

NEPR

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Fecha de Expiración: 2027-01-09



	<u>NORTH ARROW</u>		FLOOR 0'-0"		DATUM LOCATION ELEVATION
	SECTION SECTION ID SHEET NUMBER		ELEVATION ELEVATION ID SHEET NUMBER		
	DETAIL DETAIL ID SHEET NUMBER		SLOPE DOWN		CANOPY SLOPE

THE PROJECT SCOPE INCLUDES THE INSTALLATION OF A GRID-TIED SOLAR PHOTOVOLTAIC SYSTEM WITH A NOMINAL CAPACITY OF 2.21 MW (DC), DESIGNED FOR AGRIVOLTAICS TO SUPPORT ENERGY AND FOOD SECURITY IN RURAL AREAS OF PUERTO RICO.

THE INSTALLATION CONSISTS OF MULTIPLE SOLAR PANEL SUB-ARRAYS MOUNTED ON INDEPENDENT POLE-MOUNT STRUCTURES, ALONG WITH MULTIPLE INVERTERS AND SAFETY EQUIPMENT. ALL EQUIPMENT WILL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND LOCAL UTILITY STANDARDS.

DURING DAYLIGHT HOURS, THIS PHOTOVOLTAIC (SOLAR ELECTRIC) SYSTEM WILL SUPPLY ELECTRICITY IN PARALLEL WITH THE LOCAL ELECTRIC UTILITY PROVIDER.

CODE DESCRIPTION	STRUCTURAL	MECHANICAL	ELECTRICAL	SAFETY
IBC CODE 2018	X			
ASCE 7-16	X	X		
NEC CODE 2023			X	
IEEE STD 1547-218 UL 1741			X	
NFPA 855		X		X

Map of the project location in the Los Hornos area. The map shows a network of roads, including Camino Los Hornos, Camino Los Hornos, and Camino La Cumbre de Don Juan. A red circle highlights the 'SITE (PROPERTY)', and a black star marks the 'PROJECT LOCATION'. The map also shows a river and a lake. A north arrow is in the bottom right corner.

SUB-ARRAY 3
991.88 KW

SUB-ARRAY 2
445.88 KW

SUB-ARRAY 1
645.75 KW

GROUND-ARRAY
430.50 KW

PV MANUFACTURER	PV MODEL	DC TOTAL
CANADIAN SOLAR	CS6-3-60TS-615W-615W	2.21MW

SUB-ARRAY	PV QUANTITY	DC SIZE
GROUND ARRAY	700	430.50KW
SUB-AR 1	1,050	645.75KW
SUB-AR 2	725	445.88KW
SUB-AR 3	1,125	691.88KW

ITEM DESCRIPTION	REMARKS
GEOTECHNICAL REPORT	AVAILABLE
SITE SURVEY (TOPOGRAPHIC)	EXISTING CONDITIONS - TOPOGRAPHIC

SHT. No.	SHEET DESCRIPTION	REL. No.
G-01	TITLE SHEET	1
G-02	GENERAL NOTES	2
G-03	EXISTING CONDITION SITE PLAN	3
G-04	PHOTOVOLTAIC SITE PLAN	4
A-01	AGRIVOLTAICS POWER UNIT STATION (ISOMETRIC)	5
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A-03	AGRIVOLTAICS POWER UNIT STATION (ELEVATIONS)	7
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PV MODULE TYPE	CANADIAN SOLAR	ACTIVE PV MODULES	3.600
MODULE MODEL #	CS6.2-66TB-615H 615W	SPARE PV MODULES	-
ARRAY TYPE	FIXED TILT	INVERTER	11
ARRAY TILT	5 DEG AS REQUIRED.	TOTAL PV MODULES	3.600
BATTERY	(2) MEGAPACK TESLA 2XL 750KVA, 2.500KWH	TOTAL WATTS	2.21 MW DC

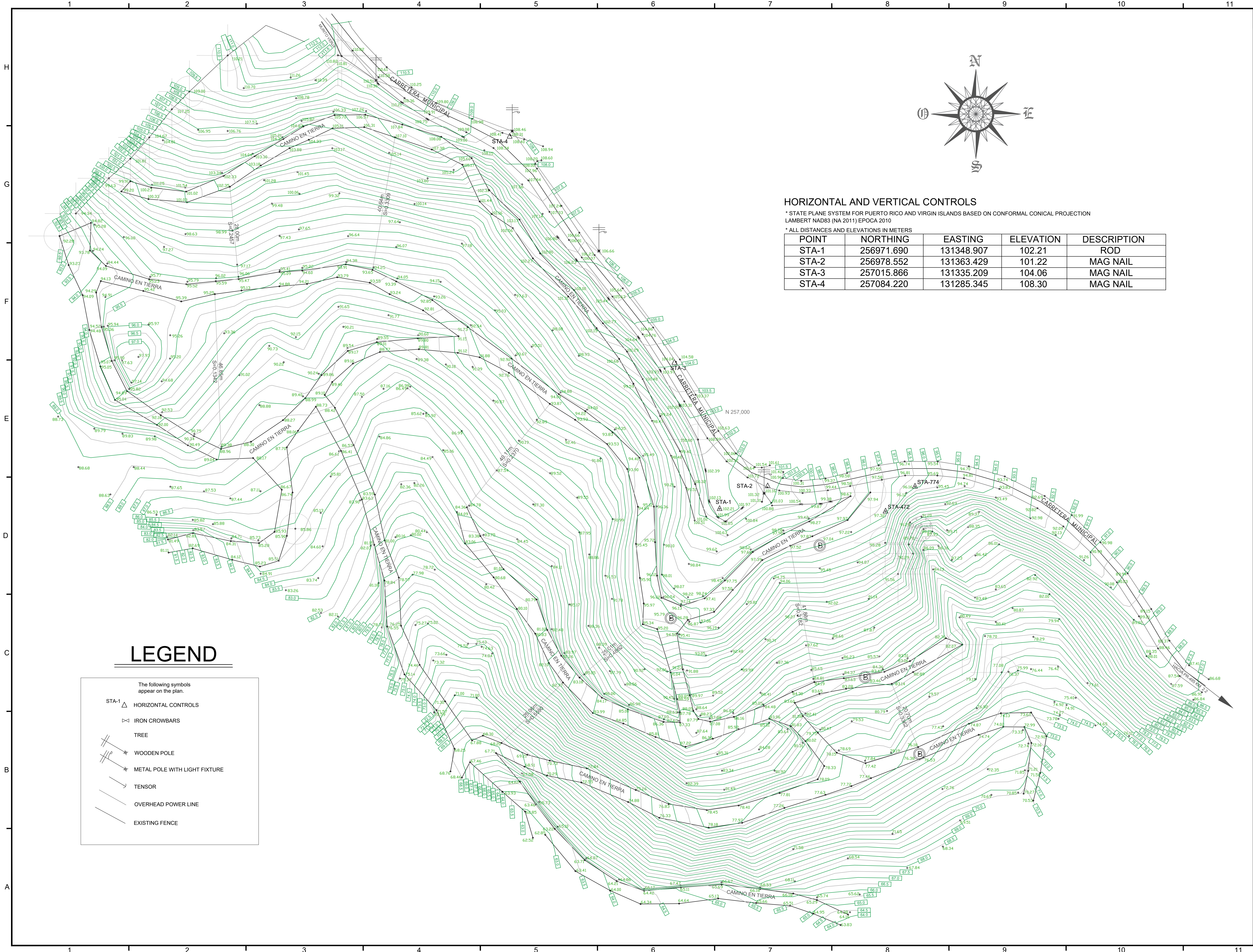
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ER2-00141 AGRIVOLTAICS
FOR
AGROENERGETICA, LLC.

RELEASE RECORD

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PROJECT INFORMATION

TITLE & ADDRESS:	
AGRIVOLTAICS MOCA PR. 00676	
PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: TITLE SHEET	
SHEET No.: G-01	



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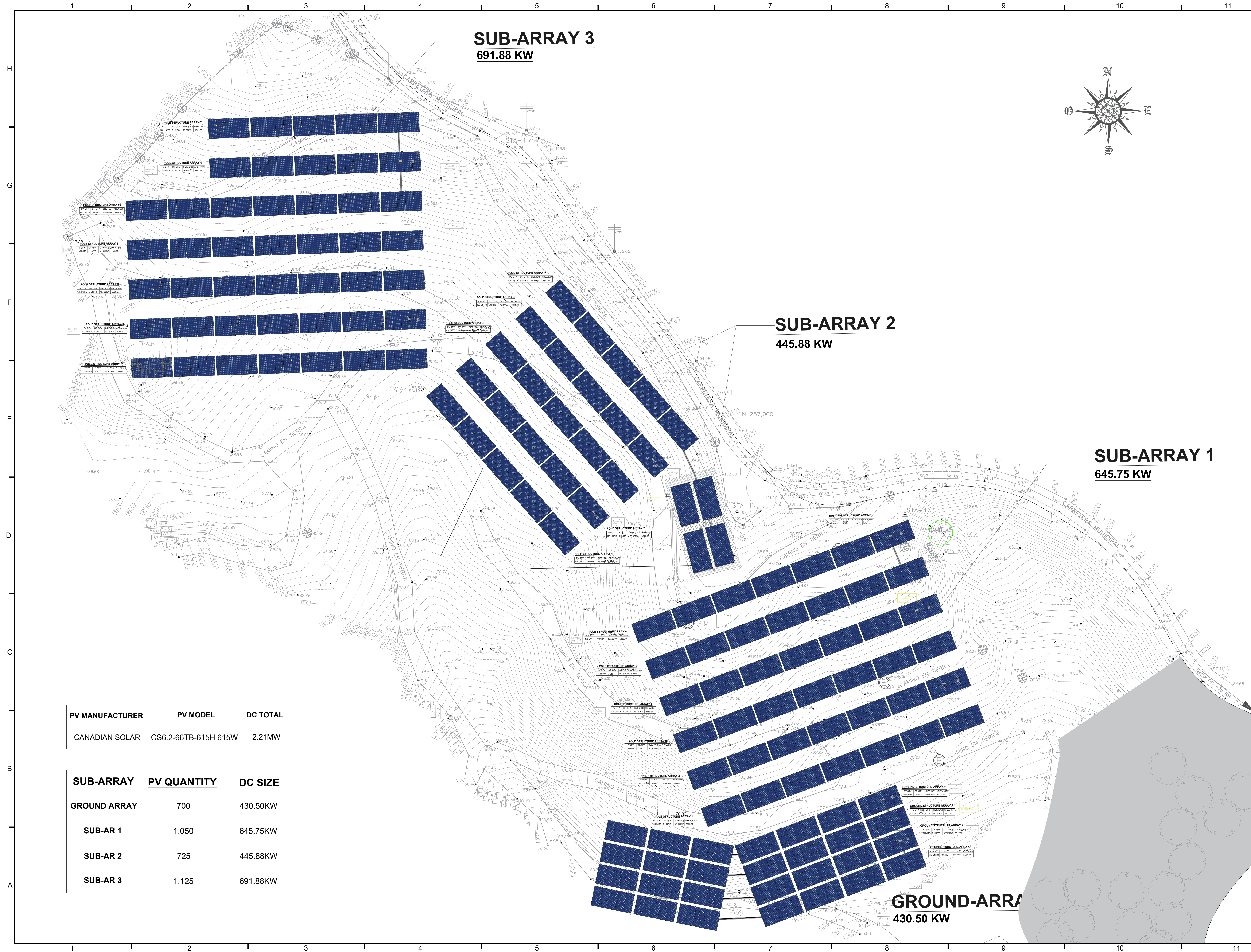
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PROJECT INFORMATION

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AGRIVOLTAICS MOCA PR. 00676	
PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: EXISTING CONDITIONS SITE PLAN	
SHEET No.: G-03	



PV MANUFACTURER	PV MODEL	DC TOTAL
CANADIAN SOLAR	CS6.2-66TB-615H 615W	2.21MW

SUB-ARRAY	PV QUANTITY	DC SIZE
GROUND ARRAY	700	430.50KW
SUB-AR 1	1.050	645.75KW
SUB-AR 2	725	445.88KW
SUB-AR 3	1.125	691.88KW

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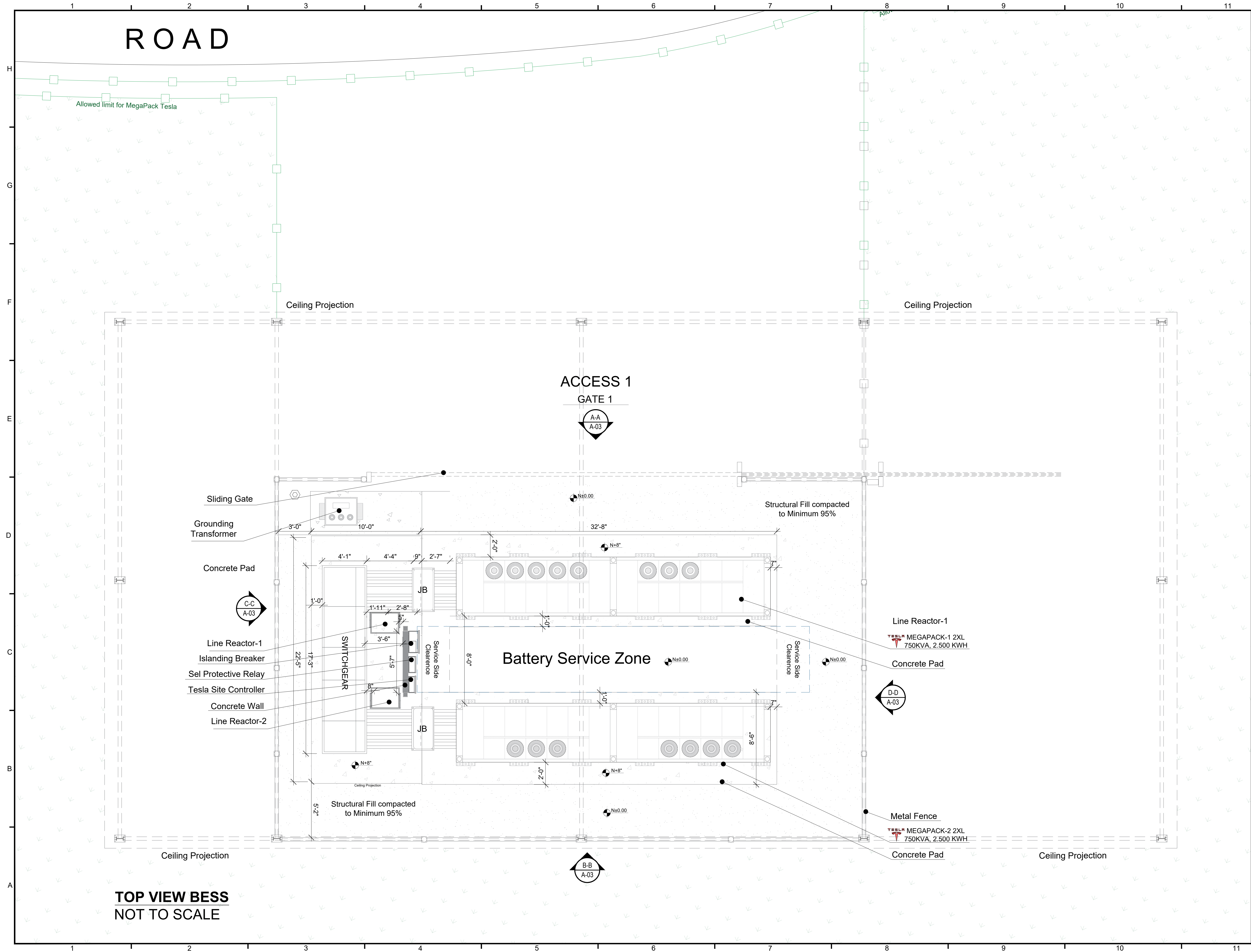
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PROJECT INFORMATION

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AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: PHOTOVOLTAIC SITE PLAN	
SHEET No.: G-04	



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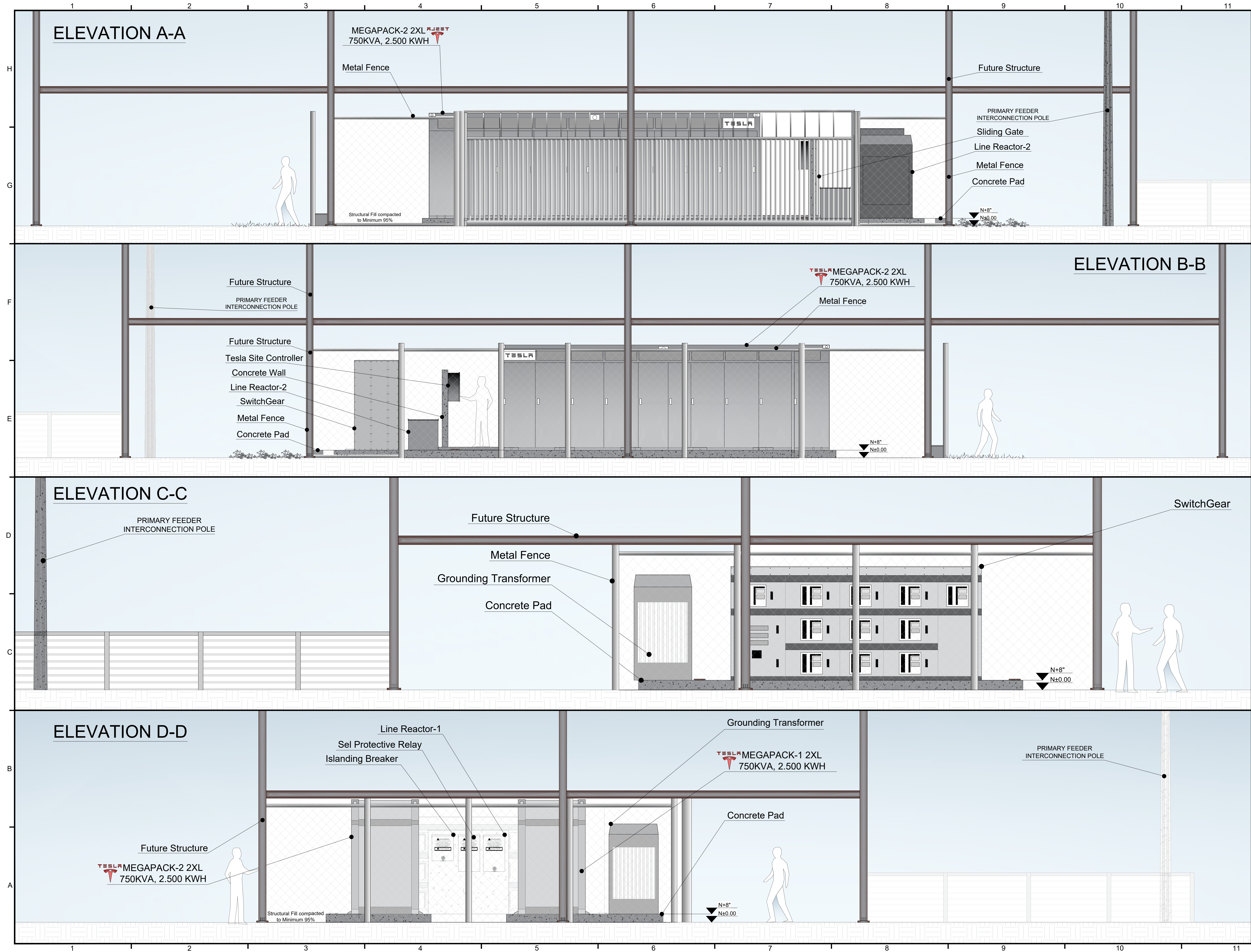
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AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: AGRIVOLTAICS POWER UNIT STATION (TOP VIEW)	
SHEET No.: A-02	



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PROJECT INFORMATION

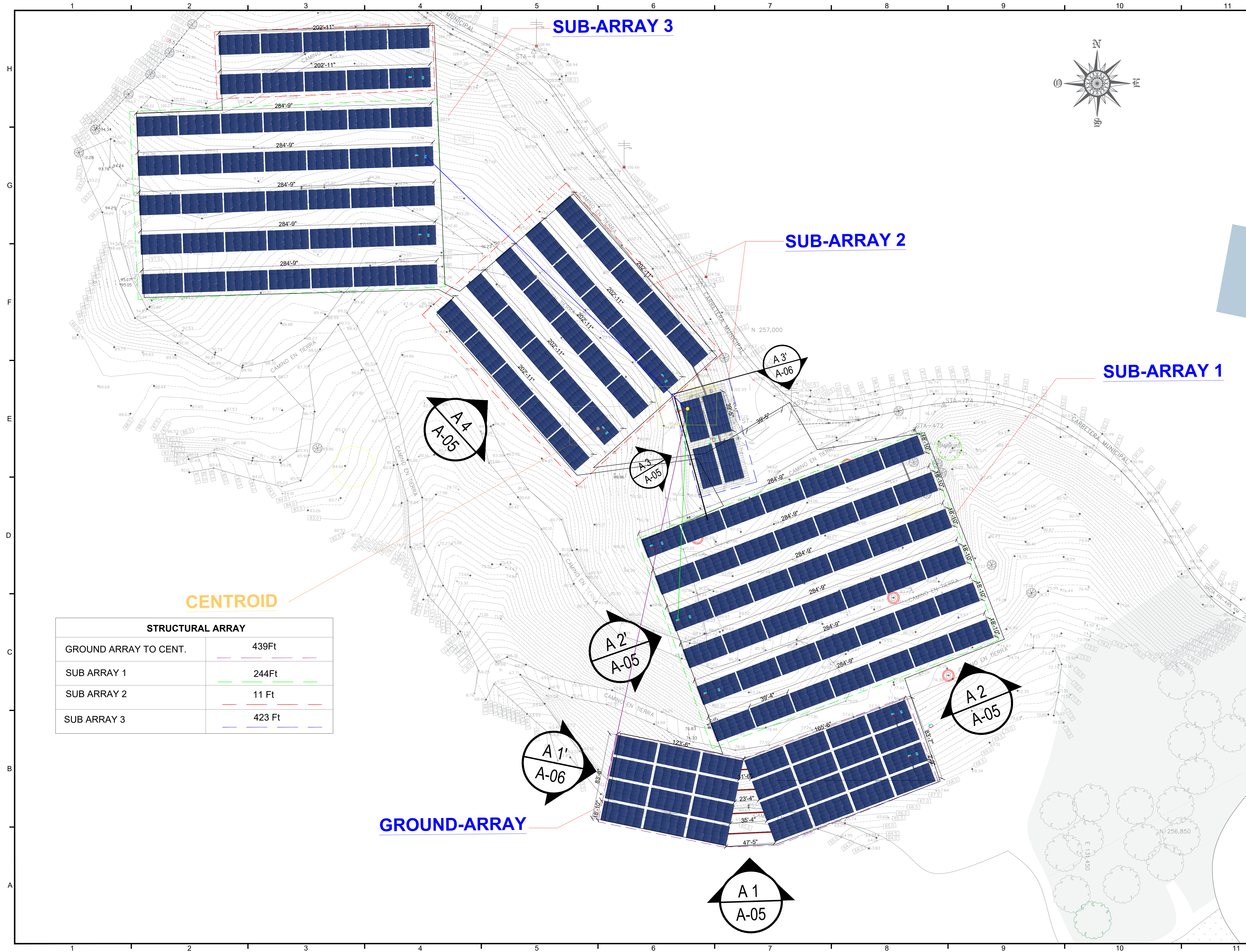
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AGRIVOLTAICS
MOCA PR. 00676
PR-495, KM. 2.2, CERRO
GORDO, PUERTO RICO

AGRIVOLTAICS PROJECT No.:
1

DRAWN BY: REVIEWED BY:

SHEET TITLE:
AGRIVOLTAICS POWER UNIT
STATION (ELEVATIONS)

SHEET No.:
A-03



STRUCTURAL ARRAY	
GROUND ARRAY TO CENT.	439Ft
SUB ARRAY 1	244Ft
SUB ARRAY 2	11 Ft
SUB ARRAY 3	423 Ft

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PROJECT INFORMATION

TITLE & ADDRESS:

AGRIVOLTAICS
MOCA PR. 00676

PR-495, KM. 2.2, CERRO
GORDO, PUERTO RICO

AGROVOLTAICS PROJECT No.:

1

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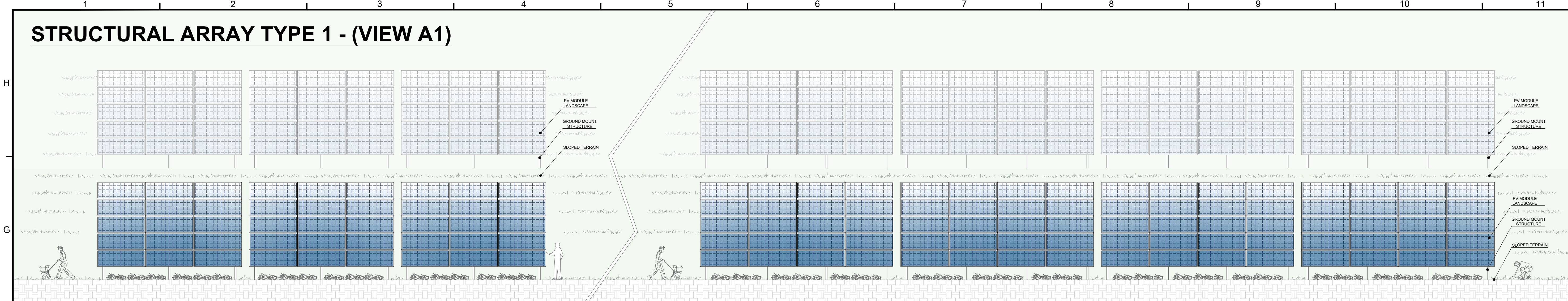
SHEET TITLE:

2.2 MW PHOTOVOLTAIC
SOLAR SYSTEM (TOP VIEW)

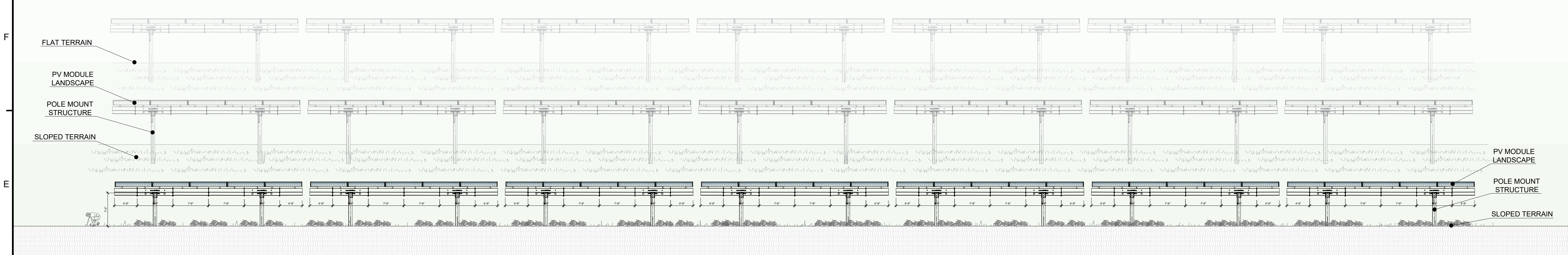
SHEET No.:

A-04

STRUCTURAL ARRAY TYPE 1 - (VIEW A1)



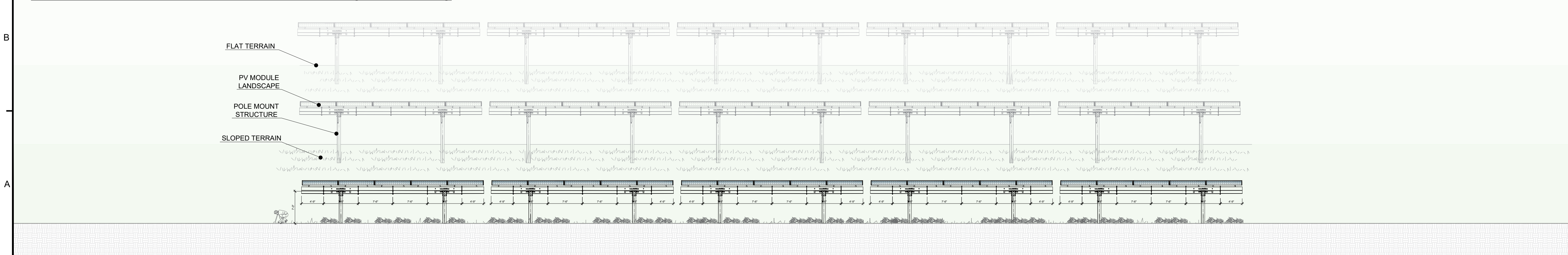
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STRUCTURAL ARRAY TYPE 3 - (VIEW A3)



STRUCTURAL ARRAY TYPE 4 - (VIEW A4)



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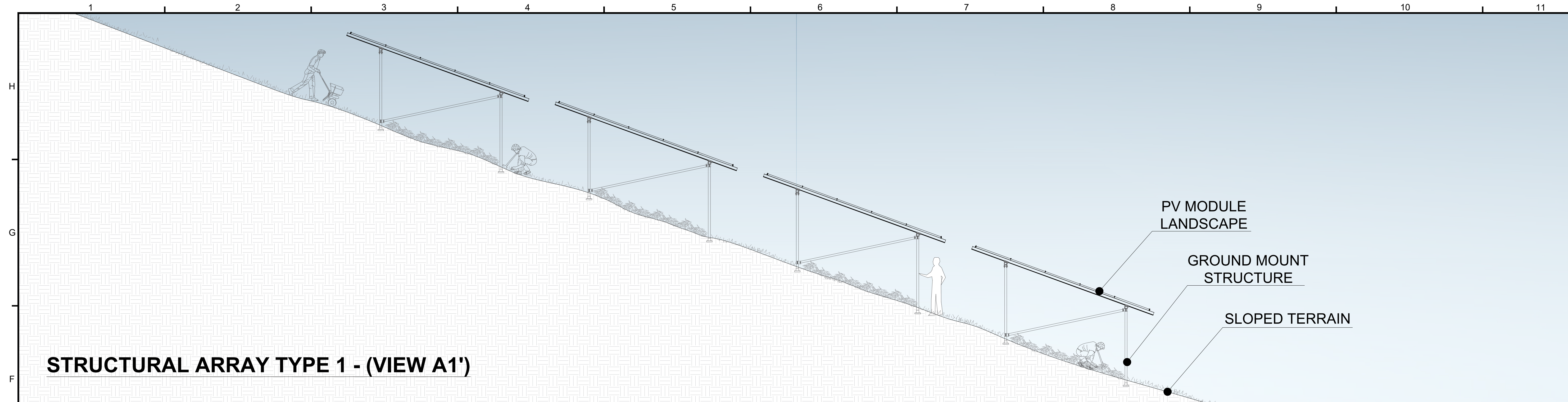


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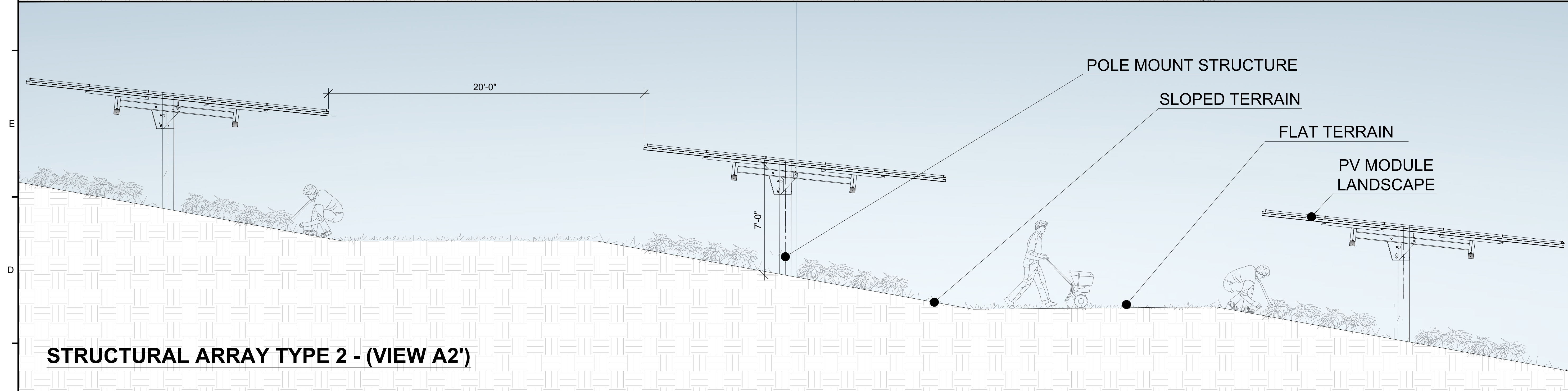


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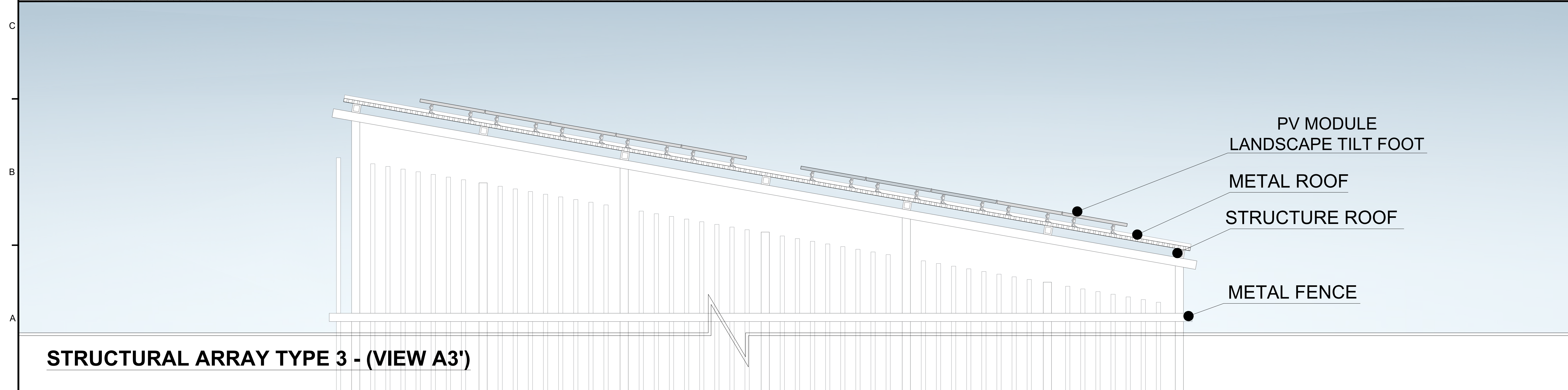
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STRUCTURAL ARRAY TYPE 1 - (VIEW A1')



STRUCTURAL ARRAY TYPE 2 - (VIEW A2')



STRUCTURAL ARRAY TYPE 3 - (VIEW A3')

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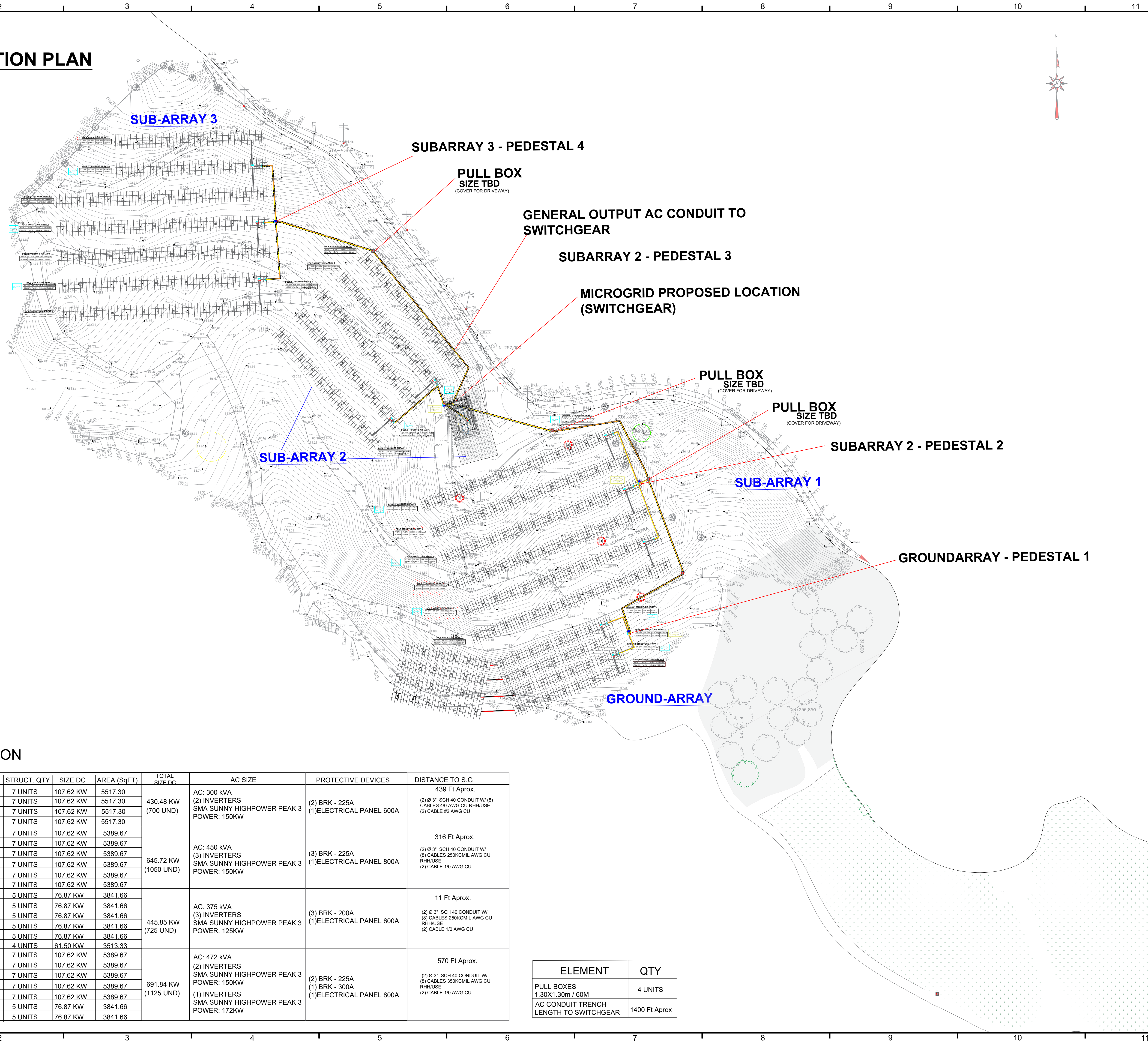
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PROJECT INFORMATION

TITLE & ADDRESS: AGRIVOLTAICS MOCA PR. 00676 PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: 2.2 MW PHOTOVOLTAIC SOLAR SYSTEM (SIDE ELEVATION)	
SHEET No.: A-06	

AC WIRE DISTRIBUTION PLAN
NOT TO SCALE



SUB ARRAYS DESCRIPTION

	STRUCTURE TYPE	ARRAY#	PV QTY	STRUCT. QTY	SIZE DC	AREA (SqFT)	TOTAL SIZE DC	AC SIZE	PROTECTIVE DEVICES	DISTANCE TO S.G
GROUND ARRAY	GROUND	ARRAY 1	175 UNITS	7 UNITS	107.62 KW	5517.30	430.48 KW (700 UND)	AC: 300 kVA (2) INVERTERS SMA SUNNY HIGHPOWER PEAK 3 POWER: 150KW	(2) BRK - 225A (1)ELECTRICAL PANEL 600A	439 Ft Aprox. (2) Ø 3" SCH 40 CONDUIT W/ (8) CABLES 4/0 AWG CU RH/HOUSE (2) CABLE #2 AWG CU
	GROUND	ARRAY 2	175 UNITS	7 UNITS	107.62 KW	5517.30				
	GROUND	ARRAY 3	175 UNITS	7 UNITS	107.62 KW	5517.30				
	GROUND	ARRAY 4	175 UNITS	7 UNITS	107.62 KW	5517.30				
SUB ARRAY 1	POLE	ARRAY 1	175 UNITS	7 UNITS	107.62 KW	5389.67	645.72 KW (1050 UND)	AC: 450 kVA (3) INVERTERS SMA SUNNY HIGHPOWER PEAK 3 POWER: 150KW	(3) BRK - 225A (1)ELECTRICAL PANEL 800A	316 Ft Aprox. (2) Ø 3" SCH 40 CONDUIT W/ (8) CABLES 250KCMIL AWG CU RH/HOUSE (2) CABLE 1/0 AWG CU
	POLE	ARRAY 2	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 3	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 4	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 5	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 6	175 UNITS	7 UNITS	107.62 KW	5389.67				
SUB ARRAY 2	POLE	ARRAY 1	125 UNITS	5 UNITS	76.87 KW	3841.66	445.85 KW (725 UND)	AC: 375 kVA (3) INVERTERS SMA SUNNY HIGHPOWER PEAK 3 POWER: 125KW	(3) BRK - 200A (1)ELECTRICAL PANEL 600A	11 Ft Aprox. (2) Ø 3" SCH 40 CONDUIT W/ (8) CABLES 250KCMIL AWG CU RH/HOUSE (2) CABLE 1/0 AWG CU
	POLE	ARRAY 2	125 UNITS	5 UNITS	76.87 KW	3841.66				
	POLE	ARRAY 3	125 UNITS	5 UNITS	76.87 KW	3841.66				
	POLE	ARRAY 4	125 UNITS	5 UNITS	76.87 KW	3841.66				
	POLE	ARRAY 5	125 UNITS	5 UNITS	76.87 KW	3841.66				
	POLE	ARRAY 6	100 UNITS	4 UNITS	61.50 KW	3513.33				
SUB ARRAY 3	POLE	ARRAY 1	175 UNITS	7 UNITS	107.62 KW	5389.67	691.84 KW (1125 UND)	AC: 472 kVA (2) INVERTERS SMA SUNNY HIGHPOWER PEAK 3 POWER: 150KW (1) INVERTERS SMA SUNNY HIGHPOWER PEAK 3 POWER: 172KW	(2) BRK - 225A (1) BRK - 300A (1)ELECTRICAL PANEL 800A	570 Ft Aprox. (2) Ø 3" SCH 40 CONDUIT W/ (8) CABLES 350KCMIL AWG CU RH/HOUSE (2) CABLE 1/0 AWG CU
	POLE	ARRAY 2	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 3	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 4	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 5	175 UNITS	7 UNITS	107.62 KW	5389.67				
	POLE	ARRAY 6	125 UNITS	5 UNITS	76.87 KW	3841.66				
	POLE	ARRAY 7	125 UNITS	5 UNITS	76.87 KW	3841.66				

ELEMENT	QTY
PULL BOXES 1.30X1.30m / 60M	4 UNITS
AC CONDUIT TRENCH LENGTH TO SWITCHGEAR	1400 Ft Aprox

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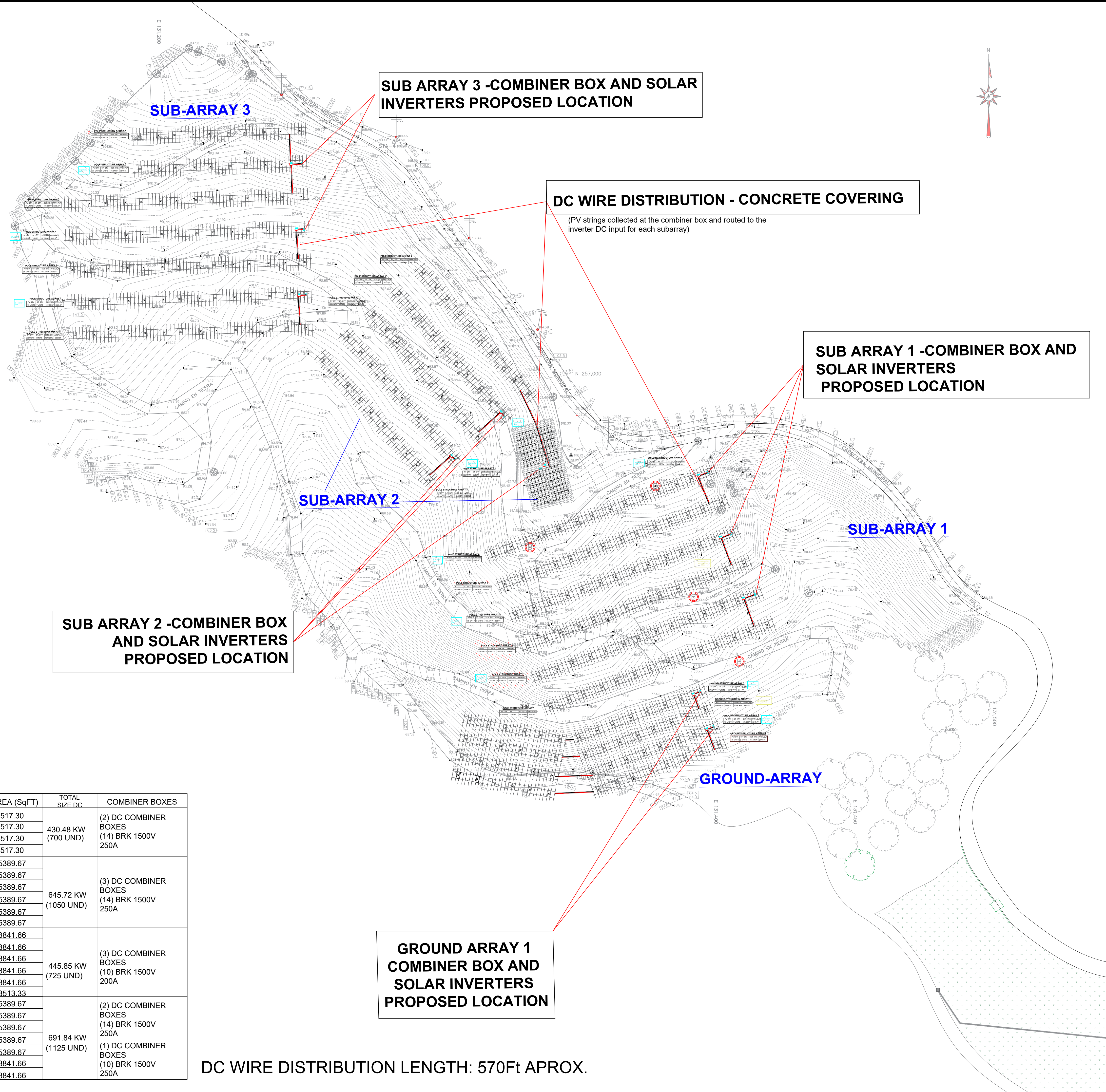
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PROJECT INFORMATION

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AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: AC WIRE DISTRIBUTION PLAN	
SHEET No.: E-101	

DC WIRE DISTRIBUTION PLAN
NOT TO SCALE



SUB ARRAYS DESCRIPTION

	STRUCTURE TYPE	ARRAY#	PV QTY	STRUCT. QTY	SIZE DC	AREA (SqFT)	TOTAL SIZE DC	COMBINER BOXES
GROUND ARRAY	GROUND	ARRAY 1	175 UNITS	7 UNITS	107.62 KW	5517.30	430.48 KW (700 UND)	(2) DC COMBINER BOXES (14) BRK 1500V 250A
	GROUND	ARRAY 2	175 UNITS	7 UNITS	107.62 KW	5517.30		
	GROUND	ARRAY 3	175 UNITS	7 UNITS	107.62 KW	5517.30		
	GROUND	ARRAY 4	175 UNITS	7 UNITS	107.62 KW	5517.30		
SUB ARRAY 1	POLE	ARRAY 1	175 UNITS	7 UNITS	107.62 KW	5389.67	645.72 KW (1050 UND)	(3) DC COMBINER BOXES (14) BRK 1500V 250A
	POLE	ARRAY 2	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 3	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 4	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 5	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 6	175 UNITS	7 UNITS	107.62 KW	5389.67		
SUB ARRAY 2	POLE	ARRAY 1	125 UNITS	5 UNITS	76.87 KW	3841.66	445.85 KW (725 UND)	(3) DC COMBINER BOXES (10) BRK 1500V 200A
	POLE	ARRAY 2	125 UNITS	5 UNITS	76.87 KW	3841.66		
	POLE	ARRAY 3	125 UNITS	5 UNITS	76.87 KW	3841.66		
	POLE	ARRAY 4	125 UNITS	5 UNITS	76.87 KW	3841.66		
	POLE	ARRAY 5	125 UNITS	5 UNITS	76.87 KW	3841.66		
	ROOF	ARRAY 6	100 UNITS	4 UNITS	61.50 KW	3513.33		
SUB ARRAY 4	POLE	ARRAY 1	175 UNITS	7 UNITS	107.62 KW	5389.67	691.84 KW (1125 UND)	(2) DC COMBINER BOXES (14) BRK 1500V 250A (1) DC COMBINER BOXES (10) BRK 1500V 250A
	POLE	ARRAY 2	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 3	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 4	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 5	175 UNITS	7 UNITS	107.62 KW	5389.67		
	POLE	ARRAY 6	125 UNITS	5 UNITS	76.87 KW	3841.66		
	POLE	ARRAY 7	125 UNITS	5 UNITS	76.87 KW	3841.66		

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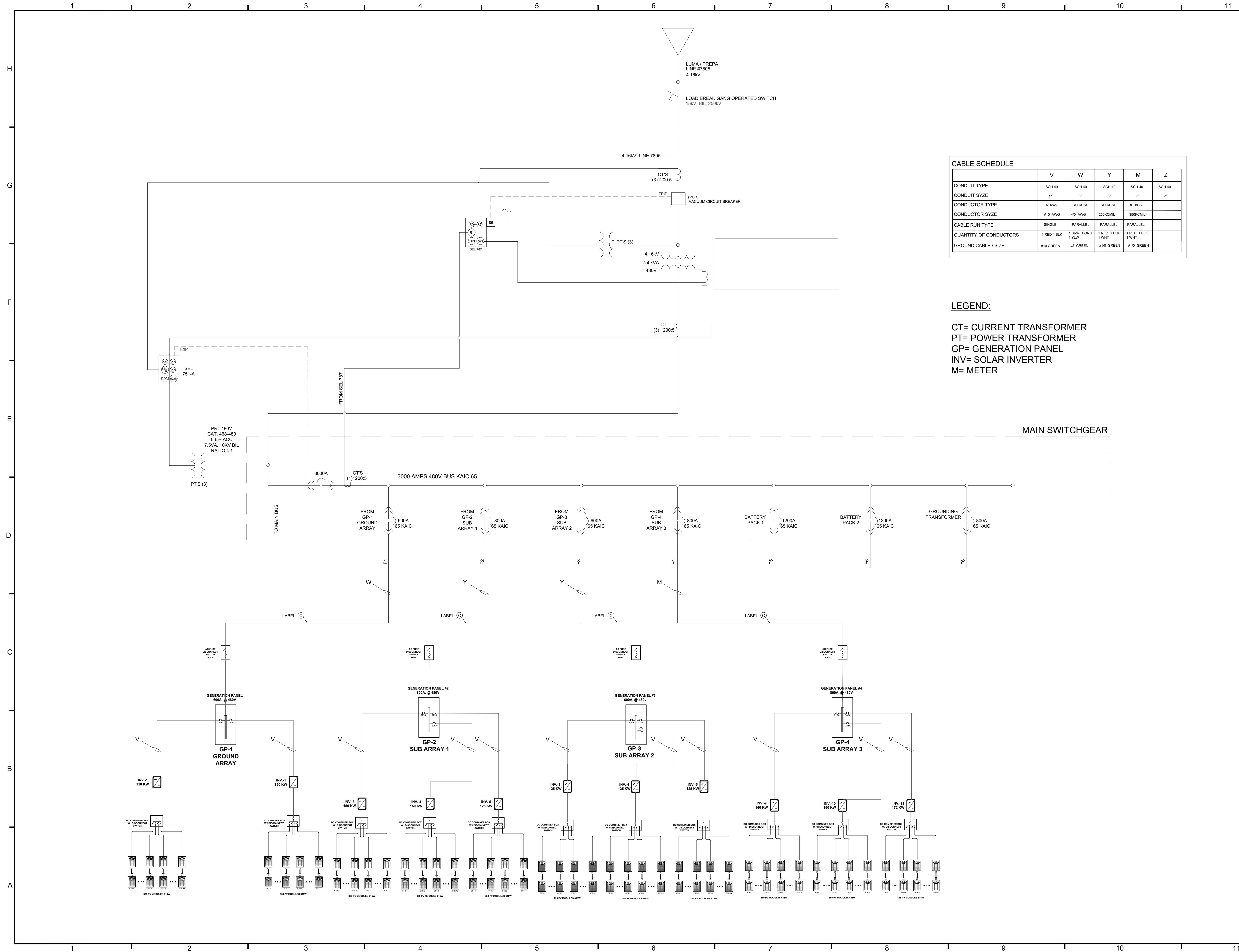
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AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: DC WIRE DISTRIBUTION PLAN	
SHEET No.: E-102	



CABLE SCHEDULE					
	V	W	Y	M	Z
CONDUIT TYPE	SCH-40	SCH-40	SCH-40	SCH-40	SCH-40
CONDUIT SYZE	1"	3"	3"	3"	3"
CONDUCTOR TYPE	RHW-2	RHHUSE	RHHUSE	RHHUSE	
CONDUCTOR SYZE	#10 AWG	4/0 AWG	250KCMIL	350KCMIL	
CABLE RUN TYPE	SINGLE	PARALLEL	PARALLEL	PARALLEL	
QUANTITY OF CONDUCTORS	1 RED 1 BLK	1 BRN 1 ORG 1 YLW	1 RED 1 BLK 1 WHT	1 RED 1 BLK 1 WHT	
GROUND CABLE / SIZE	#10 GREEN	#2 GREEN	#10 GREEN	#10 GREEN	

LEGEND:
CT= CURRENT TRANSFORMER
PT= POWER TRANSFORMER
GP= GENERATION PANEL
INV= SOLAR INVERTER
M= METER



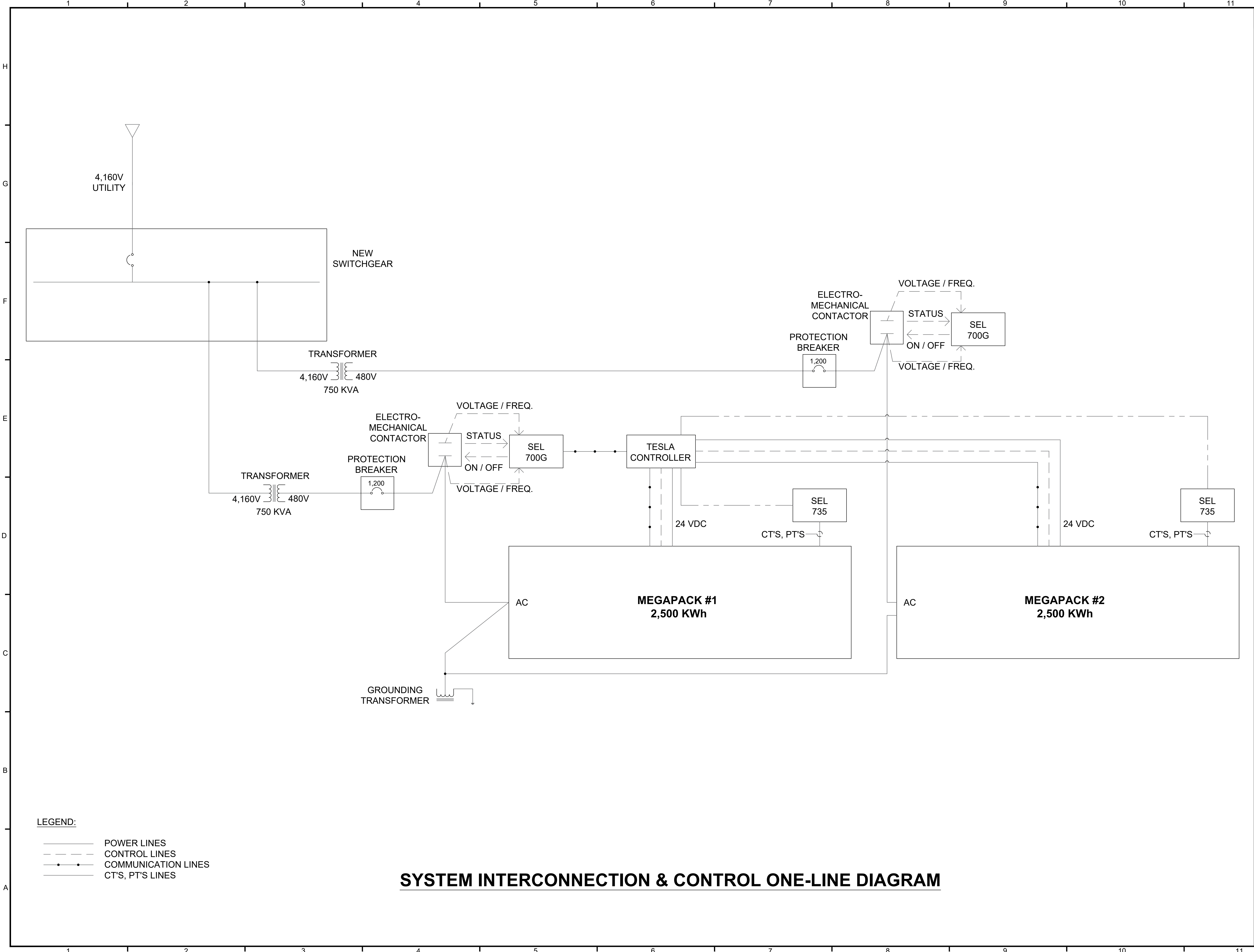
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PROJECT INFORMATION	
TITLE & ADDRESS: AGRIVOLTAICS MOCA PR. 00676 PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: PV MODULES ONE-LINE DIAGRAM	
SHEET No.: E-103	



SYSTEM INTERCONNECTION & CONTROL ONE-LINE DIAGRAM

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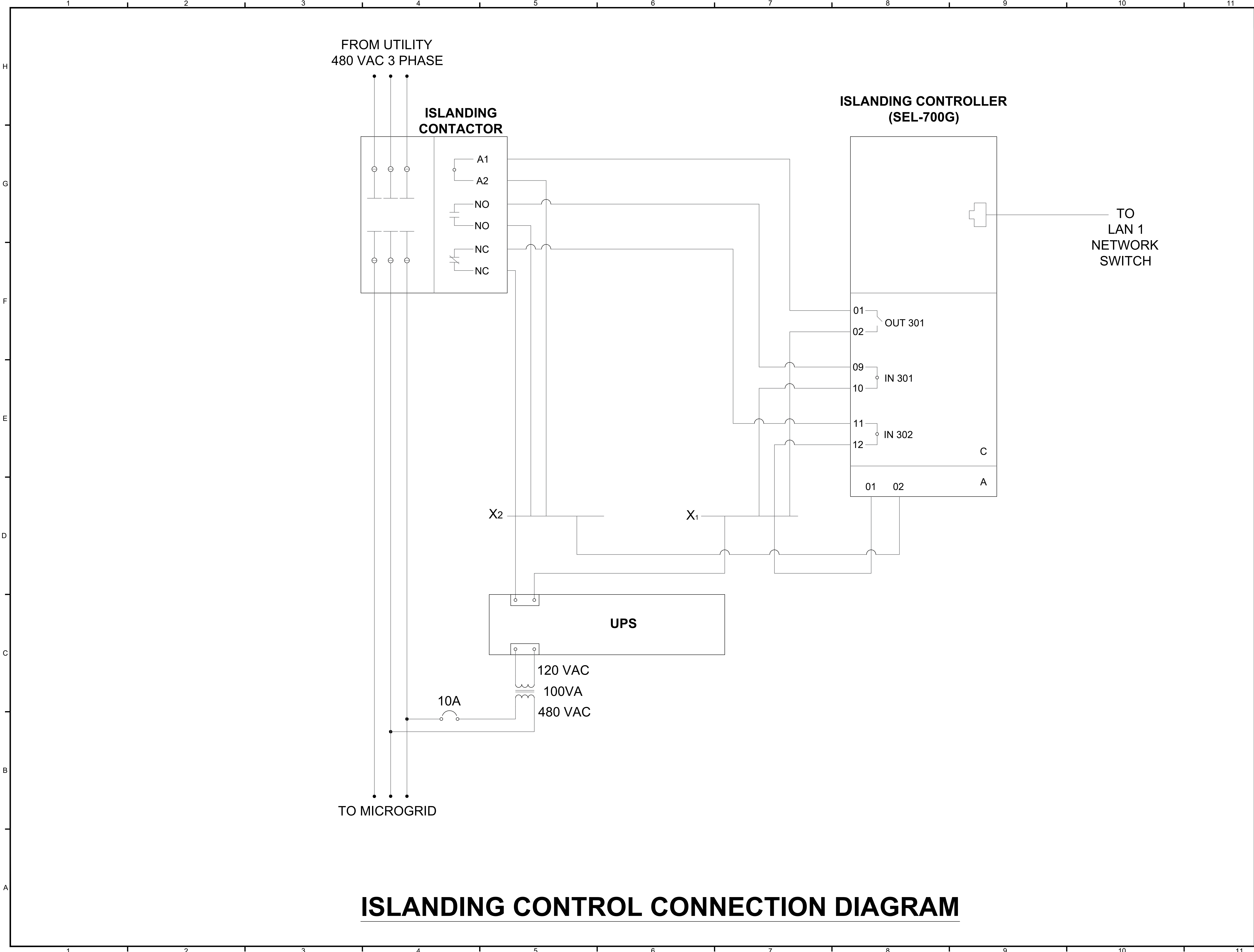
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PROJECT INFORMATION

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SHEET No.: E-104	



ISLANDING CONTROL CONNECTION DIAGRAM

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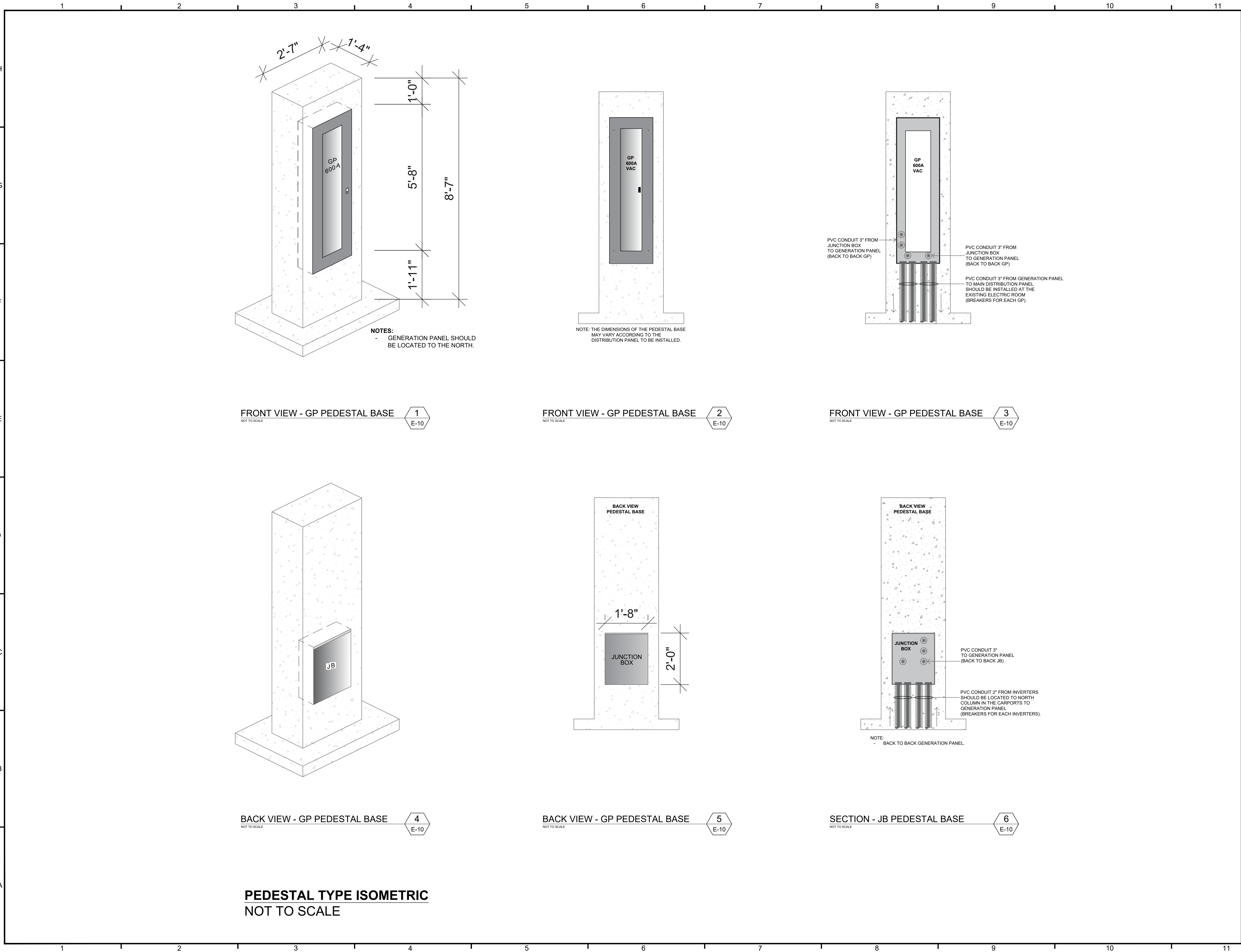
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SHEET No.: E-105	



PEDESTAL TYPE ISOMETRIC
NOT TO SCALE

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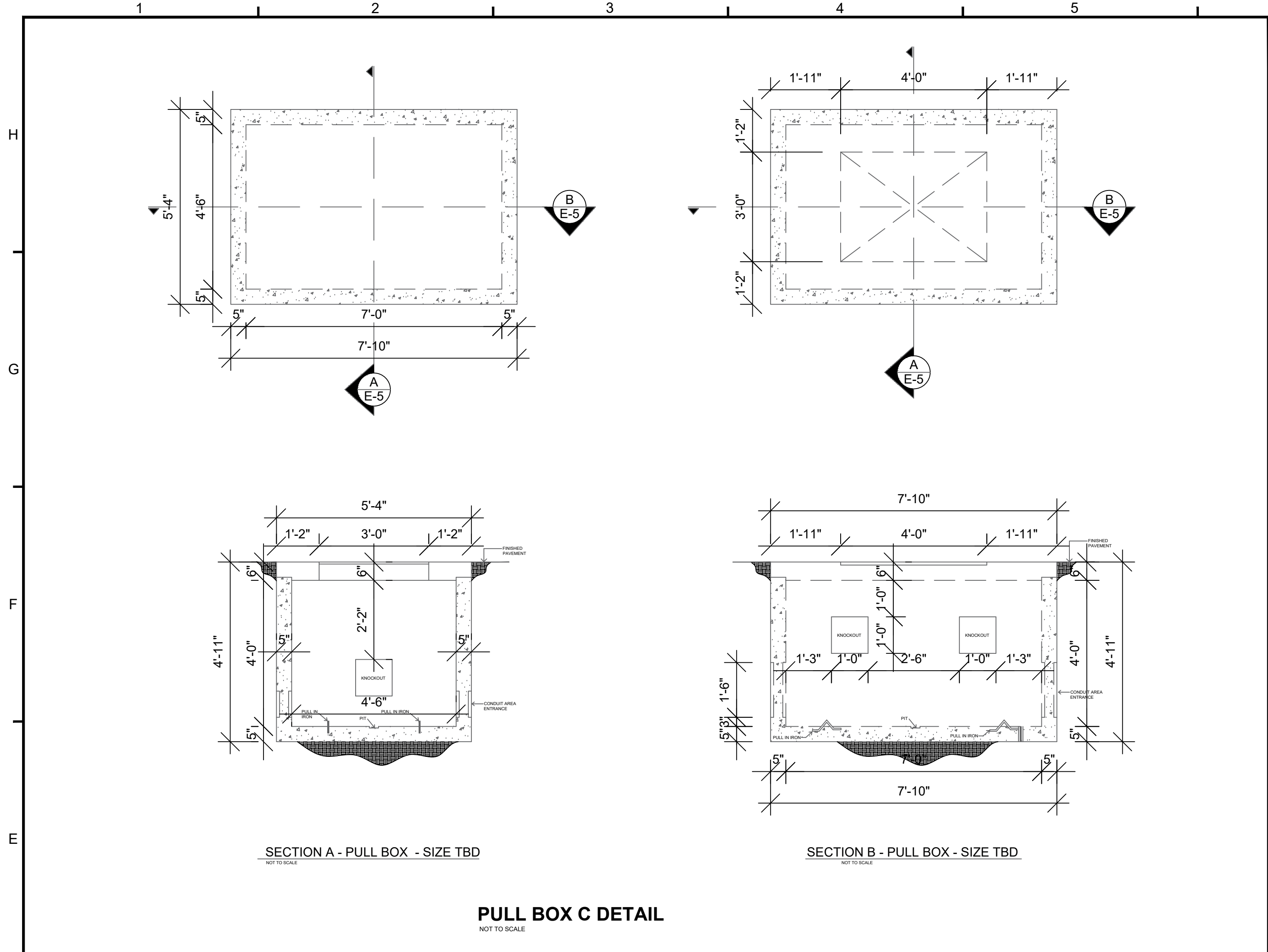
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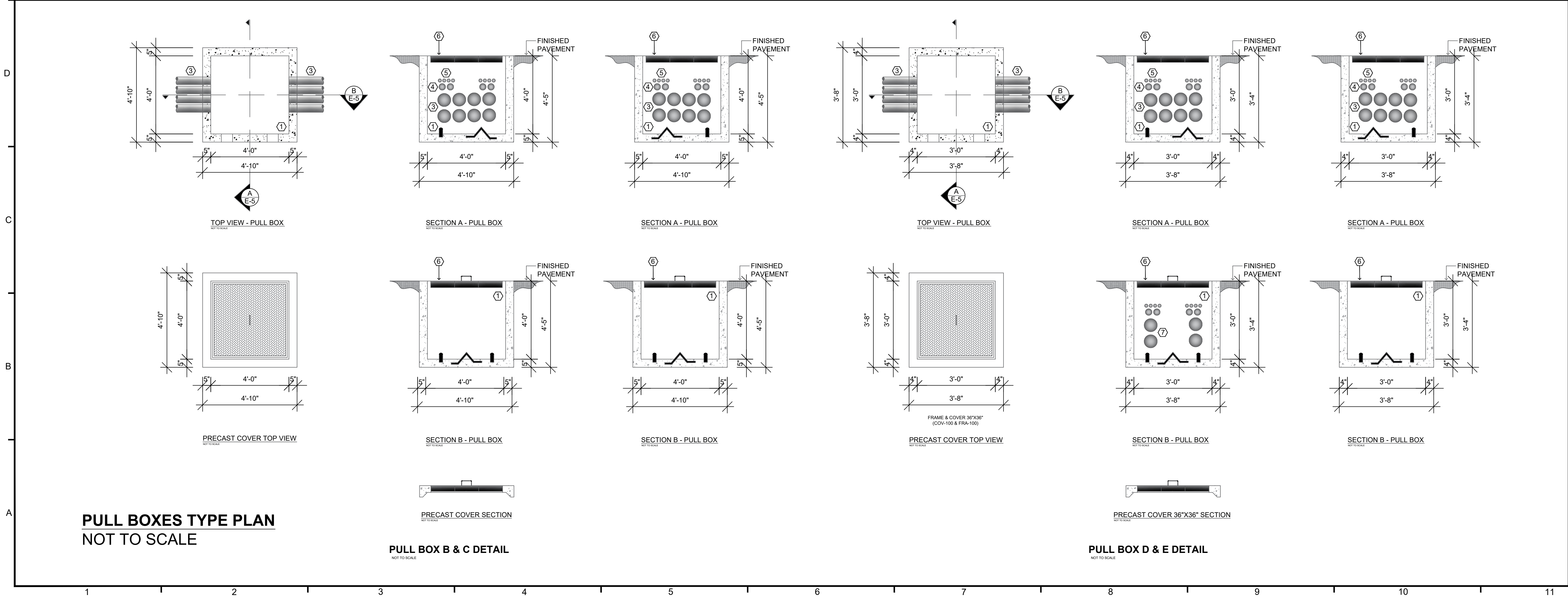
PROJECT INFORMATION

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PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
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SHEET TITLE: PEDESTAL TYPE ISOMETRIC	
SHEET No.: E-106	



PULL BOX NOTES:

- 1 PRE-FABRICATED CONCRETE UNDERGROUND PULL BOX 4'X4'X4' & PULL BOX 3'X3'X3'.
- 2 CONCRETE ENVELOPE AS PER CORRESPONDING SECTION.
- 3 PVC CONDUITS 4" SCHEDULE 40 (SEE PAGE 9 - CABLE SCHEDULE).
- 4 PVC CONDUIT 2" SCHEDULE 40 (SEE PAGE 9 - CABLE SCHEDULE).
- 5 PVC CONDUIT 1" SCHEDULE 40 (SEE PAGE 9 - CABLE SCHEDULE) COMMUNICATION CABLE.
- 6 FRAME COVER FOR DRIVEWAY.
- 7 PVC CONDUIT 4" SCHEDULE 40 (SEE PAGE 9 - CABLE SCHEDULE).



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PROJECT INFORMATION

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PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: PULL-BOXES TYPE PLAN	
SHEET No.: E-107	

Wind Load Calculations based on ASCE 7-16

Design Information :

Project Name : Agrivoltaics 5x5 revision - V2.b

Designer : MT SKYDIV AutoDesigner

Company : MT Solar

Units : Imperial

Notes : Show loads based on monoslope structure

The structure is located in **8WV0+FHJ, Moca, 00676, Puerto Rico** categorized as **Exposure C** (assumed to be homogeneous for the selected wind direction). The wind load calculation for the structure - Main W Force Resisting System (MWFRS) - is based on the Directional Procedure (Chapter 27) of ASCE 7. Moreover, the structure is classified as **Risk Category I**. The location is elevated at 296.49 ft above mean sea level

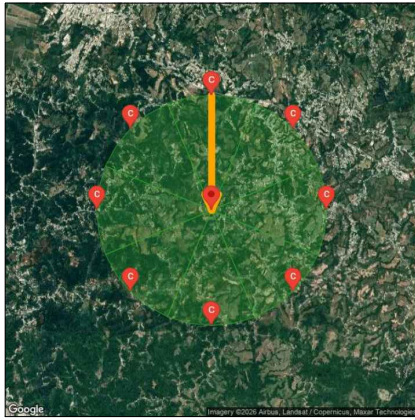


Figure 1. Site location.

Parameter	Value
Building Length, L	18.75 ft
Building Width, B	39.50 ft
Mean Roof Height, h	7.66 ft
Roof Profile	Open Monoslope
Roof Pitch Angle, θ	4.00°
Structure Type	Main Wind Force Resisting System (MWFRS)
Wind Blockage	Empty Under

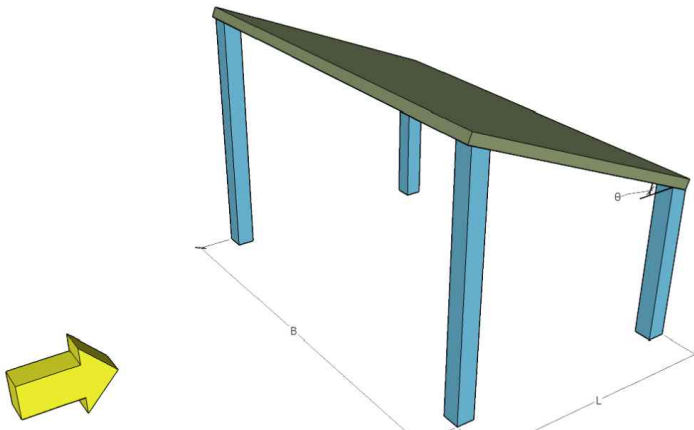


Figure 2. Building parameters.

Level	Elevation (ft)	Kz
h	7.66	0.849

• Basic Wind Speed, V

Wind speed for the address is 165 mph (defined by the user) for Risk Category I and was calculated using Triangular Interpolation Network (TIN) method from points with known wind speed values based on Figure 26.5-1 of ASCE 7.

• Wind Directionality Factor, Kd

Table 26.6-1 Kd=0.85 - Wind Directionality Factor For buildings

• Topographic Factor, Kzt

Section 26.8.1 Kzt=1 - Topographic Factor
For the selected wind source direction, either the terrain is relatively a flat surface or the structure is outside the local topographic zones.
For calculating the topographic factor, the detected topography for the selected wind source direction is Flat.

Section 26.9 • Ground Elevation Factor, Ke

Ke - Ground Elevation Factor
Ke=e^{-0.0000362E}
Ke=0.98932
Where E=Site Elevation=296.49ft

Section 26.9 Ke=0.98932 - Ground Elevation Factor

• Velocity Pressure Exposure Coefficient, Kz

Section 26.10 Kz - Velocity Pressure Exposure Coefficient
For z<15ft Kz=2.01×(15/zg)^{2/α}

Section 26.10 Kz - Velocity Pressure Exposure Coefficient
For 15ft≤z≤zg Kz=2.01×(z/zg)^{2/α}

Table 26.11-1 α=9.5
Table 26.11-1 zg=900ft
Section 26.10 Kz - Velocity Pressure Exposure Coefficient
For z<15ft Kz=2.01(15/zg)^{2/α}

Kz=0.84888
Where zg=900ft
α=9.5

Level	Elevation (ft)	Kz
h	7.66	0.849

• Velocity Pressure, qh

For the selected wind source direction.

Section 26.10.2 qh - Velocity Pressure at h
qh=0.00256 Kz Kzt Kd Ke V²
qh=49.752psf
Where Kz=Velocity Pressure Exposure Coefficient=0.84888
Kzt =Topographic Factor=1
Kd =Wind Directionality Factor=0.85
V =Basic Wind Speed=165mi/h
Ke =Ground Elevation Factor=0.98932

• Velocity Pressure for All Directions

Section 26.8 Kzt - Topographic Factor
Kzt=(1+K1×K2×K3)≥1.0²

Section 26.10 Kz - Velocity Pressure Exposure Coefficient
For 15ft≤z≤zg Kz=2.01×(z/zg)^{2/α}

Kz - Velocity Pressure Exposure Coefficient
For z<15ft Kz=2.01×(15/zg)^{2/α}

Section 26.10.2 qh - Velocity Pressure at h
qh=0.00256×Kz_h×Kzt×Kd×Ke×V²

Direction	Exposure Category	Kz @ h=7.655ft	Kzt	Kd	Ke	V (mph)	qh (psf)
N	C	0.849	1.000	0.850	0.989	165.000	49.752
NE	C	0.849	1.000	0.850	0.989	165.000	49.752
E	C	0.849	1.000	0.850	0.989	165.000	49.752
SE	C	0.849	1.000	0.850	0.989	165.000	49.752
S	C	0.849	1.000	0.850	0.989	165.000	49.752
SW	C	0.849	1.000	0.850	0.989	165.000	49.752
W	C	0.849	1.000	0.850	0.989	165.000	49.752
NW	C	0.849	1.000	0.850	0.989	165.000	49.752

• Net Pressure Coefficients, CN

Figure 27.3-4 to 27.3-7 The net pressure coefficients, CN, are calculated using Figures 27.3-4 to 27.3-7 of ASCE 7-16 - Clear Wind Flow - as shown in Table below.

Direction	Surface	CN Case A	CN Case B
0	Windward	0.240	-1.260
	Leeward	-0.393	-0.047
180	Windward	1.040	0.340
	Leeward	0.940	0.113
90	≤ h from windward edge	-0.800	0.800
	h to 2h from windward edge	-0.600	0.500
	> 2h from windward edge	-0.300	0.300

Section 26.11.1 • Gust Effect Factor, G

G=0.85 - Gust Effect Factor
The structure is assumed to be rigid.

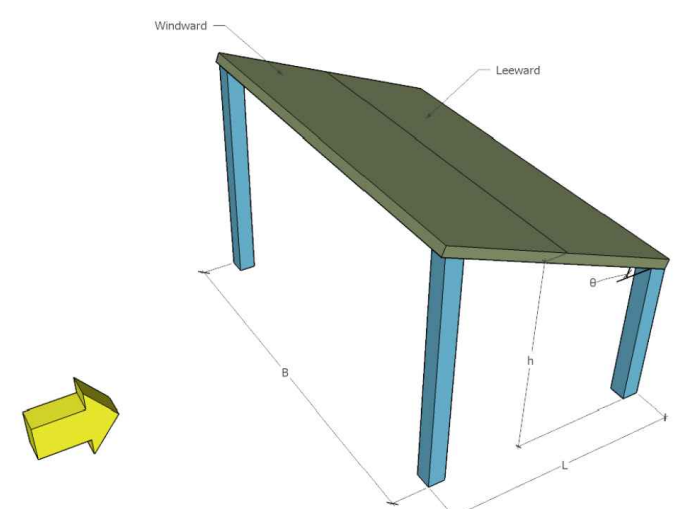
• Design Wind Pressures (MWFRS)

p - Design Wind Pressure
For open buildings p=qh×G×CN

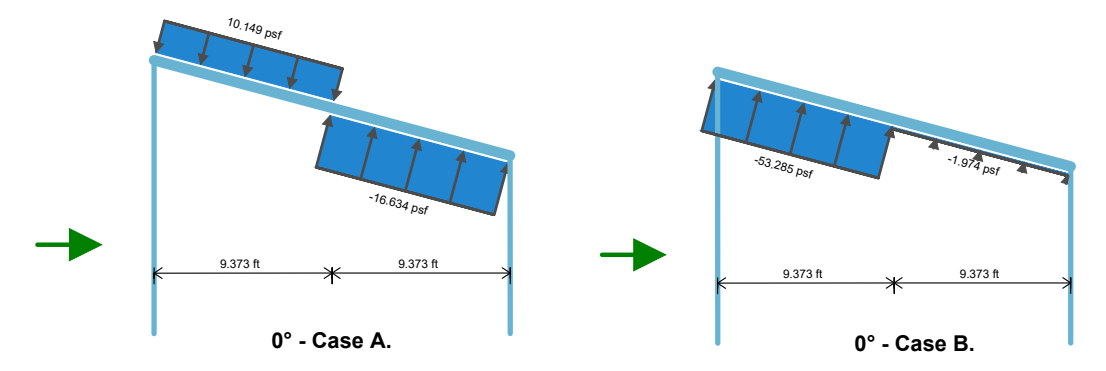
Section 27.3.2

• For Wind Pressure - 0°

Direction	Surface	qh (psf)	G	CN Case A	CN Case B	p Case A (psf)	p Case B (psf)
0	Windward	49.752	0.850	0.240	-1.260	10.149	-53.285
	Leeward	49.752	0.850	-0.393	-0.047	-16.634	-1.974



Wind along L - 180°



0° - Case A.

0° - Case B.

• Service Wind Pressure - 0°

Direction	Surface	p Case A (psf)	p Case B (psf)
0	Windward	6.090	-31.971
	Leeward	-9.980	-1.184

• For Wind Pressure - 180°

Direction	Surface	qh (psf)	G	CN Case A	CN Case B	p Case A (psf)	p Case B (psf)
180	Windward	49.752	0.850	1.040	0.340	43.981	14.378
	Leeward	49.752	0.850	0.940	0.113	39.752	4.793

Wind along L - 0°



STRUCTURAL CALCULATION SHEET (WIND)

• Service Wind Pressure - 180°

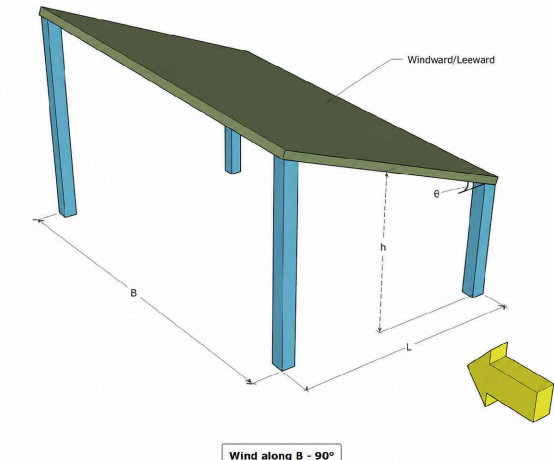
Direction	Surface	p Case A (psf)	p Case B (psf)
180	Windward	26.389	8.627
	Leeward	23.851	2.876

180° - Case A.

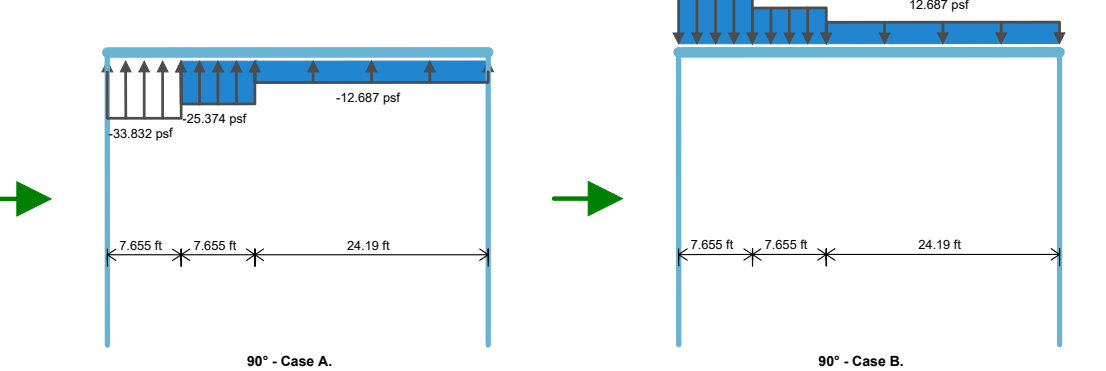
180° - Case B.

• For Wind Pressure - 90°

Direction	Surface	qh (psf)	G	CN Case A	CN Case B	p Case A (psf)	p Case B (psf)
90	≤ h from windward edge	49.752	0.850	-0.800	0.800	-33.832	33.832
	h to 2h from windward edge	49.752	0.850	-0.600	0.500	-25.374	21.145
	> 2h from windward edge	49.752	0.850	-0.300	0.300	-12.687	12.687



Wind along L - 90°



90° - Case A.

90° - Case B.

• Service Wind Pressure - 90°

Direction	Surface	p Case A (psf)	p Case B (psf)
90	≤ h from windward edge	-20.299	20.299
	h to 2h from windward edge	-15.224	12.687
	> 2h from windward edge	-7.612	7.612

Section 27.3.2 In addition to the roof pressures for 90°, an additional horizontal wind load on open building should be calculated for wind pressures parallel to the ridge in accordance with Section 28.3.5. We will assume KS=1.0 and should be adjusted and be reduced based on the actual solidity ratio and number of frames. - See Figure 28.3-2.

Section 27.3.2 Section 28.3.5 p - Horizontal Wind Loads on Open or Partially Enclosed Buildings
For wind pressure parallel to the ridge (90°)
p=qh×[(GCpf)_{windward} - (GCpf)_{leeward}] × KB × KS

Section 27.3.2 Section 28.3.5 KB - Frame Width Factor
For L<100R KB=1.8-0.01L. Otherwise, KB=0.8
KB=1.6125
Where L=Building Length=18.746ft

Section 28.3.5 KS - Shielding Factor
KS=0.6+0.073×(n-3)×(1.25×φ1.8)

Section 28.3.5 KS=1 - Shielding Factor
Assumed to be equal to 1.0 and should be adjusted based on the actual wall solidity ratio and number of frames.

Figure 28.3-1 (GCpf)_{windward} =0.4
Using Zone 5 from Figure 28.3-1

Figure 28.3-1 Section 28.3.5 (GCpf)_{leeward} =-0.29
Using Zone 6 from Figure 28.3-1

Section 27.3.2 Section 28.3.5 p - Horizontal Wind Loads on Open or Partially Enclosed Buildings
For wind pressure parallel to the ridge (90°)
p=qh[(GCpf)_{windward} - (GCpf)_{leeward}] KBKS
p=55.357psf
Where qh=Velocity Pressure at h=49.752psf
(GCpf)_{windward} =0.4
(GCpf)_{leeward} =-0.29
KB =Frame Width Factor=1.6125
KS =Shielding Factor=1

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DESCRIPTION

PROJECT INFORMATION

TITLE & ADDRESS:

AGRIVOLTAICS

MOCA PR. 00676

PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO

AGROVOLTAICS PROJECT No.:

1

DRAWN BY:

REVIEWED BY:

SHEET TITLE:

STRUCTURAL CALCULATION SHEET (WIND)

SHEET No.:

S-01

IBC 2021 PILE DESIGN

Input	Description
Region	American Standard
Concrete design code	American Concrete Institute (ACI 318:2019)

Cross-section

Input	Description	Value
Shape	Cross-sectional shape	Square
b	Section width	48 in
D	Section depth	48 in

Material Properties

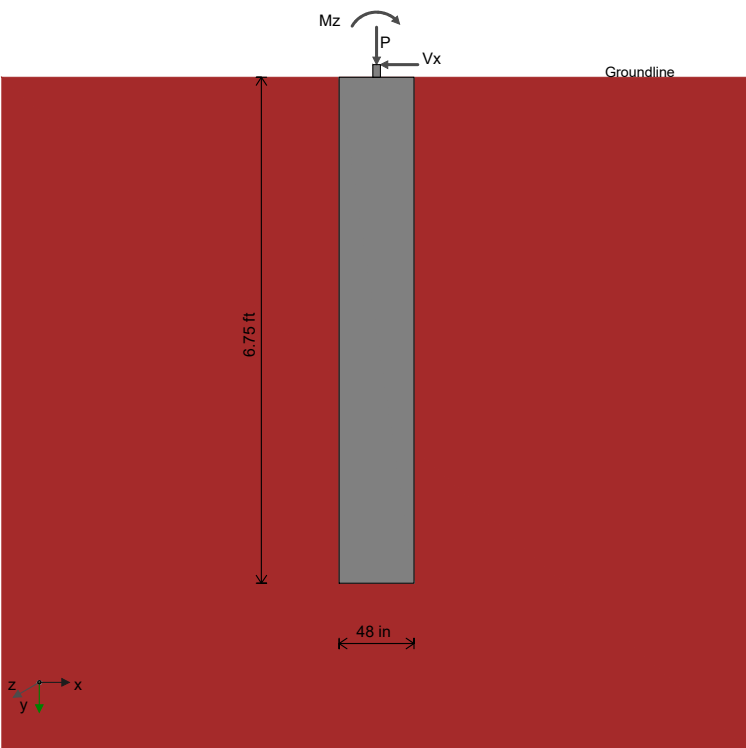
Input	Description	Value
f'ck	Concrete compressive strength	2.5 ksi
fyk	Yield strength of steel	60 ksi
db	Rebar diameter	#5 (0.625) in
cover	Concrete cover	3 in

Soil Parameters (IBC 1806)

Input	Description	Value
Soil type	Sand, silty sand, clayey sand, silty gravel & clayey gravel	
qa	Allowable bearing pressure	2000 psf
R	Allowable lateral pressure	150 ps/ft

Loading

Load	ASD	LRFD
P	11.92 kip	18.76 kip
Vx	-0.65 kip	-1.084 kip
Vz	-0.323 kip	-0.515 kip
Mx	-0.215 kip-ft	-0.343 kip-ft
Mz	24.44 kip-ft	40.49 kip-ft



- Required depth to resist lateral loads (ASD)

$$R=150\text{ ps/ft}$$

$$\text{Point of application of lateral load: } H=h_1+h_2+h_e=0+0+0=0\text{ ft}$$

Considering x-direction:

$$\text{Lateral force per section length: } H_o=\frac{V_x}{1.57\times D}=\frac{-0.65}{1.57\times 48}=-0.104\frac{\text{kip}}{\text{ft}}$$

$$\text{Moment per section length: } M_o=\frac{M_z+(V_x\times H)}{1.57\times D}=\frac{24.44+(-0.65\times 0)}{1.57\times 48}=3.892\frac{\text{kip}\cdot\text{ft}}{\text{ft}}$$

Required depth of embedment in earth:

$$L_e^3-(9\times\frac{H_o\times L_x}{R})-(12\times\frac{M_o}{R})=0$$

$$\text{Solving the cubic equation: } L_{e,x}=6.472\text{ ft}$$

Considering z-direction:

$$\text{Lateral force per section length: } H_o=\frac{V_z}{1.57\times b}=\frac{-0.323}{1.57\times 48}=-0.051\frac{\text{kip}}{\text{ft}}$$

$$\text{Moment per section length: } M_o=\frac{M_x+(V_z\times H)}{1.57\times b}=\frac{-0.215+(-0.323\times 0)}{1.57\times 48}=-0.034\frac{\text{kip}\cdot\text{ft}}{\text{ft}}$$

Required depth of embedment in earth:

$$L_e^3-(9\times\frac{H_o\times L_x}{R})-(12\times\frac{M_o}{R})=0$$

$$\text{Solving the cubic equation: } L_{e,z}=0.752\text{ ft}$$

Minimum embedded depth

$$\text{Depth of pile required: } L_{e,req}=\text{MAX}[L_{e,x},L_{e,z}]=\text{MAX}[6.472,-0.752]=6.472\text{ ft}$$

$$\text{Actual embedded length: } L_e=L-h_2-h_e=6.75-0-0=6.75\text{ ft}$$

$$\text{Utilisation: } \text{Ratio}=\frac{L_{e,req}}{L_e}=\frac{6.472}{6.75}=0.959$$

RESULTS

UTILITY: 0.96

- End-bearing Capacity (ASD)

$$\text{Allowable bearing pressure: } q_a=2000\text{ psf}$$

$$\text{Unit weight of concrete: } W_C=0.15\text{ kip/ft}^3$$

$$\text{Cross-sectional area: } A=b\times D=48\times 48=16\text{ ft}^2$$

$$\text{End-bearing pressure: } q=\frac{P}{A}=\frac{11.92}{16}=745.1\text{ psf}$$

$$\text{Utilisation: } \text{Ratio}=\frac{q}{q_a}=\frac{745.1}{2000}=0.373$$

UTILITY: 0.37

- Lateral Soil Pressure (ASD)

$$\text{Allowable lateral pressure: } R=150\text{ ps/ft}$$

Length to least lateral dimension ratio:

$$\frac{L}{\text{MIN}[b,D]}=\frac{6.75}{\text{MIN}[4,4]}=1.688$$

L/D ratio < 10. This pile is classified as a short pile.

Considering x-direction:

Distance from resting surface to pivot point:

$$a=\frac{(4\times\frac{M_o\times L_e}{(6\times Mo)+(4\times Ho\times Le)})}{(4\times\frac{Mo\times Le}{(6\times Mo)+(4\times Ho\times Le)}+(3\times Ho\times\frac{L_e^2}{2}))}=4.56\text{ ft}$$

Earth pressure against the pile at a distance a/2 from the resting surface:

$$p=\frac{0.75\times[(4\times Mo)+(3\times Ho\times Le)]^2}{L_e^3\times[(3\times Mo)+(2\times Ho\times Le)]}=0.291\frac{\text{kip}}{\text{ft}^2}$$

$$p=\frac{0.75\times[(4\times 3.892)+(3\times -0.104\times 6.75)]^2}{6.75^3\times[(3\times 3.892)+(2\times -0.104\times 6.75)]}=0.291\frac{\text{kip}}{\text{ft}^2}$$

Allowable lateral soil pressure at a depth of a/2:

$$p_a=R\times\frac{a}{2}=0.15\times\frac{4.56}{2}=0.342\frac{\text{kip}}{\text{ft}^2}$$

Utilisation - pressure at a depth of a/2

$$\text{Ratio}=\frac{p}{p_a}=\frac{0.291}{0.342}=0.85$$

RESULTS

UTILITY: 0.85

Earth pressure against the pile at distance Le:

$$s_a=\frac{6\times[(2\times Mo)+(Ho\times Le)]}{L_e^3}=\frac{6\times[(2\times 3.892)+(-0.104\times 6.75)]}{6.75^3}=0.933\frac{\text{kip}}{\text{ft}^2}$$

Allowable lateral soil pressure at a depth of Le:

$$p_s=R\times Le=0.15\times 6.75=1.012\frac{\text{kip}}{\text{ft}^2}$$

Utilisation - pressure at a depth of Le

$$\text{Ratio}=\frac{s}{p_s}=\frac{0.933}{1.012}=0.922$$

RESULTS

UTILITY: 0.92

Considering z-direction:

Distance from resting surface to pivot point:

$$a=\frac{(4\times\frac{M_o\times L_e}{(6\times Mo)+(4\times Ho\times Le)})}{(4\times\frac{Mo\times Le}{(6\times Mo)+(4\times Ho\times Le)}+(3\times Ho\times\frac{L_e^2}{2}))}=4.99\text{ ft}$$

Earth pressure against the pile at a distance a/2 from the resting surface:

$$p=\frac{0.75\times[(4\times Mo)+(3\times Ho\times Le)]^2}{L_e^3\times[(3\times Mo)+(2\times Ho\times Le)]}=0.029\frac{\text{kip}}{\text{ft}^2}$$

Allowable lateral soil pressure at a depth of a/2:

$$p_a=R\times\frac{a}{2}=0.15\times\frac{4.99}{2}=0.374\frac{\text{kip}}{\text{ft}^2}$$

Utilisation - pressure at a depth of a/2

$$\text{Ratio}=\frac{p}{p_a}=\frac{-0.029}{0.374}=-0.077$$

Earth pressure against the pile at distance Le:

$$s=\frac{6\times[(2\times Mo)+(Ho\times Le)]}{L_e^3}=\frac{6\times[(2\times -0.034)+(-0.051\times 6.75)]}{6.75^3}=-0.055\frac{\text{kip}}{\text{ft}^2}$$

Allowable lateral soil pressure at a depth of Le:

$$p_s=R\times Le=0.15\times 6.75=1.012\frac{\text{kip}}{\text{ft}^2}$$

$$\text{Ratio}=\frac{s}{p_s}=\frac{-0.055}{1.012}=-0.054$$

RESULTS

UTILITY: 0.05

- Shear force and bending moment (LRFD)

Considering x-direction:

$$\text{Lateral force per section length: } H_o=\frac{V_x}{1.57\times D}=\frac{-1.084}{1.57\times 48}=-0.173\frac{\text{kip}}{\text{ft}}$$

$$\text{Moment per section length: } M_o=\frac{M_z+(V_x\times H)}{1.57\times D}=\frac{40.49+(-1.084\times 0)}{1.57\times 48}=6.448\frac{\text{kip}\cdot\text{ft}}{\text{ft}}$$

Distance from resting surface to pivot point:

$$a=\frac{(4\times\frac{M_o\times L_e}{(6\times Mo)+(4\times Ho\times Le)})}{(4\times\frac{Mo\times Le}{(6\times Mo)+(4\times Ho\times Le)}+(3\times Ho\times\frac{L_e^2}{2}))}=4.56\text{ ft}$$

Max shear force located at depth a:

$$E=\frac{M_o}{H_o}=\frac{6.448}{-0.173}=-37.36\text{ ft}$$

$$V_{max,x}=(Ho\times D)\times[1-3\times(\frac{4\times E}{L_e}+3)\times(\frac{a}{L_e})^2]+[4\times(\frac{3\times E}{L_e}+2)\times(\frac{a}{L_e})^3]$$

$$V_{max,x}=(-0.173\times 48)\times[1-3\times(\frac{4\times -37.36}{6.75}+3)\times(\frac{4.56}{6.75})^2]+[4\times(\frac{3\times -37.36}{6.75}+2)\times(\frac{4.56}{6.75})^3]$$

$$V_{max,x}=7.232\text{ kip}$$

Max bending moment located at a depth of a/2:

$$M_{max,x}=(Ho\times D\times Le)\times[(\frac{E}{L_e}+\frac{a}{2\times Le})+(\frac{4\times E}{L_e}+3)\times(\frac{a}{2\times Le})^2]+[4\times(\frac{3\times E}{L_e}+2)\times(\frac{a}{2\times Le})^3]$$

$$M_{max,x}=(-0.173\times 48\times 6.75)\times[(\frac{37.36}{6.75}+\frac{4.56}{2\times 6.75})+(\frac{4\times -37.36}{6.75}+3)\times(\frac{4.56}{2\times 6.75})^2]+[4\times(\frac{3\times -37.36}{6.75}+2)\times(\frac{4.56}{2\times 6.75})^3]$$

$$M_{max,x}=23.98\text{ kip}\cdot\text{ft}$$

Considering z-direction:

$$\text{Lateral force per section length: } H_o=\frac{V_z}{1.57\times b}=\frac{-0.515}{1.57\times 48}=-0.082\frac{\text{kip}}{\text{ft}}$$

$$\text{Moment per section length: } M_o=\frac{M_x+(V_z\times H)}{1.57\times b}=\frac{-0.343+(-0.515\times 0)}{1.57\times 48}=-0.055\frac{\text{kip}\cdot\text{ft}}{\text{ft}}$$

Distance from resting surface to pivot point:

$$a=\frac{(4\times\frac{M_o\times L_e}{(6\times Mo)+(4\times Ho\times Le)})}{(4\times\frac{Mo\times Le}{(6\times Mo)+(4\times Ho\times Le)}+(3\times Ho\times\frac{L_e^2}{2}))}=4.99\text{ ft}$$

Max shear force located at depth a:

$$E=\frac{M_o}{H_o}=\frac{-0.055}{-0.082}=0.666\text{ ft}$$

$$V_{max,z}=(Ho\times b)\times[1-3\times(\frac{4\times E}{L_e}+3)\times(\frac{a}{L_e})^2]+[4\times(\frac{3\times E}{L_e}+2)\times(\frac{a}{L_e})^3]$$

$$V_{max,z}=(-0.082\times 48)\times[1-3\times(\frac{4\times 0.666}{6.75}+3)\times(\frac{4.99}{6.75})^2]+[4\times(\frac{3\times 0.666}{6.75}+2)\times(\frac{4.99}{6.75})^3]$$

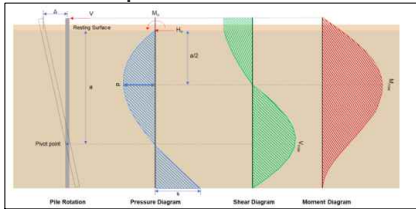
$$V_{max,z}=0.28\text{ kip}$$

Max bending moment located at a depth of a/2:

$$M_{max,z}=(Ho\times b\times Le)\times[(\frac{E}{L_e}+\frac{a}{2\times Le})+(\frac{4\times E}{L_e}+3)\times(\frac{a}{2\times Le})^2]+[4\times(\frac{3\times E}{L_e}+2)\times(\frac{a}{2\times Le})^3]$$

$$M_{max,z}=(-0.082\times 48\times 6.75)\times[(\frac{0.666}{6.75}+\frac{4.99}{2\times 6.75})+(\frac{4\times 0.666}{6.75}+3)\times(\frac{4.99}{2\times 6.75})^2]+[4\times(\frac{3\times 0.666}{6.75}+2)\times(\frac{4.99}{2\times 6.75})^3]$$

$$M_{max,z}=0.752\text{ kip}\cdot\text{ft}$$



- Minimum Reinforcement Check (LRFD)

$$\text{Gross area of concrete: } A_g=b\times D=48\times 48=2304\text{ in}^2$$

Main Reinforcement

Required reinforcement:

$$A_{sL,req}=\frac{P-(0.85\times f'_{ck}\times A_g)}{f_yk-(0.85\times f'_{ck})}=\frac{18.76-(0.85\times 2.5\times 2304)}{60-(0.85\times 2.5)}=-84.27\text{ in}^2$$

$$\text{Maximum reinforcement: } A_{sL,max}=0.08\times A_g=0.08\times 2304=184.32\text{ in}^2$$

$$\text{Minimum reinforcement: } A_{sL,min}=0.0018\times A_g=0.0018\times 2304=4.147\text{ in}^2$$

$$\text{Governing minimum reinforcement area: } (0.0018\times A_g)\leq A_{sL,req}\leq (0.08\times A_g)$$

$$A_{min}=4.147\text{ in}^2$$

$$\text{Minimum number of reinforcements: } n=\text{MIN}[\frac{A_{bar}}{A_{min}},\frac{4.147}{A_{bar}}]=14$$

$$\text{Minimum spacing: } s_{rebar}=\text{MAX}[1.5,1.5\times db]=\text{MAX}[1.5,(1.5\times 0.625)]=1.5\text{ in}$$

$$\text{Use: } n=16\text{ pcs at } 1.5\text{ in minimum spacing}$$

Total reinforcement area:

$$A_{st}=16\times 0.307=4.909\text{ in}^2$$

Shear Reinforcement

For main reinforcement $\leq 1.41\text{ in}$ Use #3(0.375 in)

Maximum spacing of shear Reinforcements:

$$s=\text{MIN}[16\times db,48\times db_{use},\text{MIN}[b,D]]=\text{MIN}[(16\times 0.625),(48\times 0.375),\text{MIN}(48,48)]=10\text{ in}$$

Detailing Summary

Main reinforcement	#5 (0.625 in) - 16pcs at 1.5 in min. spacing
Shear reinforcement	#3 (0.375 in) at 10 in max. spacing

- Axial Compression Strength (LRFD)

Allowable axial compressive strength:

$$\phi P_N=\phi\times 0.8\times[(0.85\times f'_{ck}\times A_g-A_s\times f_yk)+(A_s\times A_{st})]$$

$$\phi P_N=0.65\times 0.8\times[(0.85\times 2.5\times (2304-4.909))+(60\times 44.31)]=2694\text{ kip}$$

Utilisation

$$\text{Ratio}=\frac{P}{\phi P_N}=\frac{18.76}{2694}=0.007$$

UTILITY: 0.01

- Shear Strength LRFD)

Effective shear width	bw= 48 in
Effective shear depth	d= 44.31 in
Shear reinforcement area	Av= 0.221 in2
Shear reinforcement spacing	s= 10 in
Concrete type factor (Normal concrete)	λc= 1
Strength reduction factor for shear	φ= 0.75
Maximum shear in the x-direction	Vmax,x= 7.232 kip
Maximum shear in the z-direction	Vmax,z= 0.28 kip

Max shear strength of concrete:

$$V_{C,max}=5\times λ\times \sqrt{f'_{ck}}\times bw\times d=5\times 1\times \sqrt{2.5}\times 48\times 44.31=531.8\text{ kip}$$

Shear strength of concrete:

$$V_{C,s}=(2\times λ\times \sqrt{f'_{ck}}+\text{MIN}[\frac{P}{6\times A_g},(0.05\times f'_{ck})])\times (bw\times d)$$

$$V_{C,s}=(2\times 1\times \sqrt{2.5}+\text{MIN}[\frac{18.76}{6\times 2304},(0.05\times 2.5)])\times (48\times 44.31)=215.6\text{ kip}$$

Governing shear strength of concrete:

$$V_C=\text{MIN}[V_{C,max},V_{C,s}]=\text{MIN}[531.8,215.6]=215.6\text{ kip}$$

Shear strength of steel (a):

$$V_{S,a}=8\times \sqrt{f'_{ck}}\times bw\times d=8\times \sqrt{2.5}\times 48\times 44.31=850.8\text{ kip}$$

Shear strength of steel (b):

$$V_{S,b}=\frac{A_v\times f_yk\times d}{s}=\frac{0.221\times 60\times 44.31}{10}=58.73\text{ kip}$$

Governing shear strength of steel:

$$V_S=\text{MIN}[V_{S,a},V_{S,b}]=\text{MIN}[850.8,58.73]=58.73\text{ kip}$$

Allowable shear strength:

$$\phi V_n=\phi\times (V_C+V_S)=0.75\times (215.6+58.73)=205.7\text{ kip}$$

$$V_{max}=\text{MAX}[7.232,0.28]=7.232\text{ kip}$$

Utilisation

$$\text{Ratio}=\frac{V_{max}}{\phi V_n}=\frac{7.232}{205.7}=0.035$$

RESULTS

UTILITY: 0.04

- Flexural Strength (LRFD)

Concrete type factor (Normal concrete)	$\lambda_c =$	1
Strength reduction factor for flexure	$\phi =$	0.65
Modulus of steel reinforcement	$E_s =$	29003 ksi
Maximum concrete strain	$\epsilon_c =$	0.0030
Yield strain of steel f_y/E_s	$\epsilon_y =$	0.0003
Section width	$b =$	48 in
Distance to the compression rebar	$d_s =$	3.688 in
Distance to the tension rebar	$d =$	44.31 in
Total bar area	$A_s =$	4.909 in ²
Maximum applied axial load	$P =$	18.76 kip
Maximum moment in the x-direction	$M_{max_x} =$	23.98 kip-ft
Maximum moment in the z-direction	$M_{max_z} =$	0.752 kip-ft

A vertical scale with labels A, B, C, D, E, F, G, and H from bottom to top. Each label is positioned to the left of a horizontal tick mark on a vertical line.



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Jose E Garcia Santiago
Ingeniero
Licenciado
Lic. 9839 PE
Puerto Rico
Fecha de Expiración: 2027-01-09

111

TITLE & ADDRESS:	
AGRIVOLTAICS MOCA PR. 00676	
PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGRIVOLTAICS PROJECT No.:	
1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE:	
STRUCTURAL CONFIGURATION	
SHEET No.:	
S-03	

STRUCTURAL NOTES FOR FOUNDATION SPECIFICATIONS

1.1 CONSTRUCTION CODES & DESIGN

1.1.1 ACI 318-08 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

1.1.2 SPECIFICATION FOR MASONRY STRUCTURE ACI 530-05, ASCE 5/TMS 402-05

4.1 CONCRETE

4.1.1 4.1.3 CONCRETE ON SLAB2,500 PSI

4.1.2 CONCRETE ON FOOTING.....3,000 PSI

CONCRETE SHALL CONSIST OF 1" MAXIMUM AGGREGATE CONCRETE MIX WITH SLUMP BETWEEN 6" AND 7" AT THE TIME OF PLACEMENT.

4.1.6 METHOD OF CONCRETE FORMING, PLACEMENT AND CURING SHALL BE CONDUCTED IN ACCORDANCE WITH THE SPECIFICATIONS AS STATED.

4.1.7 CONCRETE PLACEMENT PRACTICES SHALL BE IN ACCORDANCE WITH ALL ACI-MANUAL OF CONCRETE PRACTICE 2009 LAST EDITION

4.2 REINFORCED STEEL

4.2.1 REINFORCED STEEL SHALL BE ASTM A615-94 F'Y = 60 KSI

4.2.2 LAP SPLICE NOT LESS THAN 40 TIMES THE DIAMETER OF THE BAR, #5 BAR ≥ 25", #4 ≥ 20", #3 ≥ 15"

4.2.3 ALL DIMENSIONS PERTAINING TO THE LOCATION OF REINFORCING ARE TO THE CENTER LINE OF EACH BAR EXCEPT WHERE THE COVER DIMENSION IS SHOWN TO THE FACE OF THE CONCRETE.

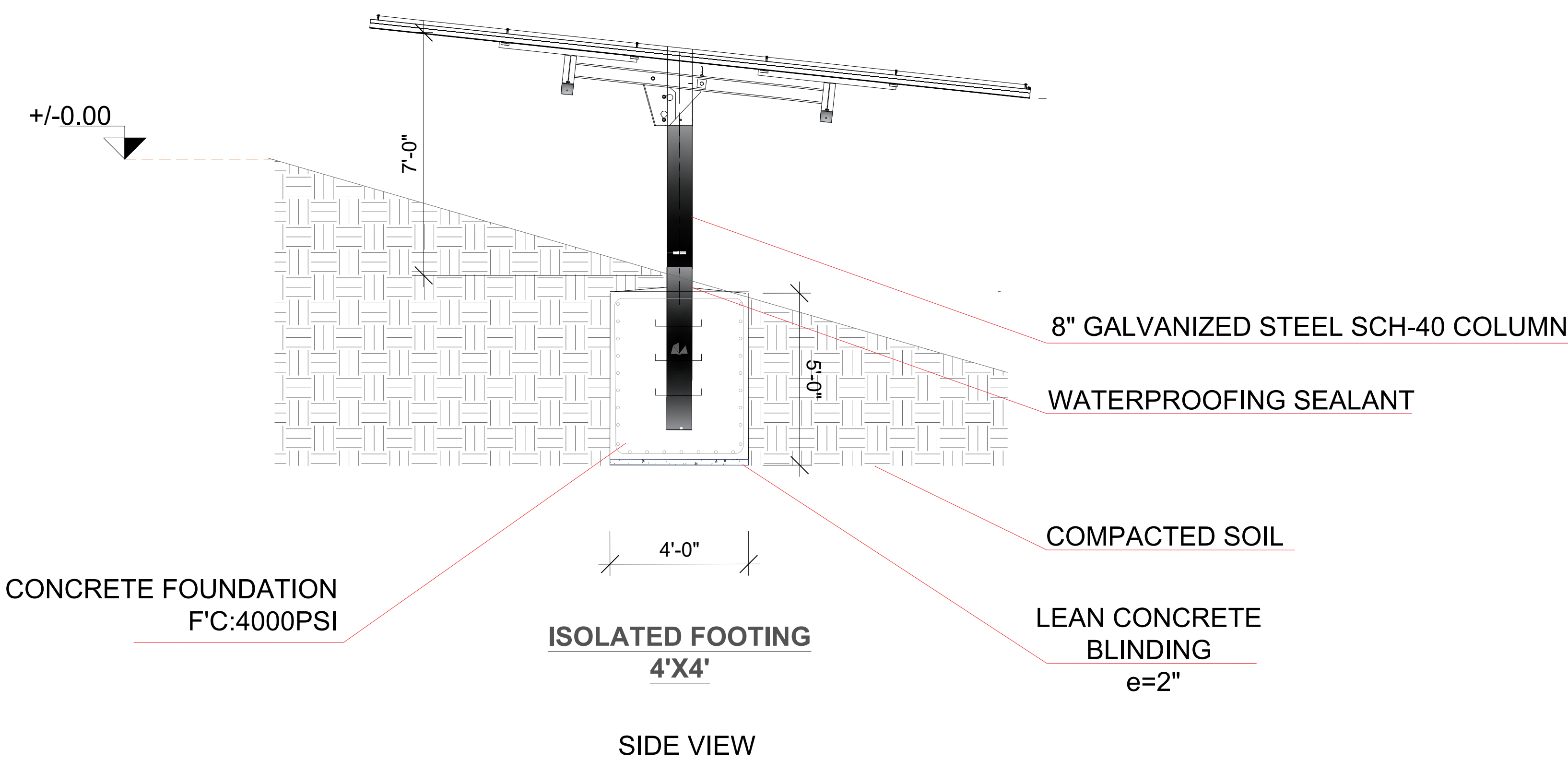
4.2.5 COVER REQUIREMENTS

4.2.5.1 CONCRETE FORMED AGAINST EARTH.....MIN 3"

4.2.5.2 CONCRETE EXPOSED TO EXTERIOR MIN 2"

4.2.7 EDITION

ALL DETAIL REINFORCEMENT IN ACCORDANCE WITH THE ACI 315 LATEST EDITION



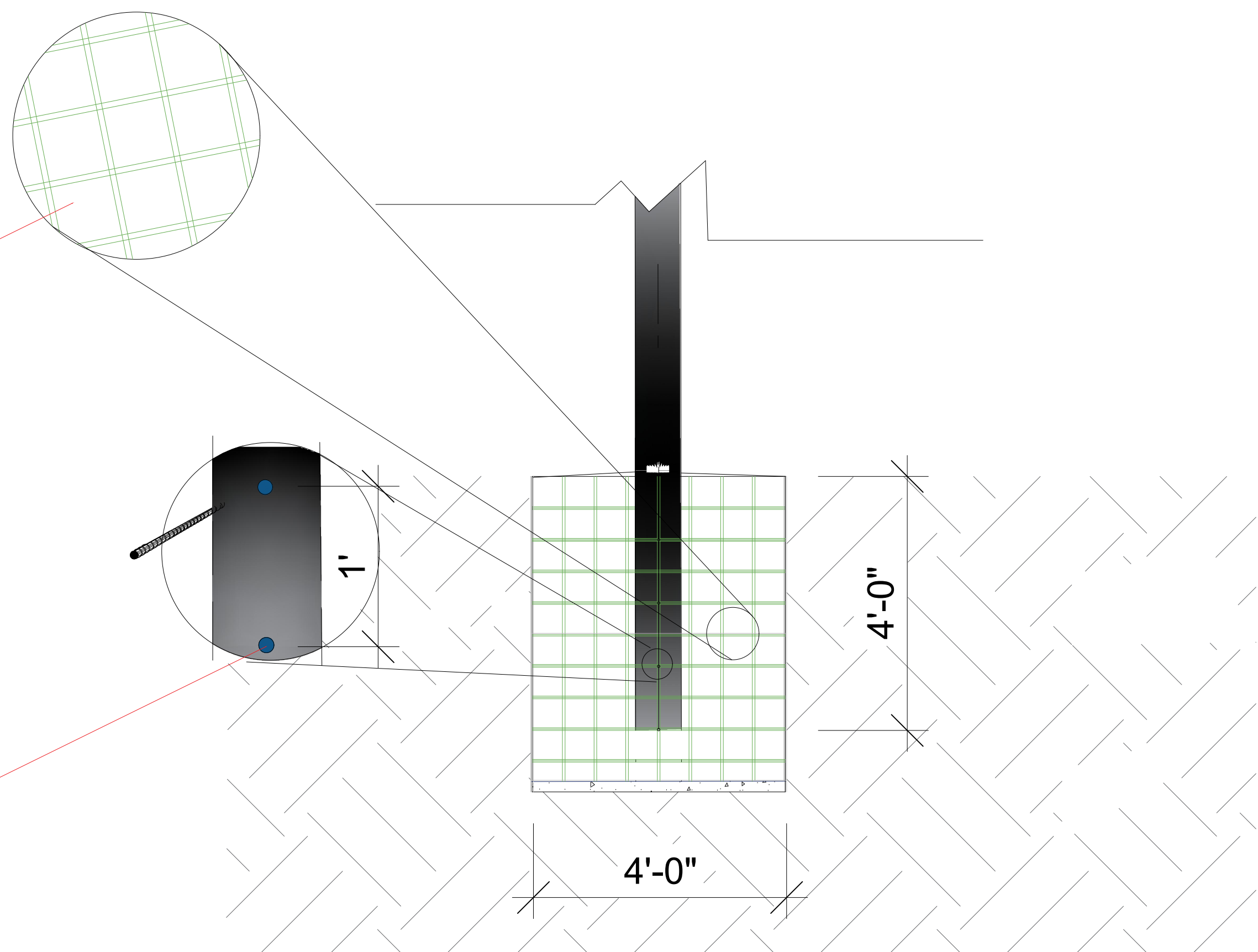
COLUMN FOOTING DETAIL
NOT TO SCALE

FRONT VIEW

1REBAR #4@6" C.C BOTH WAYS

#4 REBAR OR 1/2" DIAMETER BOLT,
16" LONG, PASSING THROUGH
STEEL COLUMN AS ANCHOR IN
CONCRETE, SPACED @ 12" O.C.

Ø5/8" HOLE



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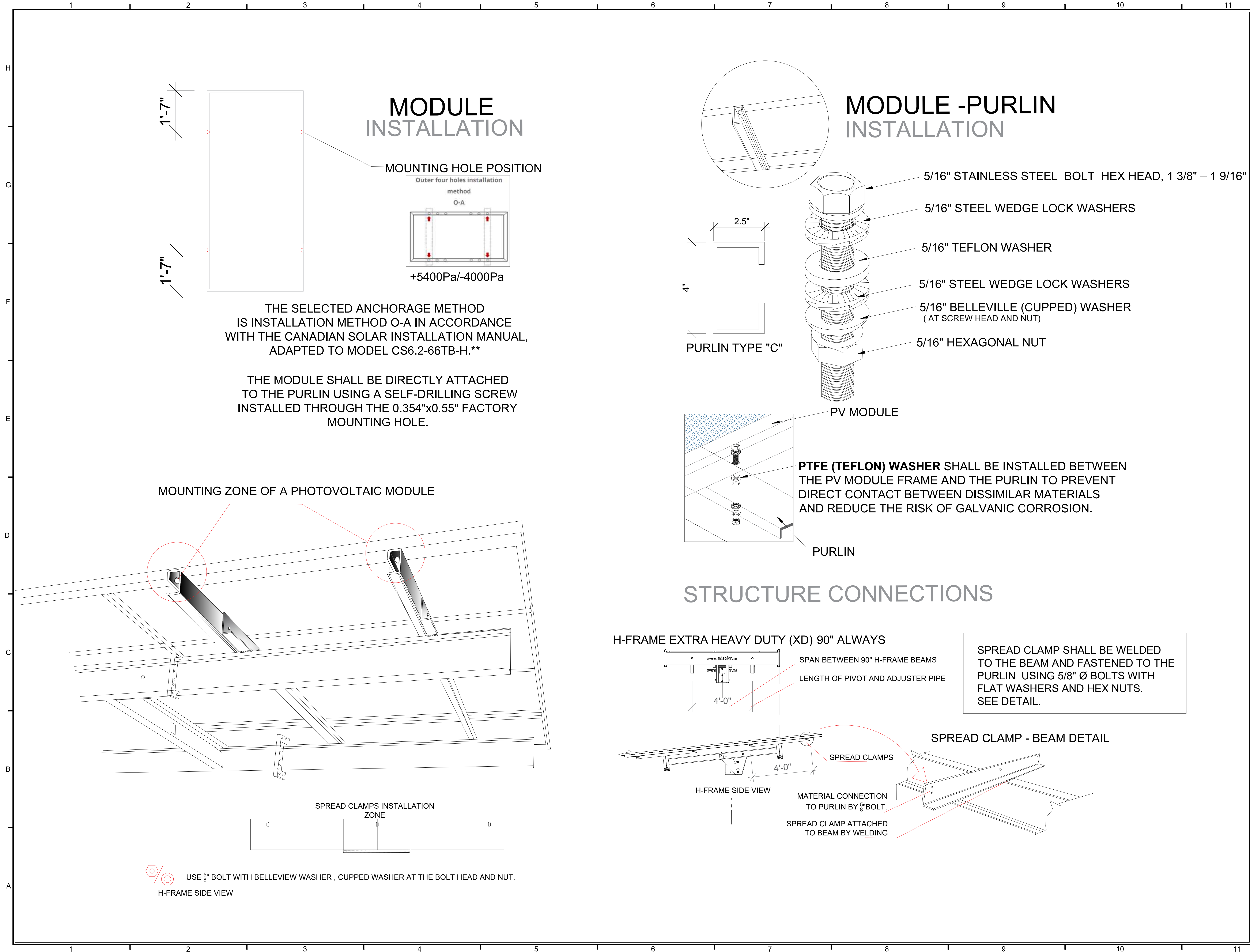
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ER2-00141 AGRIVOLTAICS
FOR
AGROENERGETICA, LLC.

RELEASE RECORD

1	01/09/26	30% REVIEW
2	06/19/26	60% REVIEW
MARK DATE		DESCRIPTION

PROJECT INFORMATION

TITLE & ADDRESS: AGRIVOLTAICS MOCA PR. 00676 PR-495, KM. 2.2, CERRO GORDO, PUERTO RICO	
AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: STRUCTURAL FOUNDATION	
SHEET No.: S-04	



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ER2-00141 AGRIVOLTAICS
FOR
AGROENERGETICA, LLC.

RELEASE RECORD

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PROJECT INFORMATION

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AGROVOLTAICS PROJECT No.: 1	
DRAWN BY:	REVIEWED BY:
SHEET TITLE: STRUCTURAL INSTALLATION DETAILS	
SHEET No.: S-05	