

SOLAR PHOTOVOLTAIC SYSTEM PERMIT SET

GENERAL CONTRACTOR
 BRIGHT POWER INC
 DBA BPI
 PO BOX 10637
 NAPA, CA 94581
 info@bpi-power.com
 PHONE: (707) 252-9990
 FAX: (707) 252-9992
 WWW.BPI-POWER.COM
 LICENSE NUMBER: 930054
 LICENSE CLASSIFICATION: A, C10, C39

OWNER
 SHAWN HORWITZ
 7870 SILVERADO TRAIL
 TRAIL
 NAPA, CA 94558



SITE CLEARING

1. REMOVE OBSTRUCTIONS, SHRUBS, GRASS AND OTHER VEGETATION AS NEEDED TO PERMIT INSTALLATION OF NEW CONSTRUCTION. CLEAR BRUSH WITHIN 10 FEET OF ARRAY LOCATION.

2

SITE INFORMATION	
SITE LATITUDE	38.47° N
ZONING DISTRICT	AW
FLOOD ZONE	X
EXPOSURE CATEGORY	C
SEISMIC DESIGN CATEGORY	
COLD DESIGN TEMPERATURE [°F]	23

	MFG	HELIENE
PV MODULE INFO	MODEL	144M-450-M6
	STC RATING	450 W
	VMP	41.79 V
	IMP	10.78 A
	VOC	50.85 V
	ISC	11.79 A
	VOC TEMP. COEFF	-.4%/°C
	ISC TEMP COEFF	5.3%/°C

INVERTERS	1-1 TO 1-6
MANUFACTURER	DELTA
MODEL	M8-TL-US
VOLTAGE AC	240
NOMINAL AC OUTPUT POWER	7.68
CEC EFFICIENCY	0.975
MODULE	HELIENE 450W
NUMBER OF STRINGS/INVERTER	3
NUMBER OF PANELS/STRING	6 or 7
MODULES/INVERTER	20
KW DC/INVERTER	9 1
ARRAY AZIMUTH	221
PV MODULE TILT	25
RACKING MFG	SUNMODO

Array	1
Array Type	Ground Mount
Inverters	6 Delta M8-TL-US
Modules Breakdown	120 Heliene 450W
Total Modules	120
DC System Size	54 kW DC
Nominal AC Output Power	46.08 kW AC

SCOPE OF WORK

THE PROJECT IS TO INSTALL A NEW PHOTOVOLTAIC SYSTEM. ALL CONSTRUCTION SHALL COMPLY WITH THE CODES ADOPTED BY NAPA COUNTY AS DESCRIBED IN THE NAPA COUNTY CODE OF ORDINANCES INCLUDING BUT NOT LIMITED TO 2019 CEC & 2019 CBC.

THE SYSTEM CONSISTS OF A GROUND MOUNT SOLAR ARRAY AND ASSOCIATED ELECTRICAL EQUIPMENT. THE SYSTEM WILL BE INTERCONNECTED TO AND WILL BE OPERATING IN PARALLEL WITH THE ELECTRICAL UTILITY GRID PER THE REQUIREMENTS OF PG&E AND THE 2019 CEC.



REV. NO	REV. DATE
1	8/30/21
2	1/21/22
3	2/23/22

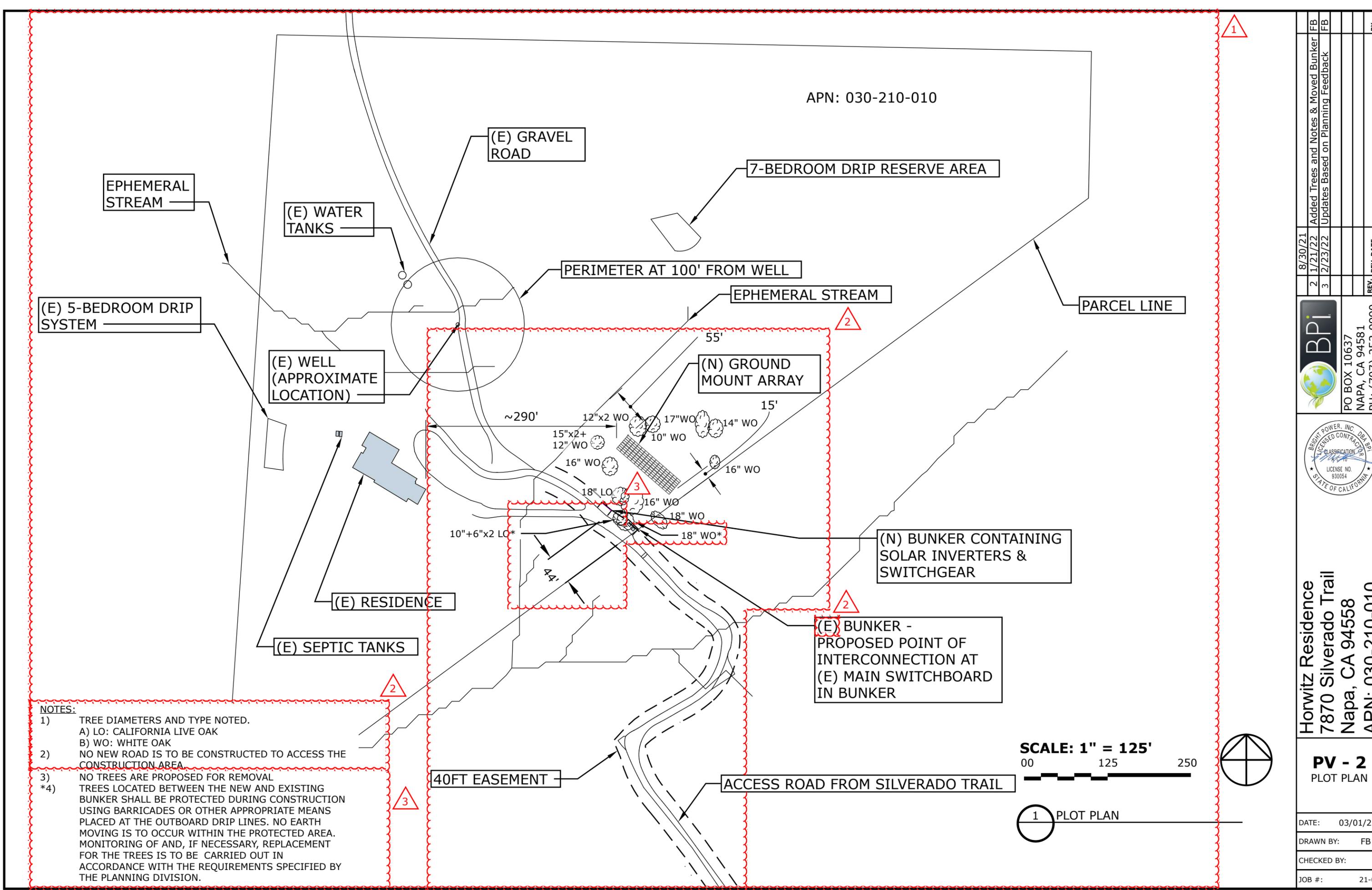
BPI
 PO BOX 10637
 NAPA, CA 94581
 PH: (707)-252-9990



Horwitz Residence
 7870 Silverado Trail
 Napa, CA 94558
 APN: 030-210-010

PV - 1 COVER SHEET

DATE: 03/01/22
 DRAWN BY: FB
 CHECKED BY:
 JOB #: 21-03



APN: 030-210-010

(E) 5-BEDROOM DRIP SYSTEM

(E) WATER TANKS

(E) GRAVEL ROAD

7-BEDROOM DRIP RESERVE AREA

PERIMETER AT 100' FROM WELL

EPHEMERAL STREAM

PARCEL LINE

(E) WELL (APPROXIMATE LOCATION)

(N) GROUND MOUNT ARRAY

(E) RESIDENCE

(E) SEPTIC TANKS

10"+6"x2 LC*

(N) BUNKER CONTAINING SOLAR INVERTERS & SWITCHGEAR

(E) BUNKER - PROPOSED POINT OF INTERCONNECTION AT (E) MAIN SWITCHBOARD IN BUNKER

40FT EASEMENT

ACCESS ROAD FROM SILVERADO TRAIL

NOTES:
 1) TREE DIAMETERS AND TYPE NOTED.
 A) LO: CALIFORNIA LIVE OAK
 B) WO: WHITE OAK
 2) NO NEW ROAD IS TO BE CONSTRUCTED TO ACCESS THE CONSTRUCTION AREA.
 3) NO TREES ARE PROPOSED FOR REMOVAL
 4) TREES LOCATED BETWEEN THE NEW AND EXISTING BUNKER SHALL BE PROTECTED DURING CONSTRUCTION USING BARRICADES OR OTHER APPROPRIATE MEANS PLACED AT THE OUTBOARD DRIP LINES. NO EARTH MOVING IS TO OCCUR WITHIN THE PROTECTED AREA. MONITORING OF AND, IF NECESSARY, REPLACEMENT FOR THE TREES IS TO BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED BY THE PLANNING DIVISION.

SCALE: 1" = 125'
 00 125 250

1 PLOT PLAN

8/30/21	1	Added Trees and Notes & Moved Bunker	FB	BY
1/21/22	2	Updates Based on Planning Feedback	FB	
2/23/22	3			
			REV. NO	REV. DATE
PO BOX 10637 NAPA, CA 94581 PH: (707)-252-9990				
Horwitz Residence 7870 Silverado Trail Napa, CA 94558 APN: 030-210-010				
PV - 2 PLOT PLAN				
DATE: 03/01/22				
DRAWN BY: FB				
CHECKED BY:				
JOB #: 21-03				

WARNING: PHOTOVOLTAIC SYSTEM DESIGNED TO RUN IN PARALLEL WITH UTILITY GRID. BEWARE OF ELECTRICAL RISK FROM EQUIPMENT ENERGIZED BY SYSTEM BACKFEED INTO UTILITY GRID.

INVERTER 1-1

INVERTER 1-6

INVERTER 1-2

PANEL A

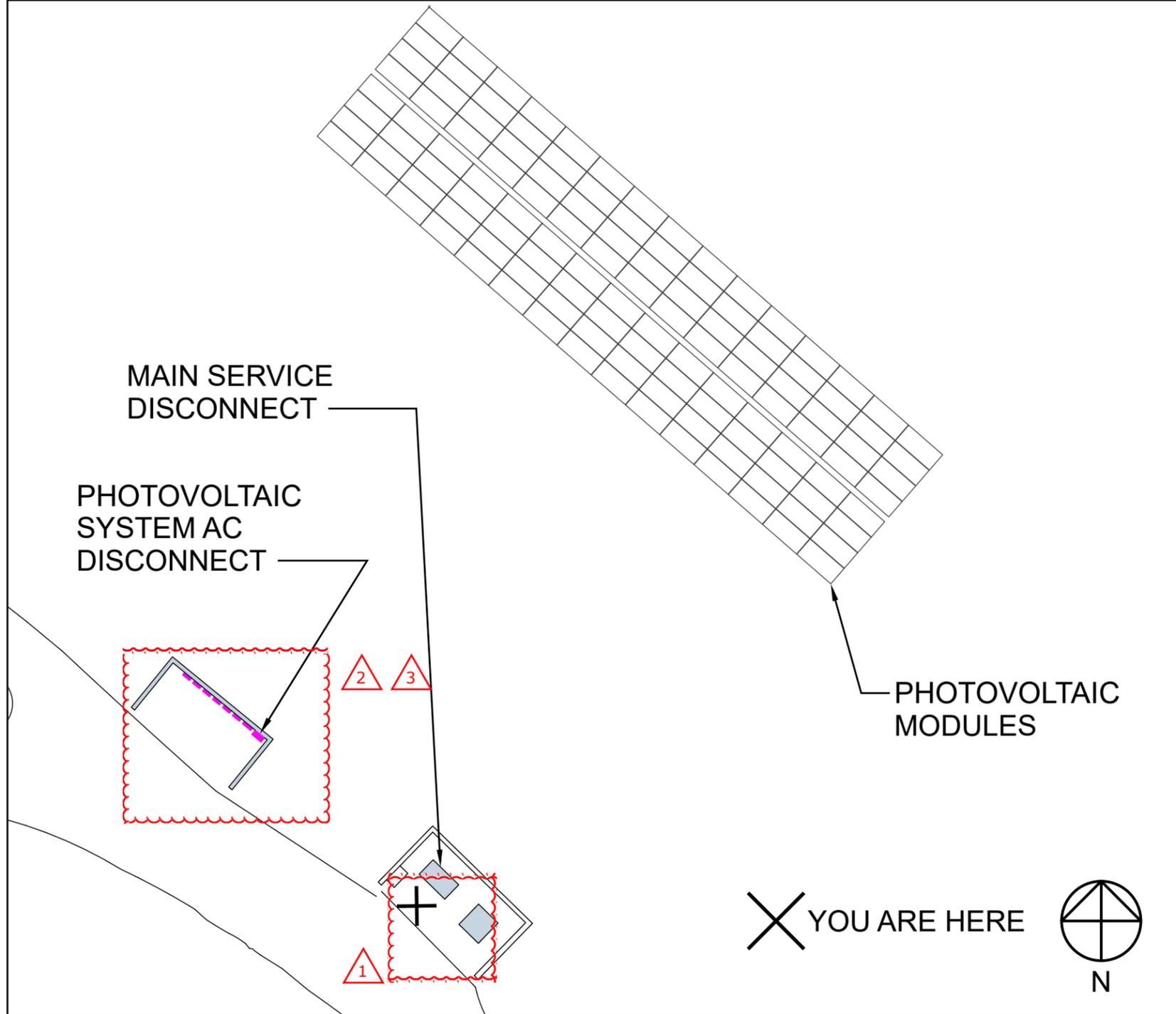
INVERTER 1-3

AC 1A

INVERTER 1-4

INVERTER 1-5

WARNING: FACILITIES SUPPLIED BY UTILITY SERVICE AND PHOTOVOLTAIC SYSTEM WITH DISCONNECT LOCATED AS SHOWN



8/30/21	Added Trees and Notes & Moved Bunker	FB	
2	1/21/22	Updates Based on Planning Feedback	FB
3	2/23/22		
		REV. DATE	BY
		REV. NO	
PO BOX 10637 NAPA, CA 94581 PH: (707)-252-9990			
Horwitz Residence 7870 Silverado Trail Napa, CA 94558 APN: 030-210-010			
PV - 9 LABELS AND WARNINGS			
DATE:	03/01/22		
DRAWN BY:	FB		
CHECKED BY:			
JOB #:	21-03		

NOTES: UNLESS OTHERWISE SPECIFIED

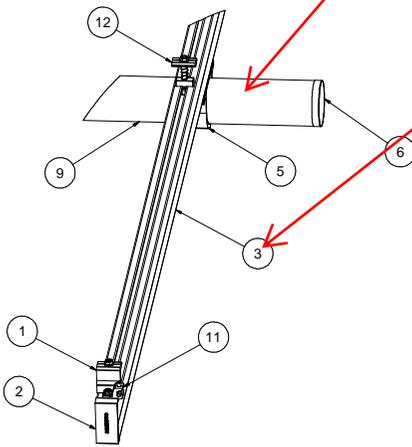
- THIS DRAWING IS NOT FOR CONSTRUCTION UNTIL ENGINEERING HAS REVIEWED AND STAMPED THIS DOCUMENT.
- DIMENSIONS SHOWN ARE INCHES.
- THE SELF-BONDING SYSTEM AND SINGLE GROUND LUG IS FOR USE WITH PV MODULES THAT HAVE A MAXIMUM SERIES FUSE RATING OF 30A.
- MATERIALS ARE AS SPECIFIED OR EQUIVALENT:
HARDWARE: 304 STAINLESS STEEL
FABRICATED EXTRUDED PARTS: 6005-T5 ALUMINUM ALLOY
FABRICATED DIE CAST PARTS: ANSI/AA A380 ALUMINUM ALLOY
STEEL PIPE: SCHEDULE 40 GALVANIZED
ALUMINUM PIPE: SCHEDULE 10 ANODIZED
- THE MAXIMUM PERMISSIBLE LENGTH OF ANY STRUCTURE SHALL BE 200 FT. FOR SYSTEMS USING A SHARED RAIL CONFIGURATION, A THERMAL BREAK IS REQUIRED IN THE RAIL EVERY 40 FT. PER THE DRAWING DETAILS.
- 5LXN-15DEG-GSM-AGM-PGM-BGM.
- APPROVED RAIL PROFILES
A20288-XXX (HR300 RAIL), A20297-001 (END CAP), K10343-004 (U-CLAMP KIT);
A20145-XXX (HR350 RAIL), A20285-001 (END CAP), K10343-001 (U-CLAMP KIT).
- K10224-XXX END CLAMP KIT OR K10299-XXX ADJ. END CLAMP KIT.
- FOUNDATION TYPES:
GSM = GROUND SCREW GROUND MOUNT
AGM = HELICAL AUGER GROUND MOUNT
PGM = POST-IN-CONCRETE GROUND MOUNT
BGM = BALLAST GROUND MOUNT

**ADD "STEEL TUBE:
A500 Gr.B,
Galvanized"**

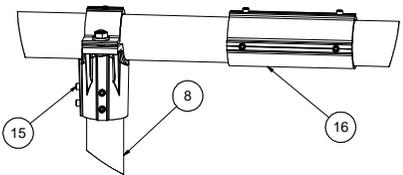
2.5" STD PIPE (SCH 40)

HR-350

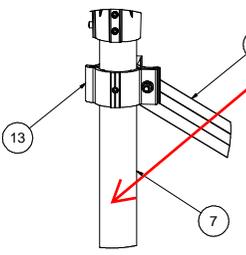
2" STD PIPE (SCH 40)



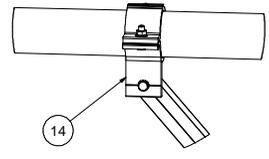
DETAIL A



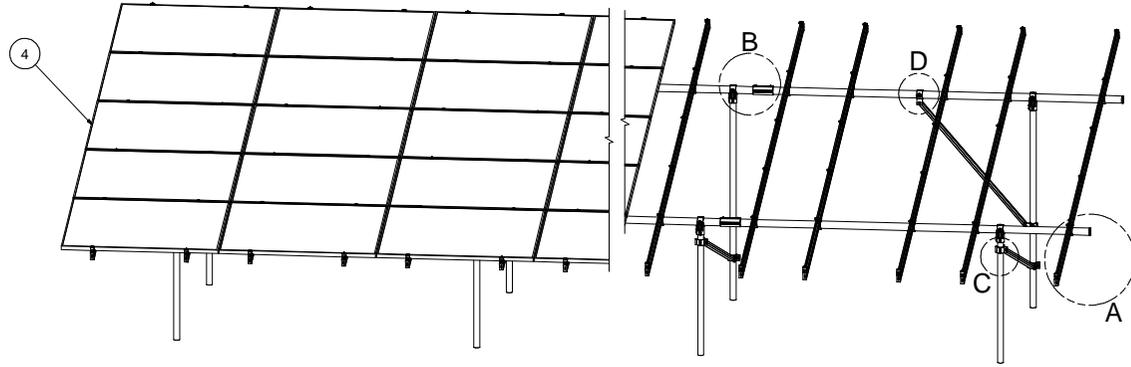
DETAIL B



DETAIL C



DETAIL D



PACKET C4	
Model Code	ASCE 7-16
Exposure Category	C and Lower
Wind Speed	105 mph and Lower
Ground Snow Load	0 PSF and Lower
Tilt	15 DEG and Lower

ITEM	PART NUMBER	DESCRIPTION	QTY
16	K10342-001	2.5" PIPE SPLICE KIT	
15	K10341-002	2.5" PIPE TEE KIT	
14	K10222-001	2.5" PIPE CLAMP KIT	
13	K10219-001	2" AL PIPE CLAMP KIT	
12	K10180-001	GROUNDING MID-CLAMP KIT WITH T COLLAR BOLT AND GROUNDING BASE	
11	K10179-001	SELF-GROUNDING LUG KIT	
10	A50164-XXX	1.5"X1.5"X0.083" GAL STEEL TUBE BRACE,L=XXX	
9	A21168-XXX	PIPE, HSS, 2.875" OD X 12 GAUGE,L=XXX	
8	A21165-XXX(REAR)	PIPE, HSS, 2.375" OD X 12 GAUGE,L=XXX	
7	A21165-XXX(FRONT)	PIPE, HSS, 2.375" OD X 12 GAUGE,L=XXX	
6	A20380-001	2.5" PIPE END CAP	
5		U-CLAMP KIT VARIES PER NOTE 7	
4		PANEL	
3		HELIO RAIL VARIES PER NOTE 7	
2		HELIO RAIL END CAP VARIES PER NOTE 7	
1		END CLAMP KIT VARIES PER NOTE 8	

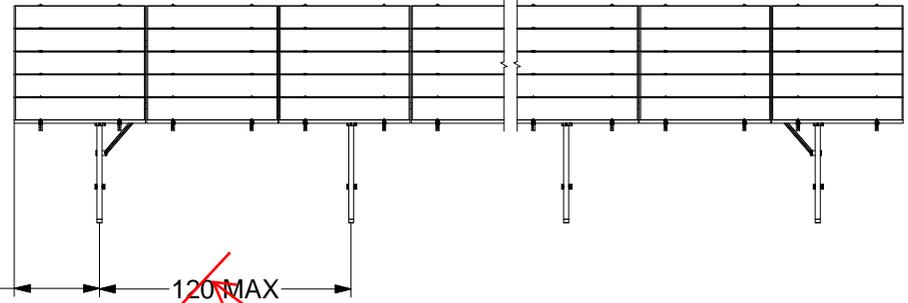
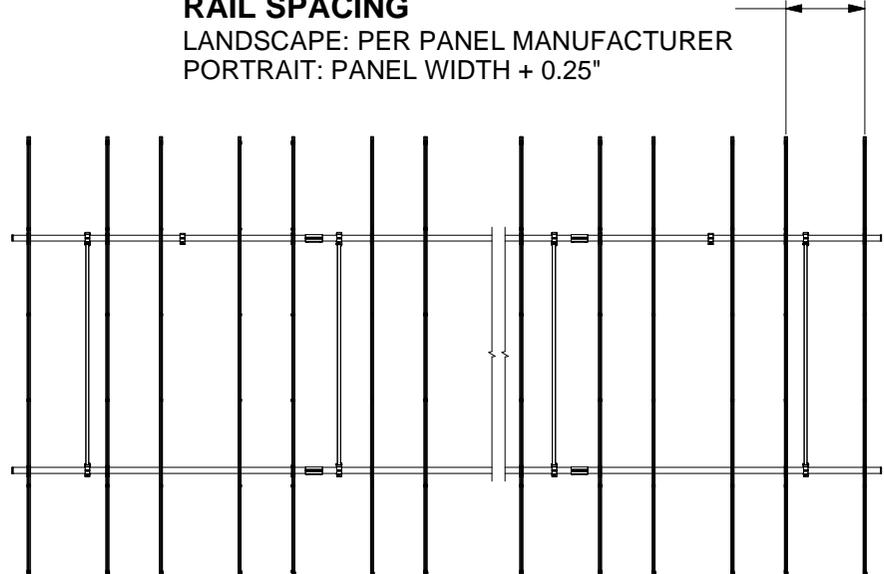
SunModo Corp.
 14800 NE 65TH STREET, VANCOUVER WA 98682
 TITLE: _____
 DATE: 09/22/2020
 DRAWING NUMBER: _____
 SHEET: 1 of 4

THIS DRAWING IS CONFIDENTIAL PROPERTY OF SUNMODO AND ITS CONTENTS MAY NOT BE DISCLOSED WITHOUT THE PRIOR WRITTEN CONSENT OF SUNMODO CORP.

NOTE:
 1. DIMENSIONS LABELED AS MAX ARE MAXIMUM ALLOWABLE AND MAY RESULT IN END POSTS BEING OUTSIDE ARRAY EDGES. MAXIMUM DIMENSIONS MAY BE REDUCED IF DESIRED.

RAIL SPACING

LANDSCAPE: PER PANEL MANUFACTURER
 PORTRAIT: PANEL WIDTH + 0.25"



30" MAX

~~40 MAX~~

~~120 MAX~~

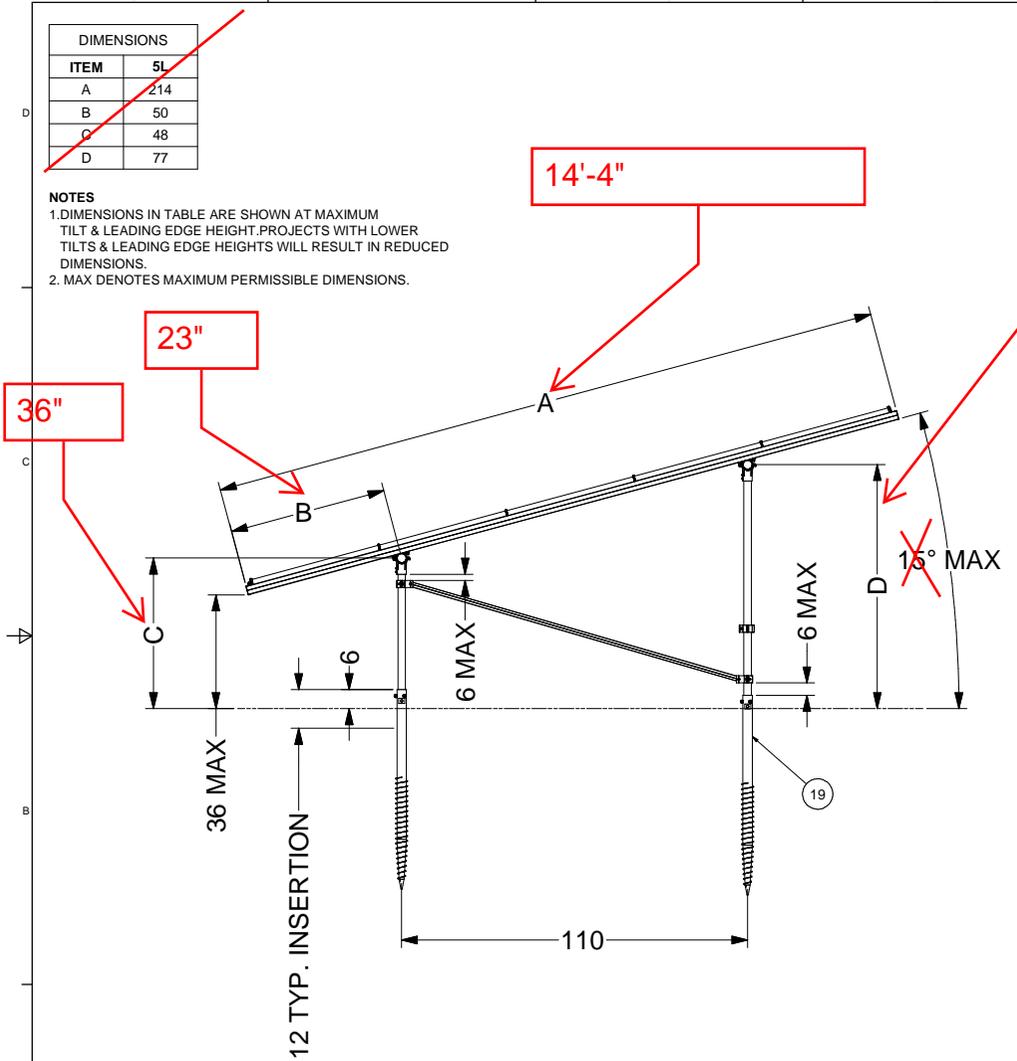
96"

SunModo Corp.			
TITLE			
D	DRAWING NUMBER: PACKET C4		
SCALE:	SHEET 2 of 4	REV	

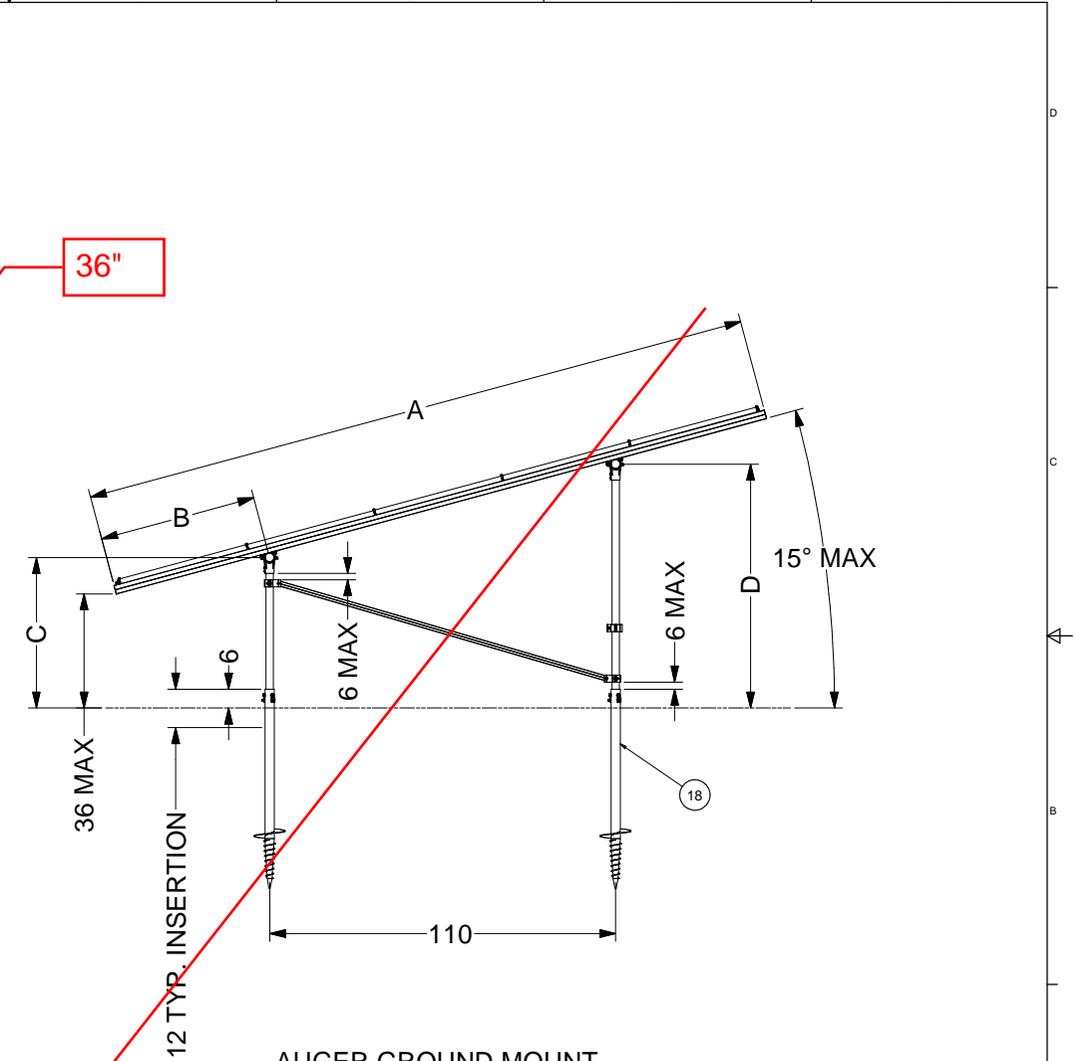
DIMENSIONS	
ITEM	5L
A	214
B	50
C	48
D	77

NOTES

1. DIMENSIONS IN TABLE ARE SHOWN AT MAXIMUM TILT & LEADING EDGE HEIGHT. PROJECTS WITH LOWER TILTS & LEADING EDGE HEIGHTS WILL RESULT IN REDUCED DIMENSIONS.
2. MAX DENOTES MAXIMUM PERMISSIBLE DIMENSIONS.



GROUND SCREW GOUND MOUNT (GSM)



AUGER GROUND MOUNT (AGM)

19	K10423-XXX	ANCHOR, SCREW AUGER KIT, L=XXX	
18	K10414-XXX	ANCHOR, 10" HELIX SCREW AUGER, L=XXX	
ITEM	PART NUMBER	DESCRIPTION	QTY
SunModo Corp.			
TITLE			
DRAWING NUMBER: PACKET C4			
SCALE: SHEET 3 of 4 REV			