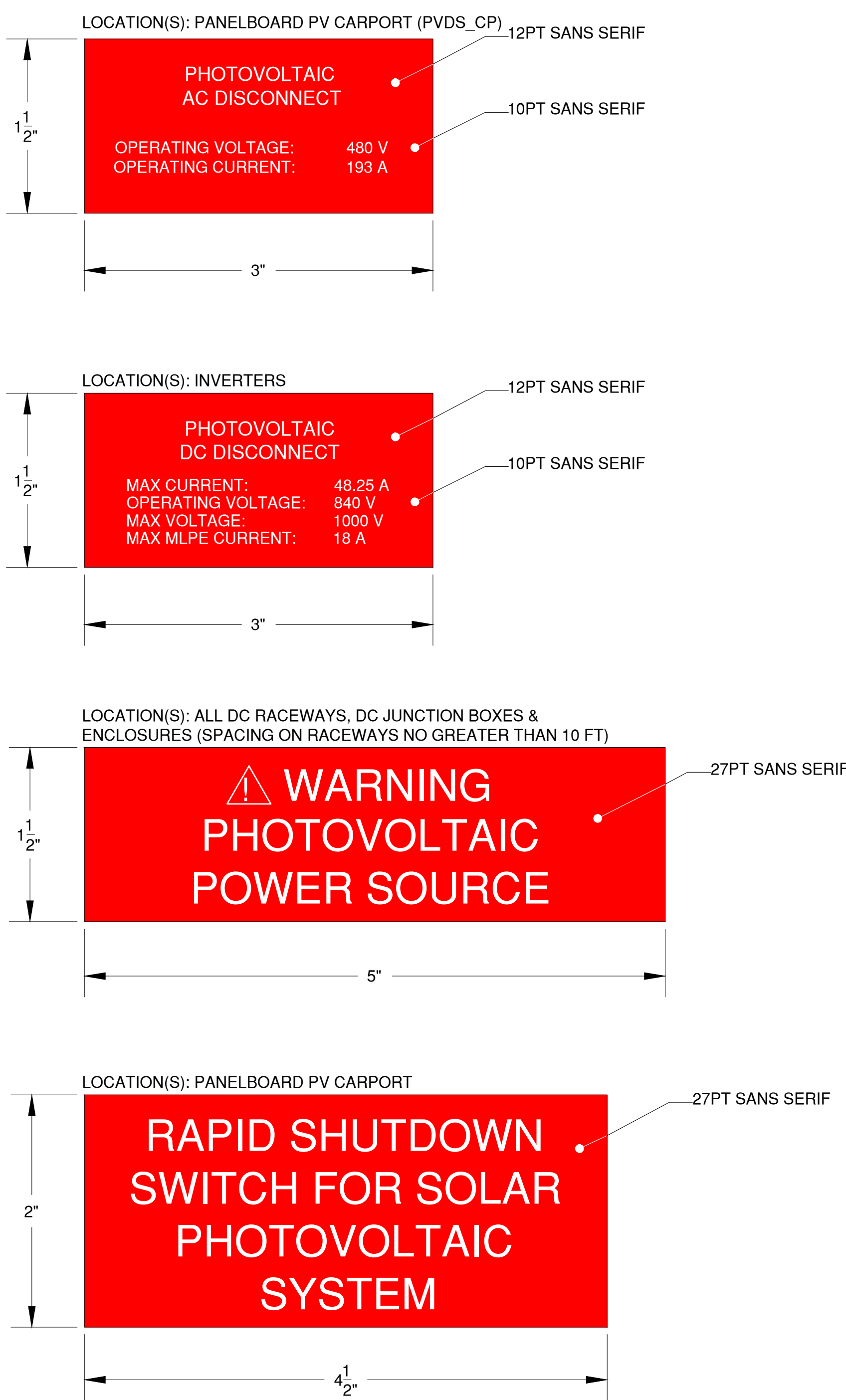
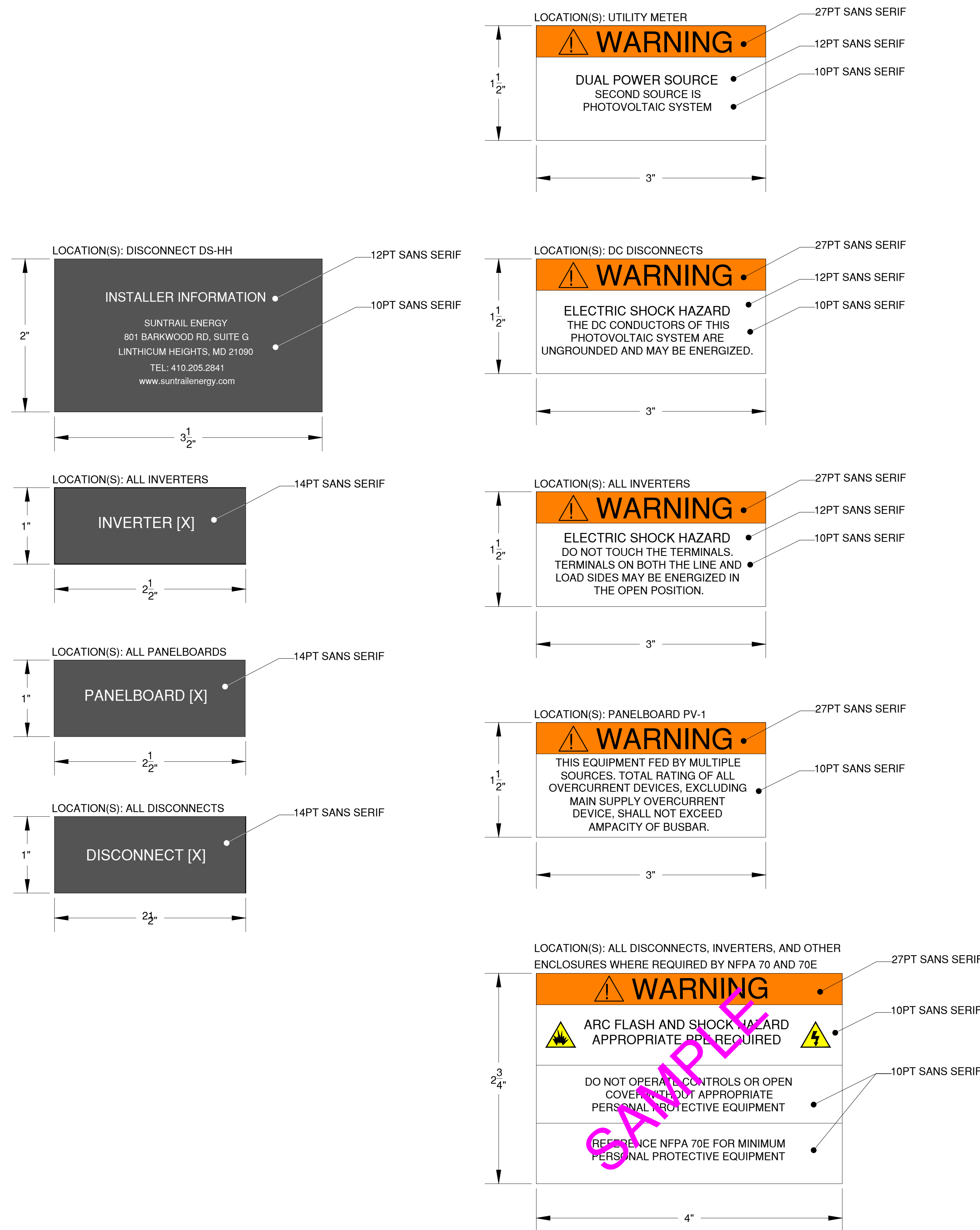
REV	DESCRIPTION	DATE	BY
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG

0 1/2" 1"
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
SECTION VIEW

G1.1

- GENERAL NOTES:
- ALL SIGNAGE SHALL FOLLOW ANSI Z535.4-2011.
 - ALL SIGNAGE WITH EITHER RED OR ORANGE BACKGROUNDS SHALL HAVE RETROREFLECTIVE FINISH.
 - ALL SIGNAGE LOCATED OUTDOORS SHALL HAVE RETROREFELCTIVE FINISH.
 - FURNISH AND INSTALL LABELS FOR EACH PIECE OF EQUIPMENT SPECIFIED OR OTHERWISE REQUIRED BY CODE.
 - ALL SIGNAGE, INCLUDING BASE MATERIALS AND ADHESIVE MATERIALS, SHALL BE APPROPRIATE FOR THE CONDITIONS OF INSTALLATION (E.G. SUNLIGHT RESISTANT, WEATHER RESISTANT, HEAT RESISTANT, ETC) AS APPLICABLE



PROJECT CARPORTS

205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

REV	DESCRIPTION	DATE	BY
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG



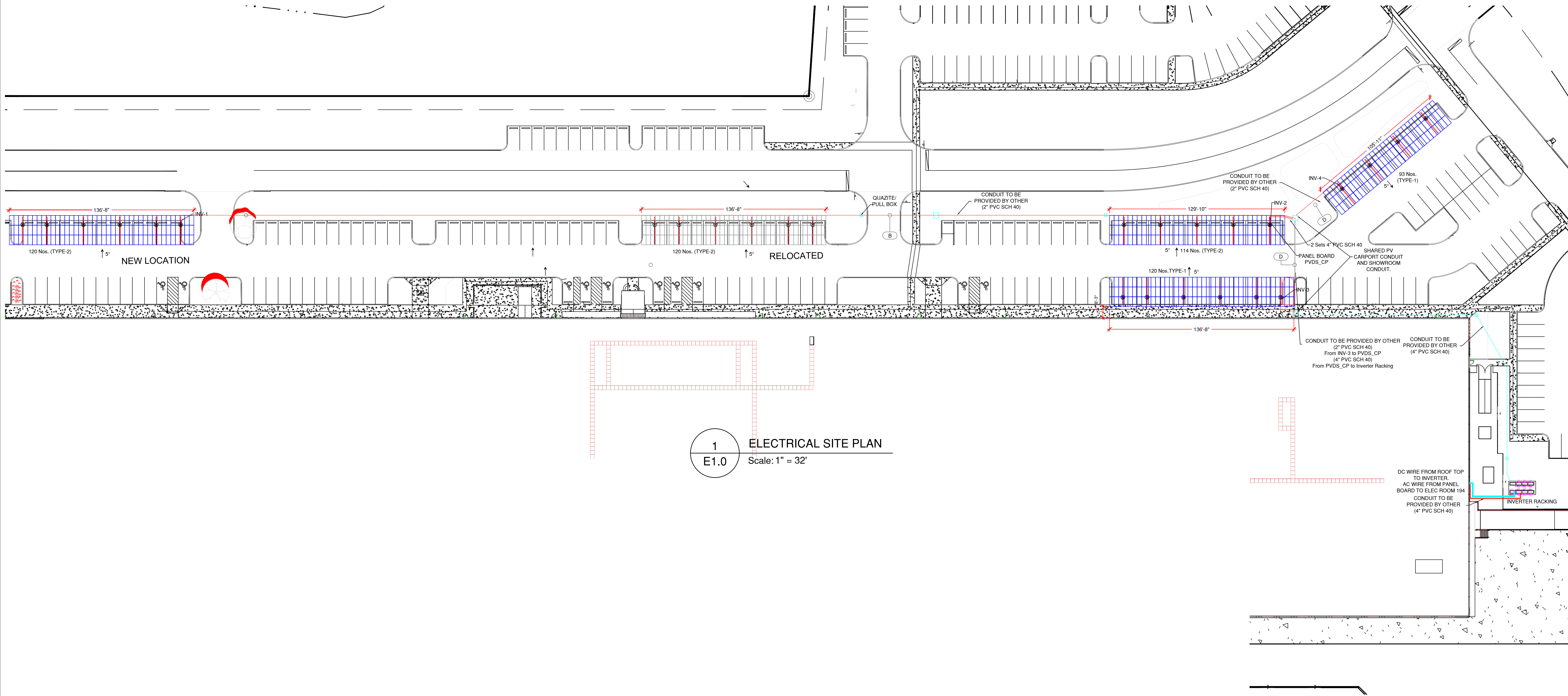
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
SIGNAGE

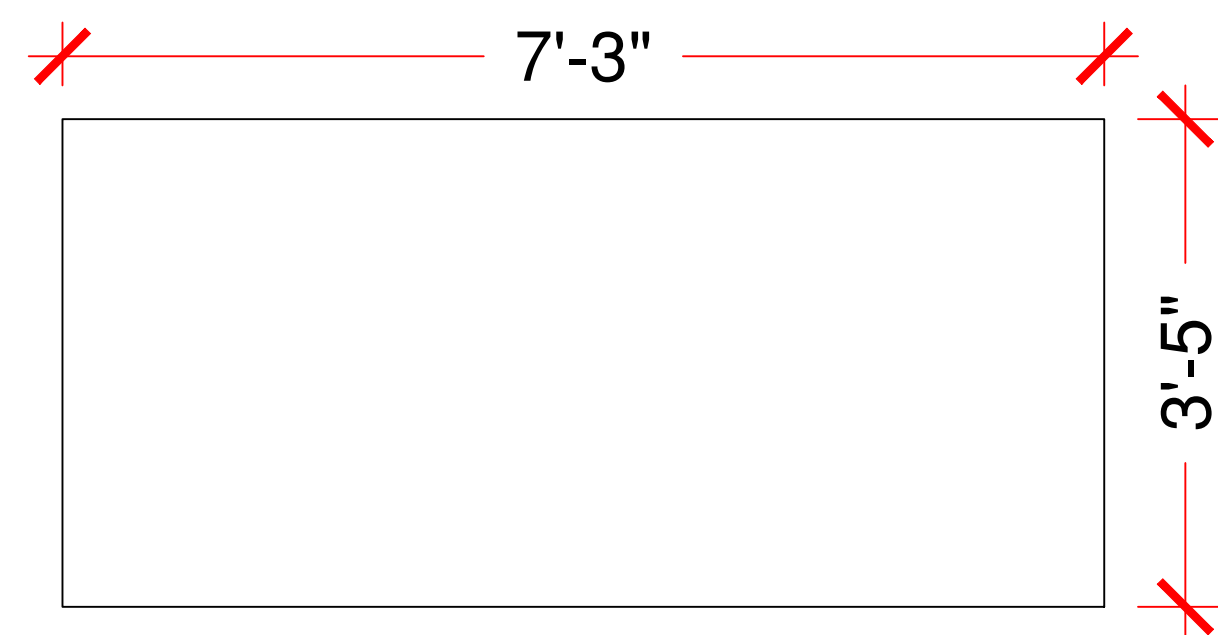
E0.2

- General Notes:**
1. ROUTE ALL SOURCE STRING CABLES WITH PV MODULES IN FIELD OF ARRAY. SECURE CONDUCTORS WITH APPROVED MEANS PER ELECTRICAL SPECIFICATIONS.
 2. ALL CONDUCTOR, EQUIPMENT, AND ARRAY LOCATIONS ARE SHOWN DIAGRAMMATICALLY AND SHOULD BE FIELD VERIFIED BASED ON EXISTING CONDITIONS.
 3. BOND RACKING TO PV EGC AS PER MANUFACTURER INSTRUCTIONS.
 4. LABEL CONDUITS PER 690.31(G)(3) & (4).
 5. DC SOURCE CIRCUITS WHERE EXPOSED TO SUNLIGHT OR ABRASIVE/SHARP EDGES OR SURFACES SHALL BE PROTECTED WITH UV AND HEAT RESISTANT BRAIDED WIRE SLEEVING OR SPLIT LOOM.

- LEGEND**
- DC CIRCUIT
 - DC CIRCUIT (INTERIOR)
 - DC CIRCUIT (UNDERGROUND)
 - AC CIRCUIT
 - AC CIRCUIT (INTERIOR)
 - AC CIRCUIT (UNDERGROUND)
 - EX. EQUIPMENT (EXTERIOR)
 - EX. EQUIPMENT (INTERIOR)
 - PROPOSED EQUIPMENT (INTERIOR)

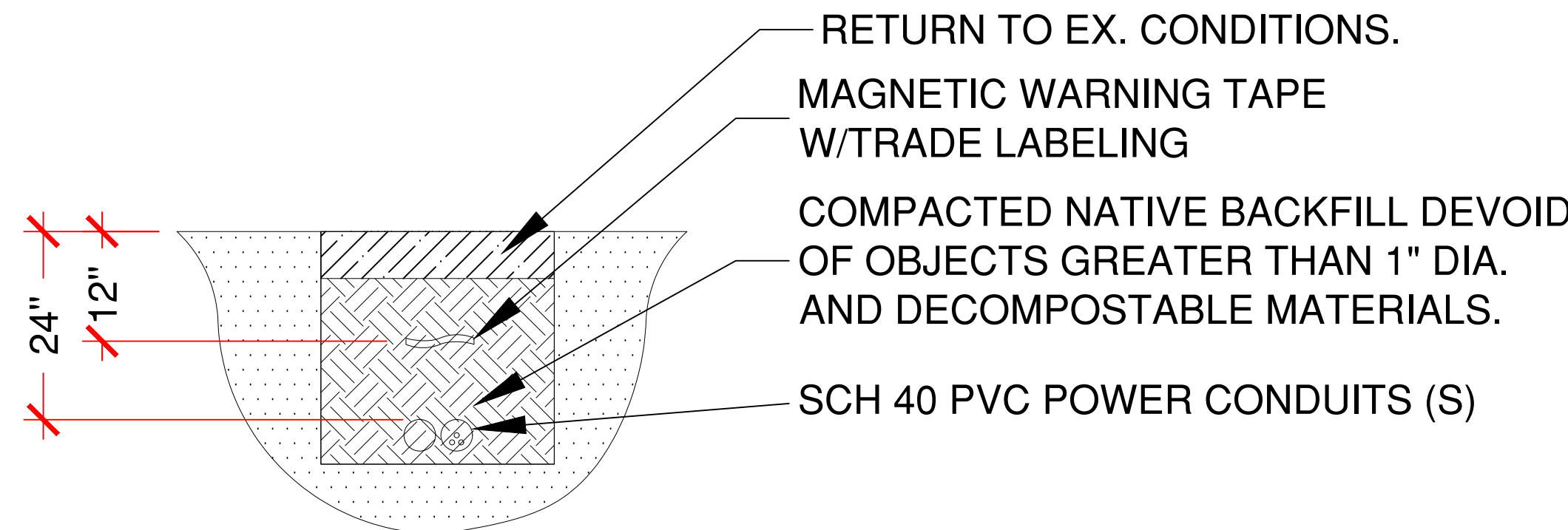


1
E1.0
ELECTRICAL SITE PLAN
Scale: 1" = 32'



JINKO JKM460M-7RL3-TV

2
E1.0
EQUIPMENT DETAIL
Scale: 1" = 1.3333'



3
E1.0
TRENCH DETAIL
Scale: N.T.S

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

REV	DESCRIPTION	DATE	BY
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG

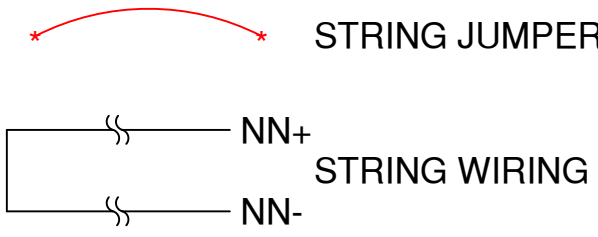
0 1/2" 1"
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
ELECTRICAL SITE PLAN

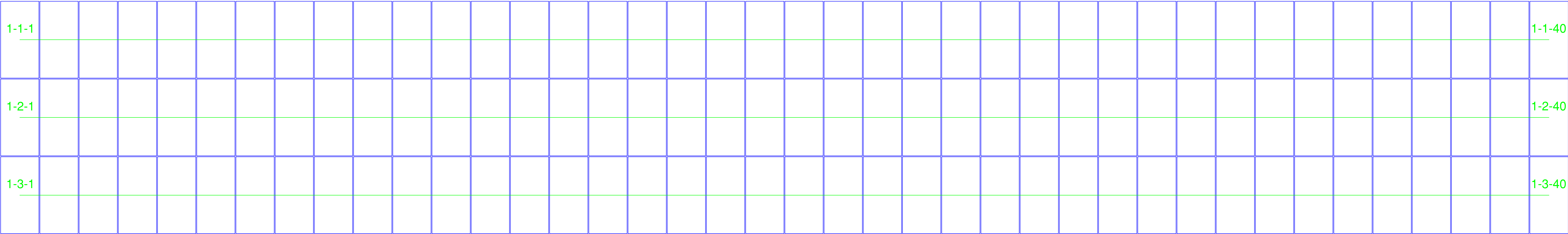
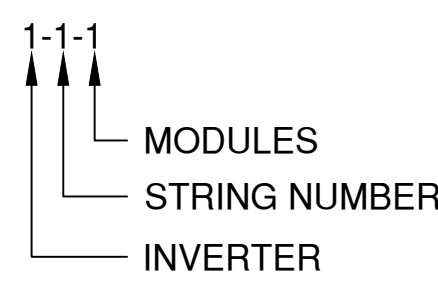
E1.0

- General Notes:**
- 1. ALL WIRES SHALL BE SUPPORTED ALONG MODULE FRAMES OR RACKING AND RATED AS SUNLIGHT (UV) RESISTANT.
 - 2. FOR HOME RUN CIRCUITS, USE ONLY CONNECTORS OF SAME BRAND AS FURNISHED WITH THE PV MODULE UNLESS SPECIFICALLY LISTED AND APPROVED FOR USE WITH THAT CONNECTOR. ALL PROPOSED NON-MATCHING CONNECTORS SHALL BE REVIEW AND APPROVED BY THE ENGINEER OF RECORD PRIOR INSTALLATION.
 - 3. LABEL ALL TERMINATIONS WITH INVERTER, STRING, AND POLARITY.
 - 4. BOND ALL ROOF MOUNTED DC CONDUITS AND RACKING SUN-ARRAYS TO DC CONDUITS AND RACKING SUB-ARRAY TO DC GROUNDING SYSTEM WITH ILSCO GBL-4DBT (OAE)

LEGEND



STRING NOMENCLATURE



INVERTER STRING SCHEDULE			
INVERTER	STRING ID	# MLPE	# MODULES
1	1-1	20	40
	1-2	20	40
	1-3	20	40
TOTAL		60	120

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG
REV	DESCRIPTION	DATE	BY



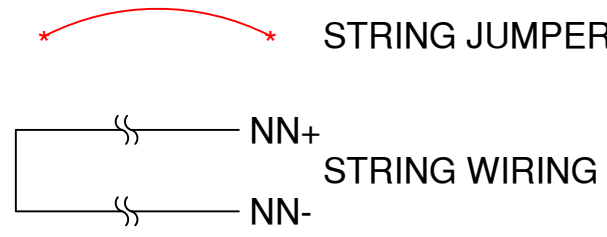
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
STRING DIAGRAM SD-1

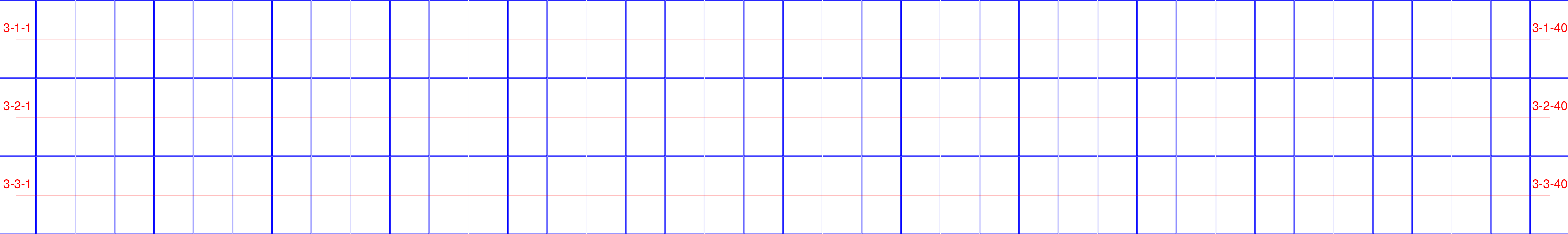
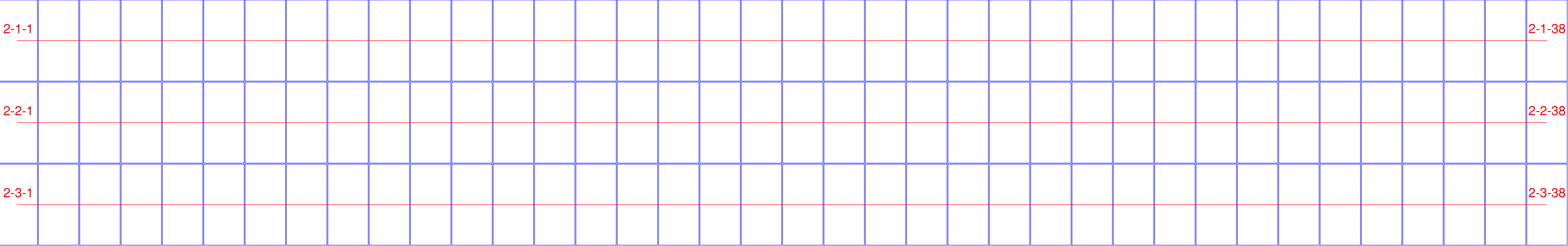
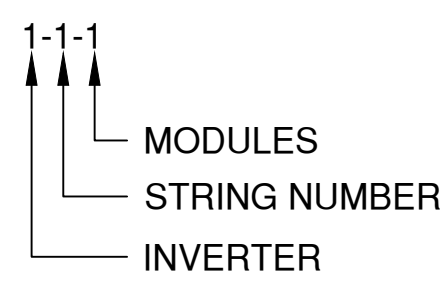
E1.1

- General Notes:**
- 1. ALL WIRES SHALL BE SUPPORTED ALONG MODULE FRAMES OR RACKING AND RATED AS SUNLIGHT (UV) RESISTANT.
 - 2. FOR HOME RUN CIRCUITS, USE ONLY CONNECTORS OF SAME BRAND AS FURNISHED WITH THE PV MODULE UNLESS SPECIFICALLY LISTED AND APPROVED FOR USE WITH THAT CONNECTOR. ALL PROPOSED NON-MATCHING CONNECTORS SHALL BE REVIEW AND APPROVED BY THE ENGINEER OF RECORD PRIOR INSTALLATION.
 - 3. LABEL ALL TERMINATIONS WITH INVERTER, STRING, AND POLARITY.
 - 4. BOND ALL ROOF MOUNTED DC CONDUITS AND RACKING SUN-ARRAYS TO DC CONDUITS AND RACKING SUB-ARRAY TO DC GROUNDING SYSTEM WITH ILSCO GBL-4DBT (OAE)

LEGEND



STRING NOMENCLATURE



INVERTER STRING SCHEDULE

INVERTER	STRING ID	# MLPE	# MODULES
2	2-1	19	38
	2-2	19	38
	2-3	19	38
TOTAL		57	114
3	3-1	20	40
	3-2	20	40
	3-3	20	40
TOTAL		60	120

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG	BY
R2	ISSUED FOR PERMIT	02.06.2024	DG	
R1	ISSUED FOR QUOTATION	01.18.2024	DG	
R0	ISSUED FOR QUOTATION	01.15.2024	DG	
REV	DESCRIPTION	DATE		



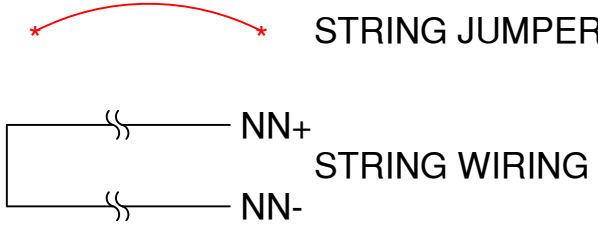
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
STRING DIAGRAM SD-2

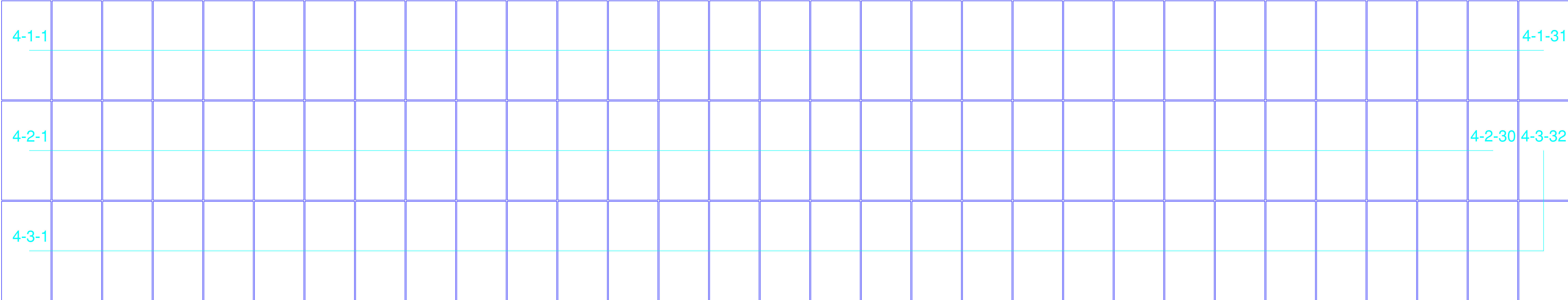
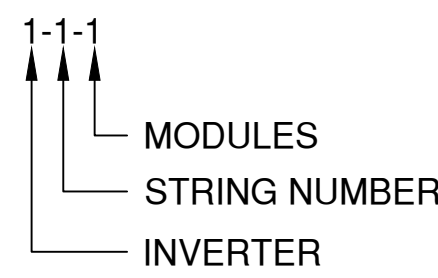
E1.2

- General Notes:**
- 1. ALL WIRES SHALL BE SUPPORTED ALONG MODULE FRAMES OR RACKING AND RATED AS SUNLIGHT (UV) RESISTANT.
 - 2. FOR HOME RUN CIRCUITS, USE ONLY CONNECTORS OF SAME BRAND AS FURNISHED WITH THE PV MODULE UNLESS SPECIFICALLY LISTED AND APPROVED FOR USE WITH THAT CONNECTOR. ALL PROPOSED NON-MATCHING CONNECTORS SHALL BE REVIEW AND APPROVED BY THE ENGINEER OF RECORD PRIOR INSTALLATION.
 - 3. LABEL ALL TERMINATIONS WITH INVERTER, STRING, AND POLARITY.
 - 4. BOND ALL ROOF MOUNTED DC CONDUITS AND RACKING SUN-ARRAYS TO DC CONDUITS AND RACKING SUB-ARRAY TO DC GROUNDING SYSTEM WITH ILSCO GBL-4DBT (OAE)

LEGEND



STRING NOMENCLATURE

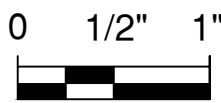


INVERTER STRING SCHEDULE

INVERTER	STRING ID	# MLPE	# MODULES
4	4-1	16	31
	4-2	15	30
	4-3	16	32
TOTAL		47	93
TOTAL		224	447

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

REV	DESCRIPTION	DATE	BY
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG



DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

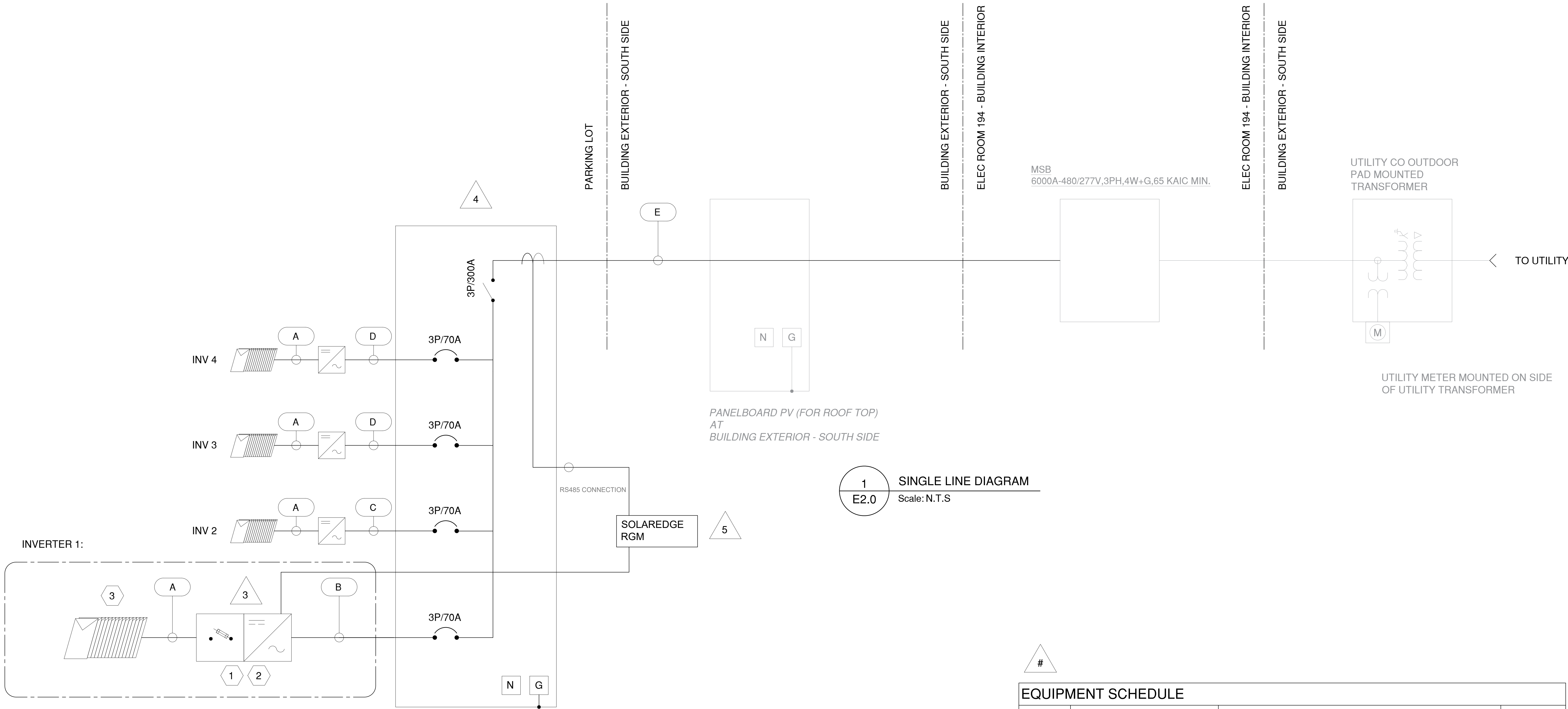
DESCRIPTION
STRING DIAGRAM SD-3

E1.3

- General Notes:**
- CONTINUOUS BOND DC EGC T RACKING SYSTEM PER NEC AND MANUFACTURE'S INSTRUCTION USING ILSCO GBL-4DBT (OAE). WHERE EXPOSED TO DAMES, ALL EGC SHALL BE MIN. #6 AWG SOLID CU.
 - SEE INVERTER STRING SCHEDULE FOR SUB-ARRAY DETAILS.
 - ALL TERMINALS ARE 75° RATED UNLESS EXPLICITLY NOTED OTHERWISE.
 - ALL CONDUCTORS ARE COPPER UNLESS EXPLICITLY NOTED OTHERWISE.

- KEYED NOTES:**
- INVERTER EQUIPPED WITH INTEGRATED LOAD-BREAK RATED DC DISCONNECT SWITCH. DC DISCONNECT EQUIPPED WITH FACTORY-INSTALLED 25A FUSES IN POSITIVE LEGS OF ALL INPUT CIRCUITS.
 - ENTER INVERTER DISCONNECT CABINET WITH WATERTIGHT CONDUIT FITTINGS TO MAINTAIN RATING OF INVERTER ENCLOSURES WHEN INSTALLED OUTDOORS.
 - INVERTER IS EQUIPPED WITH AN INSOLATION MONITOR INTERRUPTER (IMI) FOR GROUND FAULT PROTECTION.
 - SEE SOURCE STRING DETAIL FOR OPTIMIZER WIRING.
 - DISCONNECT SHALL BE LOAD-BREAK RATED, VISIBLE BREAK, LOCKABLE/TAGGABLE IN OPEN POSITION, WITHIN SIGHT OF THE UTILITY METER, AND READILY ACCESSIBLE TO UTILITY PERSONNEL.

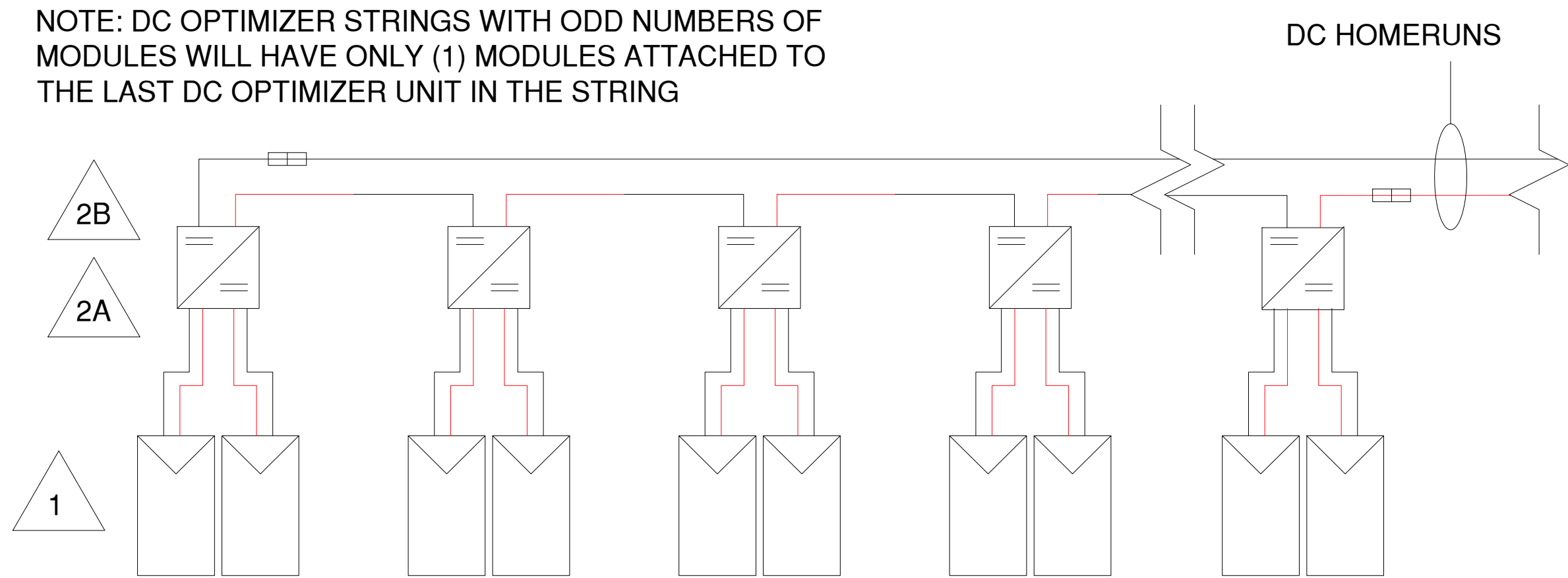
- LEGEND**
- NEW CONSUTRUCTION
 - EXISTING CONSTRUCTION
 - NEUTRAL BUS
 - GROUND BUS



EQUIPMENT SCHEDULE			
ID	EQUIPMENT NAME	DESCRIPTION	QTY
1	PHOTOVTLAIC MODULE	JINKO JKM460M-7RL3-TV	447
2	DC OPTIMIZER	SOLAREGE P1101	224
3	INVERTERS 1 - 4	SOLAREGE SE40KUS	4
4	PANELBOARD PV CARPORT (PVDS-CP)	300A BUS, 300A MCCB, 480VAC RATED, 3PH, NEMA 3R,	1
5	COMMUNICATION	SOLAREGE REVENUE GRADE METER	1

CONDUCTOR & RACEWAY SCHEDULE				
CIRCUIT ID	CONDUCTORS	RACEWAY	GROUND	#SETS
A	(18) #10 AWG PV WIRE 2KV	1-1/4" IMC	#6 AWG CU THWN-2 EGC	4
B	(3) #2/0 AWG THWN-2 (1) #2/0 AWG THWN-2 NEU	2" PVC SCH 40	#6 AWG CU THWN-2 EGC	1
C	(3) #6 AWG THWN-2 (1) #6 AWG THWN-2 NEU	1" EMT	#6 AWG CU THWN-2 EGC	1
D	(3) #6 AWG THWN-2 (1) #6 AWG THWN-2 NEU	2" PVC SCH 40	#6 AWG CU THWN-2 EGC	2
E	(3) #400 KCMIL THWN-2 (1) #400 KCMIL THWN-2 NEU	4" PVC SCH 40	#4 AWG CU THWN-2 EGC	1

NOTE: DC OPTIMIZER STRINGS WITH ODD NUMBERS OF MODULES WILL HAVE ONLY (1) MODULES ATTACHED TO THE LAST DC OPTIMIZER UNIT IN THE STRING



2
E2.0
STRING WIRING DETAIL
Scale: N.T.S.

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

R3	R2	R1	R0	REV	DESCRIPTION
03.12.2024	02.06.2024	01.18.2024	01.15.2024	DATE	
ISSUED FOR CONSTRUCTION	ISSUED FOR PERMIT	ISSUED FOR QUOTATION	ISSUED FOR QUOTATION		

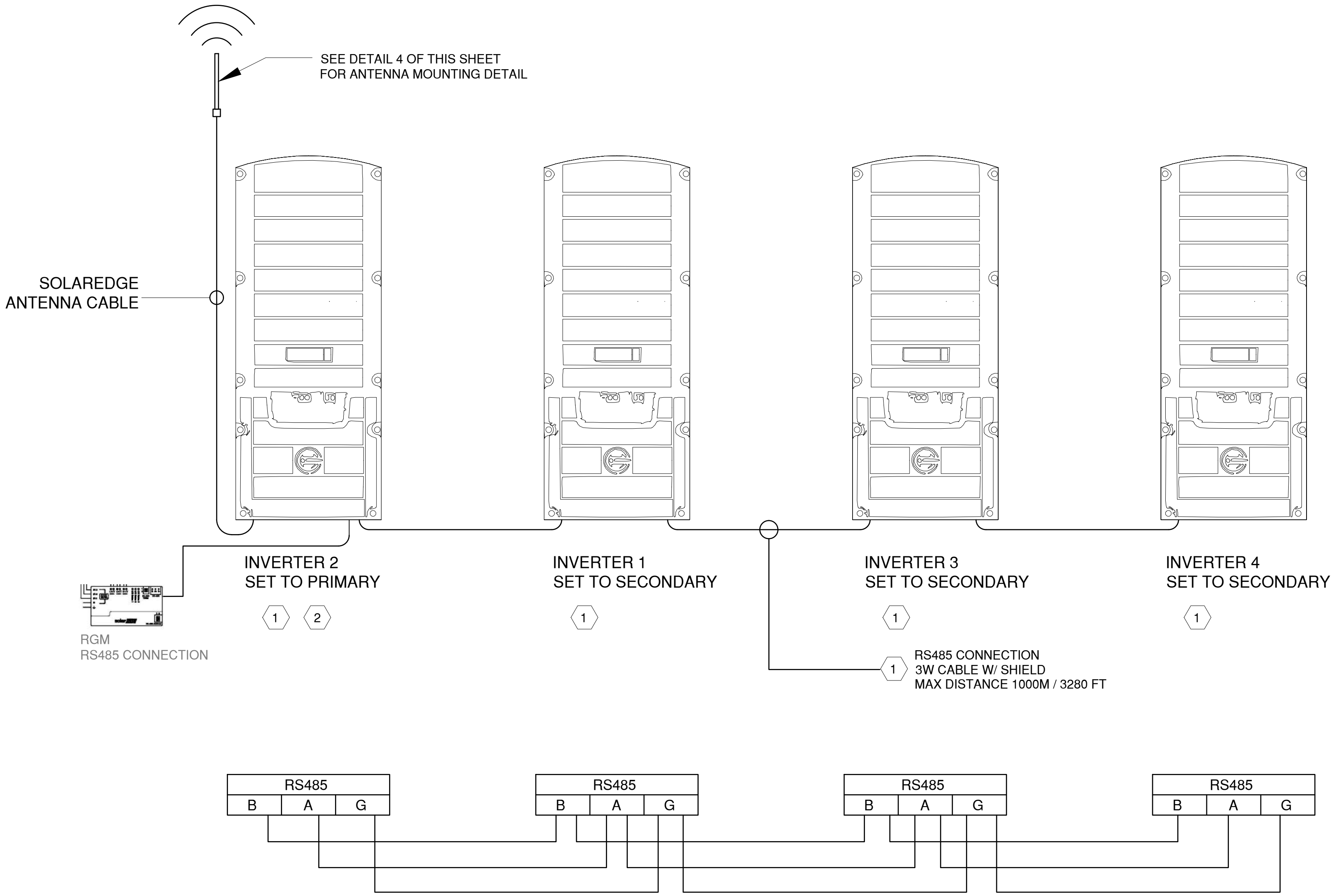
0 1/2" 1"
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
SINGLE LINE DIAGRAM

E2.0

- General Notes:**
- CELLULAR DATA PLAN REQUIRED FOR COMMUNICATIONS WITH SOLAREEDGE CLOUD SERVER

- KEYED NOTES:**
- PROVIDE 3/4" IMC WHERE EXPOSED TO DIRECT SUNLIGHT.
 - PROVIDE SOLAREEDGE SE-RS485-SPD2-K1 SURGE PROTECTION DEVICE AT FIRST AND LAST INVERTER IN RS485 CHAIN.
 - PROVIDE SOLAREEDGE GSM CELLULAR MODEM KIT AND ANTENNA.



PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

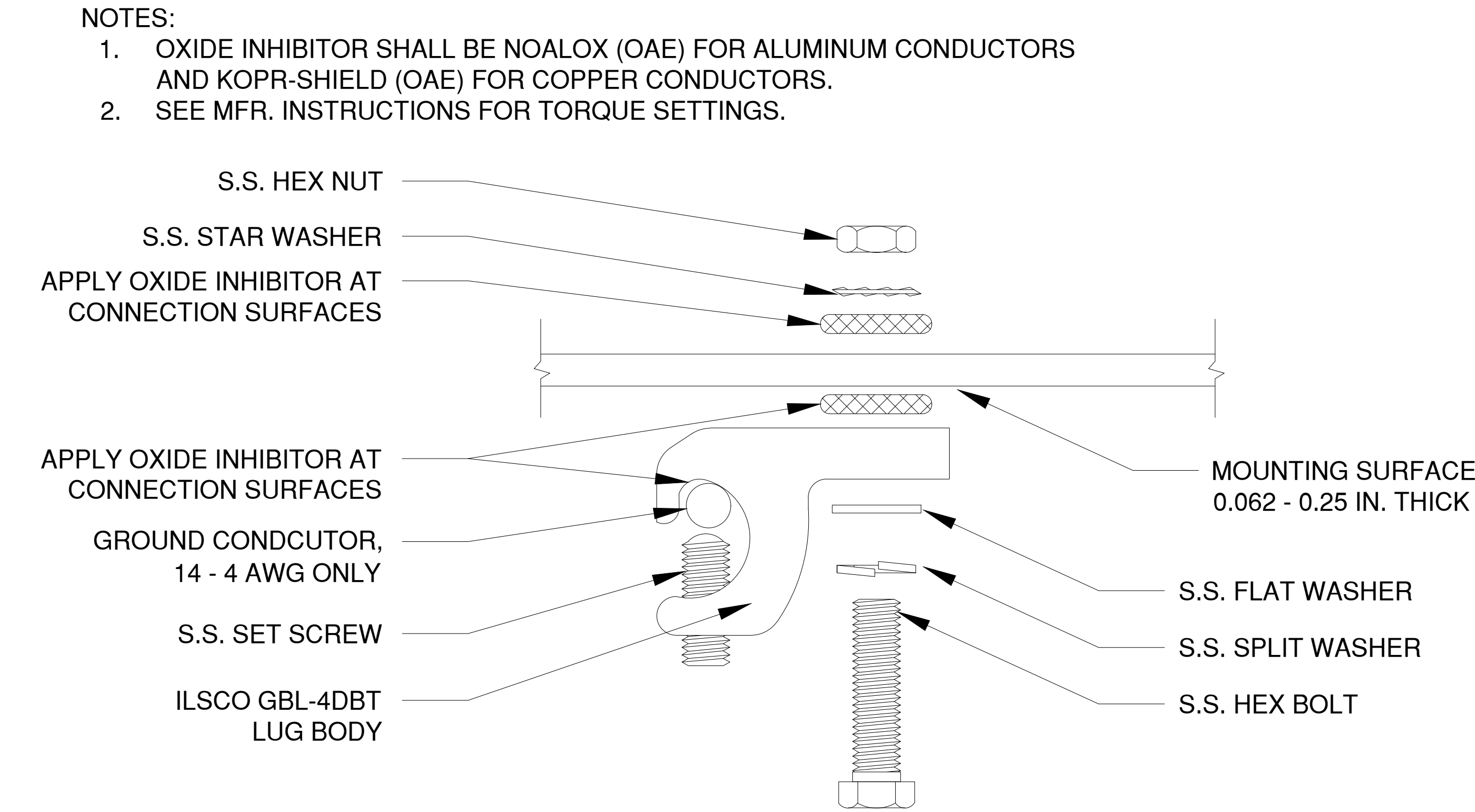
REV	DESCRIPTION	DATE	BY
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG
R2	ISSUED FOR PERMIT	02.06.2024	DG
R1	ISSUED FOR QUOTATION	01.18.2024	DG
R0	ISSUED FOR QUOTATION	01.15.2024	DG

0 1/2" 1"
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

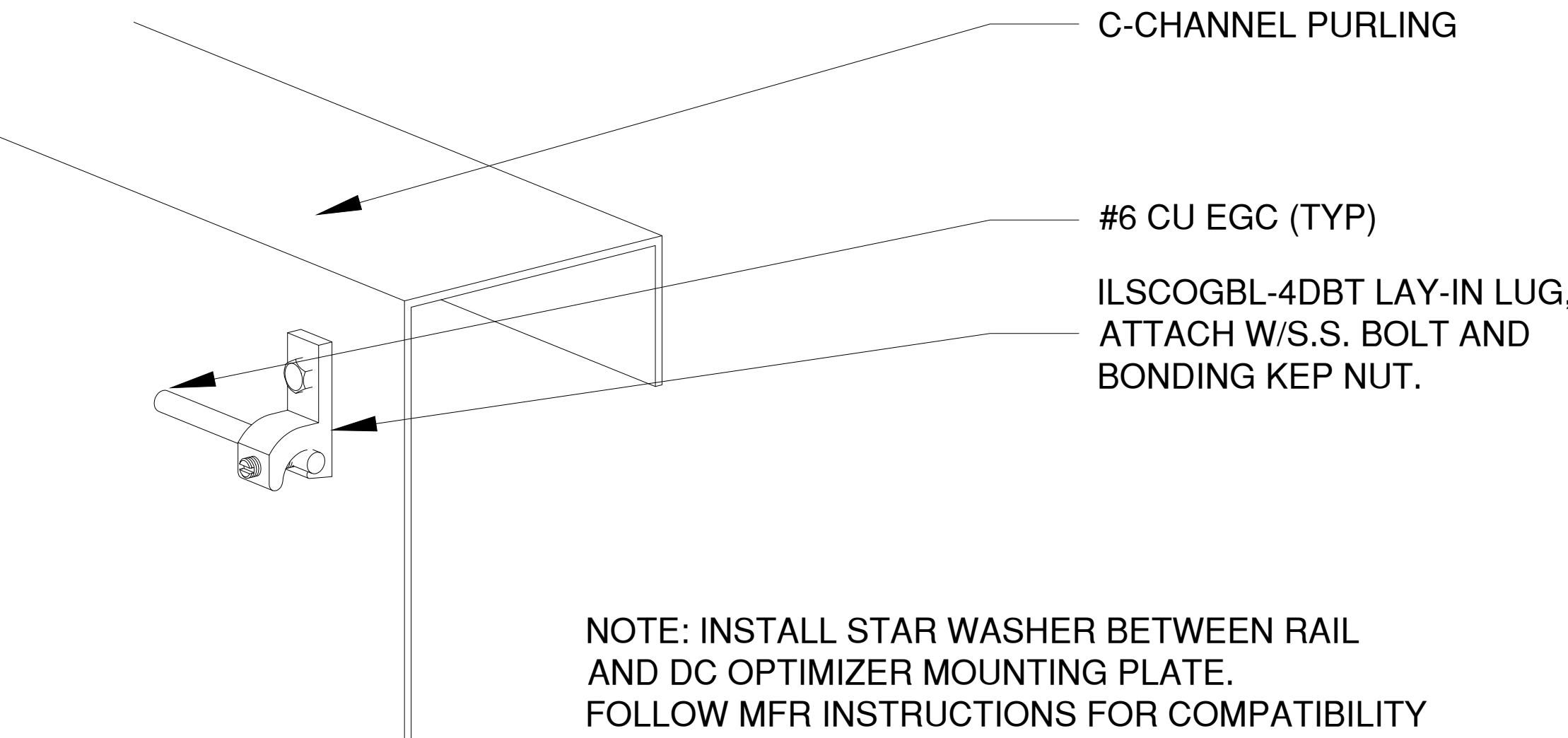
DESCRIPTION
COMMUNICATIONS

E2.1

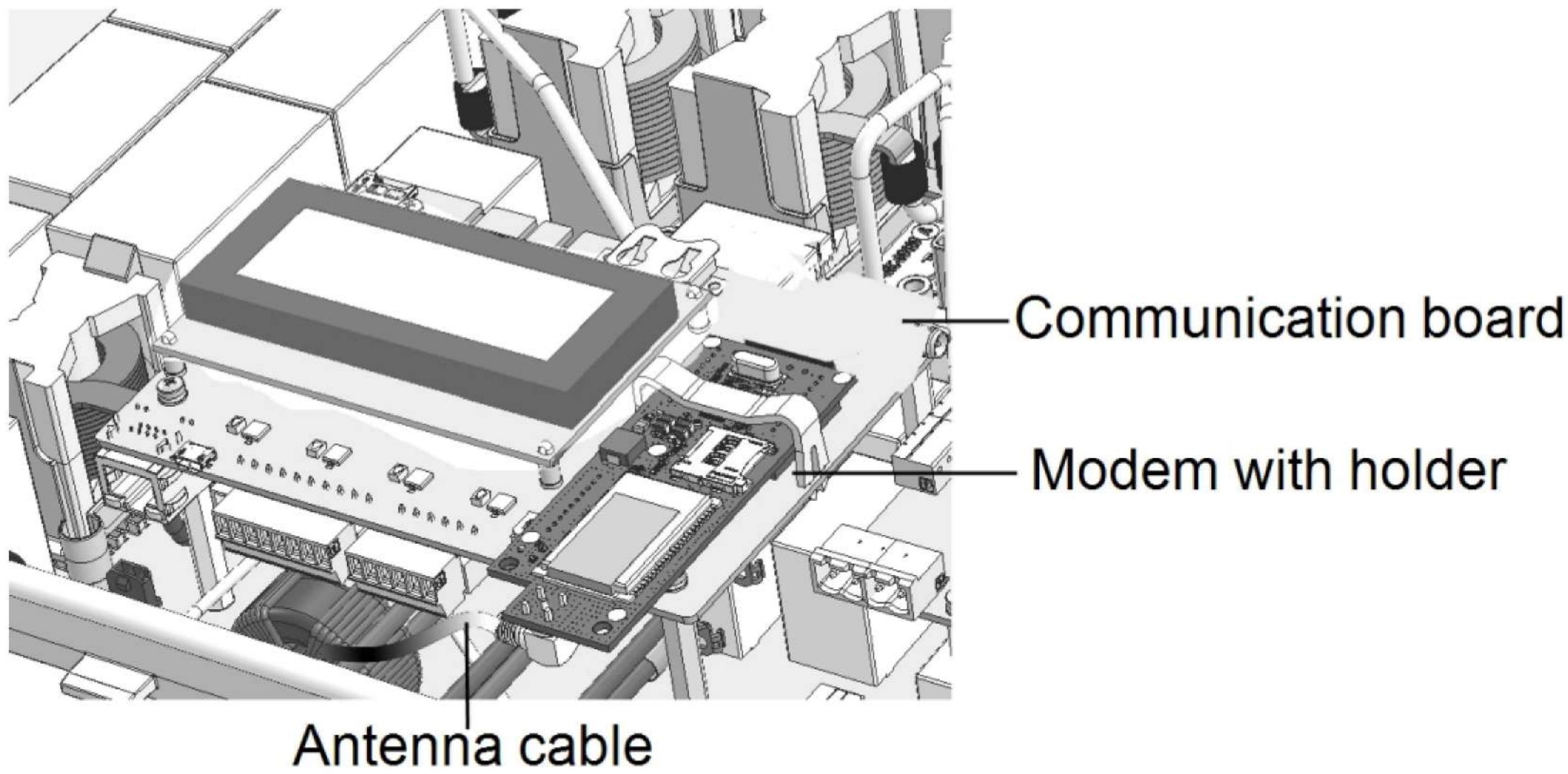
General Notes:
1. ANY CHANGES TO THE MEANS AND METHODS SHOWN IN THE DETAILS OF THIS SHEET MUST BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
2. MAINTAIN MIN. 5x CONDUCTOR DIAMETER BENDING RADIUS AT MODULE JUNCTION BOXES AND OTHER FIXING POINT FOR ALL SOURCE, OUTPUT, AND DC OPTIMIZER CIRCUIT



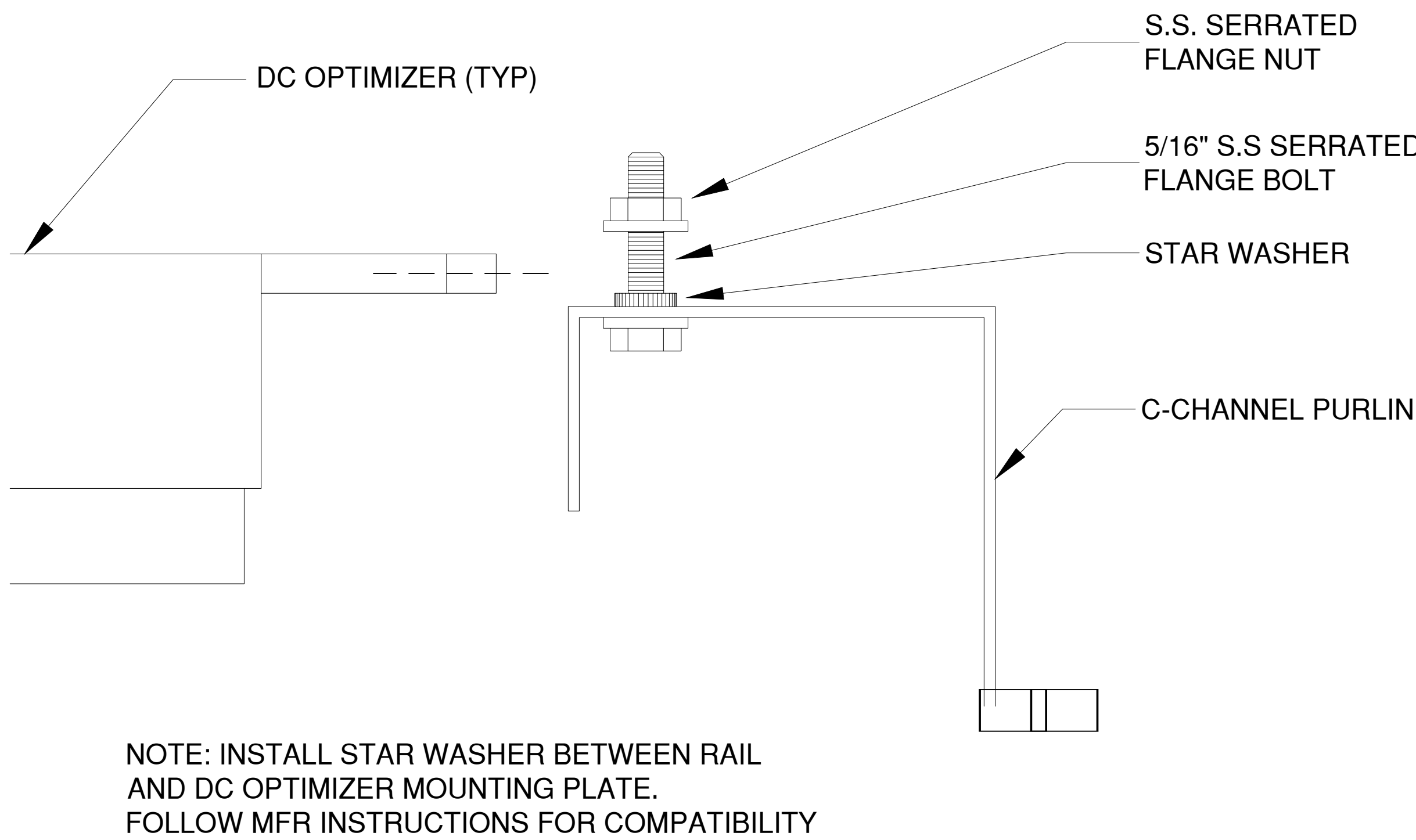
1 GROUND LUG DETAIL
Scale: N.T.S



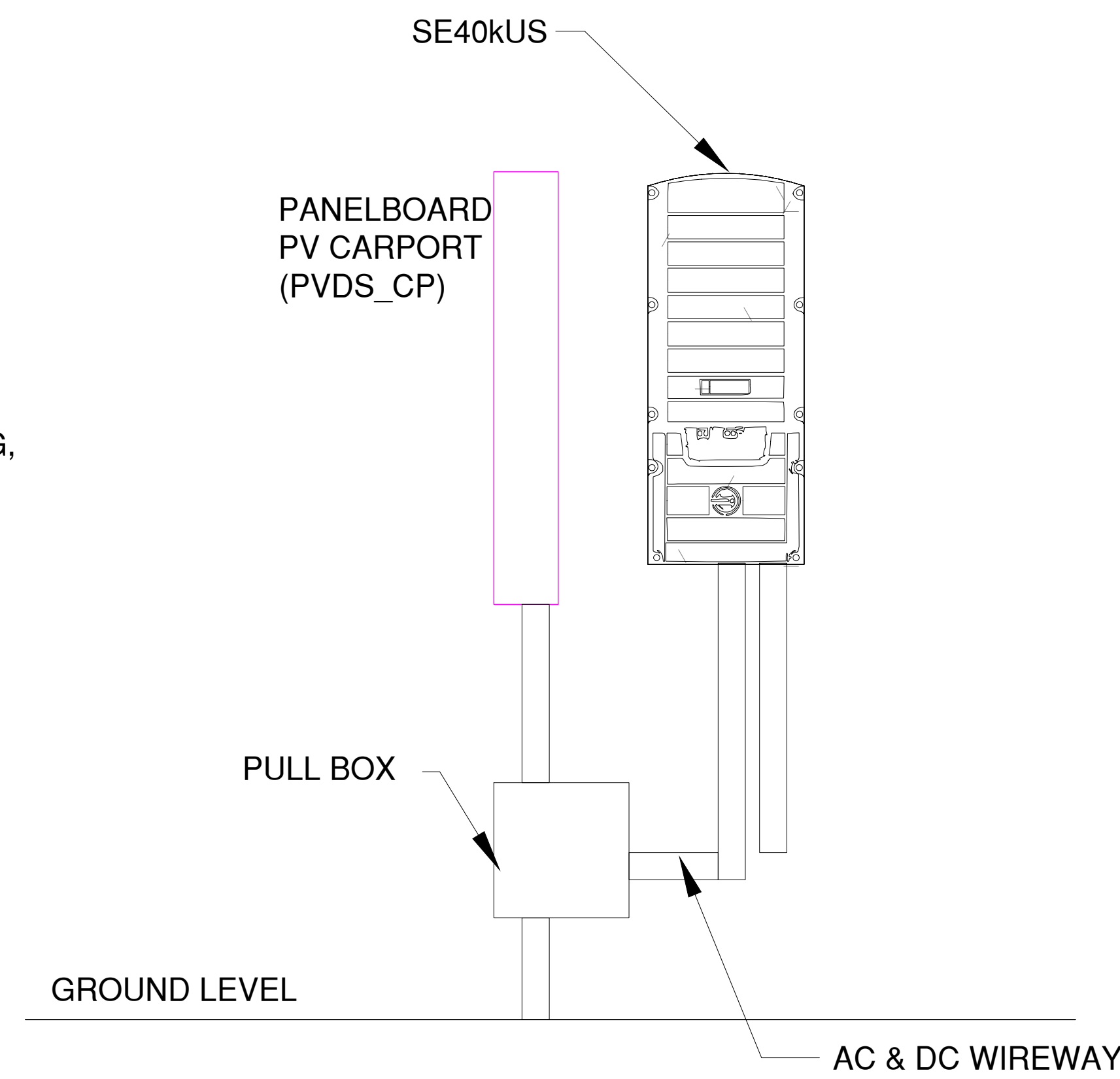
3 PURLING BONDING DETAIL
Scale: N.T.S



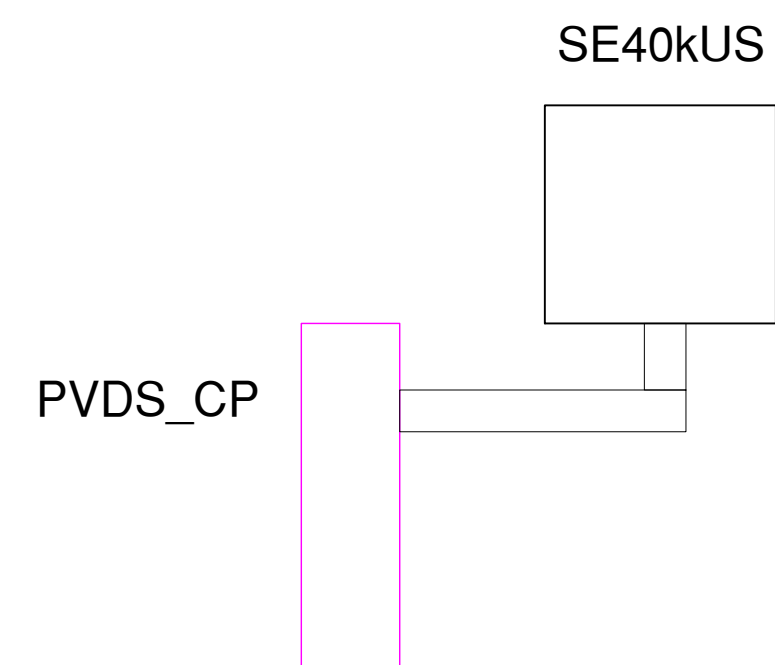
2 COMMUNICATION BOARD SOLAREEDGE
Scale: N.T.S



4 MLPE BONDING DETAIL-CANOPY
Scale: N.T.S



FRONT VIEW



TOP VIEW

5 INVERTER ELEVATION
Scale: N.T.S

NOTE:
GENERAL REPRESENTATION OF THEINVERTER RACKING LAYOUT

PROJECT CARPORTS
205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

REV	DESCRIPTION	DATE	DG	DG	DG	BY
R3	ISSUED FOR CONSTRUCTION	03.12.2024	DG	DG	DG	
R2	ISSUED FOR PERMIT	02.06.2024	DG	DG	DG	
R1	ISSUED FOR QUOTATION	01.18.2024	DG	DG	DG	
R0	ISSUED FOR QUOTATION	01.15.2024	DG	DG	DG	

0 1/2" 1"
DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION
ELECTRICAL DETAIL

E3.0

Three Phase Inverters for the 277/480V Grid for North America

SE30KUS / SE40KUS



12-20
YEAR
WARRANTY

INVERTERS

The best choice for SolarEdge enabled systems

- Specifically designed to work with power inverters
- Quick and easy inverter commissioning directly from a smartphone using SolarEdge SetApp
- Fixed voltage inverter for superior efficiency (98.5%) and longer strings
- Built-in type 2 DC and AC Surge Protection, to better withstand lightning events
- Small, lightest in its class, and easy to install outdoors or indoors on provided bracket
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per articles 690.11 and 690.12
- Built-in module level monitoring with Ethernet, wireless, or cellular communication for full system visibility
- Integrated safety switch
- UL1741 SA and SB certified, for CPUC Rule 21 grid compliance

solaredge.com



Three Phase Inverters for the 277/480V Grid⁽¹⁾ for North America SE30KUS / SE40KUS

MODEL NUMBER	SE30KUS	SE40KUS	UNITS
APPLICABLE TO INVERTERS WITH PART NUMBER	SEXKK-USX8XXXX		
OUTPUT			
Rated AC Power Output	30000	40000	W
Maximum Apparent AC Output Power	30000	40000	VA
AC Output Line Connections	3W + PE, 4W + PE		
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-N)	244 ~ 277 ~ 305		Vac
AC Output Voltage Minimum-Nominal-Maximum ⁽²⁾ (L-L)	422 ~ 480 ~ 529		Vac
AC Frequency Min-Nom-Max ⁽³⁾	59.3 ~ 60 ~ 60.5		Hz
Maximum Continuous Output Current (per Phase)	36.25	48.25	Aac
GTD Threshold	1		A
Utility Monitoring, Islanding Protection, Country Configurable Set Points	Yes		
Total Harmonic Distortion	≤ 3		%
Power Factor Range	+/- 0.85 to 1		
INPUT			
Maximum DC Power (Module STC)	52500	70000	W
Transformerless, Ungrounded	Yes		
Maximum Input Voltage DC+ to DC-	1000		Vdc
Operating Voltage Range	840 ~ 1000		Vdc
Maximum Input Current	36.25	48.25	Adc
Maximum Input Short-Circuit Current	55		Adc
Reverse-Polarity Protection	Yes		
Ground-Fault Isolation Detection	967kΩ Sensitivity ⁽⁸⁾		
CEC Weighted Efficiency	98.5		%
Night-time Power Consumption	< 4		W
ADDITIONAL FEATURES			
Supported Communication Interfaces	2 x RS485, Ethernet, Cellular (optional)		
Inverter Commissioning	With the SetApp mobile application using built-in access point for local connection		
Arc Fault Protection	Integrated, User Configurable (According to UL1699B)		
Rapid Shutdown	NEC2014, NEC2017 and NEC2020 compliant/certified		
RS485 Surge Protection Plug-in	Supplied with the inverter, Built-in		
DC Surge Protection	Type II, field replaceable, Built-in		
AC Surge Protection	Type II, field replaceable, Built-in		
DC Fuses (Single Pole)	25A, Built-in		
Smart Energy Management	Export Limitation		
DC SAFETY SWITCH			
DC Disconnect	Integrated		
STANDARD COMPLIANCE			
Safety	UL1741, UL1741 SA, UL1741 SB, UL1699B, CSA C22.2,		
Grid Connection Standards	Canadian AFCEI according to T.L. M-07		
Emissions	IEEE1547-2018, Rule 21, Rule 14 (H)		
INSTALLATION SPECIFICATIONS			
AC Output Conduit Size / AWG Range	3/4" or 1" / 6 ~ 10 AWG		
DC Input Conduit Size / AWG Range	3/4" or 1" / 6 ~ 12 AWG		
Number of DC Inputs Pairs	4		
Dimensions with Safety Switch (H x W x D)	31.8 x 12.5 x 11.8 / 808 x 317 x 300		in / mm
Weight with Safety Switch	28.2 / 35.5		lb / kg
Cooling	Fans (user replaceable)		
Noise	< 62		dBA
Operating Temperature Range	-40 to +140 / -40 to +60(4)		°F / °C
Protection Rating	IP64A, IP65		
Mounting	Bracket provided		

(1) For 120/208V inverters refer to the Three Phase Inverters for the 120/208V Grid for North America datasheet.
(2) For other regional settings please contact SolarEdge support.
(3) Where permitted by local regulations.
(4) For power derating information refer to the Temperature Derating - Technical Note (North America).

© SolarEdge Technologies, Ltd. All rights reserved. SOLAREDGE, the SolarEdge logo, OPTIMIZED BY SOLAREDGE are trademarks or registered trademarks of SolarEdge Technologies, Inc. All other trademarks mentioned herein are trademarks of their respective owners. Date: November 22, 2023 (SOL0070) (NANA). Subject to change without notice.

CE

Power Optimizer For North America

P1101



25
YEAR
WARRANTY

POWER OPTIMIZER

PV power optimization at the module level
The most cost-effective solution for commercial and large field installations

- Specifically designed to work with SolarEdge inverters
- High efficiency with module-level MPPT, for maximized system energy production and revenue, and fast project ROI
- Superior efficiency (99.5%)
- Balance of System cost reduction: 50% less cables, fuses, and combiner boxes; over 2x longer string lengths possible
- Fast installation with a single bolt
- Advanced maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

solaredge.com



Power Optimizer For North America P1101

Power Optimizer Model (Typical Module Compatibility)	P1101 (for up to 2 x high power or bi-facial modules)	Units
INPUT		
Rated Input DC Power ⁽¹⁾	1100	W
Connection Method	Single input for series connected modules	
Absolute Maximum Input Voltage (Voc at lowest temperature)	125	Vdc
MPPT Operating Range	12.5 ~ 105	Vdc
Maximum Short-Circuit Current (Isc)	14.1	Adc
Maximum Short-Circuit Current per Input (Isc)		Adc
Maximum Efficiency	99.5	%
Weighted Efficiency	98.6	%
Overvoltage Category	I	
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREGE INVERTER)		
Maximum Output Current	18	Adc
Maximum Output Voltage	80	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREGE INVERTER OR SOLAREGE INVERTER OFF)		
Safety Output Voltage per Power Optimizer	1 ± 0.1	Vdc
STANDARD COMPLIANCE		
Photovoltaic Rapid Shutdown System	Compliant with NEC 2014, 2017, 2020	
EMC	FCC Part 15 Class A, IEC61000-6-3, IEC61000-6-5	
Safety	IEC62709-1 (class II safety), UL1741, UL3741, CSA C22.2 #107.1	
Material	UL94 V-0, UV resistant	
RoHS	Yes	
INSTALLATION SPECIFICATIONS		
Compatible SolarEdge Inverters	All commercial three phase inverters	
Maximum Allowed System Voltage	1000	Vdc
Dimensions (W x L x H)	129 x 162 x 59 / 5.1 x 6.4 x 2.32	mm / in
Weight	1064 / 2.34	gr / lb
Input Connector	MC4 ⁽²⁾	
Input Wire Length Options		
1	16 / 5.2	m / ft
2		
3		
Output Wire Type / Connector	Double Insulated, MC4	
Output Wire Length	2.4 / 7.8	m / ft
Operating Temperature Range ⁽³⁾	-40 to +85 / -40 to +185	°C / °F
Protection Rating	IP68 / NEMA9P	
Relative Humidity	0 ~ 100	%

(1) Rated power of the module at STC will not exceed the Power Optimizer "Rated Input DC Power". Modules with up to +3% power tolerance are allowed.
(2) For other connector types please refer to the Power Optimizer Input Connector Compatibility Technical Notes.
(3) For ambient temperatures above +70°C / +157°F power derating is applied. Refer to Power Optimizer Derating Application Note for more details.

PV System Design Using a SolarEdge Inverter ⁽⁴⁾		208V Grid UL94	208V Grid IEC 617-34	277/480V Grid UL94	277/480V Grid IEC 617-34
Compatible Power Optimizers		P1101			
Minimum String Length	Power Optimizers	8	10	14	14
Maximum String Length	PV Modules	15	19	27	27
Maximum String Length	Power Optimizers	30	30	30	30
Maximum String Length	PV Modules	60	60	60	60
Maximum Continuous Power per String		7200	8820	15300	15300
Maximum Allowed Connected Power per String ⁽⁵⁾		1 string – 8400 2 strings or more – 9600	1 string – 10020 2 strings or more – 12020	1 string – 17550 2 strings or more – 20300	2 strings or less – 17550 3 strings or more – 20300
Parallel Strings of Different Lengths or Orientations		Yes			
Maximum Difference in Number of Power Optimizers Allowed Between the Shortest and Longest String Connected to the Same Inverter Unit		5 Power Optimizers			

* The same rules apply for String units of equivalent power ratings, that are part of the modular Synergy Technology inverter.
(4) For each string, a Power Optimizer may be connected to a single PV module if 1) each Power Optimizer is connected to a single PV module or 2) it is the only Power Optimizer connected to a single PV module in the string.
(5) Design with three phase 208V inverters is limited. Use the SolarEdge Designer for verification.
(6) To connect more STC power per string, design your project using SolarEdge Designer.

© SolarEdge Technologies, Ltd. All rights reserved. SOLAREDGE, the SolarEdge logo, OPTIMIZED BY SOLAREDGE are trademarks or registered trademarks of SolarEdge Technologies, Inc. All other trademarks mentioned herein are trademarks of their respective owners. Date: January 8, 2024 (SOL0055) (NANA). Subject to change without notice.



www.jinkosolar.com



Tiger Bifacial 445-465 Watt

Tiling Ribbon (TR) Technology

Positive power tolerance of 0~+3%

ISO9001:2015, ISO14001:2015, ISO45001:2018 certified factory

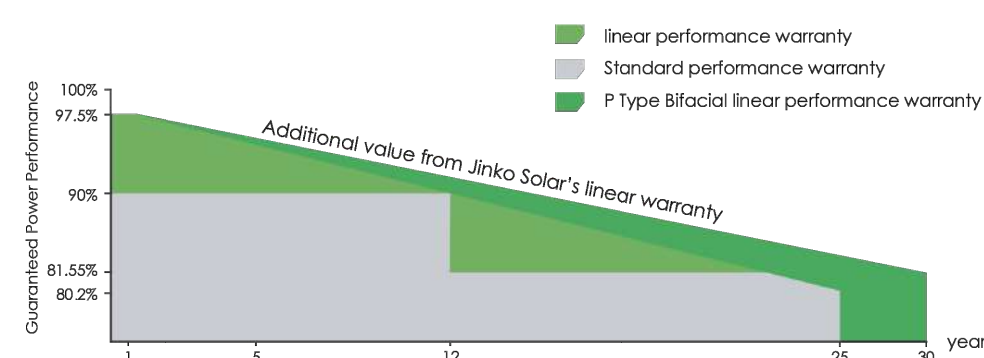
IEC61215, IEC61730 certified product

KEY FEATURES

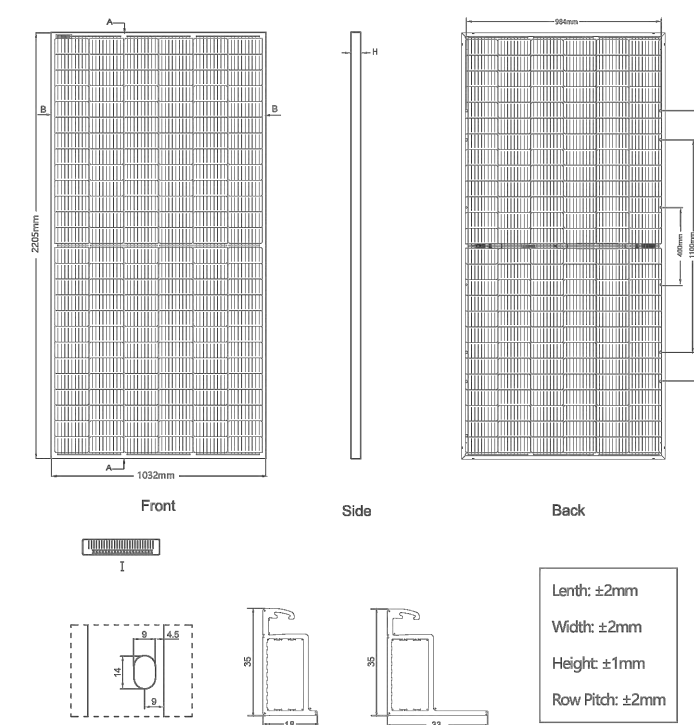
- TR technology + Half Cell**
TR technology with Half cell aims to eliminate the cell gap to increase module efficiency (bi-facial up to 20.43%)
- 988 instead of 588**
988 technology decreases the distance between bus bars and finger grid line which is benefit to power increase.
- Higher Lifetime Power Yield**
2.5% first year degradation, 0.55% linear degradation
- Best Warranty**
12 year product warranty, 30 year linear power warranty
- Avoid debris, cracks and broken gate risk effectively**
988 technology using circular ribbon that could avoid debris, cracks and broken gate risk effectively
- Severe Weather Resilience**
Certified to withstand: wind load [2400 Pascal] and snow load [5400 Pascal].

LINEAR PERFORMANCE WARRANTY

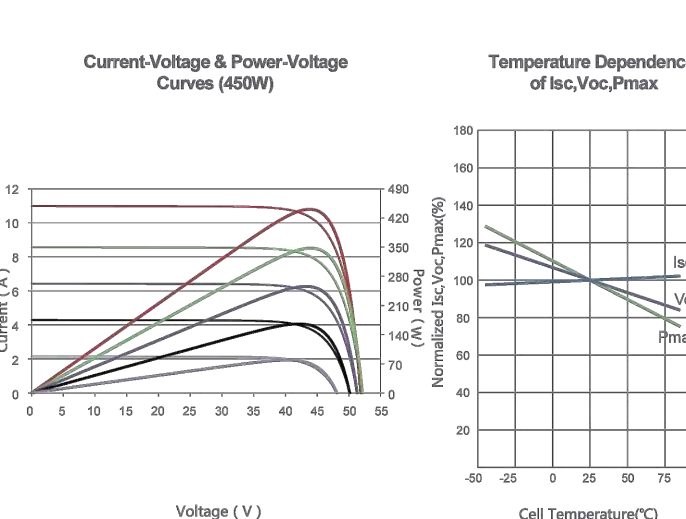
12 Year Product Warranty + 30 Year Linear Power Warranty
0.55% Annual Degradation Over 30 years



Engineering Drawings



Electrical Performance & Temperature Dependence



Packaging Configuration

12 panels in one tray
31pcs/pallets, 62pcs/crate, 620pcs/40'HQ Container

SPECIFICATIONS

Module Type	JKM445M-7RL3-TV		JKM450M-7RL3-TV		JKM455M-7RL3-TV		JKM460M-7RL3-TV		JKM465M-7RL3-TV	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	445Wp	331Wp	450Wp	335Wp	455Wp	340Wp	460Wp	345Wp	465Wp	350Wp
Maximum Power Voltage (Vmp)	43.15V	38.81V	43.19V	38.82V	43.20V	38.84V	43.20V	38.86V	43.20V	38.86V
Maximum Power Current (Imp)	10.32A	8.56A	10.32A	8.56A	10.32A	8.56A	10.32A	8.56A	10.32A	8.56A
Open-circuit Voltage (Voc)	51.80V	48.70V	51.70V	48.60V	51.80V	48.69V	51.90V	48.99V	52.00V	49.08V
Short-circuit Current (Isc)	11.08A	9.95A	11.17A	9.92A	11.26A	9.95A	11.35A	9.17A	11.44A	9.24A
Module Efficiency STC (%)	19.66%	19.78%		20.00%		20.21%		20.43%		
Operating Temperature(°C)	-40°C~+85°C									
Maximum system voltage	1500VDC (IEC)									
Maximum series fuse rating	25A									
Power tolerance	0~+3%									
Temperature coefficients of Pmax	-0.35%/°C									
Temperature coefficients of Voc	-0.28%/°C									
Temperature coefficients of Isc	0.048%/°C									
Nominal operating cell temperature (NOCT)	45±2°C									
Refer: Bifacial Factor	70±5%									

BIFACIAL OUTPUT-REARSIDE POWER GAIN

5%	Maximum Power (Pmax)	467Wp	473Wp	478Wp	483Wp	488Wp
	Module Efficiency STC (%)	20.52%	20.76%	20.99%	21.22%	21.46%
15%	Maximum Power (Pmax)	512Wp	518Wp	523Wp	529Wp	535Wp
	Module Efficiency STC (%)	22.48%	22.74%	22.96%	23.25%	23.50%
25%	Maximum Power (Pmax)	556Wp	563Wp	569Wp	575Wp	581Wp
	Module Efficiency STC (%)	24.44%	24.72%	24.99%	25.27%	25.54%

* STC: ☀ Irradiance 1000W/m² 🌡 Cell Temperature 25°C 🌤 AM=1.5
NOCT: ☀ Irradiance 800W/m² 🌡 Ambient Temperature 20°C 🌤 AM=1.5 🌀 Wind Speed 1m/s
* Power measurement tolerance: ± 3%
The company reserves the final right for explanation on any of the information presented hereby. TR JKM445M-7RL3-TV-F35-A1.1-EN

PROJECT CARPORTS 205.62 kW SOLAR PHOTOVOLTAIC SYSTEM

DG DG DG DG

03.12.2024 02.06.2024 01.18.2024 01.15.2024

ISSUED FOR CONSTRUCTION
ISSUED FOR PERMIT
ISSUED FOR QUOTATION
ISSUED FOR QUOTATION

R3 R2 R1 R0

DESCRIPTION
DATE
BY



DRAWING IS TO SCALE IF
BAR MEASURES 1 INCH

DESCRIPTION EQUIPMENT DATASHEET

E5.0