# PHOTOVOLTAIC GROUND MOUNT SYSTEM

## 900 MODULES-GROUND MOUNTED - 270.00 kW DC, 5.0 MWh

**SYSTEM SUMMARY:**
(NEW) 900 - RECOM RCM-300-6PA (300W) MODULES
(NEW) 900 - TIGO TS4-A-O OPTIMIZERS
(NEW) 2 - DC COMBINER BOX
(NEW) 3 - 5MWh STORAGE BATTERIES

### DESIGN CRITERIA:

| | |
|---|---|
| MOUNT TYPE: | GROUND MOUNT |
| SNOW LOAD : | 0 PSF |
| WIND SPEED : | 130 MPH |
| WIND EXPOSURE: | C |
| RISK CATEGORY: | I |
| COORDINATE: | 34°05'26.0"N 117°37'18.9"W |

### GOVERNING CODES:

2022 CALIFORNIA ELECTRICAL CODE (CEC)
2022 CALIFORNIA BUILDING CODE (CBC)
2022 CALIFORNIA RESIDENTIAL CODE (CRC)
2022 CALIFORNIA EXISTING BUILDING CODE (CEBC)
2022 CALIFORNIA PLUMBING CODE (CPC)
2022 CALIFORNIA MECHANICAL CODE (CMC)
2022 CALIFORNIA GREEN BUILDING CODE (CGBC)
2022 CALIFORNIA HISTORICAL BUILDING CODE (CHBC)
2022 CALIFORNIA FIRE CODE (CFC)
2022 CALIFORNIA ENERGY CODE (CEC)

### SHEET INDEX


| | |
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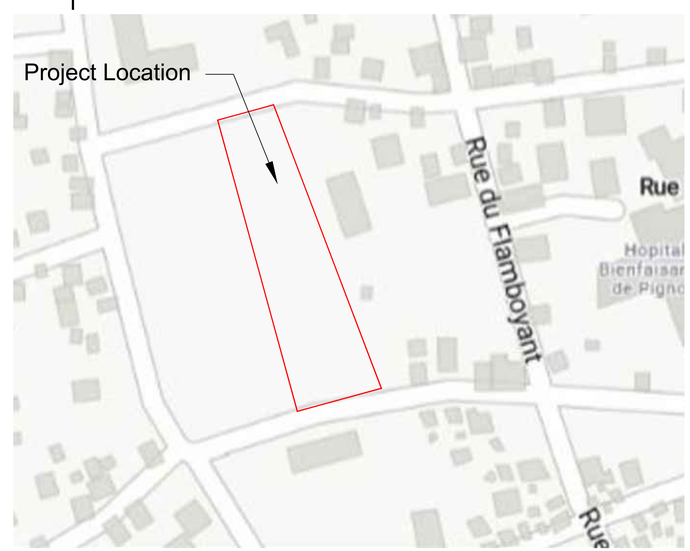
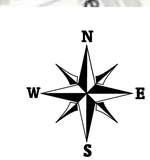
GENERAL NOTES

1. ALL WORK TO COMPLY WITH CEC ARTICLE 690.
2. REMOVAL OF A UTILITY-INTERACTIVE INVERTER OR OTHER EQUIPMENT SHALL NOT DISCONNECT THE BUILDING CONNECTION BETWEEN THE GROUNDING ELECTRODE CONDUCTOR AND THE PV SOURCE AND/OR OUTPUT CIRCUIT GROUNDED CONDUCTOR.
3. ALL PV SYSTEM COMPONENTS SHALL BE LISTED BY A RECOGNIZED TESTING AGENCY.
4. WIRING MATERIALS SHALL COMPLY WITH MAXIMUM CONTINUOUS CURRENT OUTPUT AT 25°C; WIRE SHALL BE WET RATED AT 90°C.
5. EXPOSED PHOTOVOLTAIC SYSTEM CONDUCTORS ON THE GROUND WILL BE USE-2 OR PV TYPE WIRE.
6. ALL EXTERIOR CONDUIT, FITTINGS, AND BOXES SHALL BE RAIN-TIGHT AND APPROVED FOR USE IN WET LOCATIONS (CEC 314.15).
7. ALL METALLIC RACEWAYS AND EQUIPMENT SHALL BE BONDED AND ELECTRICALLY CONTINUOUS (CEC 250.90, 250.96).
8. FOR UNGROUNDED SYSTEMS, THE PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUITS SHALL BE PROVIDED WITH A GROUND-FAULT PROTECTION DEVICE OR SYSTEM THAT DETECTS A GROUND FAULT, INDICATES THAT FAULT HAS OCCURRED, AND AUTOMATICALLY DISCONNECTS ALL CONDUCTORS OR CAUSES THE INVERTER TO AUTOMATICALLY CEASE SUPPLYING POWER TO OUTPUT CIRCUITS.
9. ANY REQUIRED GROUNDING ELECTRODE CONDUCTOR WILL BE CONTINUOUS, EXCEPT FOR SPLICES OR JOINTS AT BUSBAR'S WITHIN LISTED EQUIPMENT (CEC 250.64C).
10. ALL PV MODULES AND ASSOCIATED EQUIPMENT SHALL BE PROTECTED FROM ANY PHYSICAL DAMAGE.
11. ALL FIELD-INSTALLED JUNCTION, PULL, AND OUTLET BOXES LOCATED BEHIND MODULES SHALL BE ACCESSIBLE DIRECTLY OR BY DISPLACEMENT OF A MODULE SECURED BY REMOVABLE FASTENERS.
12. FOR GROUNDED SYSTEMS, THE INVERTER IS EQUIPPED WITH GROUND FAULT PROTECTION AND A GFI FUSE PORT FOR GROUND FAULT INDICATION
13. THE INSTALLED SOLAR SYSTEM HAS A DISTRIBUTION WEIGTH OF LESS THAN 4 PSF
14. THE CONCENTRATED LOAD FOR EACH VERTICAL SUPPORT IS LESS THAN 45 LBS
15. AC DISCONNECT IS A "KNIFE BLADE" TYPE DISCONNECT.
16. THE WORKING CLEARANCES AROUND THE EXISTING ELECTRICAL EQUIPMENT AS WELL AS THE NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH CEC 110.26
17. THE PHOTOVOLTAIC INVERTER WILL BE LISTED AS UL 1741 COMPLIANT

1 AERIAL PHOTO
PV-0 SCALE: NTS




2 VICINITY MAP
PV-0 SCALE: NTS




ENGINEERING FIRM


THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868


PROJECT NAME

**L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT**

CONTRACTOR OF RECORD

APPROVED BY:

DATE: 6/19/2026

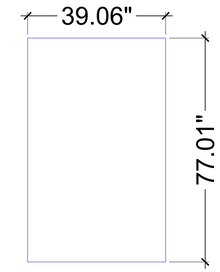
SHEET NAME
COVER SHEET

SHEET SIZE
ARCH D
24" X 36"

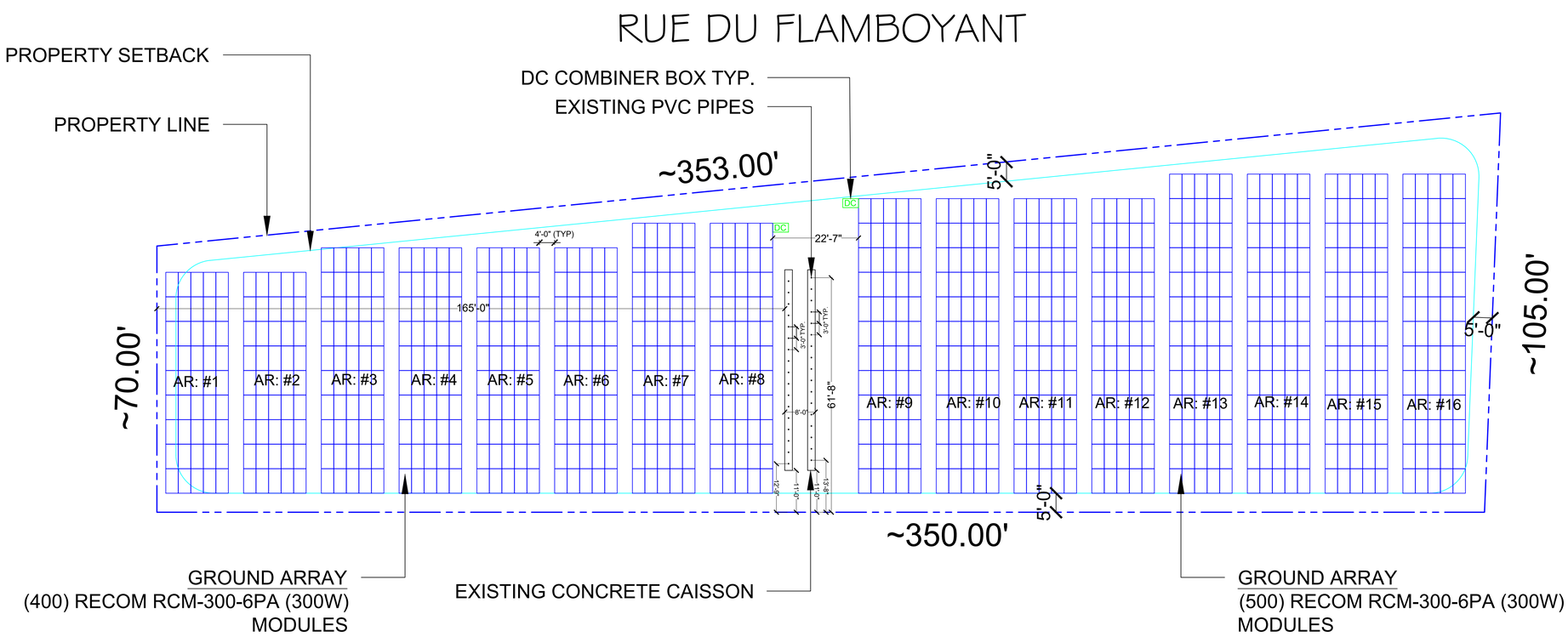
SHEET NUMBER
PV-0

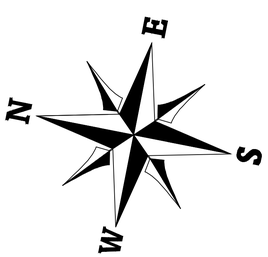
| SYSTEM SIZE: 270.00 KW DC | |
|---|---|
| 900 | RECOM RCM-300-6PA 300W MODULES |

| ARRAY TILT (DEG) | AZIMUTH (DEG) | # OF MODULES |
|---|---|---|
| 15° | 191° | 900 |




RECOM RCM-300-6PA
300W MODULE




**NOTES:**

1. Each solar module is to have its own Tigo TS4-A-O DC Series Optimizer (or equivalent installed on back).
2. Each string shall consist of 20 modules and be fused at Combiner box with 15 Amp fuse.
3. Solar strings runs are to be as short as practically possible.
4. Wiring to be installed underground as much as practically possible.

## 1 SITE PLAN

SCALE: 1" = 16'-0"

ENGINEERING FIRM

THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868

PROJECT NAME

**L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT**

CONTRACTOR OF RECORD

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
JOSEPH D. THINN
E-21093
EXP. 3/31/26
ELECTRICAL
STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME

SITE PLAN

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

PV-1

**SYSTEM SIZE: 270.00 KW DC**

| | |
|---|---|
| 900 | RECOM RCM-300-6PA 300W MODULES |

| ARRAY TILT (DEG) | AZIMUTH (DEG) | # OF MODULES |
|---|---|---|
| 15° | 191° | 900 |

RUE DU FLAMBOYANT

**GROUND ARRAY #4**
(50) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #3**
(50) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #2**
(45) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #1**
(45) RECOM RCM-300-6PA (300W) MODULES

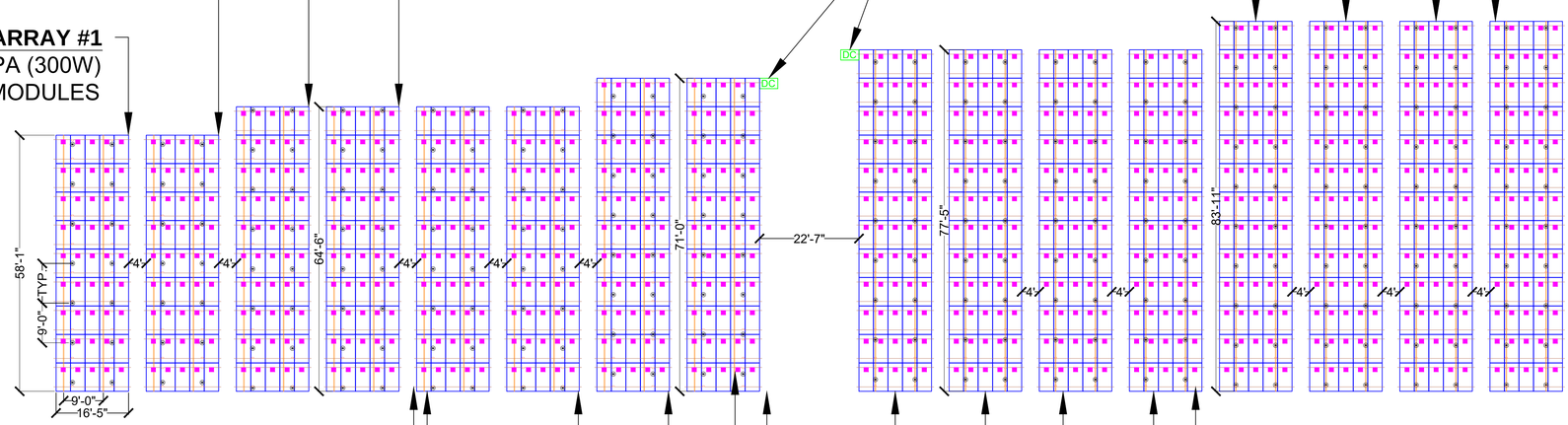
**GROUND ARRAY #13**
(65) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #14**
(65) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #15**
(65) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #16**
(65) RECOM RCM-300-6PA (300W) MODULES

(NEW) (2) DC COMBINER BOXES




EXISTING STREET

RAIL CONNECTOR

**GROUND ARRAY #5**
(50) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #6**
(50) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #7**
(55) RECOM RCM-300-6PA (300W) MODULES

(900) TIGO TS4-A-O OPTIMIZERS TOTAL

**GROUND ARRAY #8**
(55) RECOM RCM-300-6PA (300W) MODULES

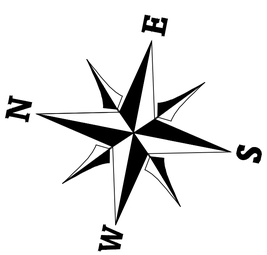
IRONRIDGE XR-1000

**GROUND ARRAY #12**
(60) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #11**
(60) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #10**
(60) RECOM RCM-300-6PA (300W) MODULES

**GROUND ARRAY #9**
(60) RECOM RCM-300-6PA (300W) MODULES




1 LAYOUT PLAN
SCALE: 1" = 16'-0"

ENGINEERING FIRM

THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868

PROJECT NAME

**L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT**

CONTRACTOR OF RECORD

APPROVED BY:

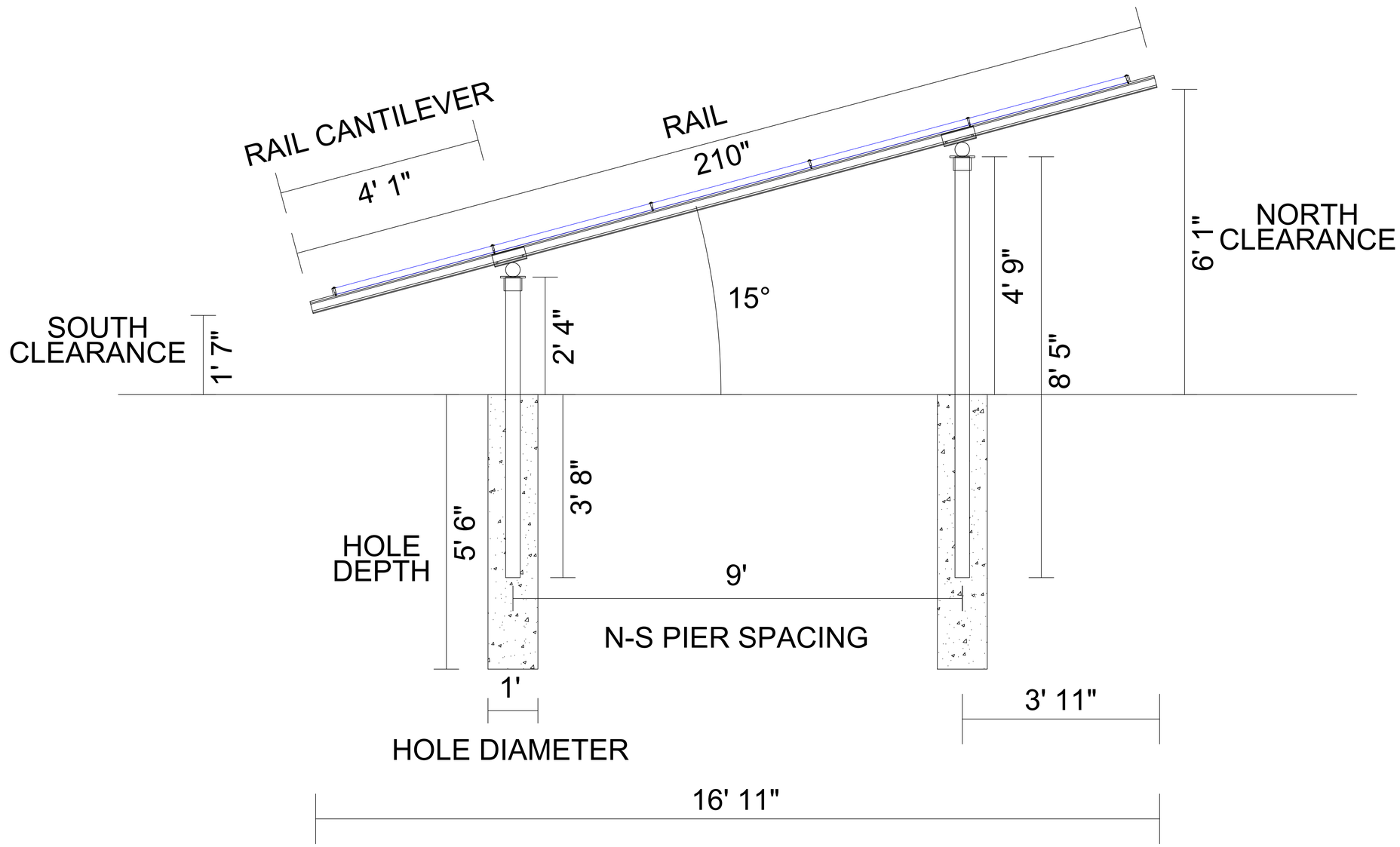
LICENSED PROFESSIONAL ENGINEER
JOSEPH D. THINN
E-21093
EXP. 3/31/25
ELECTRICAL
STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME
LAYOUT PLAN

SHEET SIZE
ARCH D
24" X 36"

SHEET NUMBER
PV-2




1 ATTACHMENT DETAIL

SCALE: NTS

ENGINEERING FIRM

THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868

PROJECT NAME

**L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT**

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APPROVED BY:

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JOSEPH D. THINN
E-21093
EXP. 3/31/25
ELECTRICAL
STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME

ATTACHMENT DETAIL

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

PV-3

| Project Details | | | |
|---|---|---|---|
| **ID** | 1472569 | **Name** | Pignon |
| **Location** | Pignon, Nord Department, HT | **Module** | Custom Panels: RECOM: RCM-300-6PA |
| **Total modules** | 900 | **Tilt** | 15 degrees |
| **Total watts** | 270.00 kW | **Piers** | 276 |
| **Foundation type** | Concrete | **Foundation info** | 44.16 cu yd |
| **Pipe diameter** | 3" | **Total pipe length** | 4315' 1" |

**Sub array Details**

| Rows | Columns | # Arrays | Size | Rail type | Rails per column | Diagonal bracing | Piers/array | Edge clearance | E/W pier span | Total south piers | Total north piers | Total cross pipes | Pipe cantilever | Total pipe length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 9 | 1 | 58' (EW) x 16' 7" (NS) | XR1000 | 2 | false | 14 | 1' 7" (S); 6' 1" (N) | 9' | 7 (6') | 7 (8' 5") | 2 (58') | 2' | 217' 2" |
| 5 | 9 | 2 | 58' (EW) x 16' 7" (NS) | XR1000 | 2 | false | 14 | 1' 7" (S); 6' 1" (N) | 9' | 7 (6') | 7 (8' 5") | 2 (58') | 2' | 217' 2" |
| 5 | 10 | 3 | 64' 5" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 16 | 1' 7" (S); 6' 1" (N) | 9' | 8 (6') | 8 (8' 5") | 2 (64' 5") | 9" | 244' 6" |
| 5 | 10 | 4 | 64' 5" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 16 | 1' 7" (S); 6' 1" (N) | 9' | 8 (6') | 8 (8' 5") | 2 (64' 5") | 9" | 244' 6" |
| 5 | 10 | 5 | 64' 5" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 16 | 1' 7" (S); 6' 1" (N) | 9' | 8 (6') | 8 (8' 5") | 2 (64' 5") | 9" | 244' 6" |
| 5 | 10 | 6 | 64' 5" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 16 | 1' 7" (S); 6' 1" (N) | 9' | 8 (6') | 8 (8' 5") | 2 (64' 5") | 9" | 244' 6" |
| 5 | 11 | 7 | 70' 11" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 16 | 1' 7" (S); 6' 1" (N) | 9' | 8 (6') | 8 (8' 5") | 2 (70' 11") | 3' 11" | 257' 5" |
| 5 | 11 | 8 | 70' 11" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 16 | 1' 7" (S); 6' 1" (N) | 9' | 8 (6') | 8 (8' 5") | 2 (70' 11") | 3' 11" | 257' 5" |
| 5 | 12 | 9 | 77' 4" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 18 | 1' 7" (S); 6' 1" (N) | 9' | 9 (6') | 9 (8' 5") | 2 (77' 4") | 2' 8" | 284' 9" |
| 5 | 12 | 10 | 77' 4" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 18 | 1' 7" (S); 6' 1" (N) | 9' | 9 (6') | 9 (8' 5") | 2 (77' 4") | 2' 8" | 284' 9" |
| 5 | 12 | 11 | 77' 4" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 18 | 1' 7" (S); 6' 1" (N) | 9' | 9 (6') | 9 (8' 5") | 2 (77' 4") | 2' 8" | 284' 9" |
| 5 | 12 | 12 | 77' 4" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 18 | 1' 7" (S); 6' 1" (N) | 9' | 9 (6') | 9 (8' 5") | 2 (77' 4") | 2' 8" | 284' 9" |
| 5 | 13 | 13 | 83' 10" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 20 | 1' 7" (S); 6' 1" (N) | 9' | 10 (6') | 10 (8' 5") | 2 (83' 10") | 1' 5" | 312' 2" |
| 5 | 13 | 14 | 83' 10" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 20 | 1' 7" (S); 6' 1" (N) | 9' | 10 (6') | 10 (8' 5") | 2 (83' 10") | 1' 5" | 312' 2" |
| 5 | 13 | 15 | 83' 10" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 20 | 1' 7" (S); 6' 1" (N) | 9' | 10 (6') | 10 (8' 5") | 2 (83' 10") | 1' 5" | 312' 2" |
| 5 | 13 | 16 | 83' 10" (EW) x 16' 7" (NS) | XR1000 | 2 | false | 20 | 1' 7" (S); 6' 1" (N) | 9' | 10 (6') | 10 (8' 5") | 2 (83' 10") | 1' 5" | 312' 2" |


ENGINEERING FIRM

THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868


PROJECT NAME

**L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT**

CONTRACTOR OF RECORD

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
JOSEPH D. THINN
E-21093
EXP. 3/31/25
ELECTRICAL
STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME

PIPE LENGTH CALCULATION

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

PV-4

## Bill of Materials

| Part | Spares | Qty | MSRP | Total |
|---|---|---|---|---|
| **Rails** | | | | |
| XR-1000-210M<br>XR-1000, 210" (17' 6") Mill | 0 | 360 | $240.03 | $86,410.80 |
| **Clamps & Grounding** | | | | |
| UFO-CL-01-A1<br>Universal Module Clamp, Clear | 0 | 1440 | $6.73 | $9,691.20 |
| UFO-END-01-A1<br>End Fastening Object (End Clamp, 30-40mm), Mill | 0 | 720 | $8.90 | $6,408.00 |
| XR-LUG-03-A1<br>Grounding Lug, Low Profile | 0 | 16 | $12.26 | $196.16 |
| **Substructure** | | | | |
| 70-0300-SGA<br>SGA Top Cap at 3" | 0 | 276 | $127.73 | $35,253.48 |
| GM-BRC3-01-M1<br>Ground Mount Bonded Rail Connector - 3" | 0 | 720 | $33.13 | $23,853.60 |

| | |
|---|---|
| Total MSRP | **$161,813.24** |
| Discount ( 0.0% ) | **($0.00)** |
| Total Price | **$161,813.24** |
| $/Watt | **$0.599** |
| Weight | **8,571.7 lbs** |

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E-21093
EXP. 3/31/25
ELECTRICAL
STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME

BILL OF MATERIALS

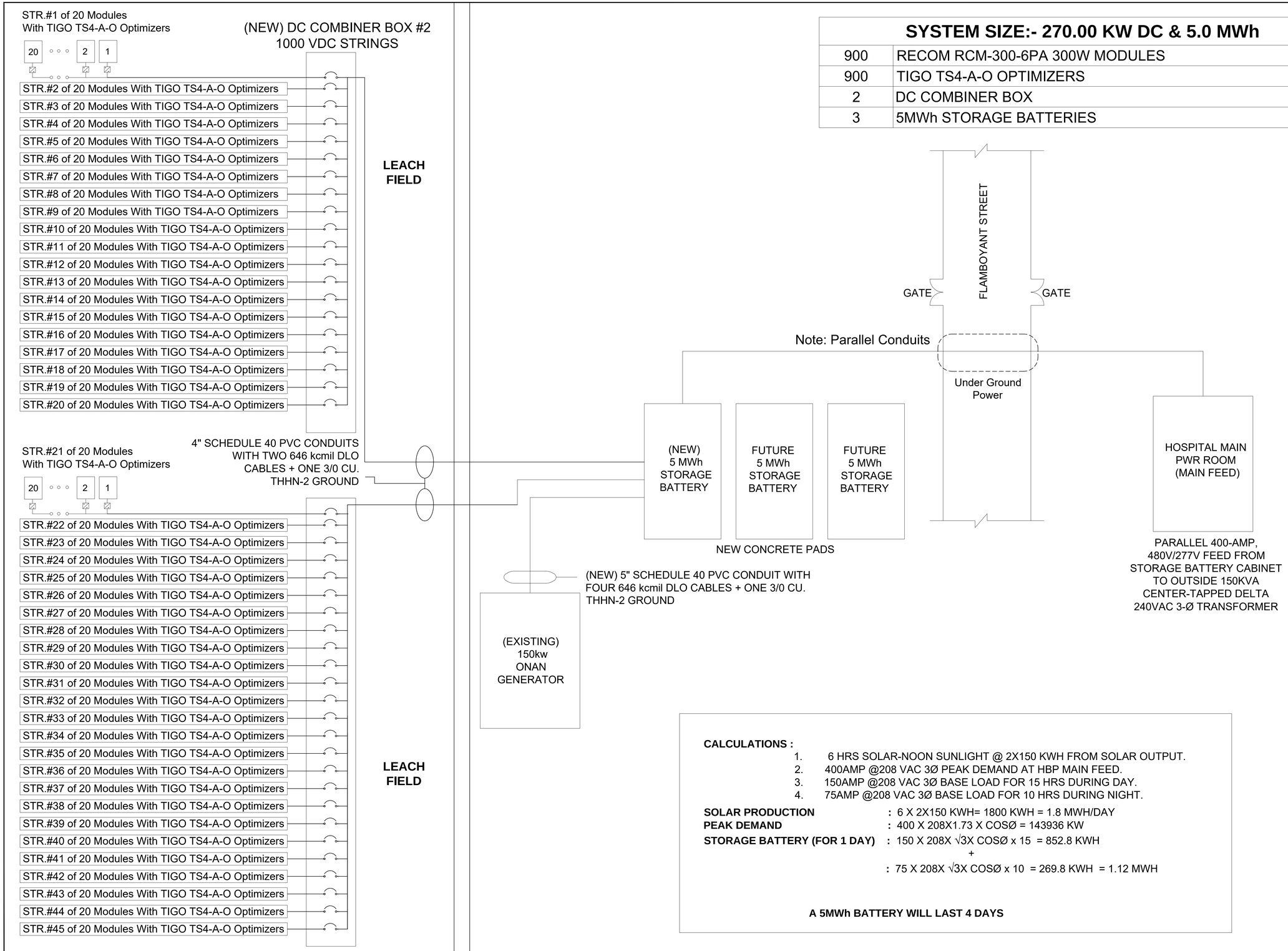
SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

PV-4.1

| SYSTEM SIZE:- 270.00 KW DC & 5.0 MWh | |
|---|---|
| 900 | RECOM RCM-300-6PA 300W MODULES |
| 900 | TIGO TS4-A-O OPTIMIZERS |
| 2 | DC COMBINER BOX |
| 3 | 5MWh STORAGE BATTERIES |




**CALCULATIONS :**

1. 6 HRS SOLAR-NOON SUNLIGHT @ 2X150 KWH FROM SOLAR OUTPUT.
2. 400AMP @208 VAC 3Ø PEAK DEMAND AT HBP MAIN FEED.
3. 150AMP @208 VAC 3Ø BASE LOAD FOR 15 HRS DURING DAY.
4. 75AMP @208 VAC 3Ø BASE LOAD FOR 10 HRS DURING NIGHT.

**SOLAR PRODUCTION** : 6 X 2X150 KWH= 1800 KWH = 1.8 MWH/DAY

**PEAK DEMAND** : 400 X 208X1.73 X COSØ = 143936 KW

**STORAGE BATTERY (FOR 1 DAY)** : 150 X 208X $\sqrt{3}$X COSØ x 15 = 852.8 KWH

+

: 75 X 208X $\sqrt{3}$X COSØ x 10 = 269.8 KWH = 1.12 MWH

**A 5MWh BATTERY WILL LAST 4 DAYS**

ENGINEERING FIRM

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CONTRACTOR OF RECORD

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER JOSEPH D. THINN E-21093 EXP. 3/31/25 ELECTRICAL STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME

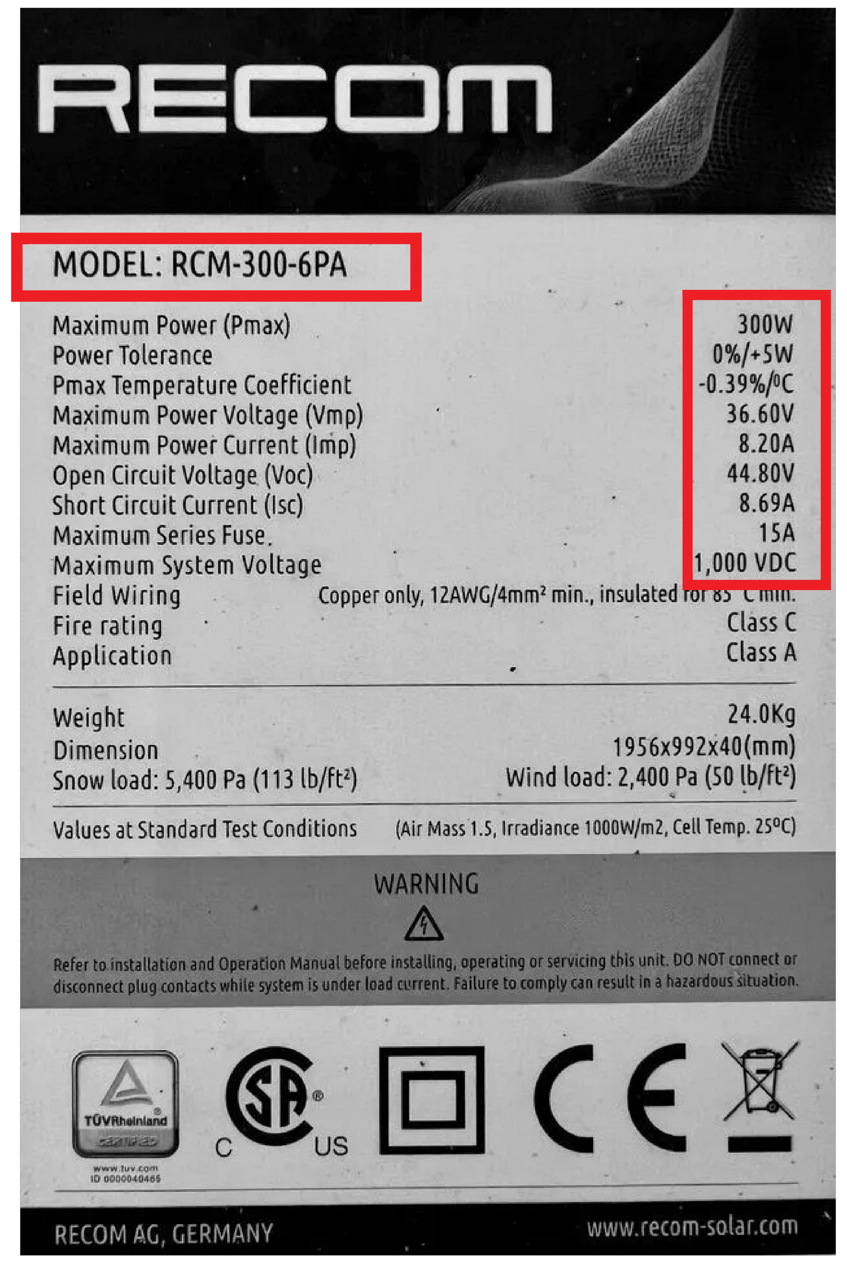
ELECTRICAL LINE DIAGRAM

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

PV-5




Datasheet

IRONRIDGE

Ground Mount System

## All-Terrain Mounting

The IronRidge Ground Mount System combines our XR100 or XR1000 rails with locally-sourced steel pipes or mechanical tubing, to create a cost-effective structure capable of handling any site or terrain challenge.

Installation is simple with only a few structural components and no drilling, welding, or heavy machinery required. In addition, the system works with a variety of foundation options—including concrete piers, ground screws, helical or driven piles, and above-ground ballast blocks.

**Rugged Construction**
Engineered steel and aluminum components ensure durability.

**PE Certified**
Pre-stamped engineering letters available in most states.

**UL 2703 Listed System**
Meets newest effective UL 2703 standard.

**Design Software**
Online tool generates engineering values and bill of materials.

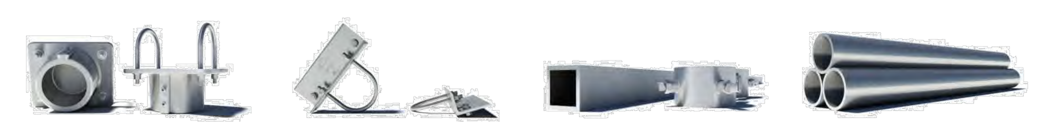
**Flexible Architecture**
Multiple foundation and array configuration options.

**25-Year Warranty**
Products guaranteed to be free of impairing defects.

Datasheet

**360° Product Tour**
Visit ironridge.com

### Substructure



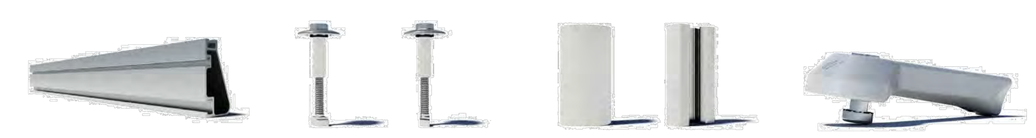
**Top Caps**
Connect vertical and cross pipes.

**Bonded Rail Connectors**
Attach and bond Rail Assembly to cross pipes.

**Diagonal Braces**
Optional Brace provides additional support.

**Cross Pipe & Piers**
Steel pipes or mechanical tubing for substructure.

### Rail Assembly



**XR100/XR1000 Rails**
Curved rails increase spanning capabilities.

**UFOs**
Universal Fastening Objects bond modules to rails.

**Stopper Sleeves**
Snap onto the UFO to turn into a bonded end clamp.

**CAMO**
Bond modules to rails while staying completely hidden.

### Resources

**Design Assistant**
Go from rough layout to fully engineered system. For free.
Go to ironridge.com/design

**NABCEP Certified Training**
Earn free continuing education credits, while learning more about our systems.
Go to ironridge.com/training

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Tech Brief

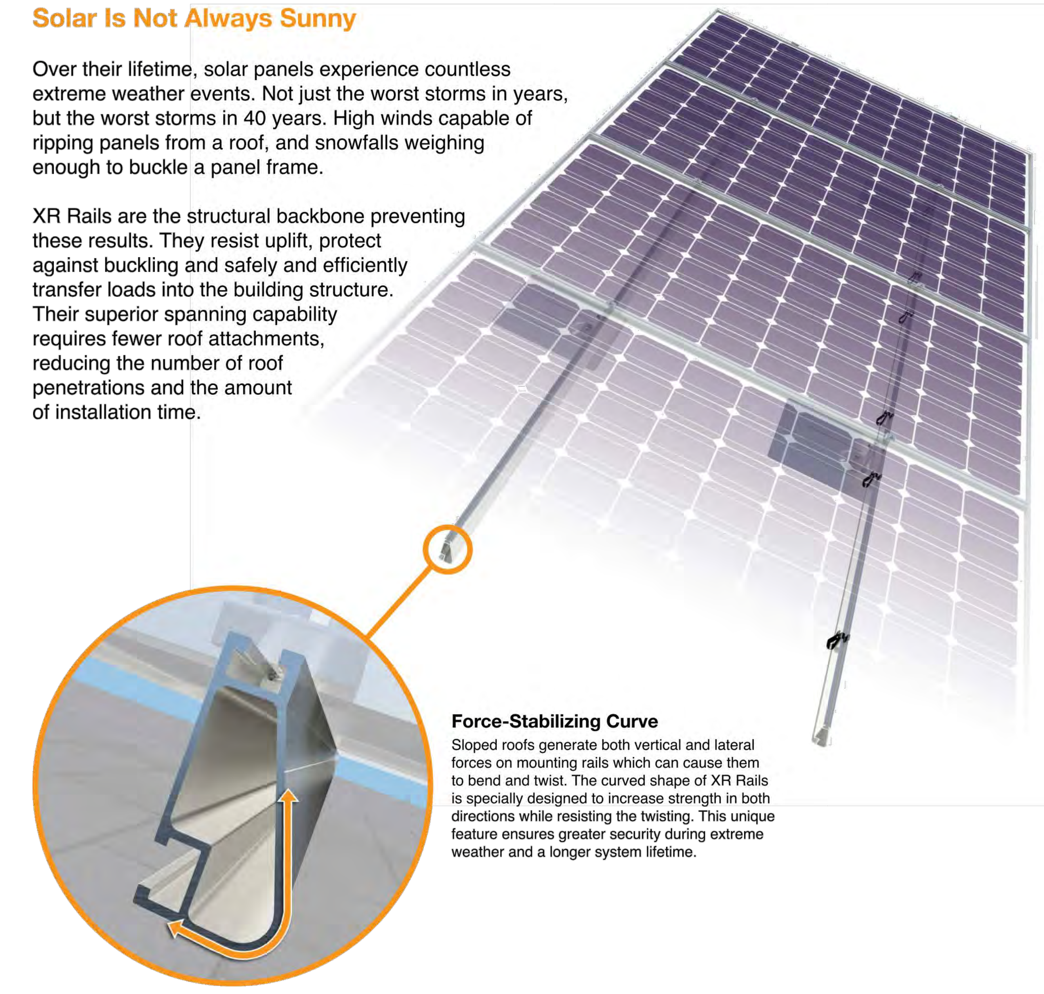
IRONRIDGE

XR Rail Family

## Solar Is Not Always Sunny

Over their lifetime, solar panels experience countless extreme weather events. Not just the worst storms in years, but the worst storms in 40 years. High winds capable of ripping panels from a roof, and snowfalls weighing enough to buckle a panel frame.

XR Rails are the structural backbone preventing these results. They resist uplift, protect against buckling and safely and efficiently transfer loads into the building structure. Their superior spanning capability requires fewer roof attachments, reducing the number of roof penetrations and the amount of installation time.



**Force-Stabilizing Curve**
Sloped roofs generate both vertical and lateral forces on mounting rails which can cause them to bend and twist. The curved shape of XR Rails is specially designed to increase strength in both directions while resisting the twisting. This unique feature ensures greater security during extreme weather and a longer system lifetime.

**Compatible with Flat & Pitched Roofs**
XR Rails are compatible with FlashFoot and other pitched roof attachments.
IronRidge offers a range of tilt leg options for flat roof mounting applications.

**Corrosion-Resistant Materials**
All XR Rails are made of marine-grade aluminum alloy, then protected with an anodized finish. Anodizing prevents surface and structural corrosion, while also providing a more attractive appearance.

Tech Brief

## XR Rail Family

The XR Rail Family offers the strength of a curved rail in three targeted sizes. Each size supports specific design loads, while minimizing material costs. Depending on your location, there is an XR Rail to match.

**XR10**
XR10 is a sleek, low-profile mounting rail, designed for regions with light or no snow. It achieves 6 foot spans, while remaining light and economical.
- 6' spanning capability
- Moderate load capability
- Clear anodized finish
- Internal splices available

**XR100**
XR100 is the ultimate residential mounting rail. It supports a range of wind and snow conditions, while also maximizing spans up to 8 feet.
- 8' spanning capability
- Heavy load capability
- Clear & black anodized finish
- Internal splices available

**XR1000**
XR1000 is a heavyweight among solar mounting rails. It's built to handle extreme climates and spans 12 feet or more for commercial applications.
- 12' spanning capability
- Extreme load capability
- Clear anodized finish
- Internal splices available

## Rail Selection

The following table was prepared in compliance with applicable engineering codes and standards. Values are based on the following criteria: ASCE 7-10, Roof Zone 1, Exposure B, Roof Slope of 7 to 27 degrees and Mean Building Height of 30 ft. Visit IronRidge.com for detailed span tables and certifications.

| Load | | Rail Span | | | | | |
|---|---|---|---|---|---|---|---|
| Snow (PSF) | Wind (MPH) | 4' | 5' 4" | 6' | 8' | 10' | 12' |
| None | 100 | | | | | | |
| | 120 | | | | | | |
| | 140 | XR10 | | XR100 | | XR1000 | |
| | 160 | | | | | | |
| 10-20 | 100 | | | | | | |
| | 120 | | | | | | |
| | 140 | | | | | | |
| | 160 | | | | | | |
| 30 | 100 | | | | | | |
| | 160 | | | | | | |
| 40 | 100 | | | | | | |
| | 160 | | | | | | |
| 50-70 | 160 | | | | | | |
| 80-90 | 160 | | | | | | |

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Tigo® Flex MLPE

# TS4-A-O

## Module-level PV Optimizer

The TS4-A-O (Optimization) is the advanced add-on optimization solution that brings smart module functionality to standard PV modules for higher reliability. Improve energy efficiency by upgrading underperforming PV systems or adding smart features to new installations.

The TS4-A-O complies with NEC 2017 and 2020 690.12 Rapid Shutdown specifications when installed on each module and accompanied by the Tigo Access Point (TAP) and the Cloud Connect Advanced (CCA). Module-level DC production data, as well as data from other Modbus connected devices, can be analyzed via Tigo's Energy Intelligence Software when connected to the cloud.

The TS4-A-O with UHD-Core technology and expanded specifications supports PV modules up to 700W, and 15A.

### Included Features

Module-level **optimization** for increased energy yield and greater design flexibility

Manual or automatic module-level **shutdown.** Complies with NEC 2017 and 2020.

Module-level **monitoring** for energy production tracking and system management

### Easy Installation
Snap to standard module frame or remove clips for rack mounting

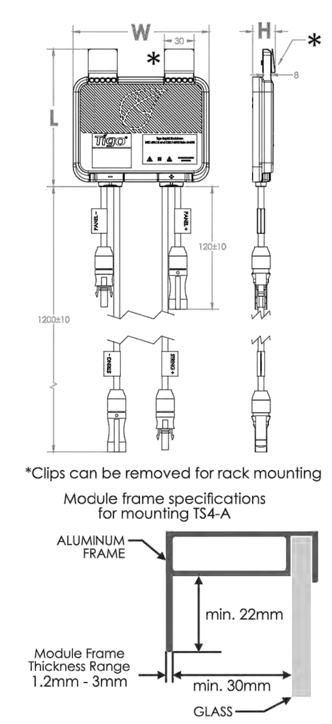
### Smart Commissioning
Configure and commission with your Android or iOS mobile device

9/2/22

PSD-00015-00 REV 1.1

## TS4-A-O SPECIFICATIONS

| | |
|---|---|
| **Environmental** | |
| Operating Temperature Range | -40°C to +70°C (-40°F to +158°F) |
| Outdoor Rating | IP68, NEMA 3R |
| Maximum Elevation | 2000m |
| **Mechanical** | |
| Dimensions | W=138.4mm, L= 139.7mm, H= 22.9mm |
| Weight | 520g |
| **Electrical** | |
| Max Input Voltage ($V_{OC}$ @ Lowest Temperature) | 80V |
| Input Voltage Range | 16 - 80V* |
| Maximum Cont. Current (Imax) | 15A |
| Maximum Short Circuit Current (Isc) | 20A |
| Maximum Power | 700W |
| Cable Length (in/out) | 0.12/1.2m (standard), 0.62/1.2m (optional) |
| Connectors | MC4 (standard), EVO2 (optional) |
| Communication Type | Wireless |
| Recommended Fuse Rating | 30A |




*Clips can be removed for rack mounting

Module frame specifications for mounting TS4-A

TAP required for module-level shutdown and CCA required for monitoring with TS4-A-O.
*$V_{MOD\ MAX}$ of the connected panel = TS4-A-O $V_{DCU\ MAX}$
**Limits are based on NEC 690.12 rapid shutdown requirements.

### ORDERING INFORMATION

PVC00101-A 1500V TÜV, 1.2m Kabel, EVO2

**For sales info:**
sales@tigoenergy.com

**For product info:**
Visit tigoenergy.com/products

**For technical info:**
Visit support.tigoenergy.com

For additional info and product selection assistance, use Tigo's online design tool at tigoenergy.com/design

Tigo®

PV 2.0

Tigo Energy, Inc. | www.tigoenergy.com | sales@tigoenergy.com

ENGINEERING FIRM

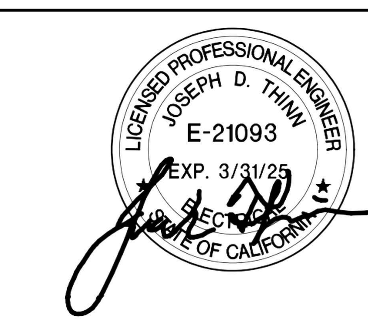
THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868

PROJECT NAME

L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT

CONTRACTOR OF RECORD

APPROVED BY:




DATE: 6/19/2026

SHEET NAME
EQUIPMENT SPEC SHEETS

SHEET SIZE
ARCH D
24" X 36"

SHEET NUMBER
PV-6

ENGINEERING FIRM

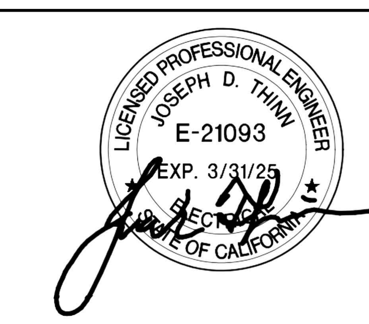
THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868

PROJECT NAME

# L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT

CONTRACTOR OF RECORD

APPROVED BY:




DATE: 6/19/2026

SHEET NAME
EQUIPMENT SPEC SHEETS

SHEET SIZE
ARCH D
24" X 36"

SHEET NUMBER
PV-7

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IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Project Details | | | |
|---|---|---|---|
| **Name** | Pignon | **Date** | 06/14/2026 |
| **Location** | Pignon, Nord Department, HT | **ASCE code** | 7.22 |
| **Total modules** | 900 | **Wind speed** | 130 mph |
| **Module** | Custom Panels: RECOM: RCM-300-6PA | **Snow load** | 20 psf |
| **Dimensions** | 77.01" x 39.06" x 1.57" (1956.0mm x 992.0mm x 40.0mm) | **Wind exposure** | C |
| **Module weight** | 52.91lbs (24.0kg) | | |
| **Total watts** | 270,000 | **Piers** | 276 |
| | | **Concrete** | 44.16 yd³ |
| **Inter sub-array spacing** | 60.0"<br>*Calculated using solar azimuth of -45.37° and solar elevation of 30.99° at 9AM (America/Port-au-Prince) on the winter solstice.* | | |

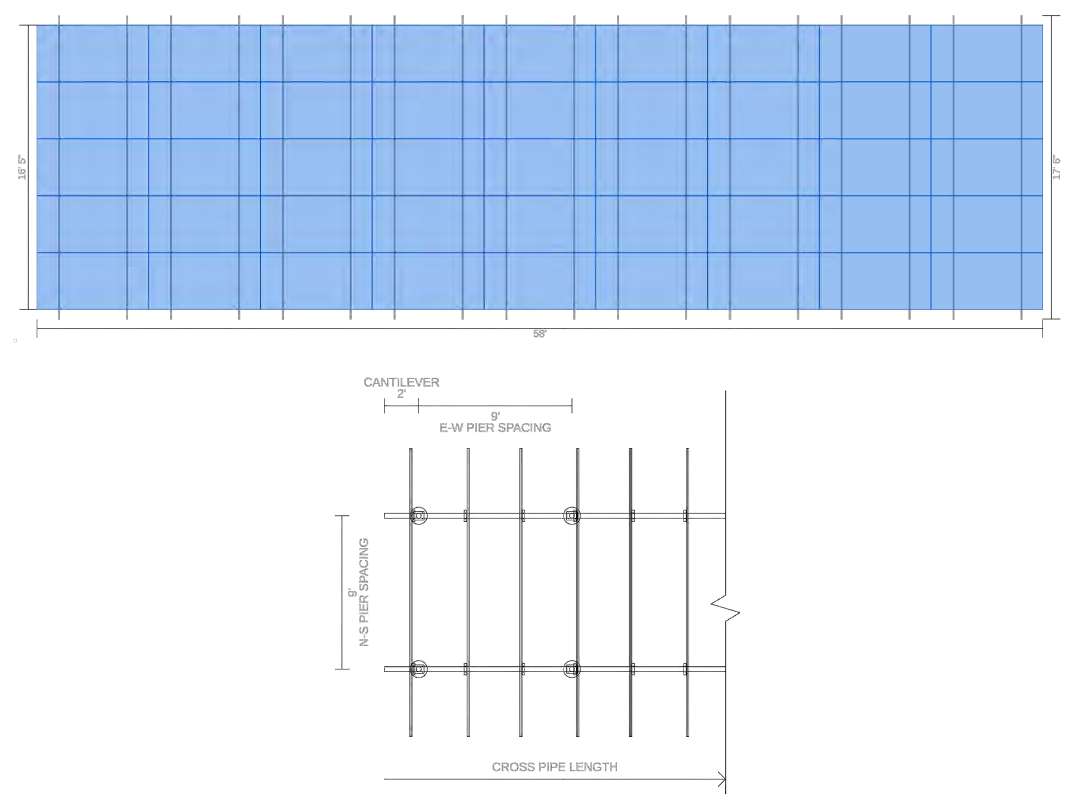
| Substructure & Foundation | | | |
|---|---|---|---|
| **Tilt** | 15° | **South facing grade** | 0° |
| **Pipe/tubing diameter** | 3" | **Soil class** | 4 |
| **Foundation type** | Concrete | **Hole diameter** | 12" |





IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #1 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 9 | **# Arrays** | 1 |
| **Area** | 58' (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 2' |
| **Piers/array** | 14 | **Total south piers** | 7 (6') | **Total north piers** | 7 (8' 5") |
| **Total cross pipes** | 2 (58') | **Total pipe length** | 217' 2" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

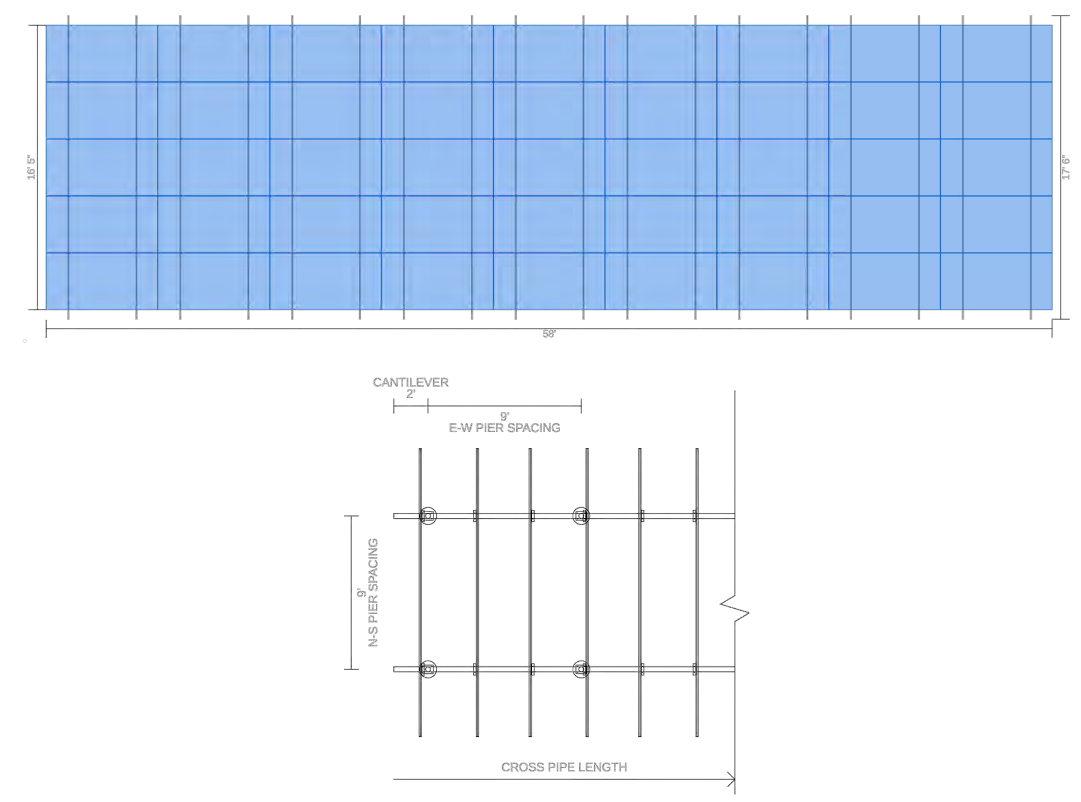







IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #2 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 9 | **# Arrays** | 1 |
| **Area** | 58' (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 2' |
| **Piers/array** | 14 | **Total south piers** | 7 (6') | **Total north piers** | 7 (8' 5") |
| **Total cross pipes** | 2 (58') | **Total pipe length** | 217' 2" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

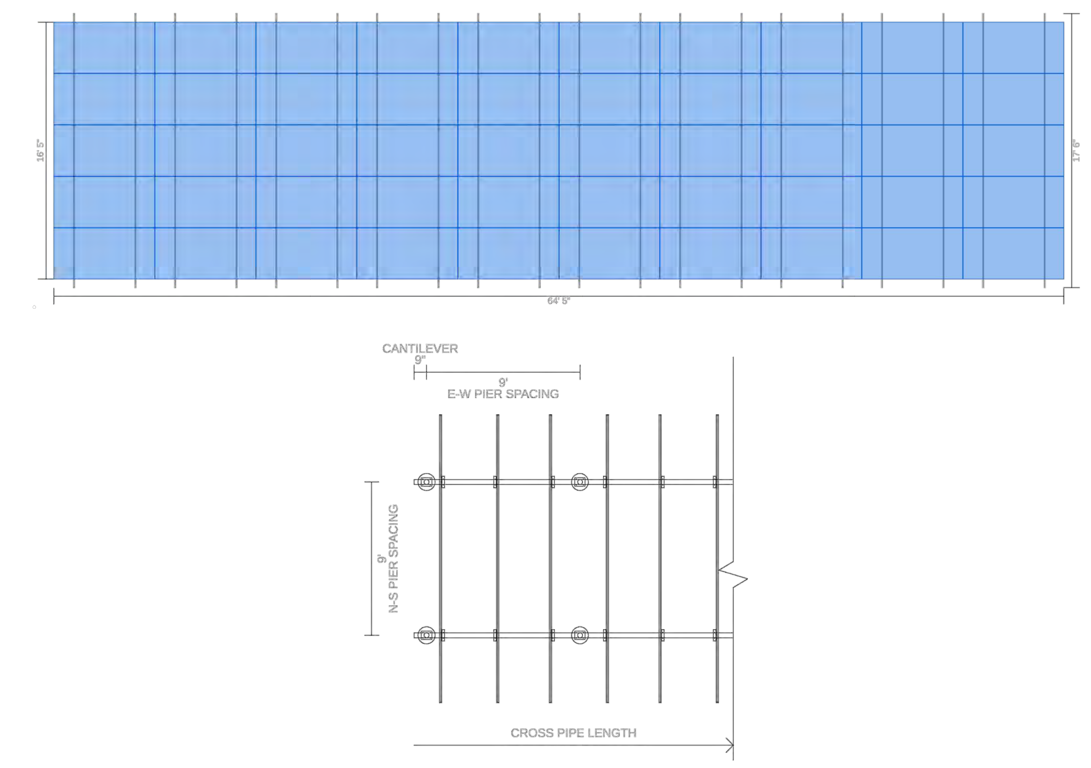







IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #3 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 10 | **# Arrays** | 1 |
| **Area** | 64' 5" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 9" |
| **Piers/array** | 16 | **Total south piers** | 8 (6') | **Total north piers** | 8 (8' 5") |
| **Total cross pipes** | 2 (64' 5") | **Total pipe length** | 244' 6" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

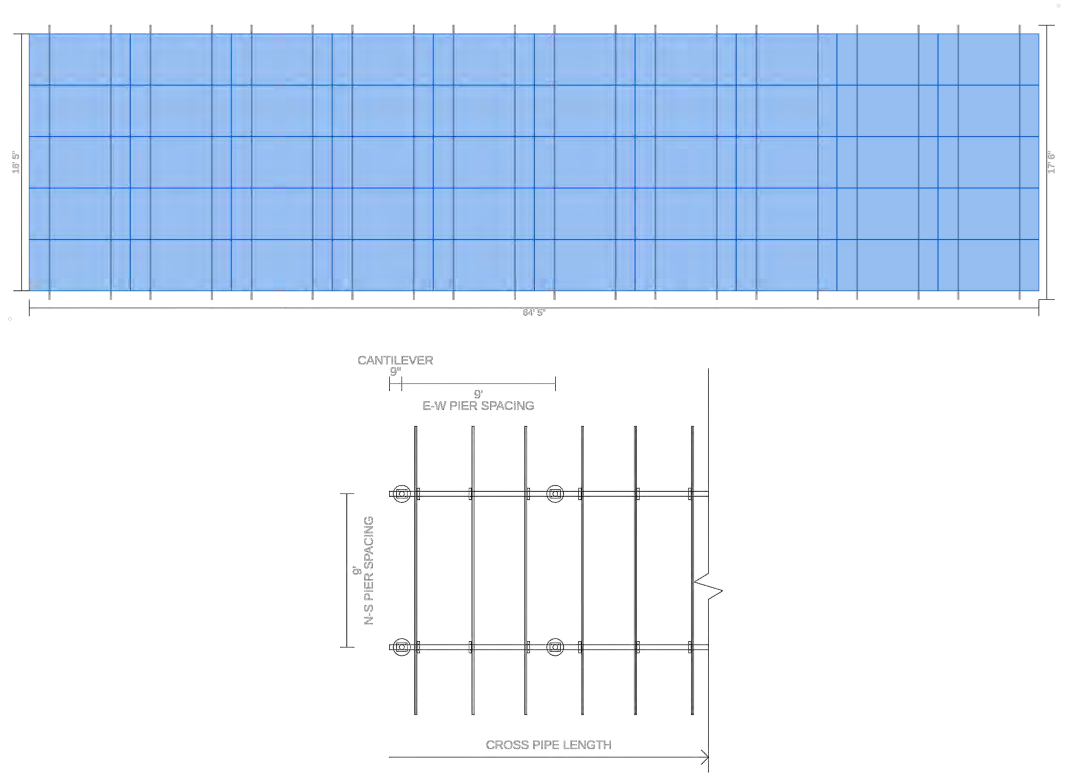







IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #4 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 10 | **# Arrays** | 1 |
| **Area** | 64' 5" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 9" |
| **Piers/array** | 16 | **Total south piers** | 8 (6') | **Total north piers** | 8 (8' 5") |
| **Total cross pipes** | 2 (64' 5") | **Total pipe length** | 244' 6" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

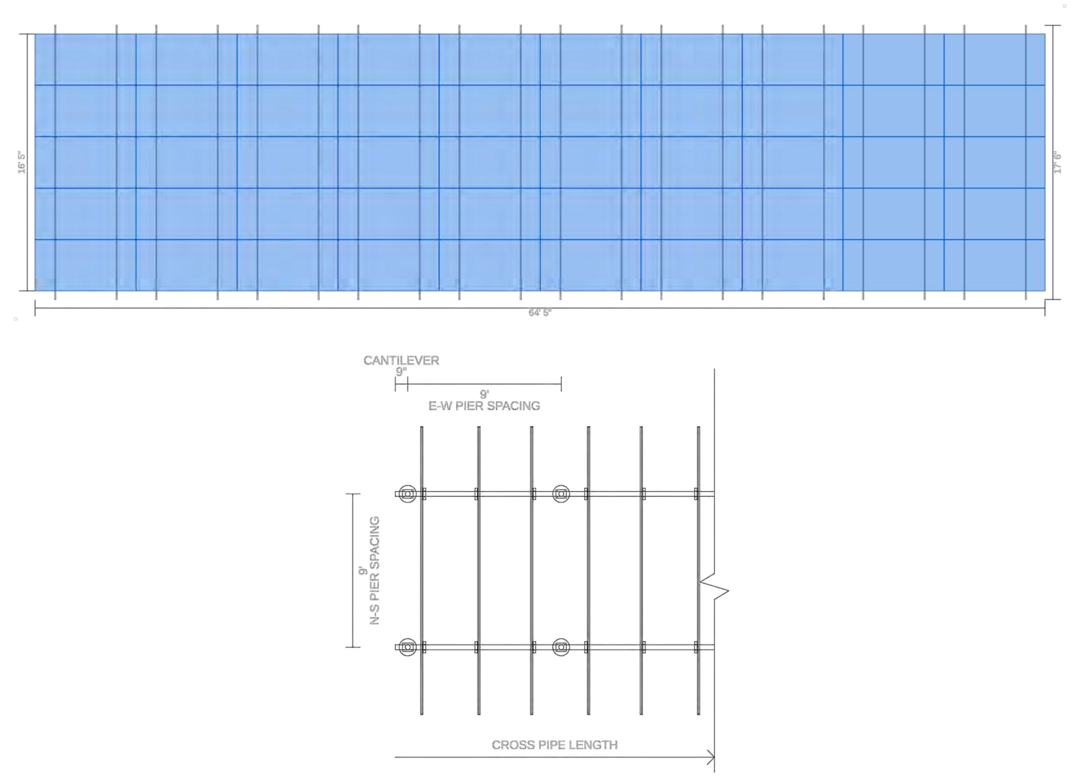







IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #5 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 10 | **# Arrays** | 1 |
| **Area** | 64' 5" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 9" |
| **Piers/array** | 16 | **Total south piers** | 8 (6') | **Total north piers** | 8 (8' 5") |
| **Total cross pipes** | 2 (64' 5") | **Total pipe length** | 244' 6" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

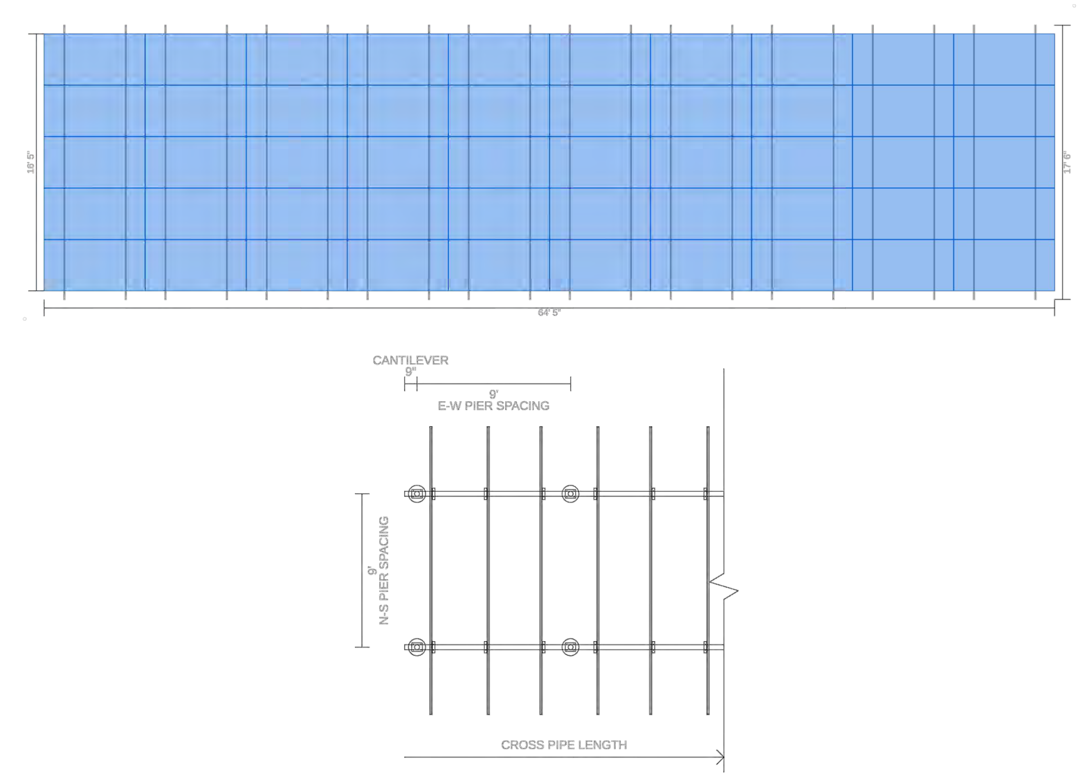







IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #6 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 10 | **# Arrays** | 1 |
| **Area** | 64' 5" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 9" |
| **Piers/array** | 16 | **Total south piers** | 8 (6') | **Total north piers** | 8 (8' 5") |
| **Total cross pipes** | 2 (64' 5") | **Total pipe length** | 244' 6" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

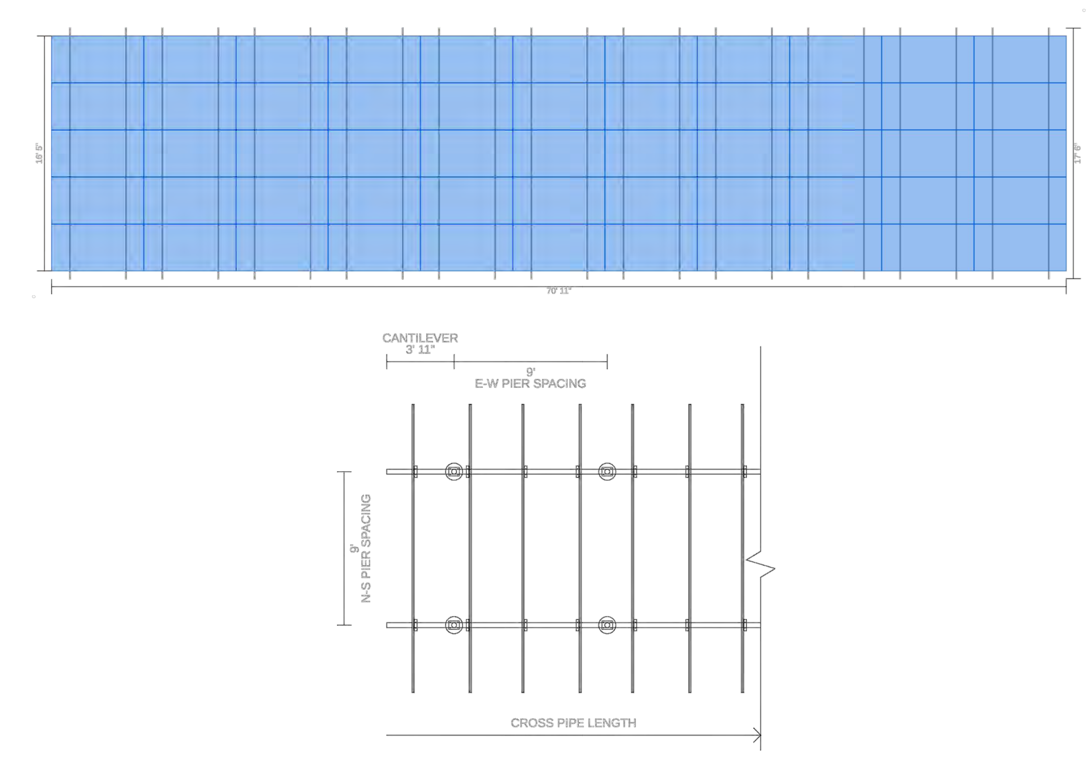







IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

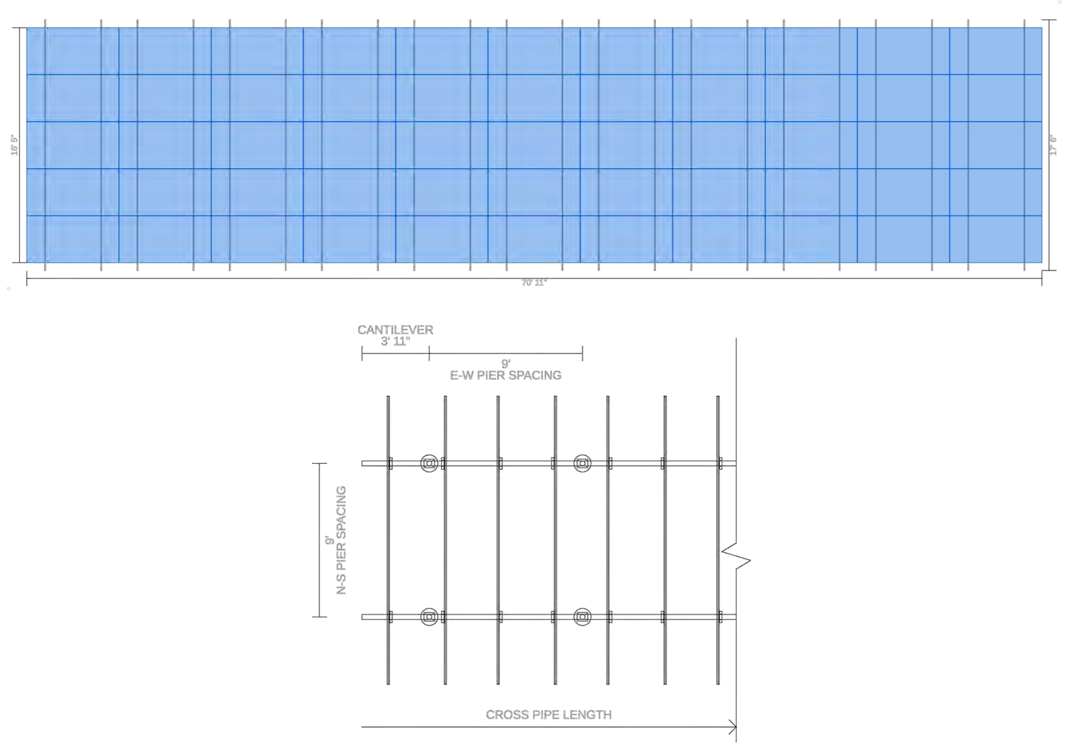
| Sub array #7 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 11 | **# Arrays** | 1 |
| **Area** | 70' 11" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 3' 11" |
| **Piers/array** | 16 | **Total south piers** | 8 (6') | **Total north piers** | 8 (8' 5") |
| **Total cross pipes** | 2 (70' 11") | **Total pipe length** | 257' 5" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |



Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #8 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 11 | **# Arrays** | 1 |
| **Area** | 70' 11" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 3' 11" |
| **Piers/array** | 16 | **Total south piers** | 8 (6') | **Total north piers** | 8 (8' 5") |
| **Total cross pipes** | 2 (70' 11") | **Total pipe length** | 257' 5" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

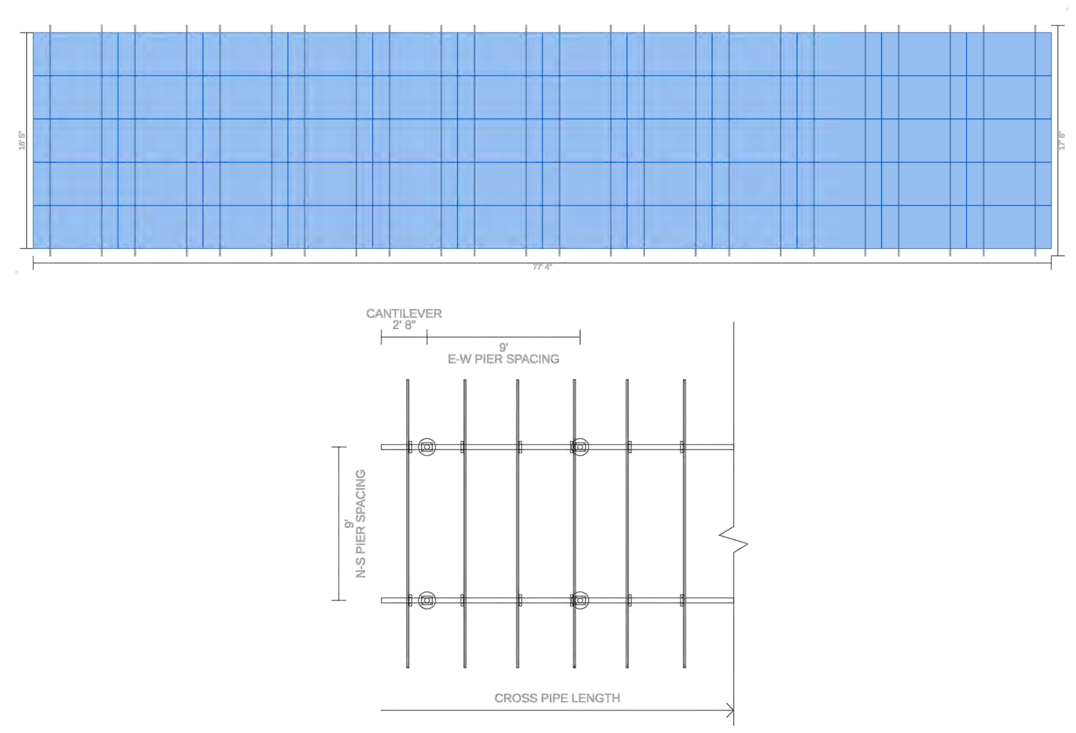





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #9 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 12 | **# Arrays** | 1 |
| **Area** | 77' 4" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 2' 8" |
| **Piers/array** | 18 | **Total south piers** | 9 (6') | **Total north piers** | 9 (8' 5") |
| **Total cross pipes** | 2 (77' 4") | **Total pipe length** | 284' 9" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

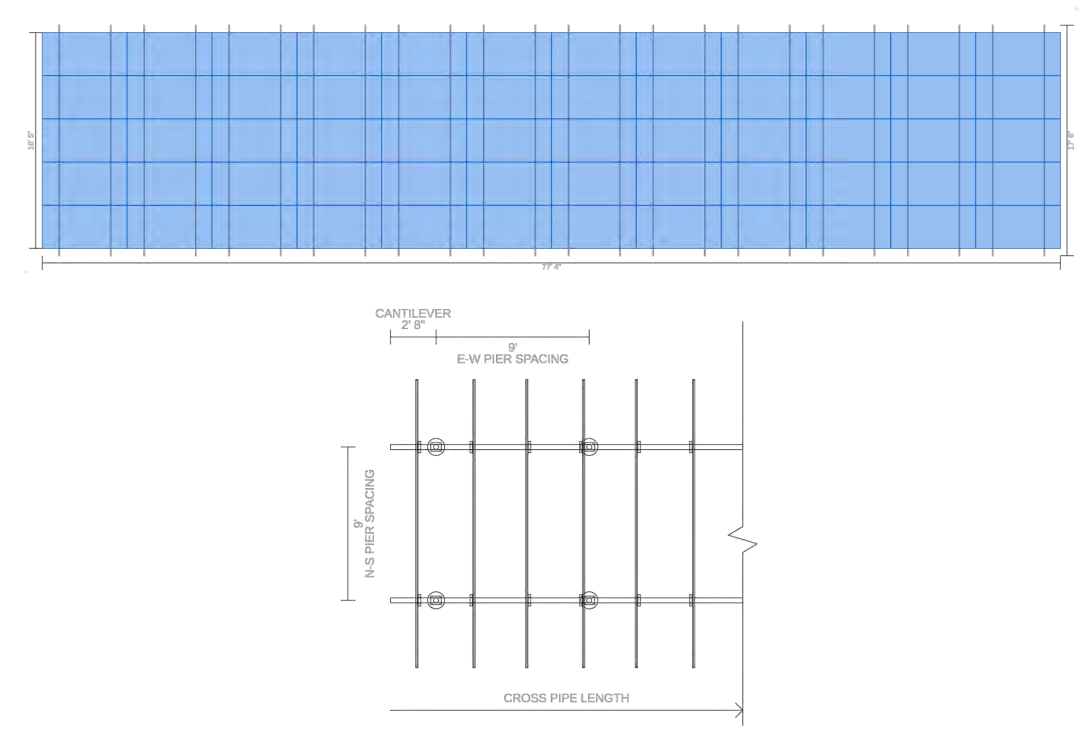





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #10 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 12 | **# Arrays** | 1 |
| **Area** | 77' 4" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 2' 8" |
| **Piers/array** | 18 | **Total south piers** | 9 (6') | **Total north piers** | 9 (8' 5") |
| **Total cross pipes** | 2 (77' 4") | **Total pipe length** | 284' 9" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

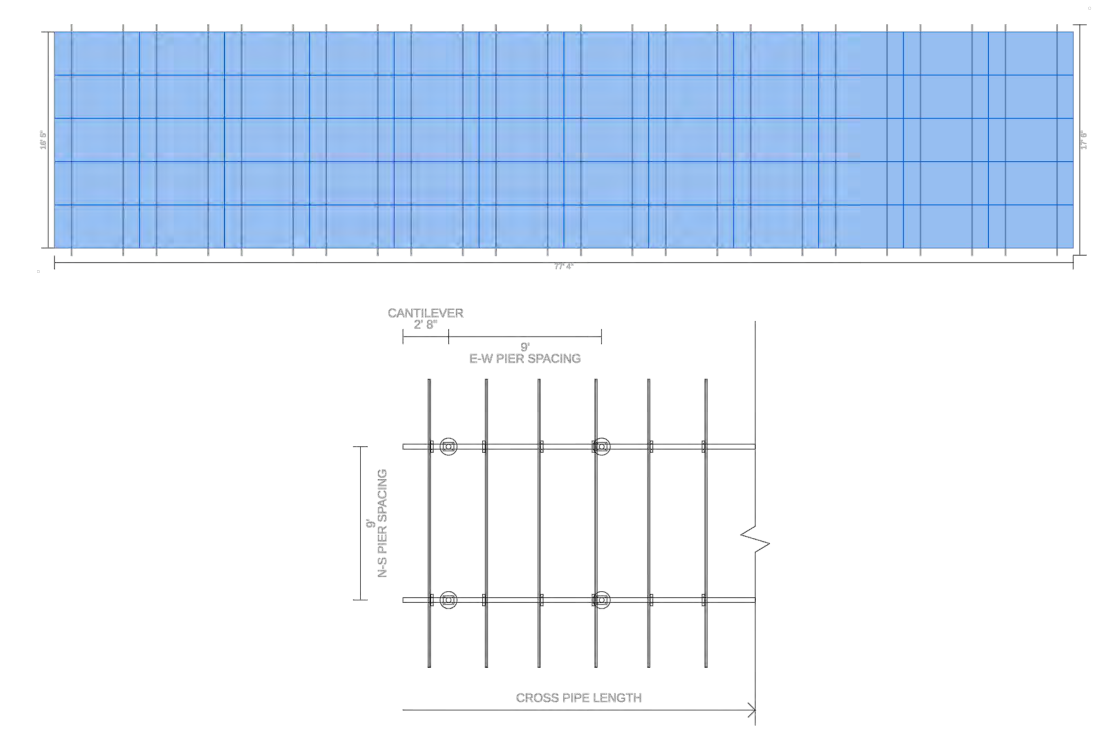





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #11 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 12 | **# Arrays** | 1 |
| **Area** | 77' 4" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 2' 8" |
| **Piers/array** | 18 | **Total south piers** | 9 (6') | **Total north piers** | 9 (8' 5") |
| **Total cross pipes** | 2 (77' 4") | **Total pipe length** | 284' 9" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

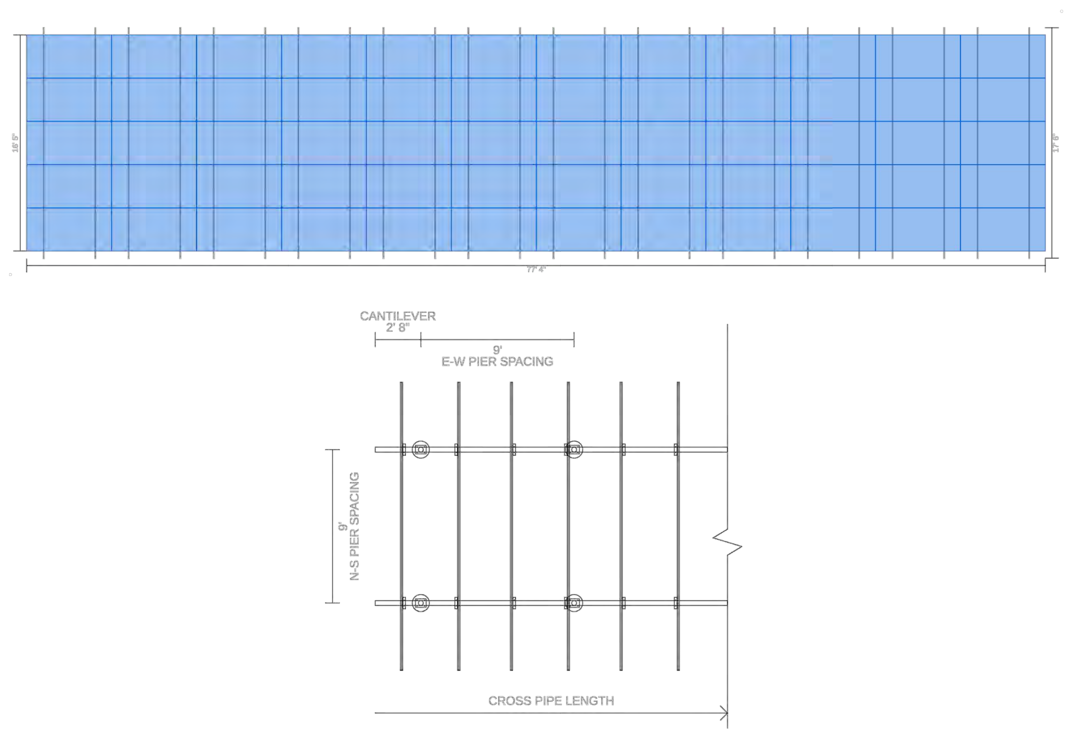





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #12 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 12 | **# Arrays** | 1 |
| **Area** | 77' 4" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 2' 8" |
| **Piers/array** | 18 | **Total south piers** | 9 (6') | **Total north piers** | 9 (8' 5") |
| **Total cross pipes** | 2 (77' 4") | **Total pipe length** | 284' 9" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

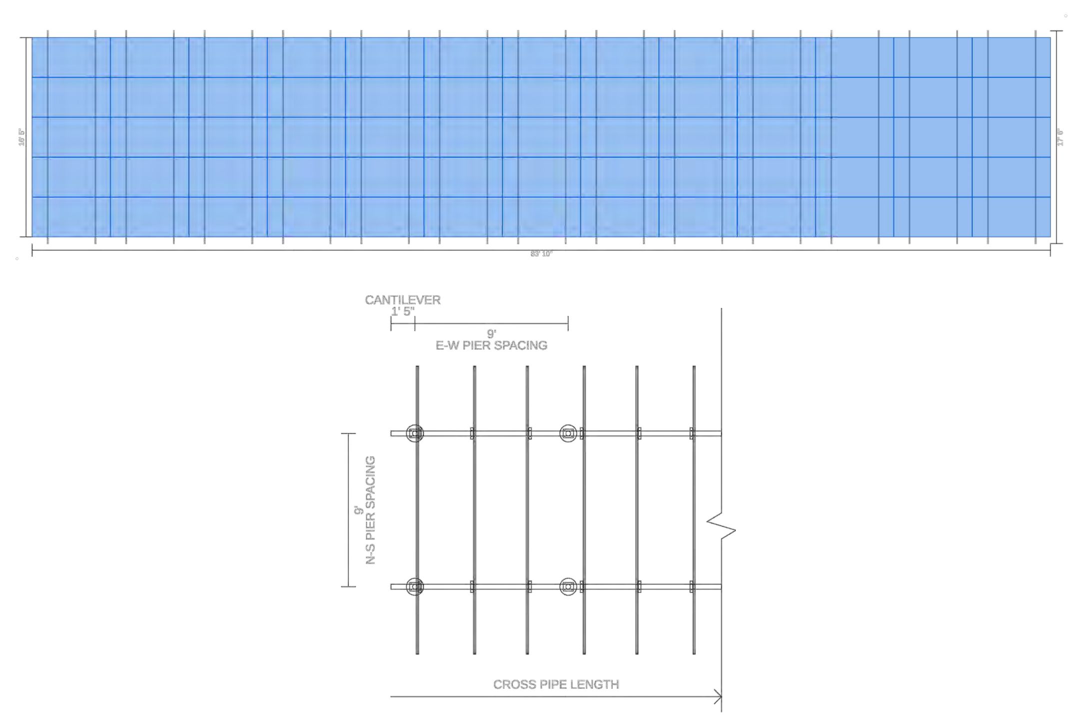





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #13 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 13 | **# Arrays** | 1 |
| **Area** | 83' 10" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 1' 5" |
| **Piers/array** | 20 | **Total south piers** | 10 (6') | **Total north piers** | 10 (8' 5") |
| **Total cross pipes** | 2 (83' 10") | **Total pipe length** | 312' 2" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

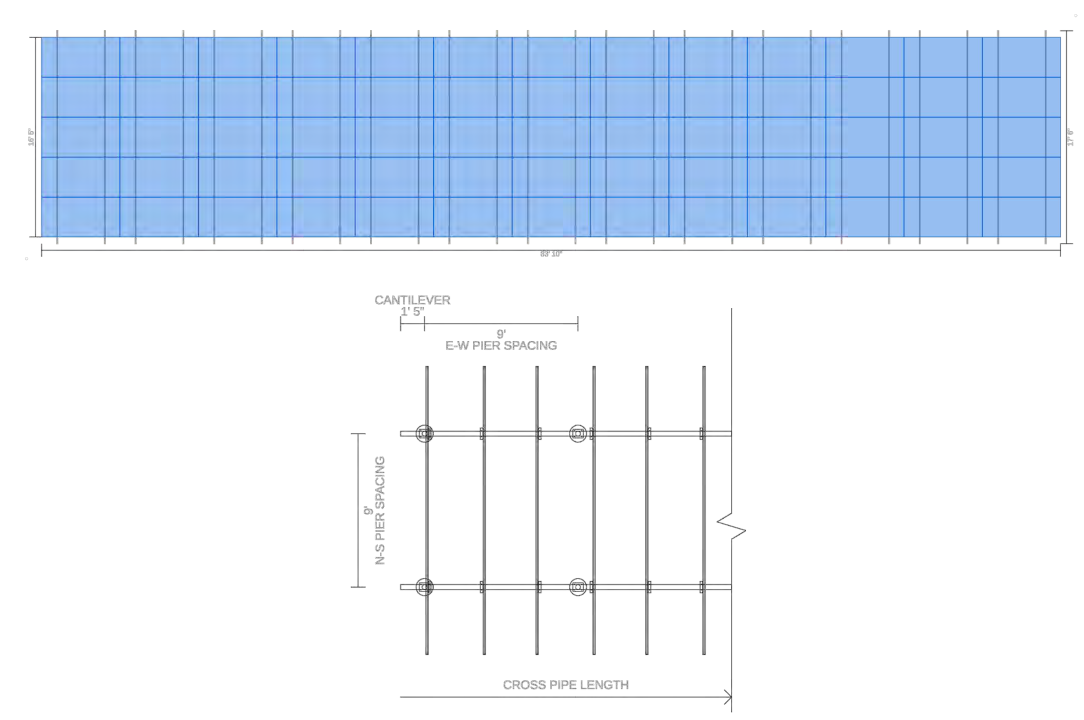





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #14 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 13 | **# Arrays** | 1 |
| **Area** | 83' 10" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 1' 5" |
| **Piers/array** | 20 | **Total south piers** | 10 (6') | **Total north piers** | 10 (8' 5") |
| **Total cross pipes** | 2 (83' 10") | **Total pipe length** | 312' 2" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |

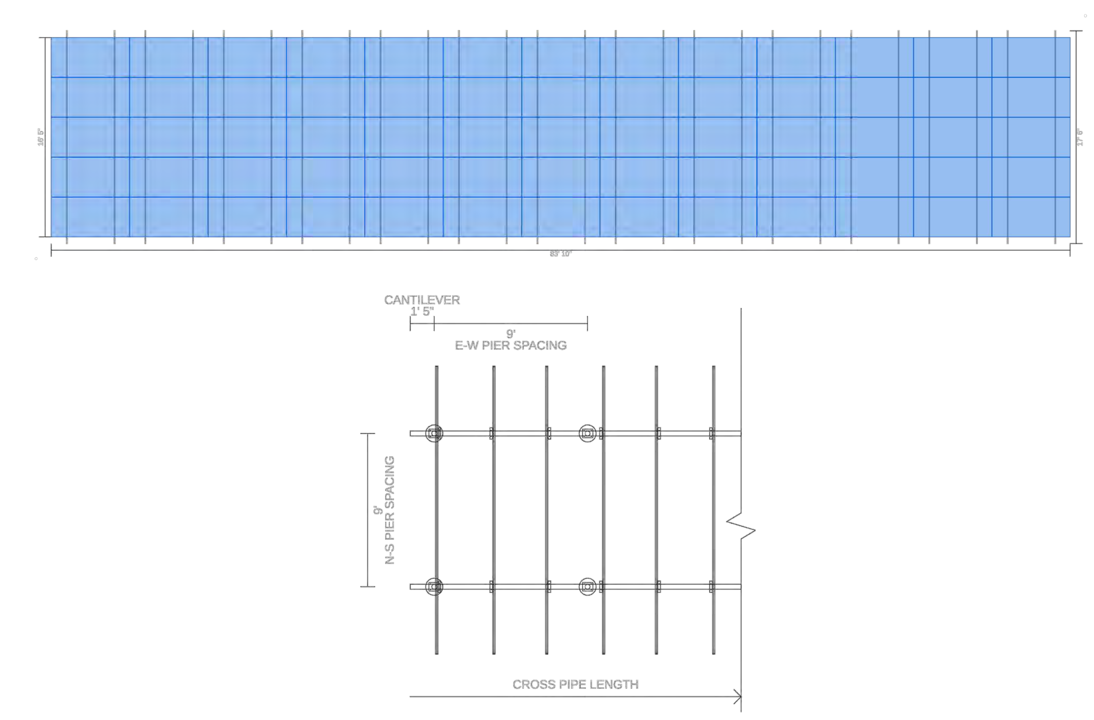





Pignon (#1472568)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

| Sub array #15 | | | | | |
|---|---|---|---|---|---|
| **Rows** | 5 | **Columns** | 13 | **# Arrays** | 1 |
| **Area** | 83' 10" (EW) × 16' 7" (NS) | **Rail type** | XR1000 | **Diagonal bracing** | no |
| **E/W spacing** | 9' | **Rail cantilever** | 4' 1" | **Pipe cantilever** | 1' 5" |
| **Piers/array** | 20 | **Total south piers** | 10 (6') | **Total north piers** | 10 (8' 5") |
| **Total cross pipes** | 2 (83' 10") | **Total pipe length** | 312' 2" | | |
| **Shear** | 782 lbs | **Moment** | 1,957 ft-lbs | **Uplift** | -1,909 lbs |






ENGINEERING FIRM

THINN ELECTRICAL ENGINEERING
1529 WEST ORANGEWOOD AVE,
ORANGE, CA 92868

PROJECT NAME

L'HOPITAL BIENFAISANCE DE PIGNON SOLAR PROJECT

CONTRACTOR OF RECORD

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
JOSEPH D. THINN
E-21093
EXP. 3/31/2_
ELECTRICAL
STATE OF CALIFORNIA

DATE: 6/19/2026

SHEET NAME

EQUIPMENT SPEC SHEETS

SHEET SIZE

ARCH D
24" X 36"

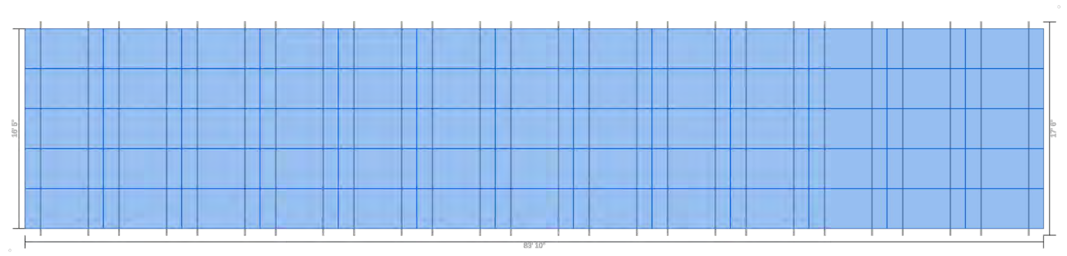
SHEET NUMBER

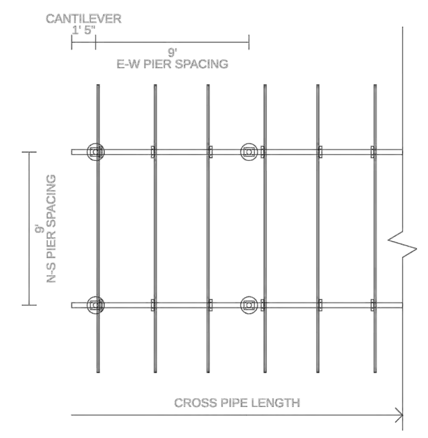
PV-8

Pignon (#1472569)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

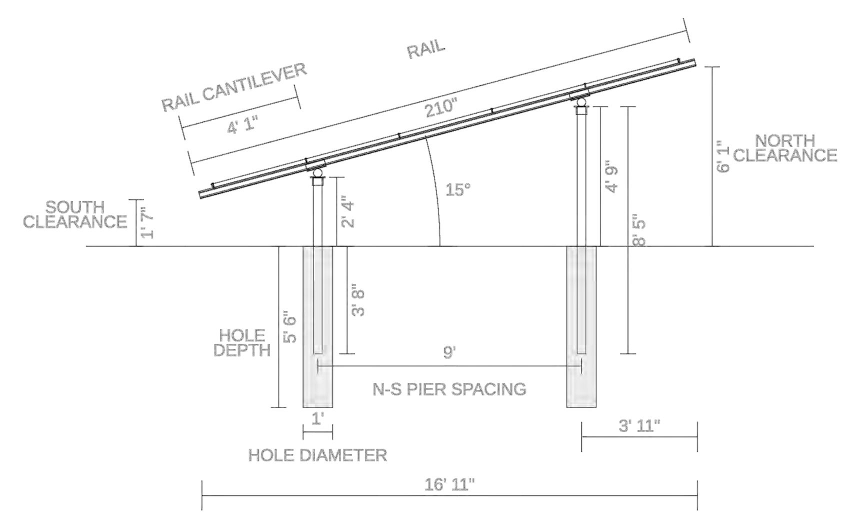
| Sub array #16 | | | | | |
|---|---|---|---|---|---|
| Rows | 5 | Columns | 13 | # Arrays | 1 |
| Area | 83' 10" (EW) × 16' 7" (NS) | Rail type | XR1000 | Diagonal bracing | no |
| E/W spacing | 9' | Rail cantilever | 4' 1" | Pipe cantilever | 1' 5" |
| Piers/array | 20 | Total south piers | 10 (6') | Total north piers | 10 (8' 5") |
| Total cross pipes | 2 (83' 10") | Total pipe length | 312' 2" | | |
| Shear | 782 lbs | Moment | 1,957 ft-lbs | Uplift | -1,909 lbs |





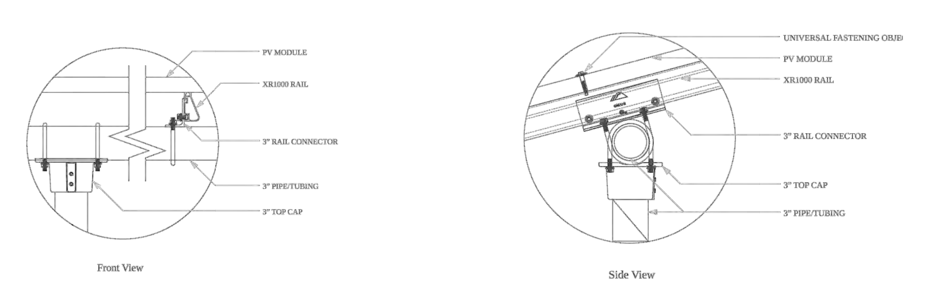



IRONRIDGE

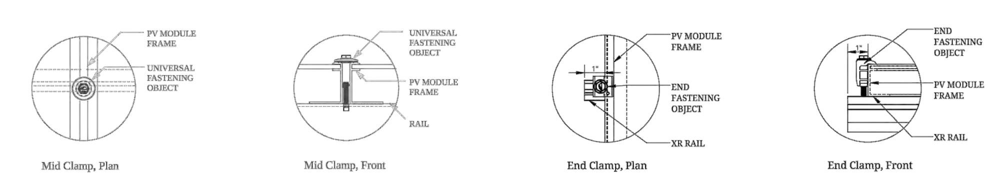



Pipe Fitting Detail

XR1000 Rail



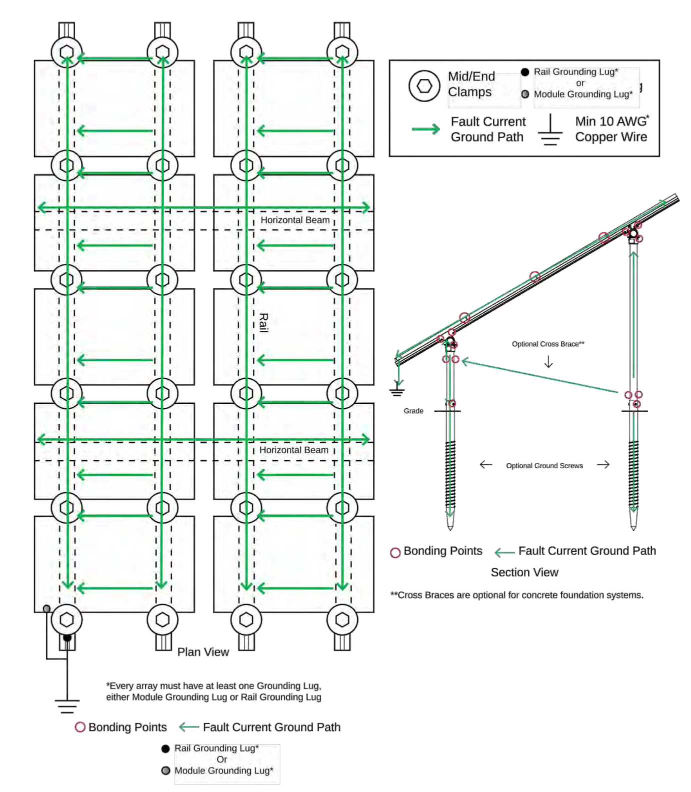

Clamp Detail






IRONRIDGE

Grounding Diagram




Bill of Materials

| Part | Spares | Qty |
|---|---|---|
| **Rails** | | |
| XR-1000-210M<br>XR-1000, 210" (17' 6") Mill | 0 | 360 |
| **Clamps & Grounding** | | |
| UFO-CL-01-A1<br>Universal Module Clamp, Clear | 0 | 1440 |
| UFO-END-01-A1<br>End Fastening Object (End Clamp, 30-40mm), Mill | 0 | 720 |
| XR-LUG-03-A1<br>Grounding Lug, Low Profile | 0 | 16 |
| **Substructure** | | |
| 70-0300-SGA<br>SGA Top Cap at 3" | 0 | 276 |
| GM-BRC3-01-M1<br>Ground Mount Bonded Rail Connector - 3" | 0 | 720 |



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