

CATALINA ISLAND CONSERVANCY SOLAR

DC SYSTEM CAPACITY = 167.2 kWp

GROUND MOUNTED

SOLAR PHOTOVOLTAIC SYSTEM

PROJECT SUMMARY

THE PROJECT CONSISTS OF THE INSTALLATION AND OPERATION OF A GRID-TIED SOLAR PHOTOVOLTAIC ARRAY SYSTEM. PV PANELS ARE INSTALLED ON GROUND MOUNTED, FENCED IN SOLAR SYSTEM AND THE INTERCONNECTION WILL BE WITH SOUTHERN CALIFORNIA EDISON AS A VIRTUAL NET ENERGY METERED SOLAR SYSTEM TO BENEFIT A COMBINATION OF METERS. THE ANTICIPATED PRODUCTION OF THE SOLAR SYSTEM WILL BE CONSUMED BY BUILDING LOADS.

THE SYSTEM WILL INCLUDE STRING INVERTERS. RAPID SHUTDOWN IS NOT REQUIRED FOR THE GROUND STRUCTURES.

THE PROPOSED ARRAYS WILL FOLLOW THE SLOPE:

AZIMUTH: +/- 180 DEG.
TILT: +/- 15 DEG.

COVERAGE AREA: 10,400 SQ.FT

DC SYSTEM SIZE: 304x 550 W = 167.2 kWp
AC SYSTEM SIZE: 2 x 62.5 kW = 125 kW
DC/AC RATIO: +/- 1.37
MAXIMUM AC POWER OUTPUT: 125 kW

SYSTEM DESCRIPTION:

MODULE: (304) 550W ZNShine ZXM7-SHDB-144
INVERTER: (2x) 62.5 kW SMA CORE 1 INVERTERS
DC DISCONNECTS: TBD
AC DISCONNECTS: TBD
COMBINER BOXES: TBD
MONITORING: TBD

PV SYSTEM DISCONNECT
AC DISCONNECT: (1) 400 A 3PH, 240Y/120V

SYSTEM:

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED IF NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES:

OSHA – STATE VERSION OF OSHA
ANSI/EIA-222- LIFE SAFETY CODE NFPA-101
CITY/COUNTY ORDINANCES (JURISDICTION)
2022 CALIFORNIA ELECTRIC CODE (CEC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA FIRE CODE (CFC)
2023 LOS ANGELES COUNTY ELECTRICAL CODE
2020 NATIONAL ELECTRICAL CODE

PLANS PREPARED WITH SUPPORT OF:

SATTLER SOLAR
AND ELECTRICAL CONTRACTORS
SATTLER SOLAR INC. - 619.880.0445
www.sattlersolar.com

DISCLAIMER: THE PLANS WERE REVIEWED AND APPROVED BY THE INSTALLER PRIOR TO INSTALLATION. COMPLIANCE WITH ALL APPLICABLE ELECTRICAL, FIRE AND BUILDING CODES IS THE RESPONSIBILITY OF THE INSTALLER.

BY USING THESE PLANS FOR THE INSTALLATION OF THE PV SYSTEM DESCRIBED HEREIN, THE INSTALLER AGREES TO HAVE REVIEWED THE PLANS AND ENSURED THAT ALL APPLICABLE ELECTRICAL, BUILDING AND FIRE CODES ARE FOLLOWED AND THE INSTALLER ACCEPTS RESPONSIBILITY.

BUILDING CODE DATA

OCCUPANCY CLASSIFICATION: N/A
DESCRIPTION OF USE: GROUND MOUNTED SOLAR ARRAY
TYPE OF CONSTRUCTION: N/A
COVERED AREA: 27,000 sq.ft

CODE COMPLIANCE STATEMENT:

ALL ELECTRICAL WORK SHALL BE DESIGNED PER 2023 LOS ANGELES COUNTY ELECTRICAL CODE, 2022 CALIFORNIA ELECTRICAL CODE, AND 2020 NATIONAL ELECTRICAL CODE.

110.2 APPROVAL: ALL ELECTRICAL EQUIPMENT SHALL BE LABELED, LISTED, OR CERTIFIED BY A NATIONALLY RECOGNIZED TESTING LABORATORY ACCREDITED BY THE UNITED STATES OCCUPATIONAL SAFETY HEALTH ADMINISTRATION.

PROJECT INFORMATION

OWNER:

Catalina Island Conservancy
CONTACT: Reed Woodyard
708 Crescent Ave.
Avalon, CA 90704
APN: 7480-041-042
Lat: 33.404 deg.
Long: -118.414 deg.

LOT SIZE:

598.86 ACRES
ZONING: OS/C
LAND USE DESIGNATION: OPEN SPACE/CONSERVATION

SOLAR PROJECT TEAM

SOLAR CONTRACTOR AND DESIGNER

SATTLER SOLAR
AND ELECTRICAL CONTRACTORS
4770 DEL MAR AVE.
SAN DIEGO, CA 92107
ENGINEERING MANAGER: ERIK SATTLER
PH: (858) 327-0334
EMAIL: erik@sattlersolar.com

PROJECT MANAGER & CONSULTANT:

GSR ENERGY
4550 U AIRPORT ROAD
AVALON, CA 90704

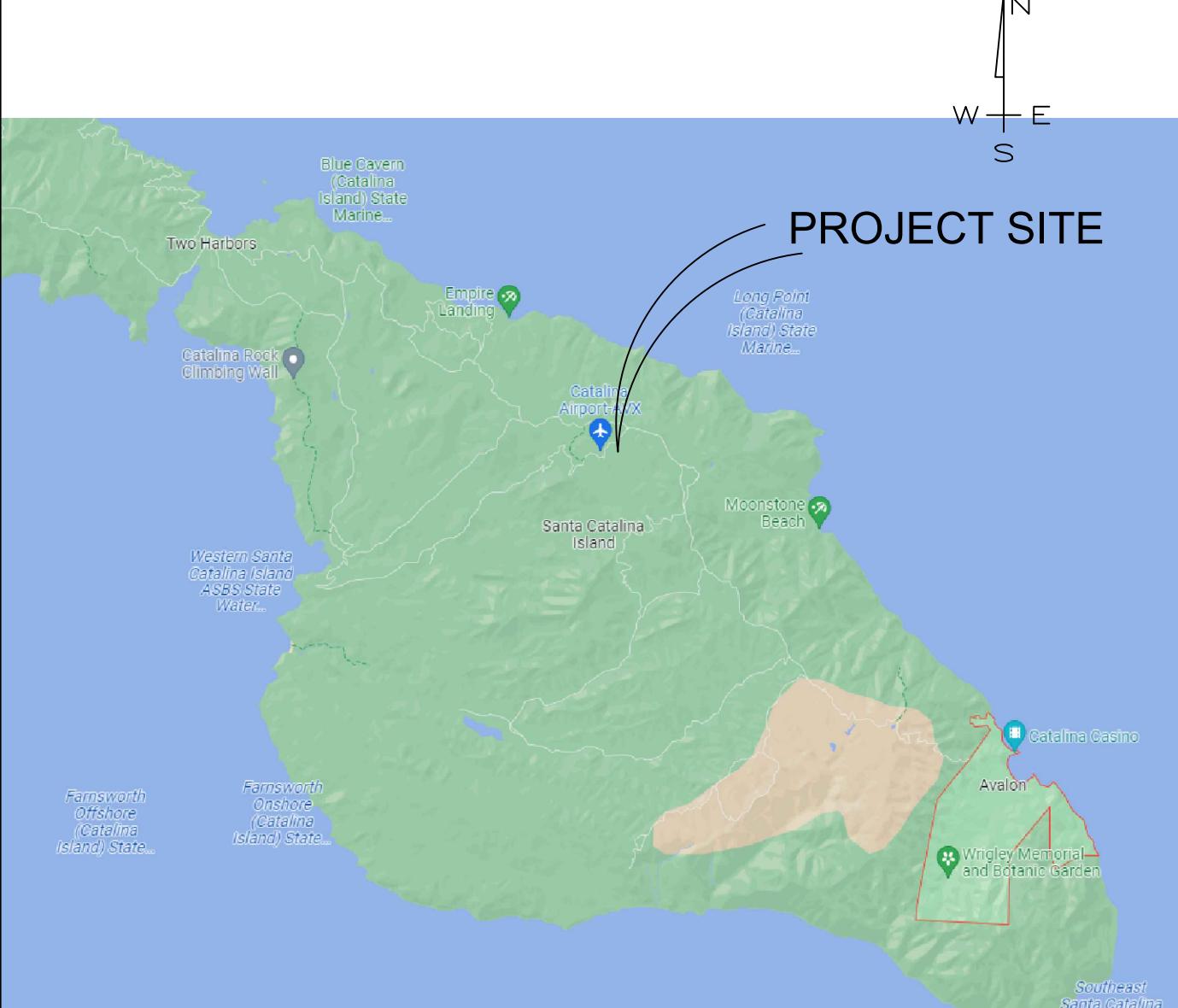
PROJECT MANAGER:

EMMA MALLONEE
PH: (831) 515-9181
EMAIL: emma@gsr-energy.com

SHEET INDEX

| SHEET: | DESCRIPTION: |
|---------|---|
| PV-0.0 | TITLE PAGE / PROJECT DESCRIPTION |
| PV-0.1 | GENERAL NOTES / SYMBOLS/GEOTECH MAP |
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| PV-1.1 | SITE PLAN WITH LAYOUT |
| PV-1.2 | PV LAYOUT |
| PV-1.3 | STRINGING PLAN |
| PV-1.4 | STRUCTURAL ANCHOR LAYOUT |
| PV-2.0 | SINGLE LINE DIAGRAM (SLD) |
| PV-3.0 | DETAILS/SECTIONS |
| PV-3.1 | FAULT CURRENT LETTER & RACKING DATA SHEET |
| PV-3.2 | BONDING & GROUNDING |
| PV-4.0 | DATA SHEETS |
| PV-5.0 | PLAQUES/SIGNAGE |
| S0 | Structural Print Package |
| S-100 | APA Racking Overview |
| S-200 | Foundation Detail |
| S-300 | Structural Purfins |
| S-400 | Structural Connections Overview |
| S-500 | Foundation Post & Bracing Overview |
| SSC-1.0 | Solar Structural Calculations |
| SFL-1.0 | Solar Foundation load test |

VICINITY MAP



Lat.: 33.404 deg.
Long.: -118.414 deg.

UNDERGROUND FACILITIES



Know what's below.
Call before you dig.

EXISTING UNDERGROUND FACILITIES ARE SHOWN ON THESE PLANS FROM RECORD INFORMATION AND ARE FOR INFORMATION ONLY. OTHER UNDERGROUND FACILITIES NOT SHOWN ON THE PLANS MAY EXIST. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING UNDERGROUND FACILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY A ONE-CALL SERVICE CENTER, TOLL FREE AT 811, NO LESS THAN TWO DAYS PRIOR TO ANY EXCAVATION.

PROJECT HOST:
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125 kW (AC) SOLAR PV
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| Revision | Date |
|------------------------------|------------|
| 80% CONSTRUCTION DOCUMENTS | 10/23/2023 |
| PLAN CHECK #4 | 1/30/2024 |
| BIOLOGIST REPORT REVISION | 3/15/2024 |
| SCE REQUESTED REVISIONS | 7/08/2024 |
| FENCE ALIGNMENT REVISED | 7/25/2024 |
| MAX. SPAN BETW. POSTS UPDATE | 11/21/2024 |

| | |
|------------|------------|
| Date | 07/25/2024 |
| Job No. | 1511 |
| Drawn By | LS |
| Checked By | ES |
| Scale | |

CONSTRUCTION DOCUMENTS

| | |
|---------------|--------------------------------|
| Drawing Title | SOLAR INSTALLATION TITLE SHEET |
| Drawing No. | PV-0.0 |

GENERAL NOTES

SOLAR PHOTOVOLTAIC SYSTEM TO BE INSTALLED ON A GROUND MOUNT STRUCTURE THAT IS FOLLOWING THE EXISTING SOUTH FACING CONTOURS OR THE EXISTING TERRAIN AS MUCH AS POSSIBLE. THIS WILL MINIMIZE THE MAXIMUM HEIGHT ABOVE GROUND.

DESIGN COMPLYING WITH THE LATEST ADDITION OF CALIFORNIA ELECTRICAL CODE, CALIFORNIA BUILDING CODE, AND ALL LOCAL ORDINANCES AND POLICIES.

THIS SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND THE UTILITY IS OBTAINED.

1 THE SYSTEM IS IN UTILITY INTERACTIVE SYSTEM WITH NO STORAGE BATTERIES.

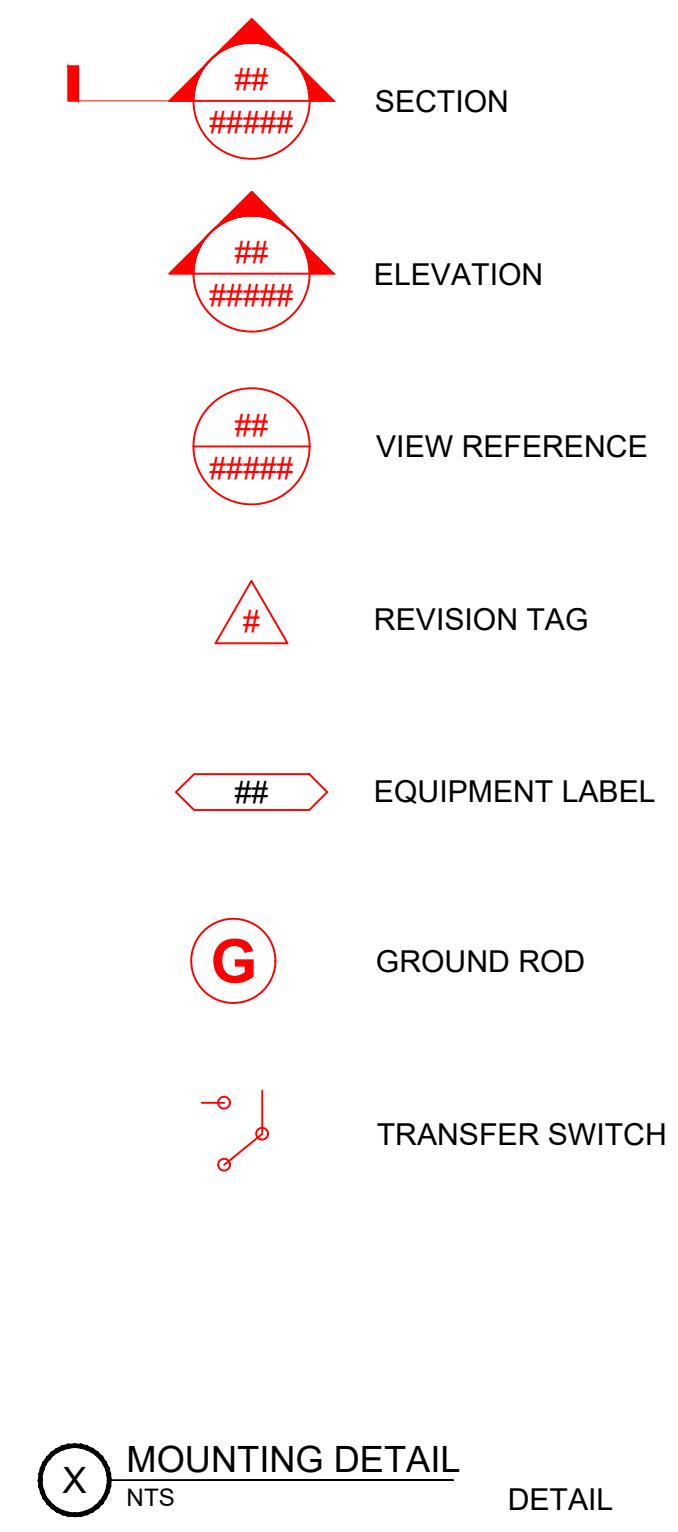
EACH MODULE SHALL BE GROUNDED USING THE SUPPLIED CONNECTION POINT IDENTIFIED ON THE MODULE AND THE MANUFACTURER'S INSTRUCTIONS. SEE BONDING DETAILS ON SHEET PV-3.1.

PV ARRAY LOCATED ON DEDICATED GROUND MOUNT TYPE STRUCTURE(S) FOR SOLE PURPOSE TO HOUSE PV WHICH WILL NOT REQUIRE THE FIRE DEPARTMENT TO WALK ON TOP OF THE STRUCTURE OR MAKE CUTS IN THE ARRAY. PER EXCEPTION IN NEC 690.12, RAPID SHUTDOWN NOT REQUIRED AS ACCEPTABLE TO AHJ.

ELECTRICAL NOTES

SYMBOLS

FOR ADDITIONAL SYMBOLS SEE INDIVIDUAL SHEETS



ABBREVIATIONS

| | |
|-------|---|
| A/AMP | AMPERE |
| AC | ALTERNATING CURRENT |
| ACB | ARRAY COMBINER BOX |
| ACD | AC DISCONNECT |
| AHJ | AUTHORITY HAVING JURISDICTION |
| AIC | AMPERE INTERRUPTING CAPACITY |
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS |
| AWG | AMERICAN WIRE GAUGE |
| CBT | CABLE TRAY |
| CT | CURRENT TRANSFORMER |
| DC | DIRECT CURRENT |
| DCD | DC DISCONNECT |
| DEG | DEGREE |
| DIA | DIAMETER |
| (E) | EXISTING |
| GEC | GROUNDING ELECTRODE CONDUCTOR |
| GEN | GENERATOR |
| GFCI | GROUND-FAULT CIRCUIT INTERRUPTER |
| G | GROUND |
| HCS | HEX CAP SCREW |
| HLS | HEX LAG SCREW |
| HVAC | HEATING, VENTILATING, AND AIR CONDITIONING |
| INV | INVERTER |
| JBX | JUNCTION BOX |
| KW | KILOWATT |
| MAX | MAXIMUM |
| MIN | MINIMUM |
| MON | MONITORING EQUIPMENT |
| MPT | MAXIMUM POWER TRACKING |
| MTR | METER |
| (N) | NEW |
| NEC | NATIONAL ELECTRICAL CODE |
| NEG | NEGATIVE |
| NEMA | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION |
| NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| NTS | NOT TO SCALE |
| OC | ON CENTER |
| PBX | PULL BOX |
| PDB | POWER DISTRIBUTION BLOCK |
| PH | PHASE |
| PNL | PANEL |
| PCC | POINT OF CONNECTION |
| POL | POLARITY |
| POS | POSITIVE |
| PSI | POUNDS PER SQUARE INCH |
| PV | PHOTOVOLTAIC |
| PVT | PV TIE |
| RD | ROOF DRAIN |
| RFI | REQUEST FOR INFORMATION |
| RT | RAIN TIGHT |
| RV | ROOF VENT |
| SCB | STRING COMBINER BOX |
| ST | STRING |
| SCH | SCHEDULE |
| SD | SATELLITE DISH |
| SFB | SPARE FUSE BOX |
| SL | SKYLIGHT |
| SLD | SINGLE LINE DIAGRAM |
| SS | STAINLESS STEEL |
| SWG | SWITCHGEAR |
| TPS | TWISTED PAIR SHIELDED |
| TSW | TRANSFER SWITCH |
| TYP | TYPE |
| UNO | UNLESS NOTED OTHERWISE |
| V | VOLT |
| VDC | VOLTAGE DIRECT CURRENT |
| VOC | OPEN CIRCUIT VOLTAGE |
| VT | VOLTAGE TAPS |
| W | WATT |
| XFMR | TRANSFORMER |

PROJECT HOST:
 Catalina Island Conservancy

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Lic # 1017484

 DATED: 01/30/24
ERIK SATTLER, SATTLER SOLAR INC. LIC. # 1017484 (C10)

PERMITTING AND SOLAR CONSULTANT:
 GSR ENERGY
HTTPS://WWW.GSR-ENERGY.COM

CATALINA ISLAND CONSERVANCY
125 kW (AC) SOLAR PV
4550 U AIRPORT ROAD
AVALON, CA 90704

MINIMUM BMP REQUIREMENTS NOTES



ATTACHMENT A BEST MANAGEMENT PRACTICES FOR CONSTRUCTION ACTIVITIES*

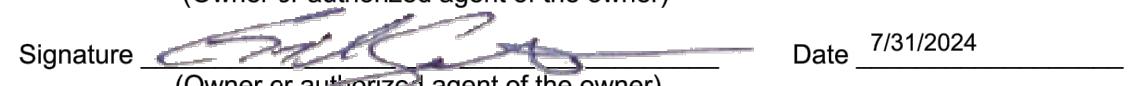
Storm Water Pollution Control Requirements for Construction Activities
Minimum Water Quality Protection Requirements for All Development Construction Projects/Certification Statement

The following is intended as minimum notes or as an attachment for building and grading plans and represent the minimum standards of good housekeeping that must be implemented on all construction sites regardless of size. (Applies to all permits)

- Eroded sediment and other pollutants must be retained on site and may not be transported from the site via sheetflow, swales, area drains, natural drainage courses or wind.
- Stockpiles of earth and other construction related materials must be protected from being transported from the site by the forces of wind or water.
- Fuels, oils, solvents and other toxic materials must be stored in accordance with their listing and are not to contaminate the soil and surface waters. All approved storage containers are to be protected from the weather. Spills must be cleaned up immediately and disposed of in a proper manner. Spills may not be washed into the drainage system.
- Non-stormwater runoff from equipment and vehicle washing and any other activity shall be contained at the project site.
- Excess or waste concrete may not be washed into the public way or any other drainage system. Provisions shall be made to retain concrete wastes on site until they can be disposed of as solid waste.
- Trash and construction related solid wastes must be deposited into a covered receptacle to prevent contamination of rainwater and dispersal by wind.
- Sediments and other materials may not be tracked from the site by vehicle traffic. The construction entrance roadways must be stabilized so as to inhibit sediments from being deposited into the public way. Accidental depositions must be swept up immediately and may not be washed down by rain or other means.
- Any slopes with disturbed soils or denuded of vegetation must be stabilized so as to inhibit erosion by wind and water.
- Other:

As the project owner or authorized agent of the owner, I have read and understand the requirements listed above, necessary to control storm water pollution from sediments, erosion, and construction materials, and I certify that I will comply with these requirements.

Print Name Erik Sattler, Sattler Solar Inc.
(Owner or authorized agent of the owner)

Signature  Date 7/31/2024
(Owner or authorized agent of the owner)

*The above Best Management Practices are detailed in the California Storm Water Best Management Practices Handbook, January 2003.
www.calphandbooks.com

Attachment A BMP Notes.doc

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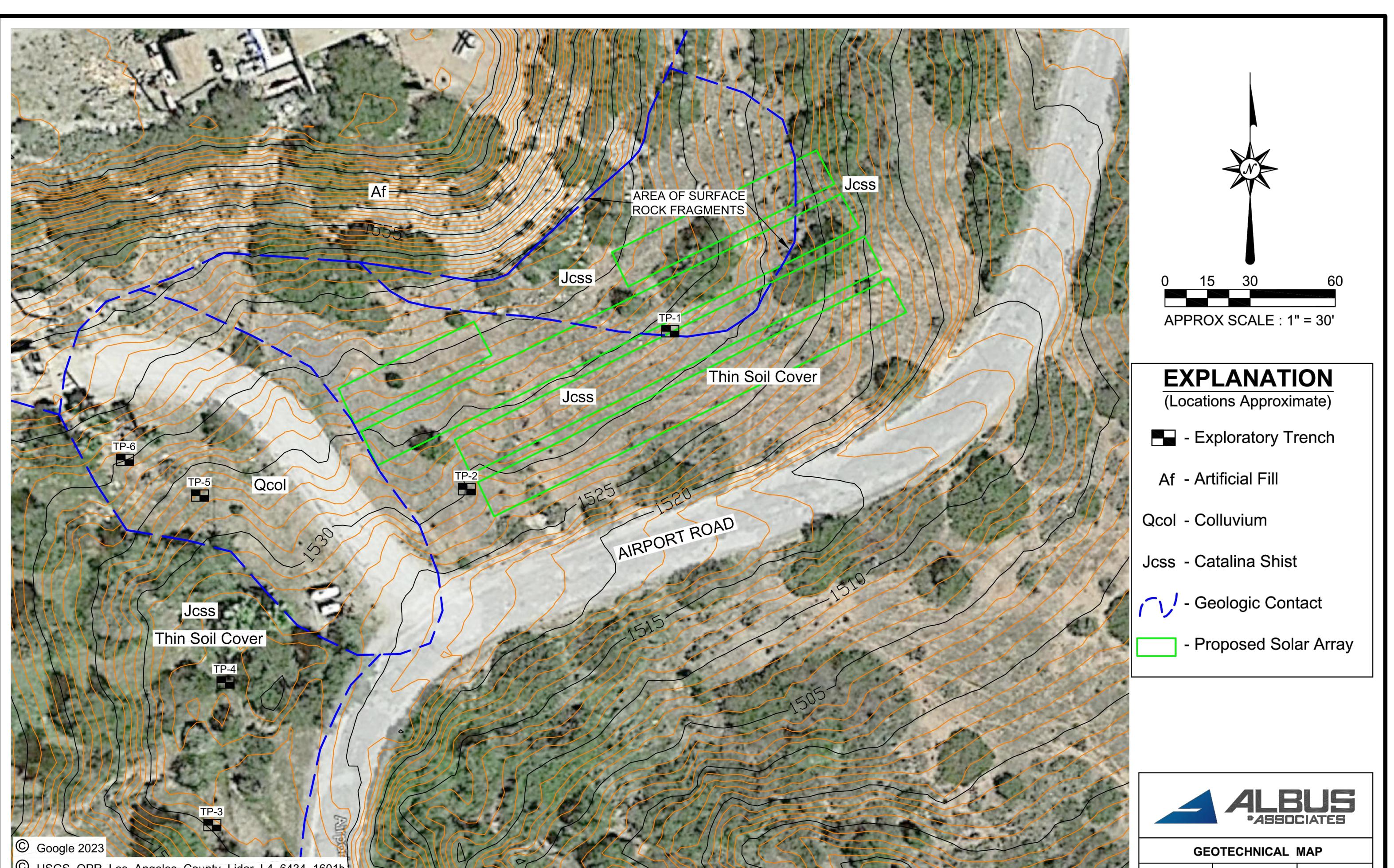
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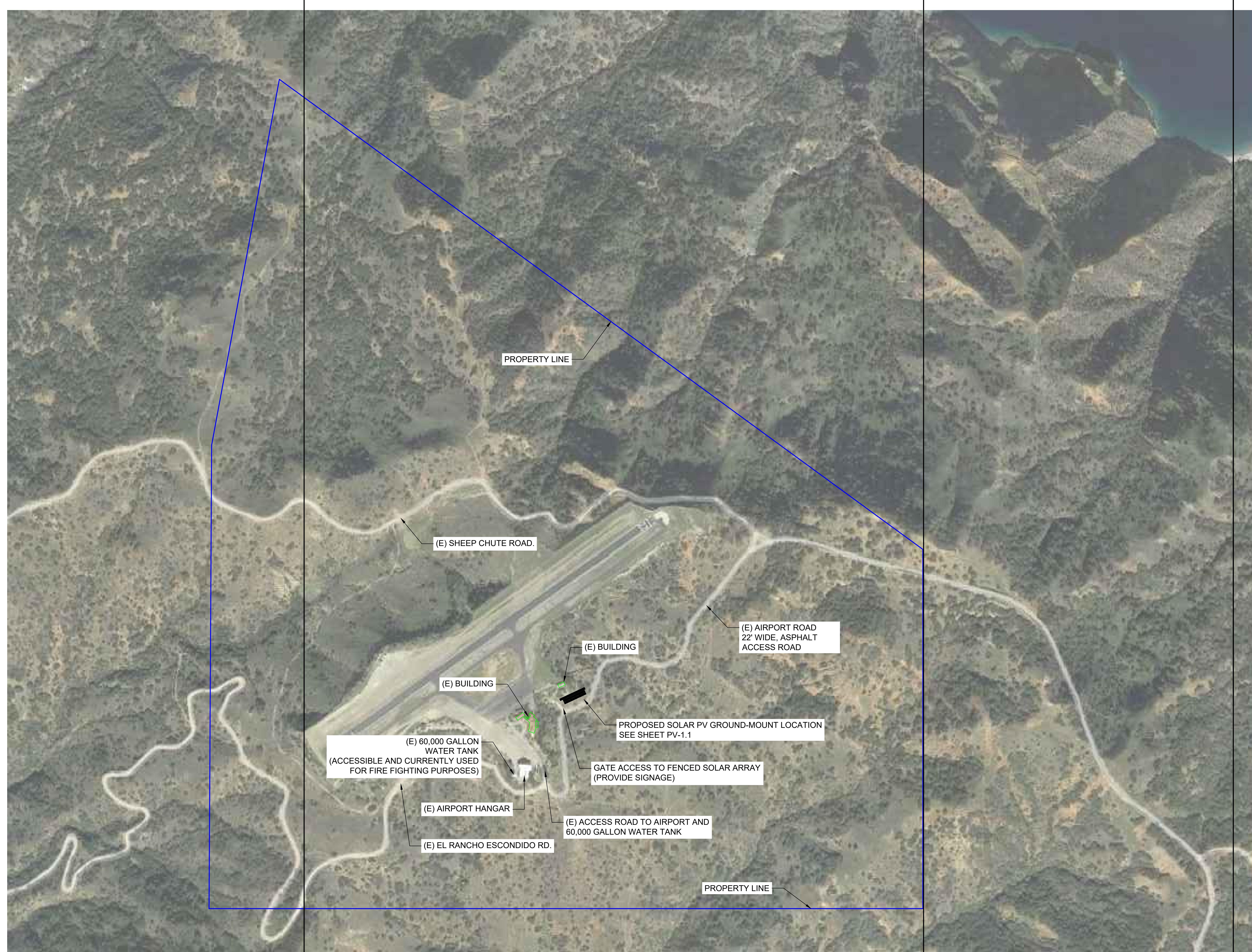
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SOLAR INSTALLATION GENERAL NOTES

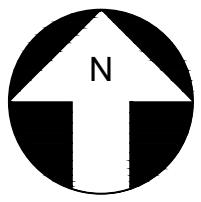
Drawing No.

PV-0.1





PROPERTY AND SITE LOCATION MAPS



PROJECT HOST:

CATALINA ISLAND CONSERVANCY

**708 Crescent Ave.
Avalon, CA 90704**

EPC
SATTLER SOLAR
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DATED: 01/30/24
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The logo for GSR Energy features a white bear walking towards the right in front of a stylized sun with yellow rays. Below the sun, the letters 'GSR' are stacked vertically in a large, bold, black font. Underneath 'GSR', the word 'ENERGY' is written in a large, bold, black font, with a horizontal black bar extending across the page behind it. At the very bottom, the website address 'HTTPS://WWW.GSR-ENERGY.COM/' is written in a smaller, black font.

CATALINA ISLAND CONSERVANCY 125 kW (AC) SOLAR PV 4550 U AIRPORT ROAD

CONSTRUCTION DOCUMENTS

Drawing Title

SOLAR INSTALLATION PROPERTY MAP

Drawing No.

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PERMITTING AND SOLAR CONSULTANT:



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| Date | 07/08/2024 |
|------------|------------|
| Job No. | 1511 |
| Drawn By | LS |
| Checked By | ES |
| Scale | |

CONSTRUCTION DOCUMENTS

Drawing Title

SOLAR INSTALLATION LAYOUT OVERVIEW

Drawing No.

PV-1.1

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CONSTRUCTION DOCUMENTS

Drawing Title

SOLAR INSTALLATION PROJECT LAYOUT

Drawing No.

PV-1.2



NOTES:

- SEE SHEET PV-1.1 FOR LOCATION OF EXISTING 60,000 GALLON FIRE HYDRANT ON AIRPORT PROPERTY WITHIN 1,000 FT OF SOLAR SITE.
- SEE SHEET PV-3.0 FOR EQUIPMENT MOUNTING DETAILS
- SEE STRUCTURAL SHEETS FOR GROUND MOUNT DETAILS AND FOUNDATION DETAILS
- INSTALL (4) BOLLARDS IF THE NEW ELECTRICAL GEAR IS SUBJECT TO POTENTIAL VEHICLE DAMAGE. THE BOLLARDS SHOULD BE SPACED NOT MORE THAN 4 FT FROM EACH OTHER. IF PHYSICAL DAMAGE IS NOT A CONCERN DUE TO NATURAL BARRIERS SUCH AS GRADE CHANGE OR BOULDERS, BOLLARDS MAY NOT BE REQUIRED.
- SEE SHEET PV-1.1 FOR LOCATION OF EXISTING 60,000 GALLON FIRE HYDRANT ON AIRPORT PROPERTY WITHIN 1,000 FT OF SOLAR SITE.
- SEE SHEET PV-3.0 FOR EQUIPMENT MOUNTING DETAILS
- SEE STRUCTURAL SHEETS FOR GROUND MOUNT DETAILS AND FOUNDATION DETAILS
- INSTALL (4) BOLLARDS IF THE NEW ELECTRICAL GEAR IS SUBJECT TO POTENTIAL VEHICLE DAMAGE. THE BOLLARDS SHOULD BE SPACED NOT MORE THAN 4 FT FROM EACH OTHER. IF PHYSICAL DAMAGE IS NOT A CONCERN DUE TO NATURAL BARRIERS SUCH AS GRADE CHANGE OR BOULDERS, BOLLARDS MAY NOT BE REQUIRED.

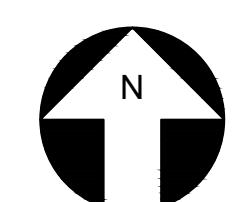
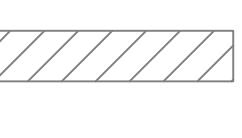
FENCE NOTES:

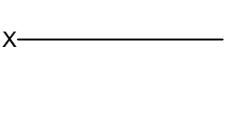
- 6 FT HIGH CHAIN LINK FENCE TO BE INSTALLED AT NO LESS THAN 6 FT SEPARATION FROM NEAREST SOLAR PV PANELS PER LAYOUT ABOVE.
- PROVIDE 7" GAPS UNDER THE FENCE WHERE FEASIBLE TO ALLOW FOR MIGRATION OF FOXES
- FENCE IS REQUIRED TO PROTECT UNAUTHORIZED PERSONNEL AND BISON FROM ENTERING THE SITE, DAMAGING THE SITE AND POSSIBLY CAUSING WILD FIRES (California Code CEC 690.31 (A)).
- FENCE ALSO DELINEATES 10 FT BRUSH CLEARANCE DISTANCE FROM SOLAR INSTALLATION.
- TOTAL AREA OF FENCED IN AREA: 15,615 sq.ft, TOTAL LENGTH OF FENCE 591 FT.

STOCK PILE NOTES:

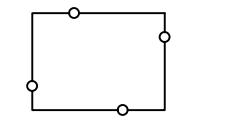
USE EXISTING DRIVEWAY FOR TEMPORARY STOCKPILING OF SOIL OR ROCKS IF REQUIRED.

PROJET SITE PLAN
1" = 20'

SITE PLAN
Scale: 1"=20'

LEGEND
 5' WIDE CLEARED PERIMETER MAINTENANCE ACCESS

 PERMANENT 6' HIGH CHAIN LINK FENCE (typically also marking 10' brush clearance area)

 10' BRUSH CLEARANCE

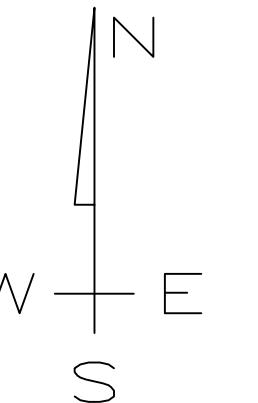
 EXCLUSIONARY FENCING TO PROTECT PALMER'S GRAPPLINGHOOK

A map of Catalina Island with a north arrow and a legend for project hosts.

PROJECT HOST:

- Catalina Island Conservancy**
- CATALINA ISLAND CONSERVANCY**
- 708 Crescent Ave.
Avalon, CA 90704**

1



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Catalina Island Conservancy

**CATALINA
ISLAND
CONSERVANCY**

**708 Crescent Ave.
Avalon, CA 90704**


DATED: 01/30/24
ERIK SATTLER, SATTLER SOLAR INC. LIC. # 1017484 (C10)

The logo for GSR Energy features a white bear walking towards the right in front of a rising sun. The sun is depicted with numerous yellow rays of varying lengths, creating a sense of movement. Below the bear and sun, the letters 'GSR' are stacked vertically in a large, bold, black font. Underneath 'GSR', the word 'ENERGY' is written in a large, bold, black, sans-serif font. The entire logo is set against a light blue background.

**CATALINA ISLAND
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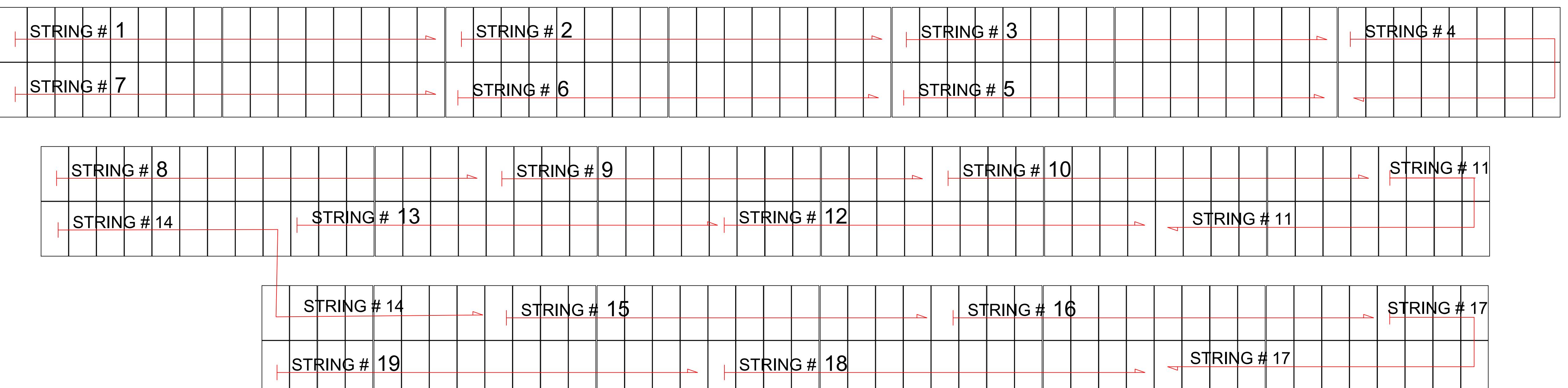
CONSTRUCTION DOCUMENTS

Drawing Title

STRINGING PLAN

Drawing No

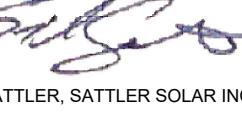
P V — 1.3



STRINGING PLAN

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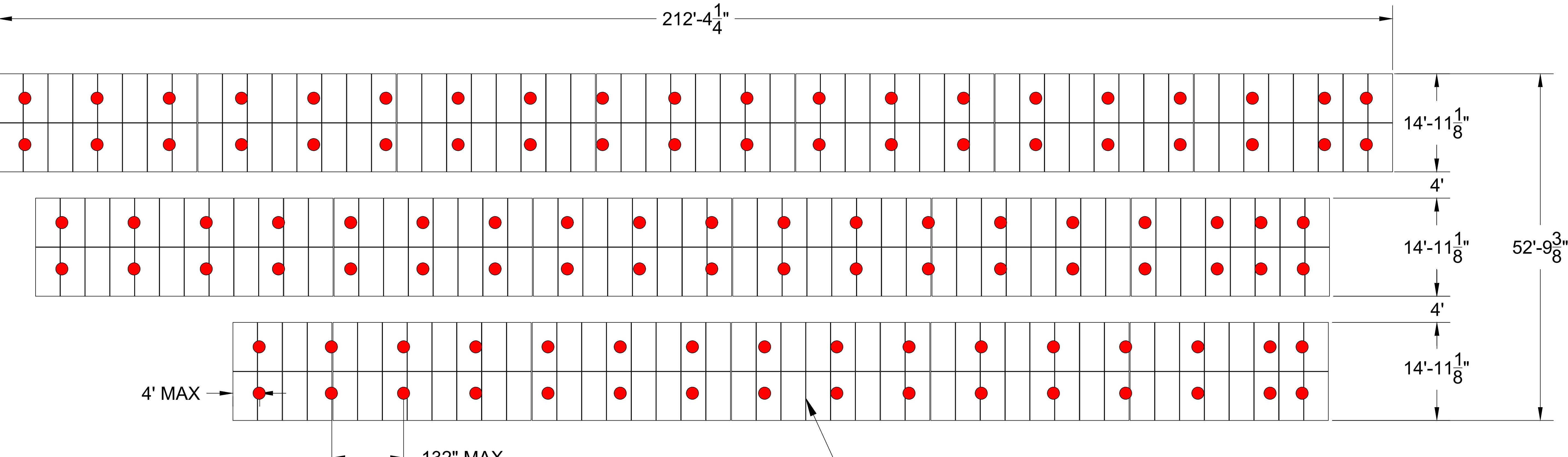
CATALINA ISLAND CONSERVANCY 125 kW (AC) SOLAR PV
4550 U AIRPORT ROAD
AVALON, CA 90704

Revision Date
80% CONSTRUCTION DOCUMENTS 10/23/2023
PLAN CHECK #4 1/30/2024
BIOLOGIST REPORT REVISION 3/15/2024
SCE REQUESTED REVISIONS 7/08/2024
FENCE ALIGNMENT REVISED 7/25/2024
MAX. SPAN BETW. POSTS UPDATE 11/21/2024

Date 11/21/2024
Job No. 1511
Drawn By LS
Checked By ES
Scale

CONSTRUCTION DOCUMENTS
Drawing Title
FOOTING MAP

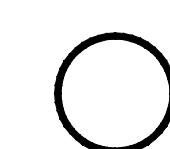
Drawing No.
PV-14



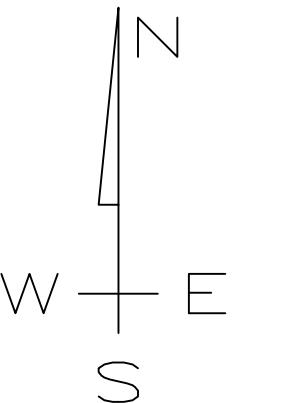
SEE STRUCTURAL SHEET S200 FOR ANCHOR DETAILS

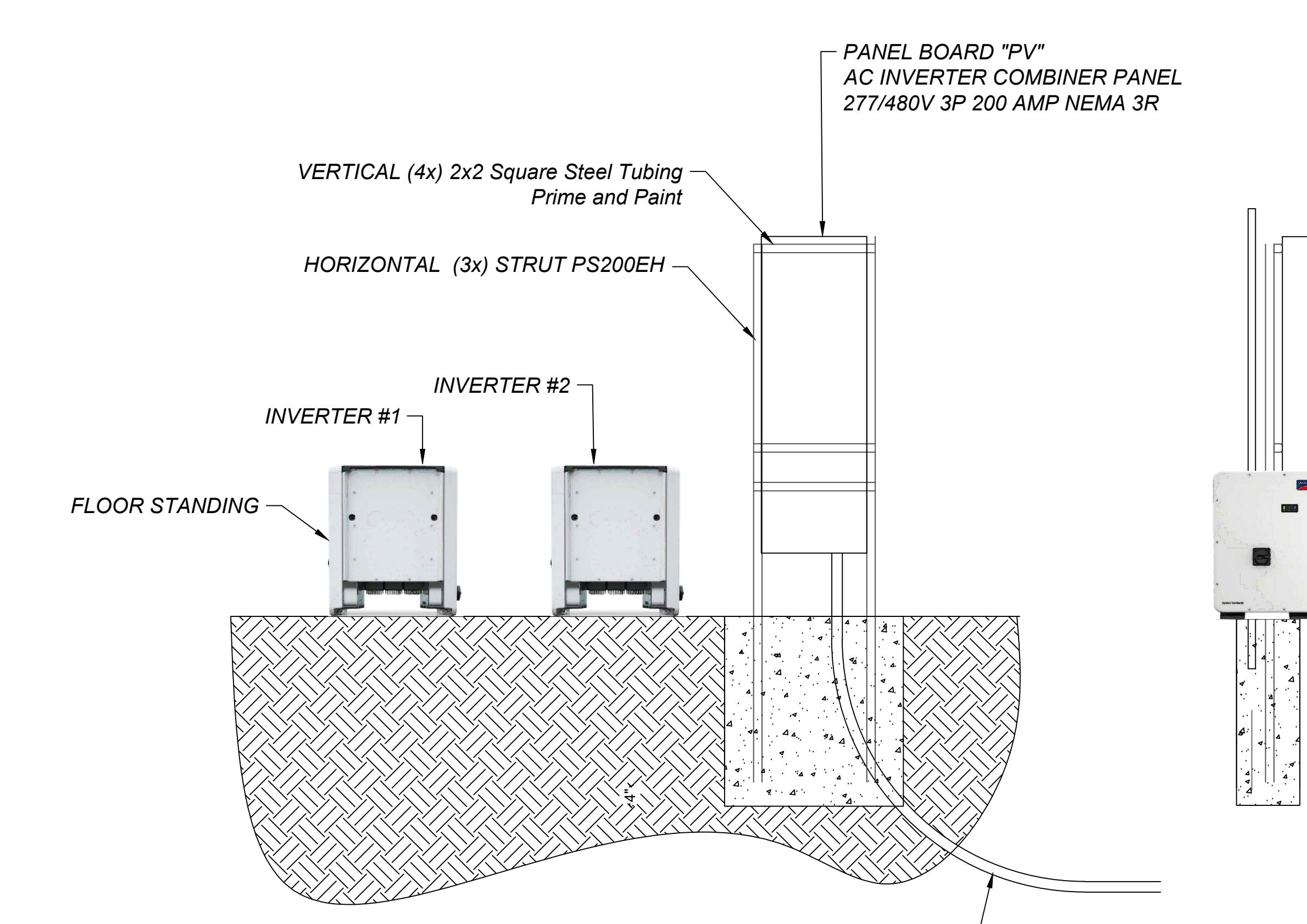
SEE SHEET S100 FOR MAXIMUM SPANS AND S300 TO S500 FOR STRUCTURAL CONNECTION DETAILS

PLEASE NOTE THAT THE ACTUAL LOCATION OF THE GROUND SCREW ANCHORS MAY SHIFT IN THE FIELD TO ACCOMMODATE TERRAIN. MAXIMUM SPANS MAY NEVER BE EXCEEDED UNLESS APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.

 ANCHOR LOCATION PLAN
1"=8'

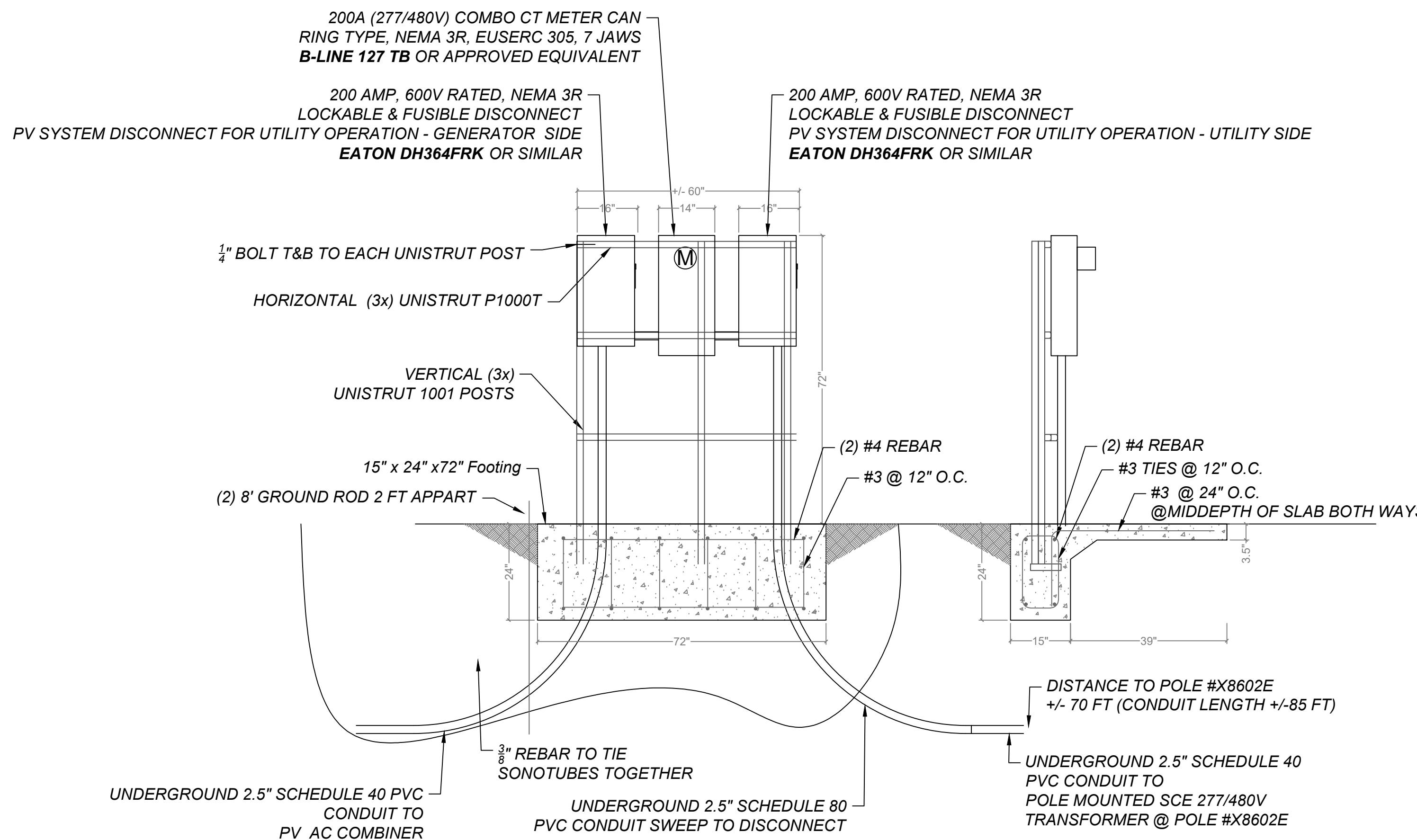
A B C D E







INVERTER & COMBINER PANEL MOUNTING





EQUIPMENT MOUNTING DETAIL

NOTES:
FOR GROUND MOUNT STRUCTURE AND FOUNDATION DETAILS SEE STRUCTURAL SHEETS



The diagram illustrates the required dimensions for burying a Schedule 40 PVC conduit. It shows a cross-section of the ground with a hatched pattern representing 'EXISTING GROUND (SOFTSCAPE)'. A horizontal line indicates the top of the trench. The trench is labeled 'TRENCH (MIN. 3" WIDE AND 20" DEEP)'. A vertical dimension line indicates an '18" COVER (MIN)' from the top of the trench to the bottom of the conduit. The conduit itself is labeled 'SCHEDULE 40 PVC CONDUIT PER SLR GP'. Arrows point from the text labels to the corresponding parts of the diagram. A note on the left specifies 'USE CLEAN SCREENING MATERIAL FOR BACKFILL AROUND CONDUIT (MINIMUM 2" & ABOVE CONDUIT (SAND OR NATIVE WITH NO ROCKS LARGER THAN 0.5")'.

TRENCH DETAIL

| MINIMUM COVER REQUIREMENTS 0 - 1000 VOLTS, NOMINAL, BURIAL IN INCHES | | | | | |
|--|------------------------------------|---|--|--|--|
| Location of Wiring Method or Circuit | Type of Wiring Method or Circuit | | | | |
| | Direct Burial Cables or Conductors | Rigid Metal Conduit or Intermediate Metal Conduit | Nonmetallic Raceways Listed for Direct Burial without Concrete Encasement or Other Approved Raceways | Residential Branch Circuits Rated 120 Volts or Less with GFCI Protection and Maximum Overcurrent Protections of 20 Amperes | Circuits for Control of Irrigation and Landscape Lighting Limited to Not More than 30 Volts and Installed with Type UF or in other Identified Cable or Raceway |
| All locations not specified below | 24 | 6 | 18 | 12 | 6 |
| In trench below 2-inch thick concrete or equivalent | 18 | 6 | 12 | 6 | 6 |
| Under minimum of 4-inch thick concrete exterior slab with no vehicular traffic and the slab extending not less than 6 inches beyond the underground installation | 18 | 4 | 4 | 6 (direct burial) 4 (in raceway) | 6 |
| Under streets, highways, roads, alleys, driveways, and parking lots | 24 | 24 | 24 | 24 | 24 |
| One- and two-family dwelling driveways and outdoor parking areas that are used only for dwelling-related purposes | 18 | 18 | 18 | 12 | 18 |

Note: This table was developed from Table 300.5 of the Code where information for other Wiring Methods not listed above can be found. Revised for the 2008 Code, 300.5 B of the Code now contains definitive language defining the inside of all raceways and enclosures installed underground as wet locations. All conductors installed in these raceways must be approved for wet locations as listed in 310.8(C) of the Code.

PROJECT HOST:

CATALINA ISLAND CONSERVANCY

**708 Crescent Ave.
Avalon, CA 90704**


ERIK SATTLER, SATTLER SOLAR INC. HQ, #1017104/2182000

The logo for GSR Energy features a stylized sun with numerous yellow rays. A white silhouette of a bear is positioned in front of the sun. Below the sun, the letters 'GSR' are stacked in a large, bold, black font. Underneath 'GSR', the word 'ENERGY' is written in a large, bold, black, sans-serif font. The entire logo is set against a white background.

**CATALINA ISLAND
CONSERVANCY
125 kW (AC)
SOLAR PV
4550 U AIRPORT ROAD
AVALON, CA 92544**

| Revision | Date |
|----------------------------|------------|
| 90% CONSTRUCTION DOCUMENTS | 10/23/2023 |
| PLAN CHECK #4 | 1/30/2024 |
| BIOLOGIST REPORT REVISION | 3/15/2024 |
| SCE REQUESTED REVISIONS | 7/08/2024 |

| | |
|------------|------------|
| Date | 07/08/2024 |
| Job No. | 1511 |
| Drawn By | LS |
| Checked By | ES |
| Sp. I. | |

CONSTRUCTION DOCUMENTS

Drawing Title

SOLAR INSTALLATION DETAILS

Drawing No

PV-3.0

| Revision | Date |
|----------------------------|------------|
| 80% CONSTRUCTION DOCUMENTS | 10/23/2023 |
| PLAN CHECK #4 | 1/30/2024 |
| BIOLOGIST REPORT REVIEW | 3/15/2024 |

| Date | 01/02/2023 |
|------------|------------|
| Job No. | 1511 |
| Drawn By | LS |
| Checked By | ES |
| Scale | |

CONSTRUCTION DOCUMENTS
Drawing Title
SOLAR INSTALLATION DETAILS

Drawing No.

PV-3.2

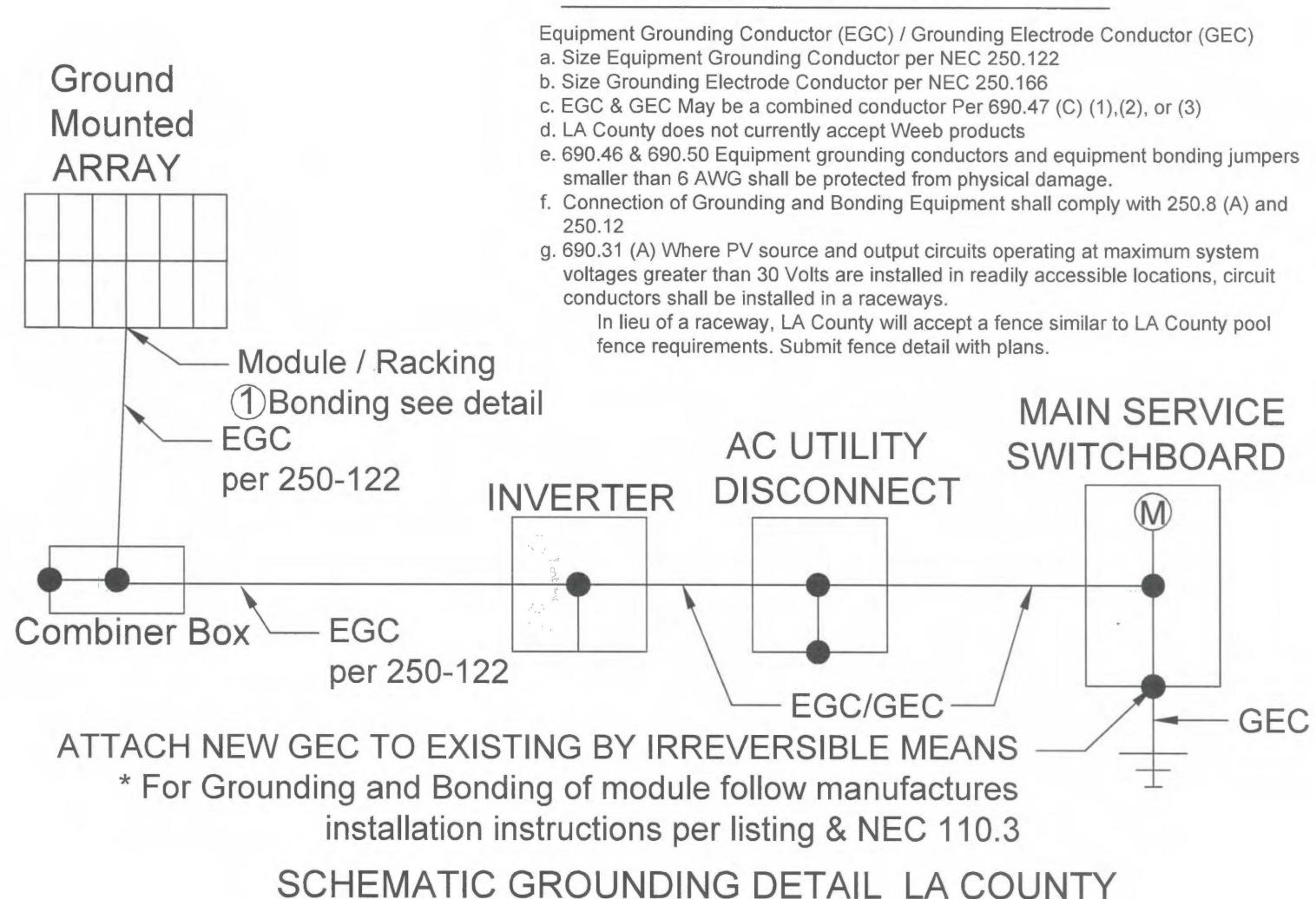
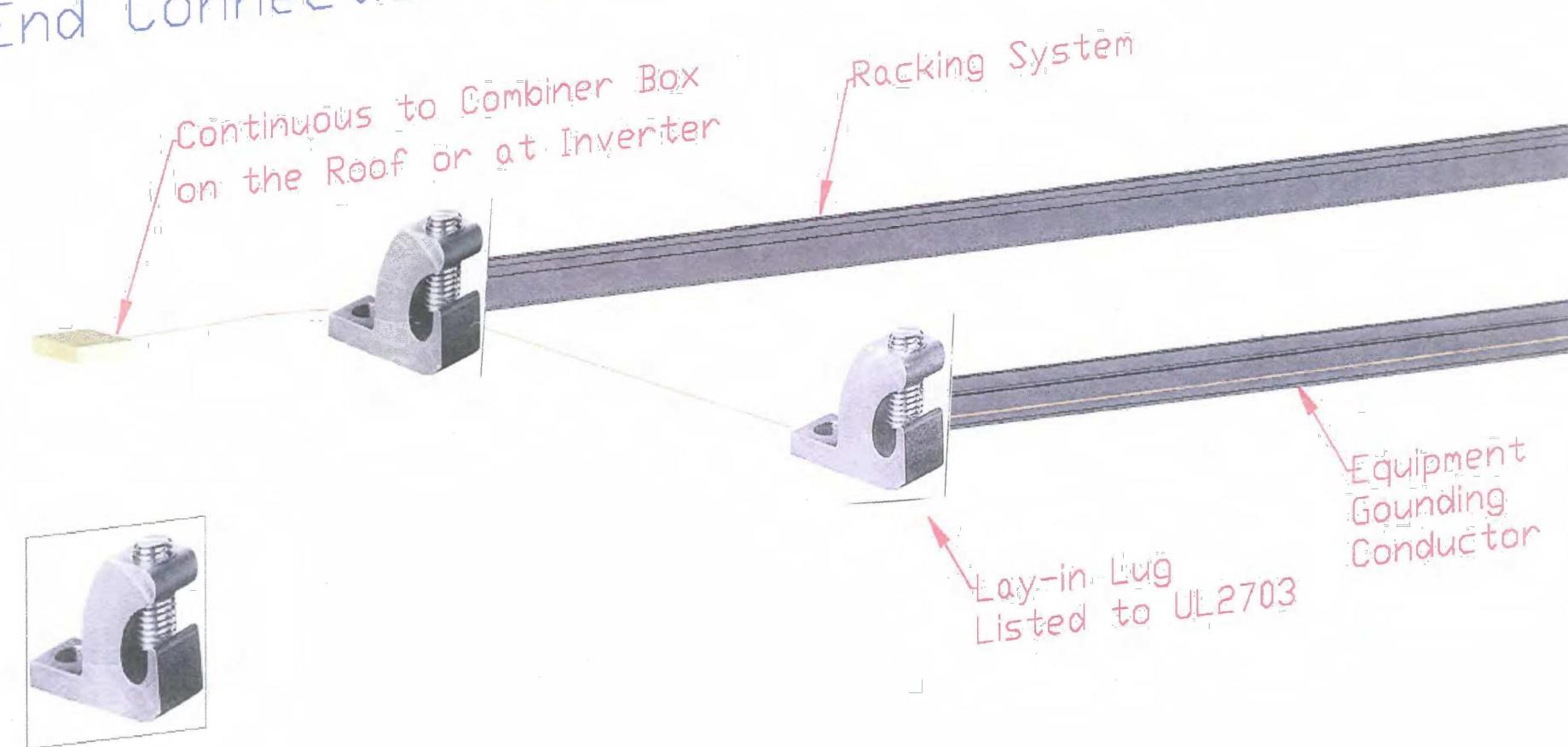
Photovoltaic Ground Mount
GROUNDING NOTES:


Exhibit C: System Connection (Rack to Rack) & End Connection (Combiner Box / Junction Box)


GROUNDING NOTES

EQUIPMENT GROUND:
 IN ADDITION TO THE EQUIPMENT GROUNDING CONDUCTORS RUN WITH THE PV SYSTEM CONDUCTORS, A GROUNDING CONDUCTOR SHALL BE PROVIDED FROM THE PV ARRAY TO A GROUNDING ELECTRODE SYSTEM ESTABLISHED AT THAT GROUND MOUNT.

NOTE:

10-24 SS BOLT

#10 SS FLAT WASHER

TIN PLATED LAY-IN LUG BY LSCO OR BURNDY

BOLT NUT

#10 SS FLAT WASHER

TIN PLATED LAY-IN LUG BY LSCO OR BURNDY

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SUNNY TRIPower CORE1 33-US / 50-US / 62-US



UP TO 60% FASTER INSTALLATION FOR COMMERCIAL PV SYSTEMS

2017 inter solar award WINNER

SunSpec Certified

Fully integrated

- Intuitive design requires no additional racking for rooftop installation
- Integrated DC and AC disconnects and overvoltage protection
- Up to 60% faster for reduced labor and material costs

Increased power, flexibility

- Includes power ratings small to large scale commercial PV installations
- Six MPPT tracks for flexible stringing and overvoltage protection
- OptiFresh® Peak shade tolerant MPPT tracking

Enhanced safety, reliability

- Includes built-in IEC-62696-2 for module-level rapid shutdown compliance to 2017 NEC
- Six MPPT tracks for flexible stringing and overvoltage protection
- OptiFresh® Peak shade tolerant MPPT tracking

Smart monitoring, control, service

- Advanced built-in inverter grid support capabilities
- Increased ROI with SMA ennxs cross sector energy management platform
- SMA Smart Connected proactive OEM solution reduces time spent diagnosing and servicing in the field

Technical data*

| | Sunny Tripower CORE1 33-US | Sunny Tripower CORE1 50-US | Sunny Tripower CORE1 62-US |
|---|---|---|---|
| Input (DC) | 50000 Wp STC 330 V...800 V | 75000 Wp STC 550 V...800 V | 93750 Wp STC 150 V...1000 V |
| MPPT operating voltage range | 500 V...800 V | 550 V...800 V | 550 V...800 V |
| Maximum DC voltage / string voltage | 150 V / 188 V | 150 V / 188 V | 150 V / 188 V |
| MPPT tracking range / MPPT input | 4 V | 4 V | 4 V |
| Maximum operating input current per MPPT / per string input | 120 A / 20 A | 120 A / 20 A | 120 A / 20 A |
| Minimum string current per MPPT / per string input | 30 A / 30 A | 30 A / 30 A | 30 A / 30 A |
| Output (AC) | 33300 W 33300 VA 33300 W 62500 W 66000 VA | 50000 W 50000 VA 480 V / 277 V WYE 244 V...305 V | 62500 W 66000 VA 60 Hz 50 Hz / 60 Hz / 400 Hz 50 Hz / 60 Hz / 400 Hz / 400 Hz lagging |
| Efficiency | 97.5% | 99% | 99% |
| Protection and safety features | Load rated DC disconnect Load rated AC disconnect Ground fault protection / Differential current DC AC fault protection SunSpec IEC signal for rapid shutdown DC reverse power protection AC short circuit protection DC surge protection / Type 2 / Type 1-2 AC surge protection / Type 2 / Type 1-2 Protection class / overvoltage category (as per UL 840) | | |
| General data | Device dimensions (W/H/D) 84 kg (185 lbs) Operating temperature range Storage temperature range Audible noise emission (dB(A) power 0 m and 25 °C) Internal consumption of light RoHS RoHS2 WEEE CE IEC 62696-2 IEC 62040-2 IEC 62040-4 IEC 62040-5 IEC 62040-6 IEC 62040-7 IEC 62040-8 IEC 62040-9 IEC 62040-10 IEC 62040-11 IEC 62040-12 IEC 62040-13 IEC 62040-14 IEC 62040-15 IEC 62040-16 IEC 62040-17 IEC 62040-18 IEC 62040-19 IEC 62040-20 IEC 62040-21 IEC 62040-22 IEC 62040-23 IEC 62040-24 IEC 62040-25 IEC 62040-26 IEC 62040-27 IEC 62040-28 IEC 62040-29 IEC 62040-30 IEC 62040-31 IEC 62040-32 IEC 62040-33 IEC 62040-34 IEC 62040-35 IEC 62040-36 IEC 62040-37 IEC 62040-38 IEC 62040-39 IEC 62040-40 IEC 62040-41 IEC 62040-42 IEC 62040-43 IEC 62040-44 IEC 62040-45 IEC 62040-46 IEC 62040-47 IEC 62040-48 IEC 62040-49 IEC 62040-50 IEC 62040-51 IEC 62040-52 IEC 62040-53 IEC 62040-54 IEC 62040-55 IEC 62040-56 IEC 62040-57 IEC 62040-58 IEC 62040-59 IEC 62040-60 IEC 62040-61 IEC 62040-62 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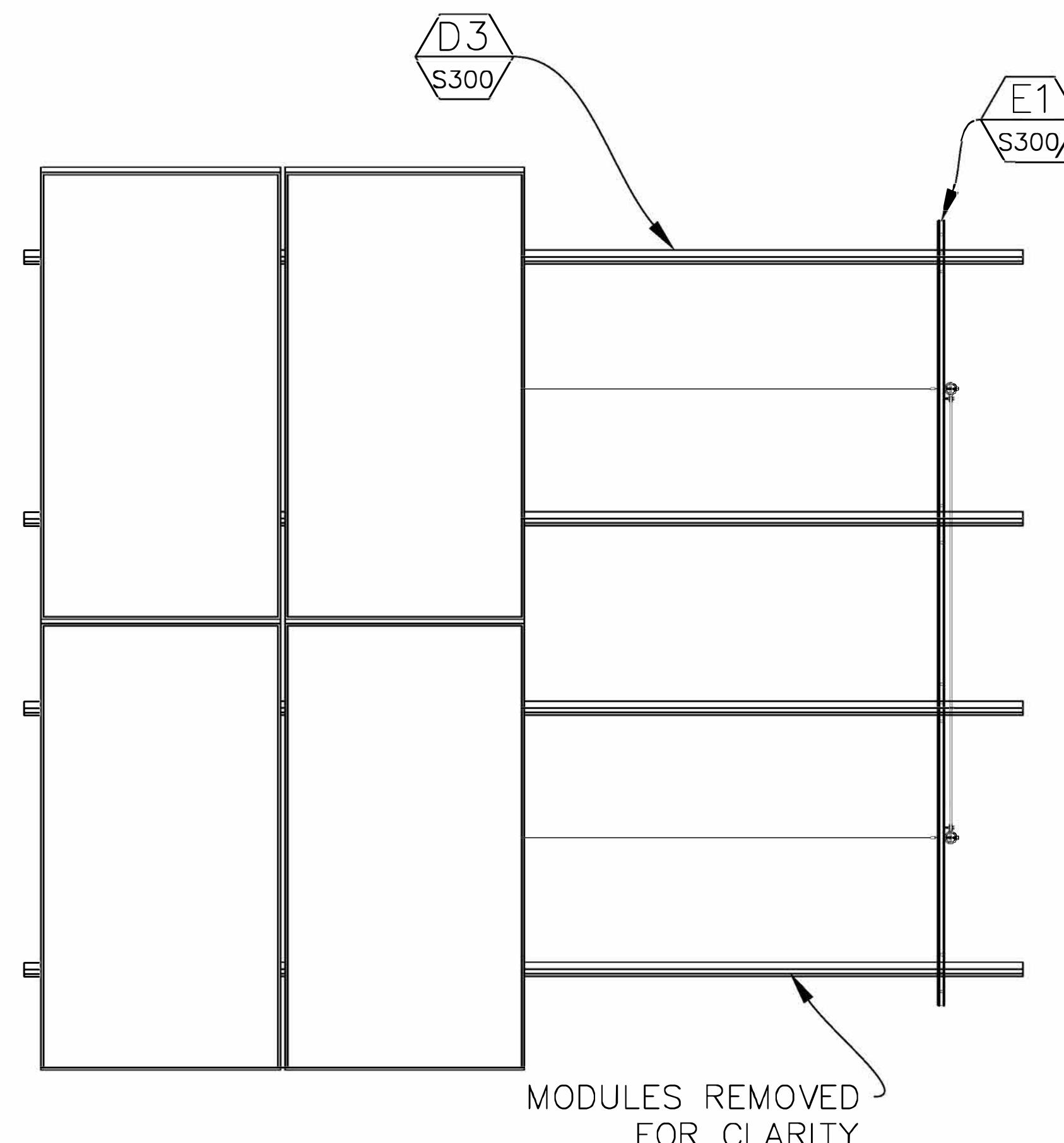
***IMAGE REFERENCE ONLY. SHOWS STRUCTURAL MAXIMUMS. NOT INDICATIVE OF REQUIRED QUANTITIES. PLEASE REFER TO SITE SPECIFIC BUILD PLANS FOR SITE SPECIFIC REQUIRED SPANS/QUANTITIES.**

MAX CANT.
48.00"

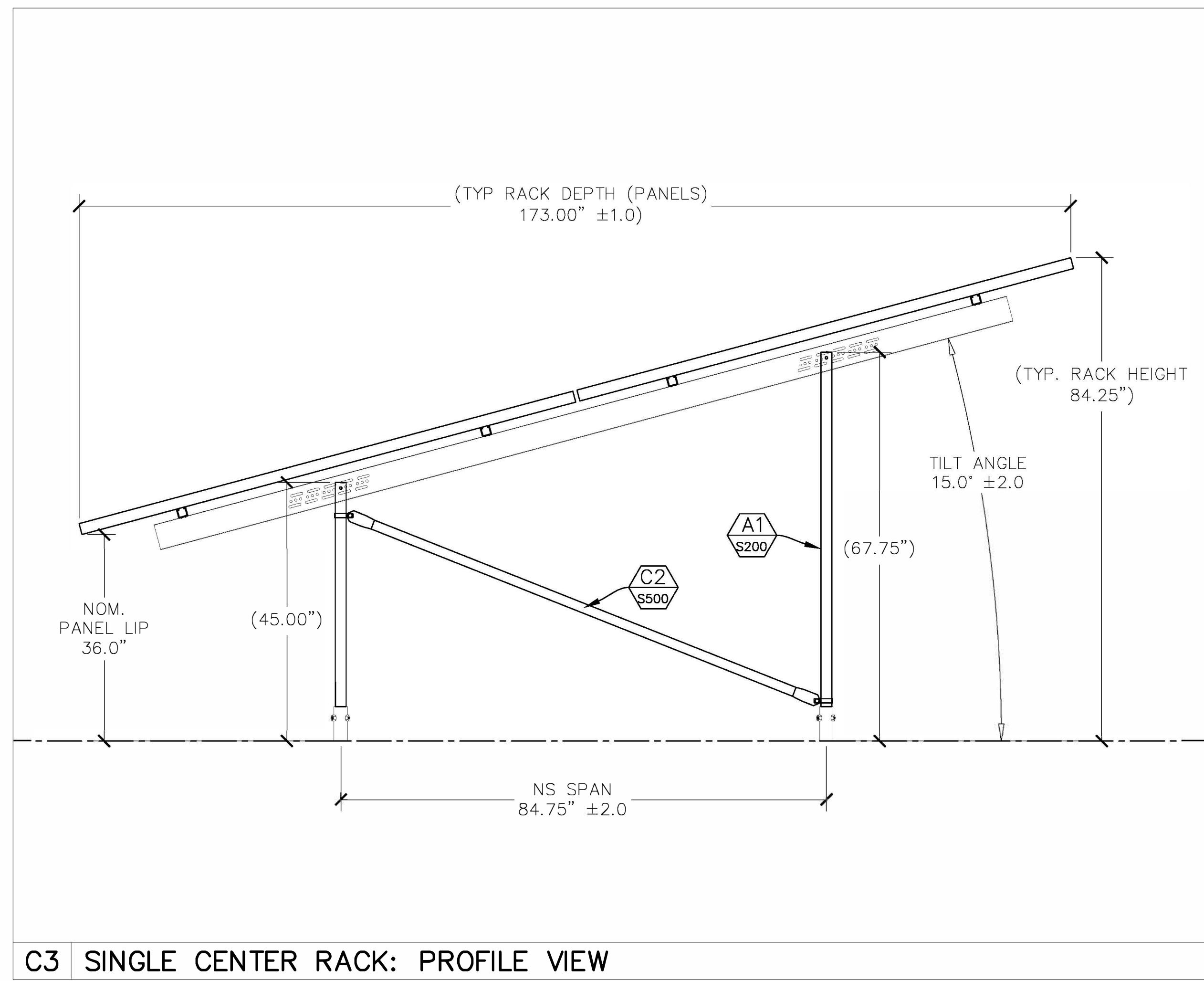
GROUND SURFACE SHOWN LEVEL

MAX EW SPAN
132.00" ±2.0

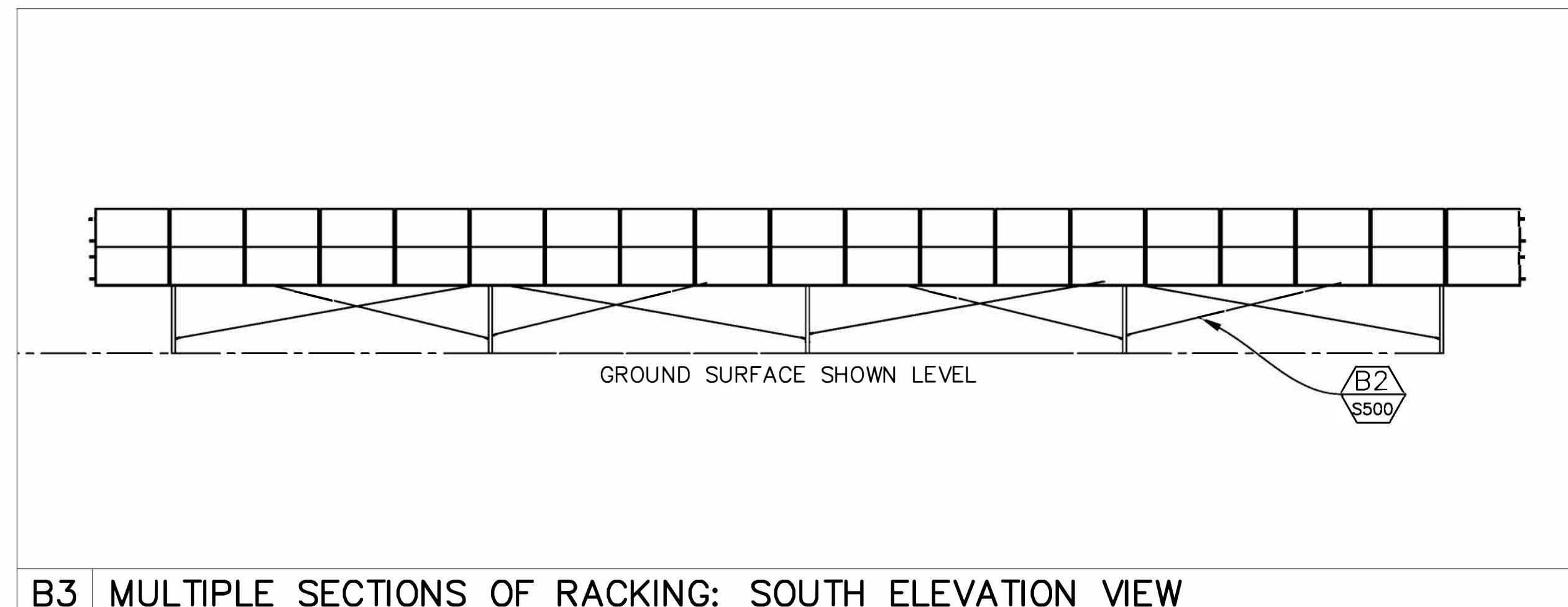
C1 SINGLE CENTER RACK: ELEVATION VIEW



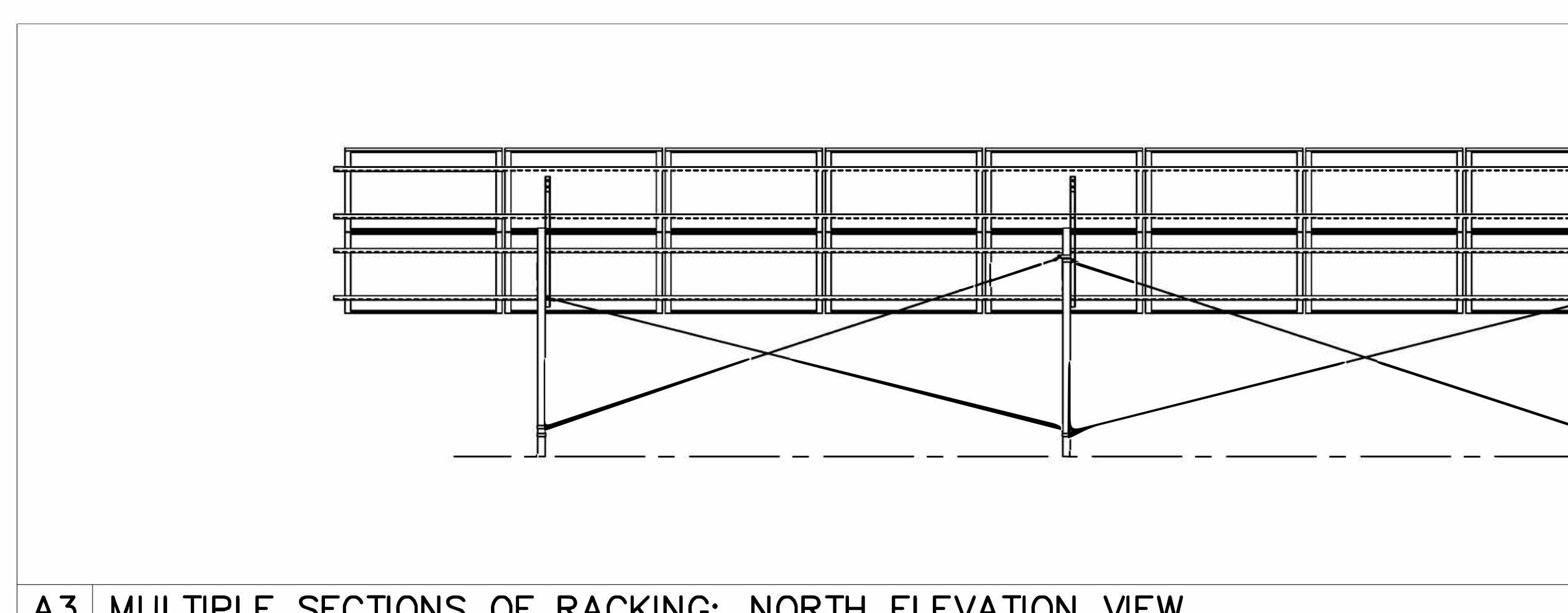
A1 SINGLE CENTER RACK: PLAN VIEW



C3 SINGLE CENTER RACK: PROFILE VIEW



B3 MULTIPLE SECTIONS OF RACKING: SOUTH ELEVATION VIEW



A3 MULTIPLE SECTIONS OF RACKING: NORTH ELEVATION VIEW

NOTES:

1. STANDARD FRONT LIP HEIGHT AND TILT ANGLES MEASURED FROM LEVEL GROUND
2. FOUNDATION TESTING, WHERE REQUIRED, SHALL BE DONE ACCORDING TO THE "QUICK TEST METHOD" PER ASTM D1143 & D3689.
3. PRINT DIMENSIONS: DIMENSIONS SHOWN REFLECT POST HEIGHTS ON LEVEL GROUND. ON UNEVEN TERRAIN, REAR POST HEIGHT WILL BE DICTATED BY FRONT LIP HEIGHT, PANEL TILT, AND NORTH/SOUTH ANCHOR SPACING.
4. ADDITIONAL TOLERANCES: POST PLUMBNESS SHOULD BE WITHIN $\pm 2^\circ$
5. SPECIAL INSPECTIONS (WHERE REQUIRED):

SPECIAL INSPECTIONS ARE NOT REQUIRED BY AP
ALTERNATIVES OR THE STRUCTURAL ENGINEER OF
RECORD, THE JDI GROUP. WHERE REQUIRED BY
OWNER, CUSTOMER, AND/OR AUTHORITY HAVING
JURISDICTION, MINIMUM INSPECTION SHALL FOLLOW
IBC OR LOCAL AHJ SPECIAL INSPECTIONS
GUIDELINES.

| | |
|---|---|
| CUSTOMER | |
| RACKING PROVIDER | |
|  APA SOLAR RACKING | |
| 20-345 COUNTY ROAD X RIDGEVILLE CORNERS, OHIO 43555 (P) 419.267.5280 (F) 419.267.5214 WWW.APASOLAR.COM | |
| RACKING TYPE | |
|  READY RACK | |
| ENGINEER OF RECORD | |
|  the jdi group architects & engineers | |
|  Coast 2 Coast Engineering, P.A. 6586 Hypoluxo Road #816 Lake Worth, FL 33467 Phone: 561-657-0018 Fax: 630-869-5344 | Coast 2 Coast Engineering, P.A. 6586 Hypoluxo Road #816 Lake Worth, FL 33467 Phone: 561-657-0018 Fax: 630-869-5344 |
| PROFESSIONAL SEAL/STAMP | |
|  REGISTERED PROFESSIONAL ENGINEER TIMOTHY J. WORLINE C 63356 Exp. 09-30-2026 ★ Timothy J. Worline ★ CIVIL STATE OF CALIFORNIA | |

| | |
|---------------------------------|-------------------|
| STRUCTURAL PRINT PACKAGE | |
| <u>SITE STREET ADDRESS:</u> | 4550 U AIRPORT RD |
| <u>SITE CITY, STATE, ZIP:</u> | AVALON, CA 90704 |

| SHEET REVISIONS | | |
|-----------------|----------------------------|-----------|
| REV. | DESCRIPTION | DATE |
| A | INITIAL RELEASE | 12/8/2023 |
| B | DESIGN CHANGE-LATERAL LOAD | 11/5/2024 |

| | | | |
|-------------------------|----------|----------|------|
| APPROVED | | | |
| DRAWN | REVIEWED | APPROVED | SIZE |
| JK | TM | JDI | D |
| SHEET NAME | | | |
| RACKING OVERVIEW | | | |
| PROJECT NUMBER | | | |
| 220367 | | | |
| DRAWING NUMBER | REV. | | |
| S.100 | B | | |

OTES:

- FOUNDATION TESTING, WHERE REQUIRED, SHALL BE DONE ACCORDING TO THE "QUICK TEST METHOD" PER ASTM D1143 & D3689.
- PRINT DIMENSIONS: REAR POST HEIGHT WILL BE DICTATED BY FRONT LIP HEIGHT, PANEL TILT, AND NORTH/SOUTH ANCHOR SPACING.
- ADDITIONAL TOLERANCES: POST PLUMBNESS SHOULD BE WITHIN $\pm 2^\circ$
- SPECIAL INSPECTIONS (WHERE REQUIRED):

SPECIAL INSPECTIONS ARE NOT REQUIRED BY AP
TERNATIVES OR THE STRUCTURAL ENGINEER OF
ECORD, THE JDI GROUP, WHERE REQUIRED BY
OWNER, CUSTOMER, AND/OR AUTHORITY HAVING
JURISDICTION, MINIMUM INSPECTION SHALL FOLLOW
BC OR LOCAL AHJ SPECIAL INSPECTIONS
GUIDELINES.

CUSTOMER

RACKING PROVIDER

APA
SOLAR RACKING

20-345 COUNTY ROAD X
RIDGEVILLE CORNERS, OHIO 43555

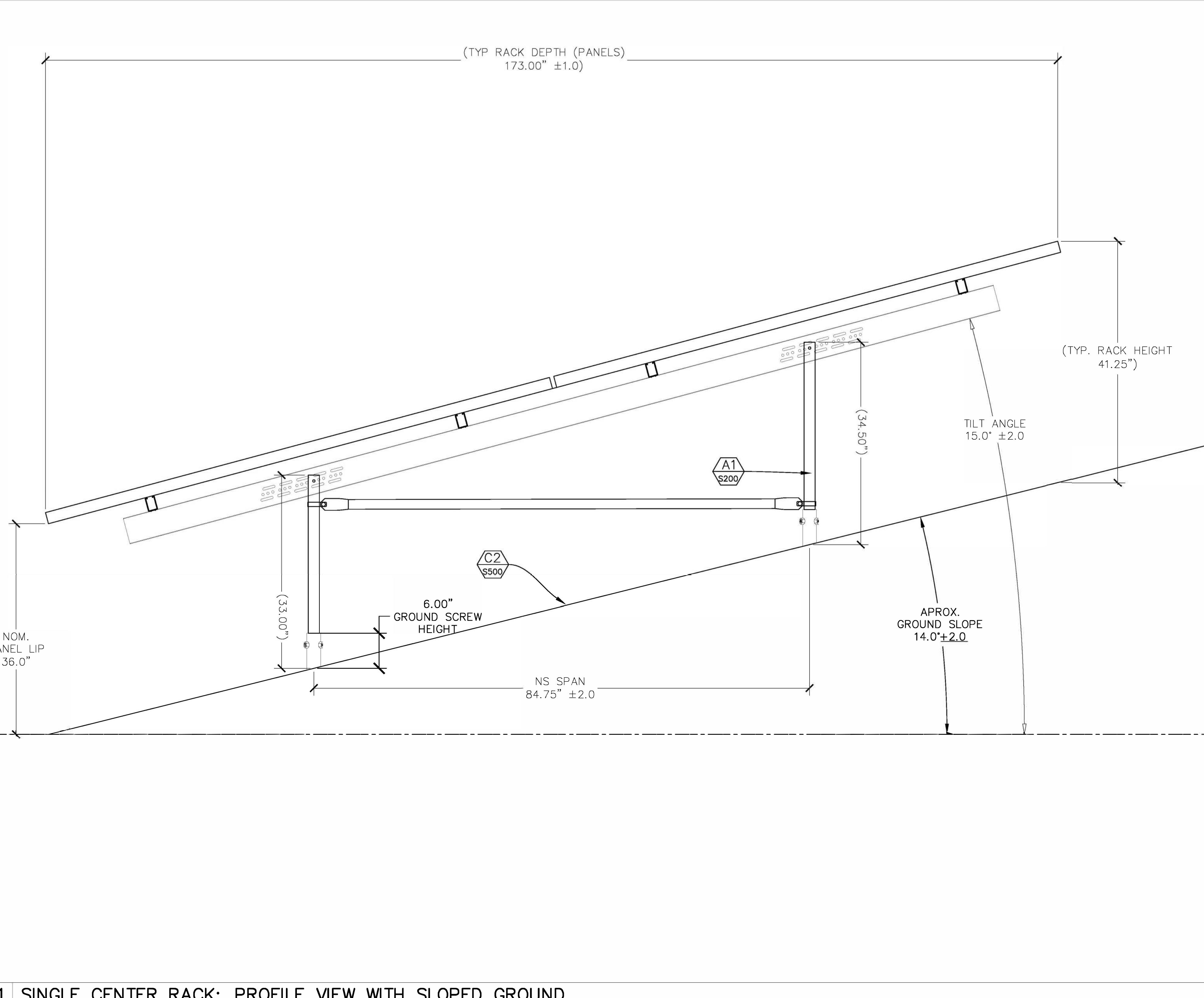
(P) 419.267.5280
(F) 419.267.5214
WWW.APASOLAR.COM

The image contains two distinct sections. The top section features the text 'READY RACK' in large, bold, blue, sans-serif letters. Below this, a horizontal line separates the text 'ENGINEER OF RECORD' in black, all-caps, sans-serif letters. A second horizontal line further down contains the 'the jdi group' logo in green and white, with 'the' in a smaller font, 'jdi' in a large bold font, and 'group' in a smaller font. Below the logo, the words 'architects & engineers' are written in a smaller, black, sans-serif font.

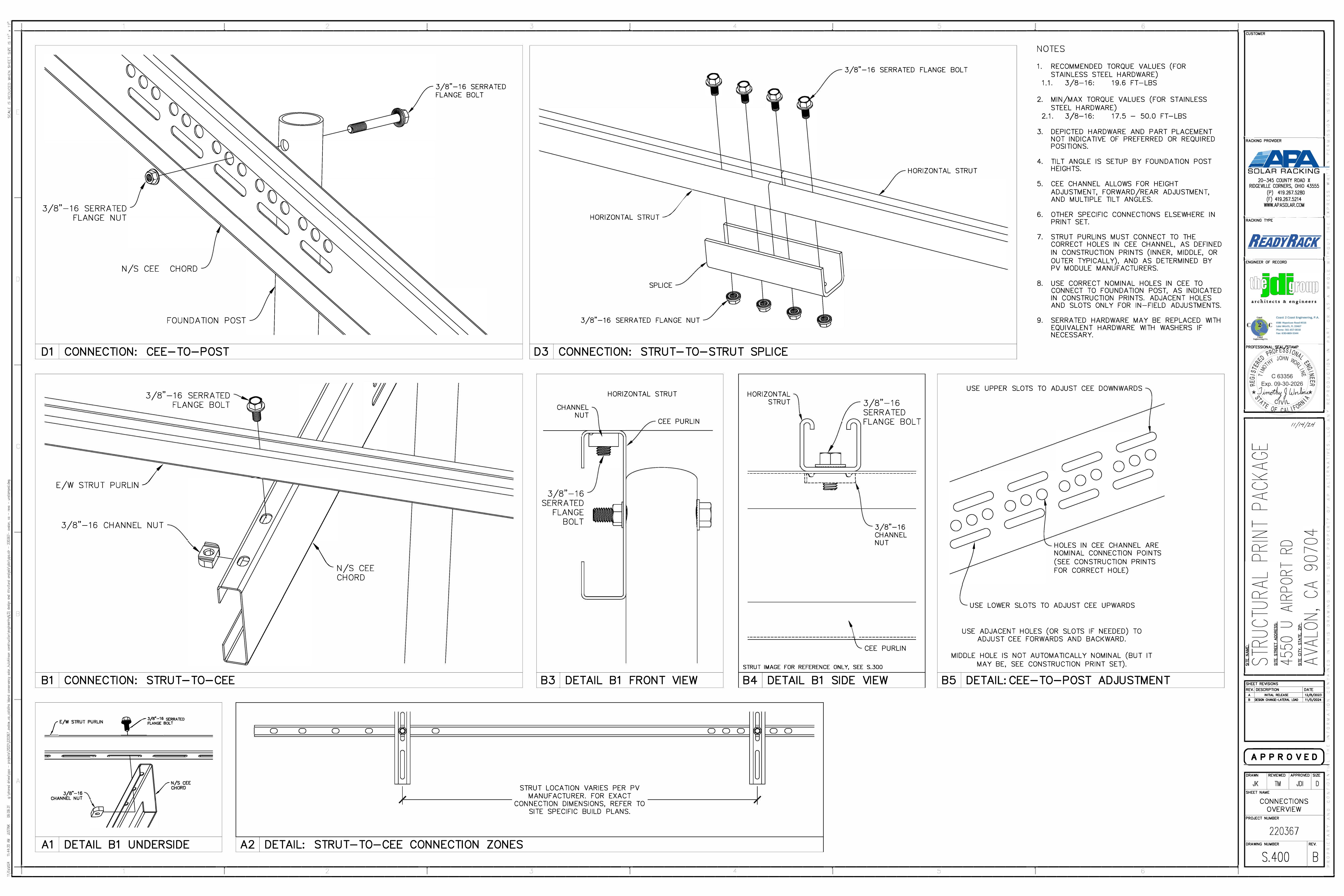
| | | | |
|-------------------------------|--|--------------------------|--|
| <u>SITE NAME:</u> | | STRUCTURAL PRINT PACKAGE | |
| <u>SITE STREET ADDRESS:</u> | | 1 AIRPORT RD | |
| <u>SITE CITY, STATE, ZIP:</u> | | AVALON, CA 90704 | |

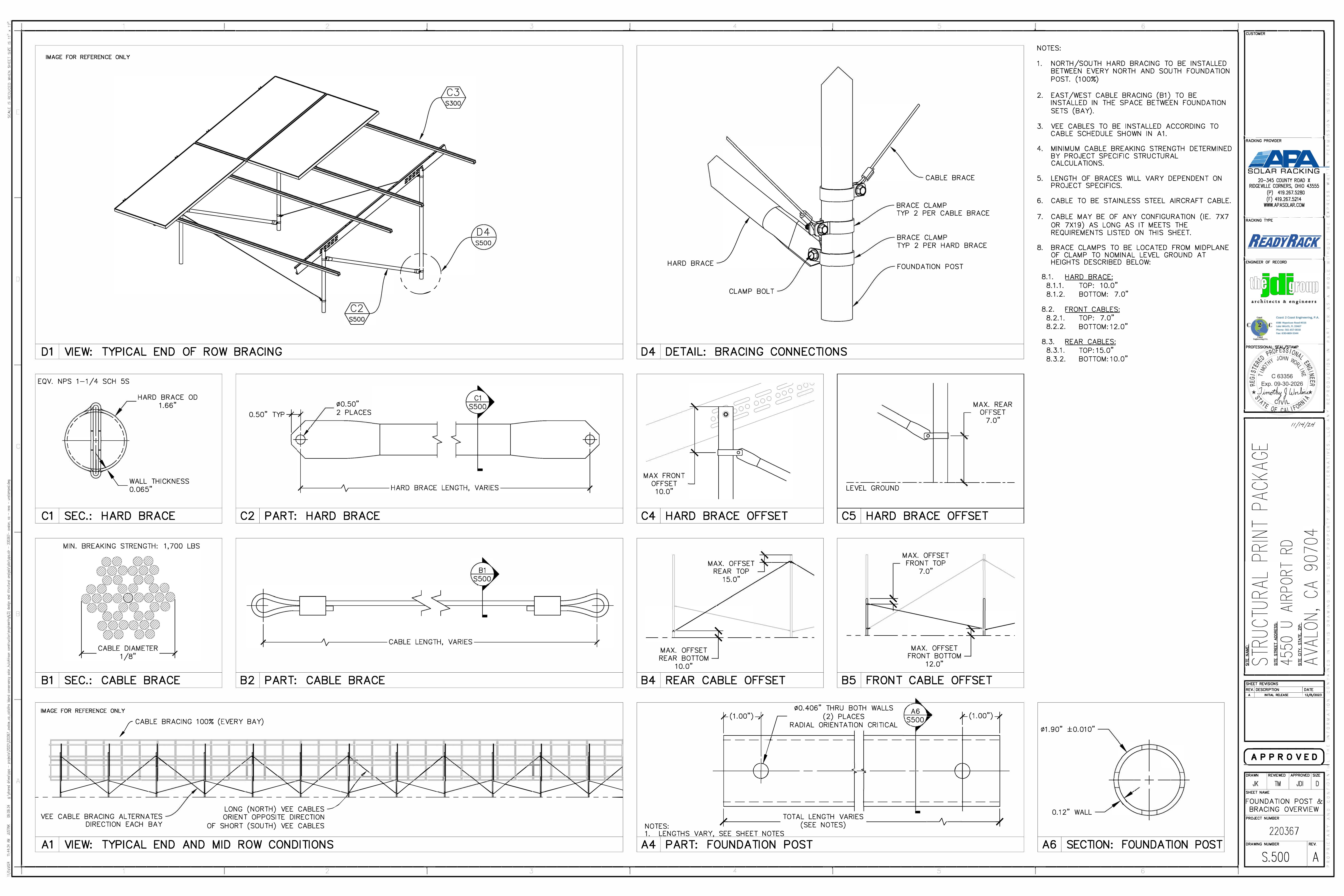
| SHEET REVISIONS | | |
|-----------------|-----------------|------------|
| REV. | DESCRIPTION | DATE |
| A | INITIAL RELEASE | 12/15/2023 |

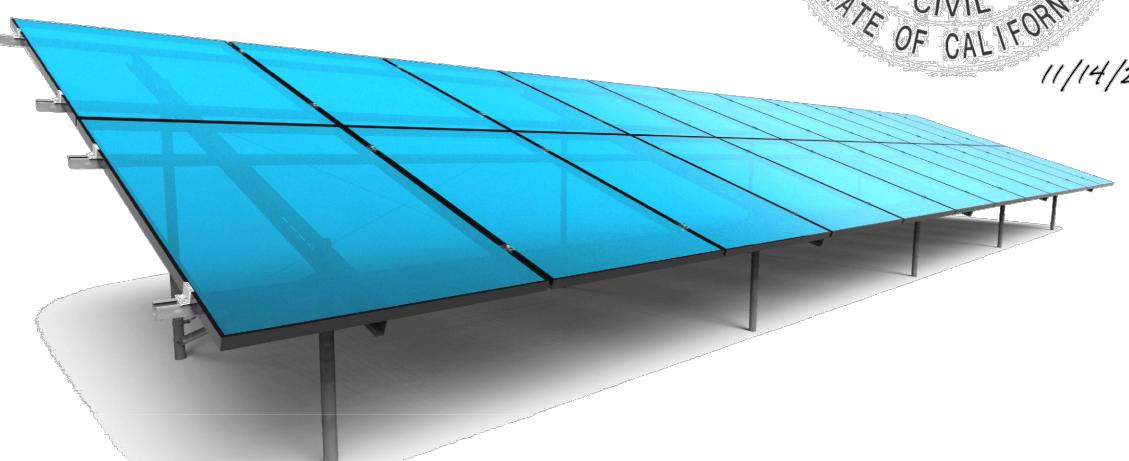
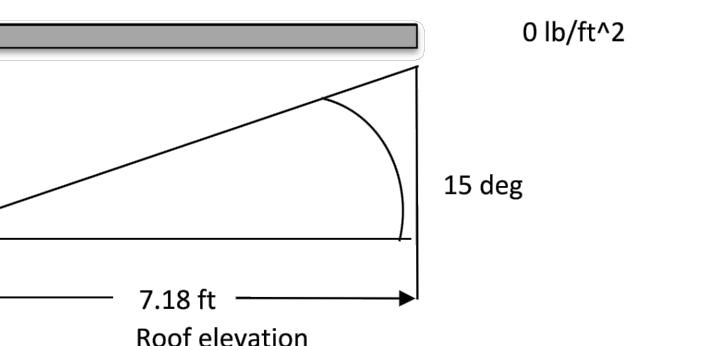
| | | | |
|------------------------------|----------|----------|------|
| APPROVED | | | |
| DRAWN | REVIEWED | APPROVED | SIZE |
| JK | TM | JDI | D |
| SHEET NAME | | | |
| RACKING OVERVIEW ON SLOPE | | | |
| PROJECT NUMBER | | | |
| 220367 | | | |
| DRAWING NUMBER | REV. | | |
| S.101 | A | | |

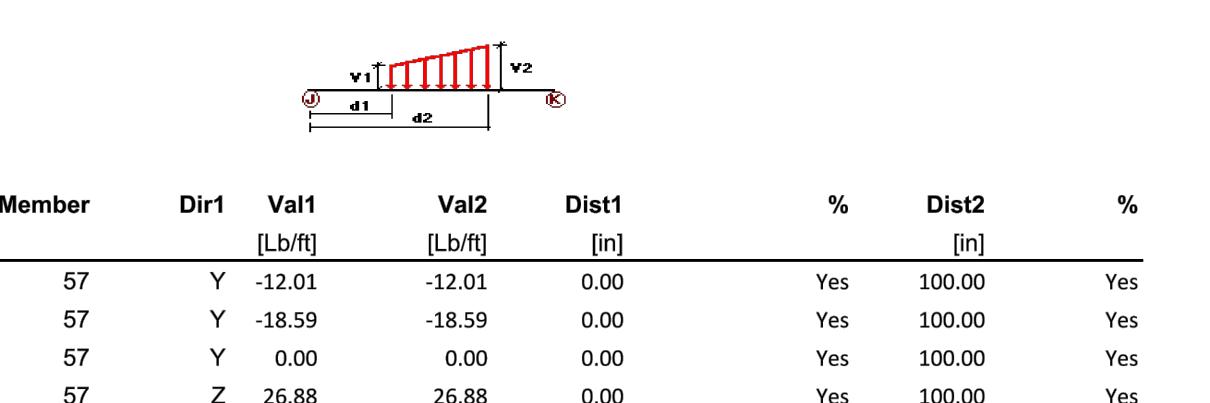
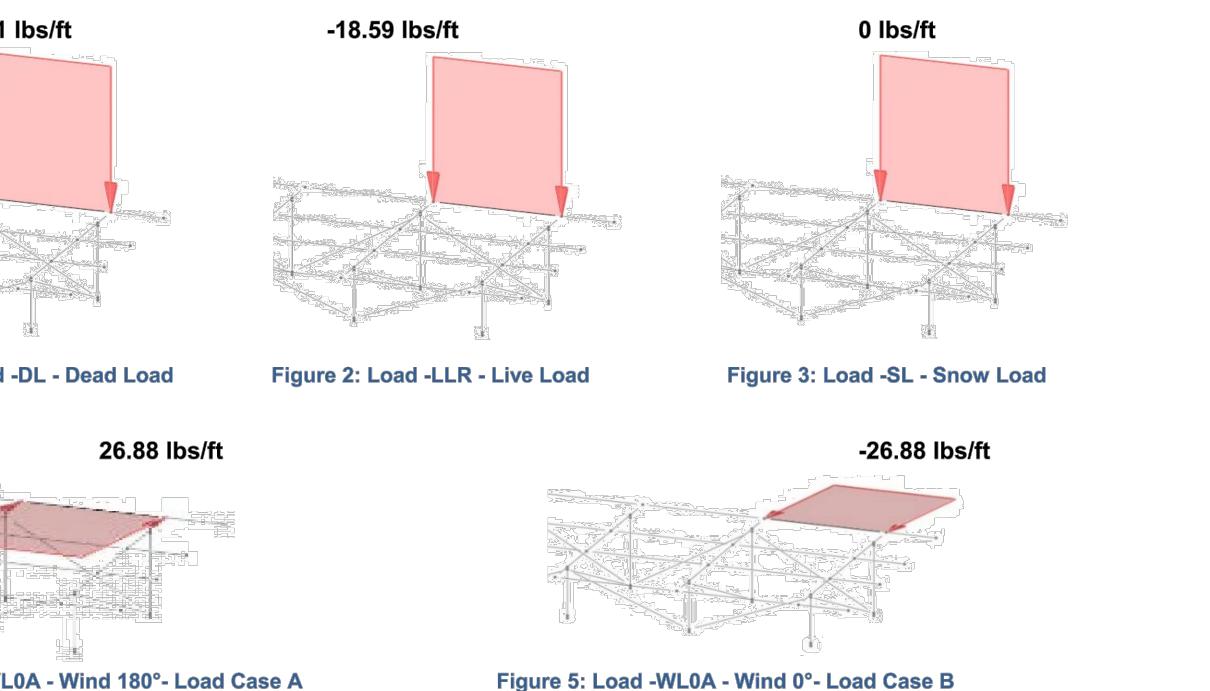


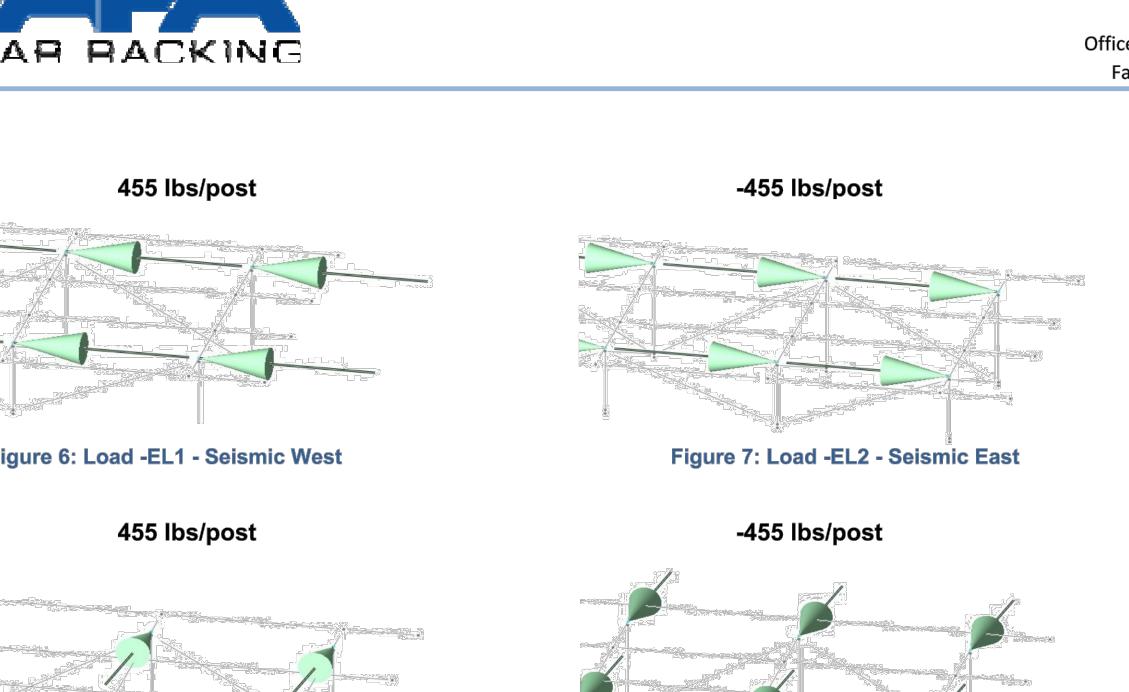
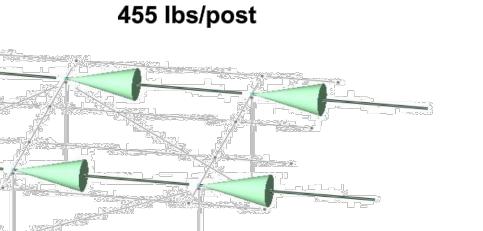
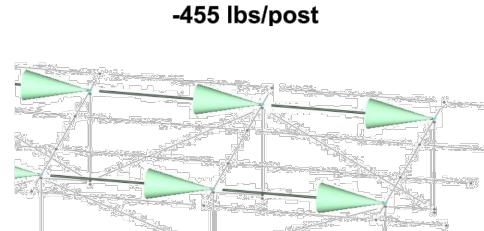
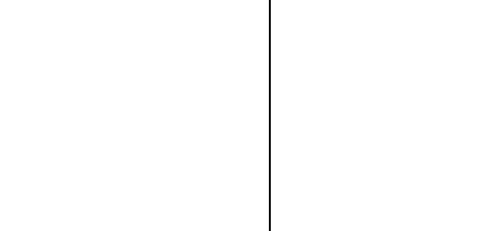
A1 | SINGLE CENTER RACK: PROFILE VIEW WITH SLOPED GROUND





| | | | | | |
|---|---|--|---|---|--|
| SOLAR PV GROUND MOUNT STRUCTURAL CALCULATIONS | APA SOLAR RACKING 20-345 County Road X, PO Box 326 Ridgeville Corners, OH 43555 Office: 419.267.5280 Fax: 419.267.5214 | APA SOLAR RACKING General Calculations General Dimensions Quantity of PV Modules, Vertically (Cartridge) $PV_O = 1$ PV Module Tilt $PV_T = 15^\circ$ PV Module Length $PV_L = 89.21 \text{ in}$ PV Module Width $PV_W = 44.65 \text{ in}$ PV Module Area $PV_A = PV_O \times PV_W = 27.66 \text{ ft}^2$ PV Module Weight $PV_W = 71.00 \text{ lbs}$ Force Resisting Members Quantity $M_0 = 2$ Vertical Section Flat Length (chord) $PV_{FL} = PV_L \times \cos(PV_T) = 7.43 \text{ ft}$ Vertical Section Profile Length (at tilt) $PV_{PW} = PV_W = 7.18 \text{ ft}$ Horizontal Width (at tilt) $PV_{PH} = PV_L \times \sin(PV_T) = 3.72 \text{ ft}$ Profile Height (at tilt) $PV_{PH} = PV_L \times \sin(PV_T) = 1.92 \text{ ft}$ Area Projected Vertically $PV_{AV} = PV_O \times PV_{PW} = 26.72 \text{ ft}^2$ Area Projected Horizontally $PV_{AH} = PV_{PH} \times PV_{PW} = 7.16 \text{ ft}^2$ | APA SOLAR RACKING 20-345 County Road X, PO Box 326 Ridgeville Corners, OH 43555 Office: 419.267.5280 Fax: 419.267.5214 | SNOW Snow loading (ASCE-16) Building details Roof type: Monoslope Width of roof: $W = 7.18 \text{ ft}$ Slope of roof: $\alpha = 15 \text{ deg}$ Ground snow load Ground snow load: $Pg = 0 \text{ lb/ft}^2$ Density of snow: $Y = 14 \text{ lb/ft}^3$ Terrain type: C (see Section 26.7) Exposure factor (Table 7-2) Thermal condition (Table 7-3) Thermal factor (Table 7-3) Risk category (Table 1-1) Risk factor (Table 7-4) Flat roof snow load (Section 7.3) Cold roof slope factor ($Ct > 1.0$) Roof surface type: Slippery Ventilation: Ventilated Thermal resistance (R -value): $R = 30$ Roof slope factor Fig 7-2c (dashed line): $Cs = 1.00$ Monoslope Sloped roof snow load (Cl.7.4): $ps = Cs \times Pg = 0 \text{ lb/ft}^2$ | APA SOLAR RACKING Seismic loading (ASCE-16) Site parameters Site class: D Mapped acceleration parameters (Section 11.4.1) at short period: $S_{05} = 3.73$ at 1 sec period: $S_{1} = 1.39$ Site coefficient/short period (Table 11.4-1): $F_a = 1$ at 1 sec period (Table 11.4-2): $F_v = 1.7$ Spectral response acceleration parameters (Section 11.4.4) at short period (Eq. 11.4-3): $S_{05} = 2.486667$ at 1 sec period (Eq. 11.4-4): $S_{1} = 1.575333$ Seismic design category Risk category (Table 1-5): I Seismic design category: E Approximate fundamental period Height above base to highest level of building: $h_b = 7.48434 \text{ ft}$ From Table 12.8-2: Structure type: All other systems Building period parameter Ct: $C_t = 0.02$ Building period parameter x: $x = 0.75$ Approximate fundamental period (Eq 12.8-7): $T_s = 0.090 \text{ sec}$ Building fundamental period (Section 12.8.2): $T = 0.090$ Long-period transition period: $T_1 = 8$ Seismic response coefficient Seismic force-resisting system (Table 12.2-1): G. CANTILEVERED COLUMN SYSTEMS DETAILED TO CONFORM TO THE REQUIRE 2. Steel ordinary cantilever column systems Response modification factor (Table 12.2-1): $R = 1.25$ Seismic importance factor (Table 1-5-2): $I_s = 1.00$ Seismic response coefficient (Section 12.8.1) Maximum ((Eq 12.8-3)) $C_{x,max} = 13.93$ |
| DESIGN CRITERIA: TITAN 15° TILT 0 PSF SNOW 101 MPH WIND, RISK CAT I, EX. C. ASCE-16 Allowable Stress Design (ASD) | | Dead Loading Force Resisting Member Weight $M_0 = 1.80 \text{ lbs/ft}$ Cartridge Weight per Member $PV_{LR} = PV_L / PV_O / M_0 = 35.5 \text{ lbs}$ Misc. Hardware Weight per Vertical Section $W_{05} = 5.00 \text{ lbs}$ Dead Load per Vertical Section $DL = (PV_{LR} \times PV_O + M_0 \times PV_W + M_0 \times PV_G + W_{05}) = 89.40 \text{ lbs}$ TD: Distributed Dead Load on Member $[DL] = DL / PV_O / M_0 / PV_W = 12.01 \text{ lbs/ft/member}$ | | Live Roof Loading Live Roof Pressure $LLR_p = 5.00 \text{ lbs/ft}$ Live Roof Load per Vertical Section $LLR = LLR_p / PV_O / M_0 / PV_W = 138.31 \text{ lbs/ft}$ RR: Distributed Live Roof Load on Member $[LLR] = LLR / PV_O / M_0 / PV_W = 18.59 \text{ lbs/ft/member}$ | |
|  | |  | |  | |

| APA SOLAR RACKING 20-345 County Road X, PO Box 326 Ridgeville Corners, OH 43555 Office: 419.267.5280 Fax: 419.267.5214 | APA SOLAR RACKING Wind loading (ASCE-16) Using the directional design method Wall/sign data Length of wall/sign: $B = 3.72 \text{ ft}$ Height of wall/sign: $S = 1.92 \text{ ft}$ Height to top of sign: $h = 5.42 \text{ ft}$ General wind load requirements Basic wind speed: $V = 101 \text{ mph}$ Risk category: I Velocity pressure exponent coeff (Table 26.6-1): $K_d = 0.85$ Exposure category (Cl.26.7.3): C Topography Topography factor not significant: $K_{st} = 1.00$ Velocity pressure Velocity pressure coefficient (T.29.3-1): $K_d = 0.85$ Velocity pressure: $q_0 = 0.00256 \times K_d \times K_{st} \times K_d \times V^2 \times 1 \text{ psf}/\text{mph}^2 = 18.84 \text{ psf}$ Area of sign: $A_s = B \times S = 7.16 \text{ ft}^2$ Ratio of solid area to gross area: $\epsilon = 1.00$ Wall/sign forces - Case A and B Force coefficient (Figure 29.4-1): $C_{f,A} = 1.78$ Resultant force: $F_{AV} = \max(16\text{psf}, q_0 \times G_f \times C_{f,A}) \times A_f = 0.2 \text{ kips}$ Distributed Loading: Wind Loading - Solid Freestanding Wall/Sign RR: Distributed Wind Load on Member $W_{LH1} = f_{PV}/PV_O/M_0/PV_W = 26.88 \text{ lbs/ft/member}$ | APA SOLAR RACKING 20-345 County Road X, PO Box 326 Ridgeville Corners, OH 43555 Office: 419.267.5280 Fax: 419.267.5214 | Load data - with ASD Combos (for reactions) GLOSSARY Load conditions <table border="1"> <thead> <tr> <th>Condition</th> <th>Description</th> <th>Comb.</th> <th>Category</th> </tr> </thead> <tbody> <tr> <td>DL</td> <td>Dead Load</td> <td>No</td> <td>DL</td> </tr> <tr> <td>LLR</td> <td>Live Roof Load</td> <td>No</td> <td>EQ</td> </tr> <tr> <td>SL</td> <td>Snow Load</td> <td>No</td> <td>SNOW</td> </tr> <tr> <td>WLH1</td> <td>Wind Horizontal At</td> <td>No</td> <td>WIND</td> </tr> <tr> <td>WLH2</td> <td>Wind Horizontal Away</td> <td>No</td> <td>WIND</td> </tr> <tr> <td>EL1</td> <td>Seismic Left</td> <td>No</td> <td>EQ</td> </tr> <tr> <td>EL2</td> <td>Seismic Right</td> <td>No</td> <td>EQ</td> </tr> <tr> <td>EL3</td> <td>Seismic North</td> <td>No</td> <td>EQ</td> </tr> <tr> <td>EL4</td> <td>Seismic South</td> <td>No</td> <td>EQ</td> </tr> <tr> <td>D1</td> <td>DL</td> <td>Yes</td> <td></td> </tr> <tr> <td>D2</td> <td>DL+LLR</td> <td>Yes</td> <td></td> </tr> <tr> <td>D3</td> <td>DL+SL</td> <td>Yes</td> <td></td> </tr> <tr> <td>D4</td> <td>DL+75SL</td> <td>Yes</td> <td></td> </tr> <tr> <td>D5</td> <td>DL+75LLR</td> <td>Yes</td> <td></td> </tr> <tr> <td>D6</td> <td>DL+6WLH1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D7</td> <td>DL+6WLH2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D8</td> <td>DL+7EL1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D9</td> <td>DL+7EL2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D10</td> <td>DL+7EL3</td> <td>Yes</td> <td></td> </tr> <tr> <td>D11</td> <td>DL+7EL4</td> <td>Yes</td> <td></td> </tr> <tr> <td>D12</td> <td>DL+75SL+0.45WLH1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D13</td> <td>DL+75SL+0.45WLH2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D14</td> <td>DL+75LLR+0.45WLH1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D15</td> <td>DL+75LLR+0.45WLH2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D16</td> <td>DL+75SL+0.525EL1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D17</td> <td>DL+75SL+0.525EL2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D18</td> <td>DL+75SL+0.525EL3</td> <td>Yes</td> <td></td> </tr> <tr> <td>D19</td> <td>DL+75SL+0.525EL4</td> <td>Yes</td> <td></td> </tr> <tr> <td>D20</td> <td>DL+75LLR+0.525EL1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D21</td> <td>DL+75LLR+0.525EL2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D22</td> <td>DL+75LLR+0.525EL3</td> <td>Yes</td> <td></td> </tr> <tr> <td>D23</td> <td>DL+75LLR+0.525EL4</td> <td>Yes</td> <td></td> </tr> <tr> <td>D24</td> <td>0.60+0.6WLH1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D25</td> <td>0.60+0.6WLH2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D26</td> <td>0.60L+0.7EL1</td> <td>Yes</td> <td></td> </tr> <tr> <td>D27</td> <td>0.60L+0.7EL2</td> <td>Yes</td> <td></td> </tr> <tr> <td>D28</td> <td>0.60L+0.7EL3</td> <td>Yes</td> <td></td> </tr> <tr> <td>D29</td> <td>0.60L+0.7EL4</td> <td>Yes</td> <td></td> </tr> </tbody> </table> | Condition | Description | Comb. | Category | DL | Dead Load | No | DL | LLR | Live Roof Load | No | EQ | SL | Snow Load | No | SNOW | WLH1 | Wind Horizontal At | No | WIND | WLH2 | Wind Horizontal Away | No | WIND | EL1 | Seismic Left | No | EQ | EL2 | Seismic Right | No | EQ | EL3 | Seismic North | No | EQ | EL4 | Seismic South | No | EQ | D1 | DL | Yes | | D2 | DL+LLR | Yes | | D3 | DL+SL | Yes | | D4 | DL+75SL | Yes | | D5 | DL+75LLR | Yes | | D6 | DL+6WLH1 | Yes | | D7 | DL+6WLH2 | Yes | | D8 | DL+7EL1 | Yes | | D9 | DL+7EL2 | Yes | | D10 | DL+7EL3 | Yes | | D11 | DL+7EL4 | Yes | | D12 | DL+75SL+0.45WLH1 | Yes | | D13 | DL+75SL+0.45WLH2 | Yes | | D14 | DL+75LLR+0.45WLH1 | Yes | | D15 | DL+75LLR+0.45WLH2 | Yes | | D16 | DL+75SL+0.525EL1 | Yes | | D17 | DL+75SL+0.525EL2 | Yes | | D18 | DL+75SL+0.525EL3 | Yes | | D19 | DL+75SL+0.525EL4 | Yes | | D20 | DL+75LLR+0.525EL1 | Yes | | D21 | DL+75LLR+0.525EL2 | Yes | | D22 | DL+75LLR+0.525EL3 | Yes | | D23 | DL+75LLR+0.525EL4 | Yes | | D24 | 0.60+0.6WLH1 | Yes | | D25 | 0.60+0.6WLH2 | Yes | | D26 | 0.60L+0.7EL1 | Yes | | D27 | 0.60L+0.7EL2 | Yes | | D28 | 0.60L+0.7EL3 | Yes | | D29 | 0.60L+0.7EL4 | Yes | | Load on nodes <table border="1"> <thead> <tr> <th>Condition</th> <th>Node</th> <th>FX</th> <th>FY</th> <th>FZ</th> <th>MX</th> <th>MY</th> <th>MZ</th> </tr> </thead> <tbody> <tr> <td>EL1</td> <td>153</td> <td>455.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>EL2</td> <td>153</td> <td>-455.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>EL3</td> <td>153</td> <td>0.00</td> <td>0.00</td> <td>455.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> <tr> <td>EL4</td> <td>153</td> <td>0.00</td> <td>0.00</td> <td>-455.00</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> </tr> </tbody> </table> | Condition | Node | FX | FY | FZ | MX | MY | MZ | EL1 | 153 | 455.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | EL2 | 153 | -455.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | EL3 | 153 | 0.00 | 0.00 | 455.00 | 0.00 | 0.00 | 0.00 | EL4 | 153 | 0.00 | 0.00 | -455.00 | 0.00 | 0.00 | 0.00 |
|---|--|---|--|-----------|-------------|-------|----------|------|-----------|----|-------|-----|----------------|----|----|--------|-----------|------|------|--------|--------------------|-----|------|------|----------------------|--------|------|-----|--------------|-----|----|-----|---------------|------|------|------|---------------|--------|-----|------|---------------|----|-------|-------|------|-----|--------|-----|--------|-----|---|--------|--------|------|-----|--------|---------|---|--|----|----------|-----|--|----|----------|-----|--|----|----------|-----|--|----|---------|-----|--|----|---------|-----|--|-----|---------|-----|--|-----|---------|-----|--|-----|------------------|-----|--|-----|------------------|-----|--|-----|-------------------|-----|--|-----|-------------------|-----|--|-----|------------------|-----|--|-----|------------------|-----|--|-----|------------------|-----|--|-----|------------------|-----|--|-----|-------------------|-----|--|-----|-------------------|-----|--|-----|-------------------|-----|--|-----|-------------------|-----|--|-----|--------------|-----|--|-----|--------------|-----|--|-----|--------------|-----|--|-----|--------------|-----|--|-----|--------------|-----|--|-----|--------------|-----|--|---|-----------|------|----|----|----|----|----|----|-----|-----|--------|------|------|------|------|------|-----|-----|---------|------|------|------|------|------|-----|-----|------|------|--------|------|------|------|-----|-----|------|------|---------|------|------|------|
| Condition | Description | Comb. | Category | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DL | Dead Load | No | DL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLR | Live Roof Load | No | EQ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SL | Snow Load | No | SNOW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WLH1 | Wind Horizontal At | No | WIND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WLH2 | Wind Horizontal Away | No | WIND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL1 | Seismic Left | No | EQ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL2 | Seismic Right | No | EQ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL3 | Seismic North | No | EQ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL4 | Seismic South | No | EQ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D1 | DL | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D2 | DL+LLR | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D3 | DL+SL | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D4 | DL+75SL | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D5 | DL+75LLR | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D6 | DL+6WLH1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D7 | DL+6WLH2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D8 | DL+7EL1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D9 | DL+7EL2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D10 | DL+7EL3 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D11 | DL+7EL4 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D12 | DL+75SL+0.45WLH1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D13 | DL+75SL+0.45WLH2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D14 | DL+75LLR+0.45WLH1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D15 | DL+75LLR+0.45WLH2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D16 | DL+75SL+0.525EL1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D17 | DL+75SL+0.525EL2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D18 | DL+75SL+0.525EL3 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D19 | DL+75SL+0.525EL4 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D20 | DL+75LLR+0.525EL1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D21 | DL+75LLR+0.525EL2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D22 | DL+75LLR+0.525EL3 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D23 | DL+75LLR+0.525EL4 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D24 | 0.60+0.6WLH1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D25 | 0.60+0.6WLH2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D26 | 0.60L+0.7EL1 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D27 | 0.60L+0.7EL2 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D28 | 0.60L+0.7EL3 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D29 | 0.60L+0.7EL4 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Condition | Node | FX | FY | FZ | MX | MY | MZ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL1 | 153 | 455.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL2 | 153 | -455.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL3 | 153 | 0.00 | 0.00 | 455.00 | 0.00 | 0.00 | 0.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EL4 | 153 | 0.00 | 0.00 | -455.00 | 0.00 | 0.00 | 0.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Distributed Forces on Members  | | <table border="1"> <thead> <tr> <th>Condition</th> <th>Member</th> <th>Dir</th> <th>Val1</th> <th>Val2</th> <th>Dist1</th> <th>%</th> <th>Dist2</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>DL</td> <td>57</td> <td>Y</td> <td>-12.01</td> <td>-12.01</td> <td>0.00</td> <td>Yes</td> <td>100.00</td> <td>Yes</td> </tr> <tr> <td>LLR</td> <td>57</td> <td>Y</td> <td>-18.59</td> <td>-18.59</td> <td>0.00</td> <td>Yes</td> <td>100.00</td> <td>Yes</td> </tr> <tr> <td>SL</td> <td>57</td> <td>Y</td> <td>0.00</td> <td>0.00</td> <td>0.00</td> <td>Yes</td> <td>100.00</td> <td>Yes</td> </tr> <tr> <td>WLH1</td> <td>57</td> <td>Z</td> <td>26.88</td> <td>26.88</td> <td>0.00</td> <td>Yes</td> <td>100.00</td> <td>Yes</td> </tr> <tr> <td>WLH2</td> <td>57</td> <td>Z</td> <td>-26.88</td> <td>-26.88</td> <td>0.00</td> <td>Yes</td> <td>100.00</td> <td>Yes</td> </tr> </tbody> </table> | | Condition | Member | Dir | Val1 | Val2 | Dist1 | % | Dist2 | % | DL | 57 | Y | -12.01 | -12.01 | 0.00 | Yes | 100.00 | Yes | LLR | 57 | Y | -18.59 | -18.59 | 0.00 | Yes | 100.00 | Yes | SL | 57 | Y | 0.00 | 0.00 | 0.00 | Yes | 100.00 | Yes | WLH1 | 57 | Z | 26.88 | 26.88 | 0.00 | Yes | 100.00 | Yes | WLH2 | 57 | Z | -26.88 | -26.88 | 0.00 | Yes | 100.00 | Yes |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Condition | Member | Dir | Val1 | Val2 | Dist1 | % | Dist2 | % | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DL | 57 | Y | -12.01 | -12.01 | 0.00 | Yes | 100.00 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LLR | 57 | Y | -18.59 | -18.59 | 0.00 | Yes | 100.00 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SL | 57 | Y | 0.00 | 0.00 | 0.00 | Yes | 100.00 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WLH1 | 57 | Z | 26.88 | 26.88 | 0.00 | Yes | 100.00 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WLH2 | 57 | Z | -26.88 | -26.88 | 0.00 | Yes | 100.00 | Yes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| APA SOLAR RACKING 20-345 County Road X, PO Box 326 Ridgeville Corners, OH 43555 Office: 419.267.5280 Fax: 419.267.5214 |  |  |  |  | |
| Figure 6: Load-EL1 - Seismic West  | | Figure 7: Load-EL2 - Seismic East  | | Figure 8: Load-EL3 - Seismic North  | |
| Figure 9: Load-EL4 - Seismic South  | | | | | |

