



Sunnyslope Water District

3570 Airline Highway Phone (831) 637-4670
Hollister, California 95023-9702 Fax (831) 637-1399

REQUEST FOR QUOTES

LESSALT WTP ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENT

Background

Sunnyslope County Water District (District) operates the Lessalt Water Treatment Plant, a critical infrastructure facility located in Hollister, California. Currently, the District has identified a significant baseload energy demand resulting from auxiliary equipment and essential systems that remain operational during plant standby or shutdown periods. Additionally, in response to escalating energy rates from PG&E, the project has been initiated to financially optimize the treatment plant. By integrating a rooftop solar system, the District aims to offset non-discretionary power consumption, proactively prepare against future utility rate increases, and enhance the overall sustainability of the Lessalt's energy profile.

Scope of Work

Contractors to furnish all tools, equipment, apparatus, facilities, labor, transportation, and material necessary to perform and complete the Work in a good manner.

The Work is generally described as follows:

Task 1: Structural Improvement

1. Conform to the requirements of the 2022 California Building Code and local code requirements.
2. Replace Four (4) X-brace with specified materials according to the drawings.
3. Reinforce Two (2) purlins.

Task 2: Roof Solar System Installation

1. Supply and install (138) 545W Solar PV modules as determined by the drawings.
2. Supply and install One (1) 60-kW-AC grid-interactive string inverter.
3. Supply and install the racking system as determined by the drawings and specs.
4. Supply and install grounding & bonding IRONRIDGE XR system as determined by the drawings.
5. Supply and install a rapid-shutdown device as determined by the drawings.
6. Provide a secondary breaker connection to the main switchgear.

7. Supply all conduits, wiring, and combiners.

Task 3: Testing, Commissioning & Closeout

1. Perform IV curve tracing and thermal imaging of all strings
2. Supply and install labels as specified by the drawings.
3. Deliver As-built drawings and O&M Manuals.

Cost Breakdown

Line Item	QTY	Units	Unit Cost	Cost
Structural Improvement	1	LS		
Solar System Installation	1	LS		
Testing, Commissioning & Closeout	1	LS		
			Total Cost =	

Timeline

RFQ submission deadline: **1/13/2026 at 2 PM PST**

Anticipated date for contract award: 1/28/2026

Required completion date: **4/15/2026**

Contractor guarantees final completion by _____ date.

Submission Requirements

Contractor is required to submit a completed bid form, proof of insurance, and licenses to be considered. The submission shall be submitted to the District point of contact via email.

Qualifications

Contractor must maintain a competent license and be registered and qualified to perform public work under California Labor Code § 1725.5 to submit quotes.

Prevailing Wage

The Work under this Contract qualifies as Public Works subject to California Labor Code Section 1720 et seq. Contractor shall comply with and be bound by all pertinent sections of the Labor Code beginning with Section 1720 regarding payment of prevailing wage rates, holiday and overtime pay, hiring of apprentices, workers compensation insurance, etc., all as set forth by the California Department of Industrial Relations (DIR). Contractor shall be registered with DIR as

a Public Works Contractor and abide by all relevant reporting requirements. Contractor is responsible for maintaining all applicable payroll records and reports, which shall be made available to District for review upon written request.

Insurance

Prior to commencing work, proof of the following insurance policy limits will be required to name Sunnyslope Water District as additional insured:

Without limiting Contractor's duty to indemnify, Contractor shall maintain, at no cost to the District, throughout the term of this Contract a policy or policies of insurance covering all of Contractor's Work hereunder with the following minimum limits of liability:

1. General liability insurance, including but not limited to premises, personal injury, products, and completed operations, with a combined single limit of \$1,000,000 per occurrence and \$2,000,000 aggregate.
2. Comprehensive automobile liability insurance covering all motor vehicles, including owned and non-owned vehicles used in providing services related to the Work previously described, with a combined single limit of \$2,000,000 per occurrence.
3. Worker's compensation insurance or self-insurance of not less than \$1,000,000 indicating compliance with any applicable Labor Codes, acts, laws, or statutes, whether federal or state.

Contractor shall file a certificate of insurance with the District as evidence that Contractor has the insurance coverages required under this Contract. The District shall be notified in writing thirty (30) days prior to any cancellation or material change in the insurance.

Clarifications & Questions

Please direct any questions or requests for clarification to Rob Hillebrecht, Principal Engineer at rob@sunnyslopedwater.org or Alvin Do, Assistant Engineer at alvin@sunnyslopedwater.org.

EXHIBIT A

DRAWINGS AND SPECS

LESSALT WATER TREATMENT PLANT ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS

1391 FAIRVIEW ROAD
HOLLISTER, CALIFORNIA 95023

LEGEND:

KEYNOTE	
DETAIL CALLOUT	
FEEDER/WIRE/CABLE (UNDERGROUND)	
FEEDER/WIRE/CABLE (EXPOSED)	
CONDUIT RISER	
CONDUIT PENETRATION	
POINT OF CONNECTION	
GROUNDING ELECTRODE	
METER	
CURRENT TRANSFORMER	
POTENTIAL TRANSFORMER	
CIRCUIT BREAKER	
FUSED SWITCH	
TRANSFORMER	
SOLAR INVERTER	
PV MODULE	
CURRENT LIMITER	
SOLAR INVERTER NETWORK CARD	
PV MODULE RAPID SHUTDOWN DEVICE	
PV MODULE RACKING	
120V/20A RECEPTACLE	

ABBREVIATIONS:

A OR AMP	AMPERE	MFR	MANUFACTURER
AC	ALTERNATING CURRENT	MIN	MINIMUM
AF/AS	AMP FUSE/AMP SWITCH	MLO	MAIN LUG ONLY
AFG	ABOVE FINISHED GRADE	MPPT	MAX POWER POINT TRACKING
AHJ	AUTHORITY HAVING JURISDICTION	MSB	MAIN SWITCHBOARD
A.I.C	AMPERE INTERRUPTING CAPACITY	N	NEUTRAL
AL	ALUMINUM	NC	NORMALLY CLOSED
APPROX	APPROXIMATE	NEG	NEGATIVE
AT/AF	AMP TRIP/AMP FRAME	NEU	NEUTRAL
AUX	AUXILIARY	NO	NORMALLY OPEN
AWG	AMERICAN WIRE GAUGE	NIC	NOT IN CONTRACT
BESS	BATTERY ENERGY STORAGE SYSTEM	NTS	NOT TO SCALE
BLDG	BUILDING	OCPD	OVERCURRENT PROTECTIVE DEVICE
BFG	BELOW FINISHED GRADE	O&M	OPERATION AND MAINTENANCE
C OR CDT	CONDUIT	P	POLE
CB	COMBINER BOX	PB	PULL BOX
C/B	CIRCUIT BREAKER	PCS	POWER CONDITIONING SYSTEM
CKT	CIRCUIT	PH	PHASE
COMM	COMMUNICATION	POC	POINT OF CONNECTION
CT	CURRENT TRANSFORMER	POS	POSITIVE
CONT	CONTINUOUS	PT	POTENTIAL TRANSFORMER
CU	COPPER	PTC	PVUSA TEST CONDITIONS
DAS	DATA ACQUISITION SYSTEM	PV	PHOTOVOLTAIC
DC	DIRECT CURRENT	QTY	QUANTITY
DISC.	DISCONNECT	RAD	RADIUS
DWG	DRAWING	REC	RECEPTACLE
EA	EACH	REF	REFERENCE
EMT	ELECTRICAL METALLIC TUBING	SECT	SECTION
EQUIP	EQUIPMENT	SLD	SINGLE LINE DIAGRAM
E OR (E)	EXISTING	SPEC	SPECIFICATION
FL	FLOOR	STC	STANDARD TEST CONDITIONS
FLA	FULL LOAD AMPS	SW	SWITCH
GEC	GROUND ELECTRODE CONDUCTOR	SWBD	SWITCHBOARD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TEMP	TEMPERATURE
GND	GROUND	TYP	TYPICAL
GRS	GALVANIZED RIGID STEEL CONDUIT	UG	UNDERGROUND
HP	HORSEPOWER	UL	UNDERWRITERS LABORATORY
HZ	HERTZ	UON	UNLESS OTHERWISE NOTED
I _{MP}	MAXIMUM POWER CURRENT	V	VOLT
I _{SC}	SHORT CIRCUIT CURRENT	V _{MP}	MAXIMUM POWER VOLTAGE
J	JUNCTION BOX	V _{OC}	OPEN CIRCUIT VOLTAGE
KCMIL	THOUSAND CIRCULAR MILS	W	WATT
KVA	KILOVOLT-AMPERE	WP	WEATHERPROOF
KW	KILOWATT	XFMR	TRANSFORMER
KWH	KILOWATT-HOUR		
KMCP	KEYSTONE MICROGRID CONTROL PANEL		
LV	LOW VOLTAGE		
MCB	MAIN CIRCUIT BREAKER		
MET	METEOROLOGICAL		

PROJECT DESCRIPTION/SCOPE OF WORK:

INSTALLATION OF A 75.210 KW-DC ROOFTOP SOLAR PHOTOVOLTAIC SYSTEM AT 1391 FAIRVIEW ROAD, HOLLISTER, CA. THE SYSTEM CONSISTS OF (138) 545W SOLAR PV MODULES AND (1) 60KW-AC GRID-INTERACTIVE STRING INVERTER. THE SYSTEM IS INTERCONNECTED TO THE PACIFIC GAS AND ELECTRIC (PG&E) GRID WITH A LOAD-SIDE CONNECTION AT THE EXISTING MAIN SWITCHBOARD AT THE SITE.

BUILDING INFORMATION

- OCCUPANCY: B, F-1, H-7
- CONSTRUCTION TYPE: V-N, STEEL FRAME, NON-COMBUSTIBLE ROOF
- FLOORS: 1
- AREA: 5,600 SF
- SPRINKLERED: NO

GENERAL NOTES:

- EXISTING CONDITIONS SHALL BE VERIFIED PRIOR TO PERFORMING WORK.
- DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING EQUIPMENT PER THE SITE AND JOB SPECIFIC REQUIREMENTS LISTED HEREIN. CHANGES TO PROPOSED EQUIPMENT LOCATIONS, CIRCUIT INFORMATION, AND ROUTING OF RACEWAYS SHALL BE RECORDED ON THE FIELD SET OF DRAWINGS AND COMPILED INTO ONE 'AS-BUILT' SET TO THE OWNER UPON COMPLETION OF THE PROJECT.
- ELECTRICAL EQUIPMENT INSTALLED SHALL BE LISTED, LABELED, AND/OR CERTIFIED FOR ITS INTENDED USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL).
- EV/PV/BESS DISTRIBUTION PANEL(S) ARE ONLY FOR SERVING EV/PV/BESS SYSTEMS AND RELATED EQUIPMENT. NO OTHER LOADS SHALL BE SERVED FROM THESE PANELS.
- PV CIRCUIT BREAKERS SHALL BE SUITABLE FOR BACKFEED OPERATION.
- ELECTRICAL EQUIPMENT SHALL BE ANCHORED AND/OR BRACED IN COMPLIANCE WITH APPLICABLE CODES.
- CUTTING, BORING, OR DRILLING OF ANY STRUCTURAL ELEMENT SHALL ONLY BE PERFORMED AS DETAILED IN THE DRAWINGS OR WITH WRITTEN ACCEPTANCE BY THE STRUCTURAL ENGINEER AND WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL FURNISH AND INSTALL REQUIRED ELECTRICAL EQUIPMENT LABELS AND PLACARDS PER NEC, CEC, AHJ, & CAL FIRE REQUIREMENTS.
- DISCREPANCIES BETWEEN INFORMATION SHOWN IN THE PLANS AND ESTABLISHED CODES AND STANDARDS SHALL BE DOCUMENTED AND THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION. THESE CONSTRUCTION DOCUMENTS ARE NOT INTENDED TO ALLOW VIOLATION OF CODE REQUIREMENTS OR LOCAL ORDINANCES.

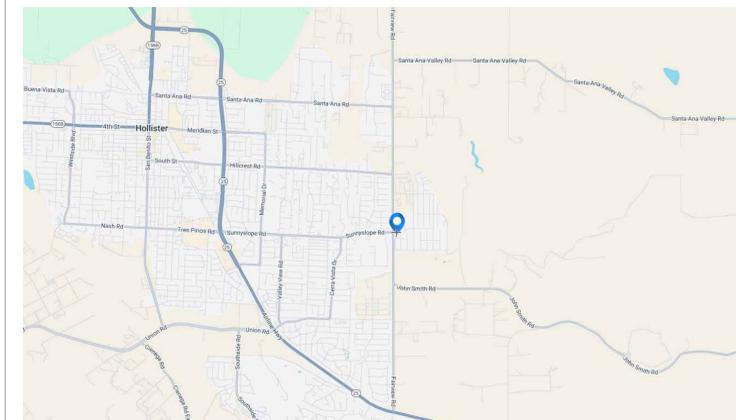
APPLICABLE CODES AND STANDARDS:

2022 CALIFORNIA CODE OF REGULATIONS - TITLE 24 PART 1: CALIFORNIA ADMINISTRATIVE CODE (CAC)
 2022 CALIFORNIA CODE OF REGULATIONS - TITLE 24 PART 2: CALIFORNIA BUILDING CODE (CBC), VOL. 1 & 2
 2022 CALIFORNIA CODE OF REGULATIONS - TITLE 24 PART 3: CALIFORNIA ELECTRICAL CODE (CEC)
 2022 CALIFORNIA CODE OF REGULATIONS - TITLE 24 PART 6: BUILDING ENERGY EFFICIENCY (TITLE 24)
 2022 CALIFORNIA CODE OF REGULATIONS - TITLE 24 PART 9: CALIFORNIA FIRE CODE (CFC)

REFERENCED STANDARDS, CBC CHAPTER 35
 2020 NFPA 70 (NATIONAL ELECTRICAL CODE)

VICINITY MAP:

LATITUDE: 36° 50' 19.83" N
 LONGITUDE: 121° 21' 46.76" W
 ELEVATION: 922 FT
 APN: 060-110-0220



PROPERTY OWNER:

SUNNYSLOPE COUNTY WATER DISTRICT

CONTACT PERSON: DREW LANDER
 PHONE: 831-637-4670
 EMAIL: drew@sunnyslopewater.org

STRUCTURAL ENGINEER:

PACIFIC ENGINEERING GROUP, INC
 9699 BLUE LARKSPUR LANE, SUITE 104
 MONTEREY, CA 93940
 831-333-0644

ELECTRICAL ENGINEER:

ELVIN B. IBARRA, PE
 LICENSE: C-88045
 EMAIL: ei.peg93940@gmail.com

ELECTRICAL ENGINEER:

EVA GREEN POWER
 2445 IMPALA DR, CARLSBAD, CA 92010
 PHONE: 858-344-4293

ALLEN J. SLY, PE
 LICENSE: E-22797
 EMAIL: allen@evagreenpower.com

SHEET LIST:

ELECTRICAL:
 E-001 GENERAL NOTES, LEGEND, AND ABBREVIATIONS
 E-002 ELECTRICAL SPECIFICATIONS
 E-101 SITE PLAN
 E-201 ROOF PLAN
 E-401 SINGLE LINE DIAGRAM
 E-501 DETAILS
 E-502 DETAILS
 E-503 DETAILS
 E-601 LABELS AND PLACARDS

STRUCTURAL:
 S1.0 FOUNDATION AND BUILDING SECTION
 S2.0 ROOF FRAMING AND DETAILS

CLIENT

Sunnyslope County
Water District

3570 AIRLINE HWY
HOLLISTER, CA 95023

PRIME

EVA
GREEN POWER

2445 IMPALA DRIVE
CARLSBAD, CA 92010

STAMP

LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS
1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:	
PROJECT #:	23-005
SUBMITTAL:	90%CD
DRAWN BY:	CDS
REVIEWED BY:	AJS
SCALE:	AS NOTED
DATE:	10/07/2025
SHEET NAME:	GENERAL NOTES, LEGEND, AND ABBREVIATIONS
SHEET NUMBER:	E-001

CLIENT



Sunnyslope County Water District

3570 AIRLINE HWY
HOLLISTER, CA 95023

PRIME
EVA GREEN POWER

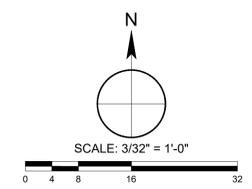
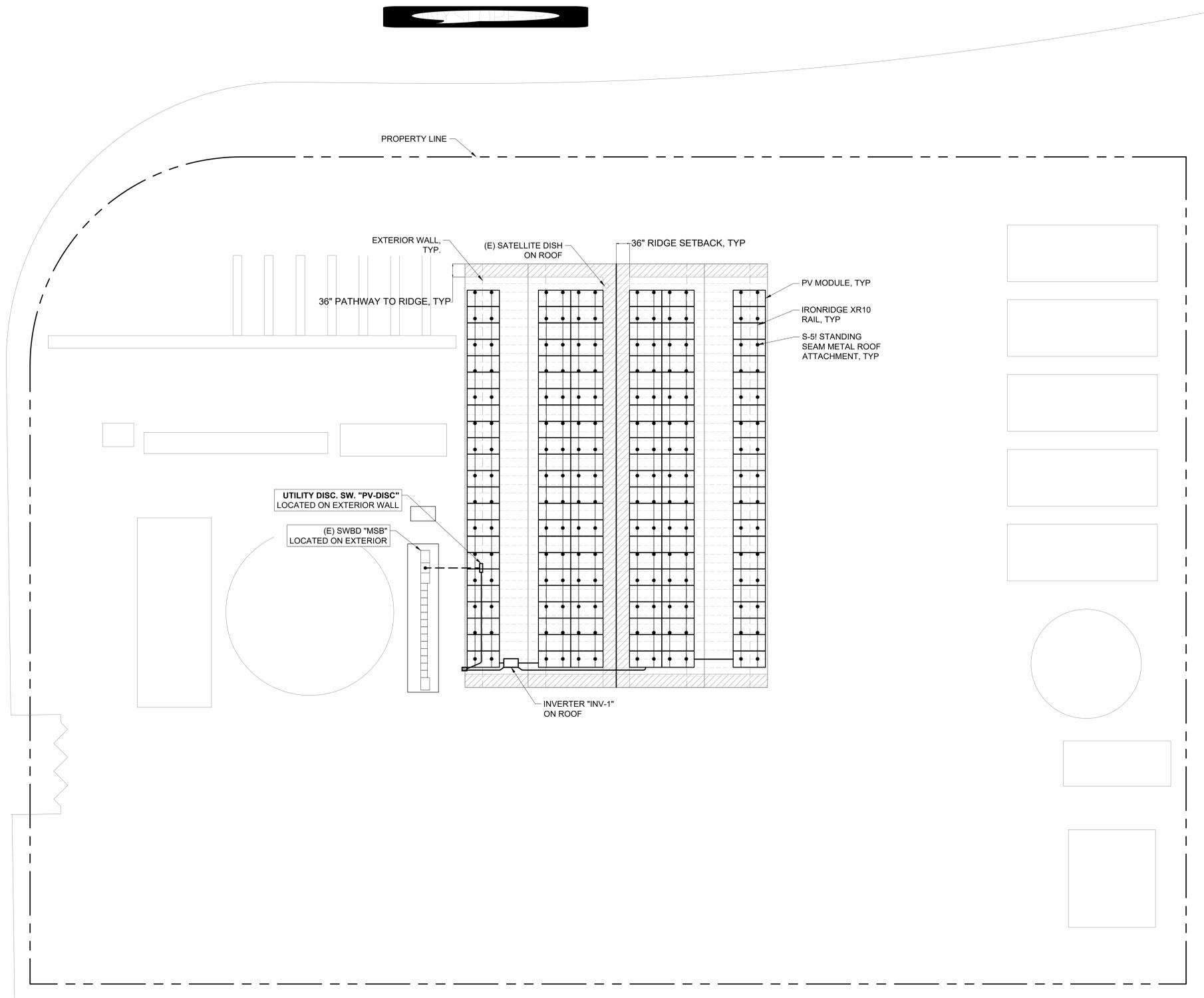
2445 IMPALA DRIVE
CARLSBAD, CA 92010

STAMP



SHEET NOTES:

1. REFER TO SINGLE LINE DIAGRAM ON SHEET E-401 FOR ADDITIONAL INFORMATION
2. REFER TO SHEET E-601 FOR LABELS AND PLACARDS REQUIRED ON EQUIPMENT, RACEWAYS, AND BOXES.
3. ROOFTOP MOUNTED SOLAR PV SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH CFC 1205.2 - 1205.4.3.
4. PV SYSTEM ACHIEVES 'CLASS A' SYSTEM LEVEL FIRE RATING UNDER UL61730 & UL2703 FOR THE COMBINED USE OF RACKING SYSTEM IRONRIDGE XR FLUSH MOUNT SYSTEM WITH PV MODULE LONGI #LR5-72HBD-545M. SEE EQUIPMENT SPECIFICATIONS ON SHEET E-501 AND E-502 FOR MORE INFORMATION.



LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS
 1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:

PROJECT #: 23-005

SUBMITTAL: 90%CD

DRAWN BY: CDS

REVIEWED BY: AJS

SCALE: AS NOTED

DATE: 10/07/2025

SHEET NAME:

SITE PLAN

SHEET NUMBER:

E-101



Sunnyslope County Water District

3570 AIRLINE HWY
HOLLISTER, CA 95023

PRIME
EVA GREEN POWER

2445 IMPALA DRIVE
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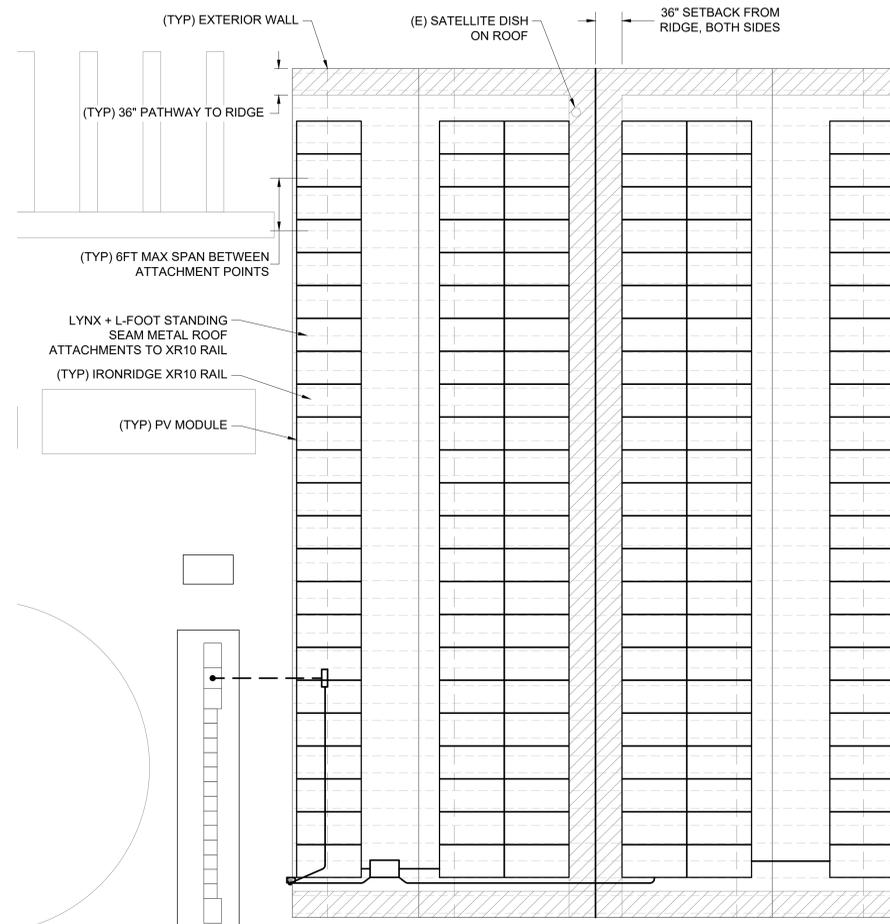


SHEET NOTES:

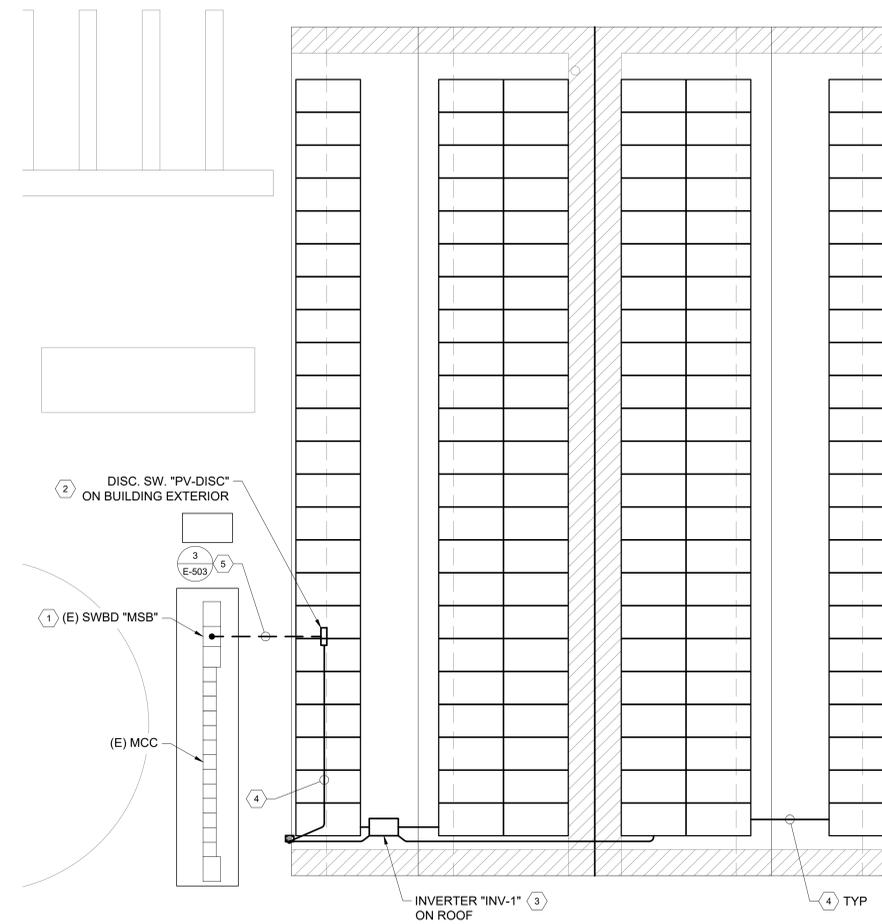
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KEY NOTES:

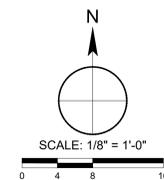
- 1 POINT OF CONNECTION FOR PV SYSTEM.
- 2 PROVIDE UTILITY PV SYSTEM DISCONNECT SWITCH SUBJECT TO PG&E REQUIREMENTS. DISCONNECT SHALL BE LOCKABLE IN THE OFF (OPEN) POSITION. MOUNT DISCONNECT TO EXTERIOR WALL OF BUILDING.
- 3 PROVIDE INVERTER MOUNTED ON ROOF WITH S-SI GRIPPERFIX MOUNTING BRACKETS.
- 4 PROVIDE CONDUIT ALONG EXTERIOR WALL AS SHOWN.
- 5 PROVIDE CONDUIT UNDERGROUND AS SHOWN.
- 6 PROVIDE CONDUIT TO ARRAYS FOR STRINGING AS REQUIRED.



2 PV MODULE LAYOUT AND MOUNTING



1 POWER PLAN



LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS
1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:

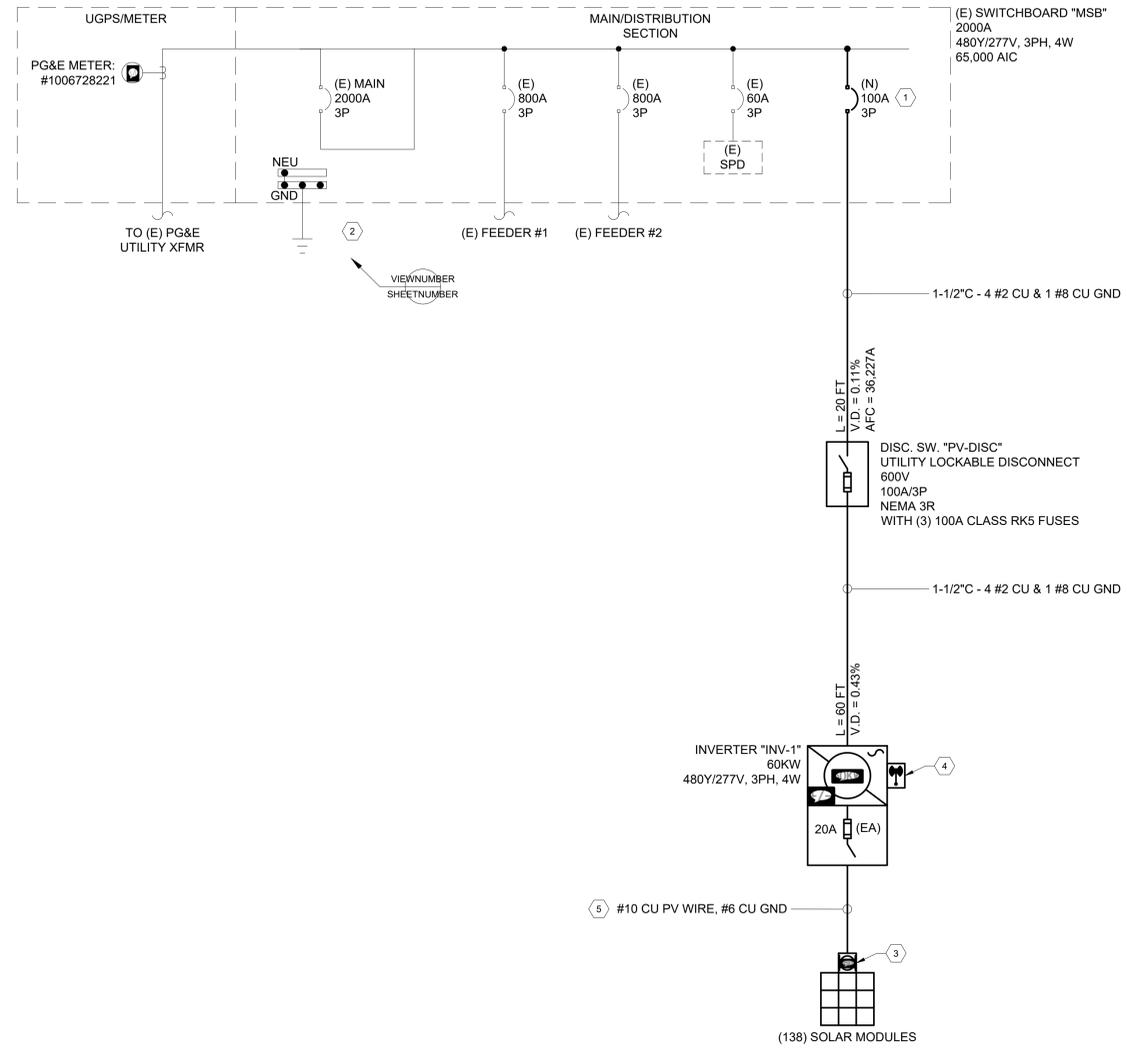
PROJECT #:	23-005
SUBMITTAL:	90%CD
DRAWN BY:	CDS
REVIEWED BY:	AJS
SCALE:	AS NOTED
DATE:	10/07/2025

SHEET NAME:

ROOF PLAN

SHEET NUMBER:

E-201



SHEET NOTES:

- REFER TO SHEET E-601 FOR LABELS REQUIRED ON EQUIPMENT, RACEWAYS, AND BOXES.

KEY NOTES:

- PROVIDE NEW BREAKER FOR SOLAR POINT OF CONNECTION. LOCATE AT THE END OF THE BUS.
- PV GROUNDING SYSTEM SHALL BE BONDED TO THE SERVICE GROUNDING ELECTRODE SYSTEM.
- PROVIDE RAPID SHUTDOWN DEVICE FOR PV MODULES PER TABLE ON THIS SHEET.
- PROVIDE 4G CELLULAR ETHERNET NETWORK CARD #ENC-PORT-C510.
- PROVIDE STRINGS PER STRING INFORMATION SCHEDULES.

PV SYSTEM SUMMARY:

MODULE
 LONGI #LR5-72HBD-545M
 TILT: 9°
 AZIMUTH: 90° & 270°
 QTY: (138)

INVERTER
 YASKAWA SOLECTRIA SOLAR #PVI-60TL-480
 MAX DC INPUT: 90 KW, 1000 V
 MAX AC OUTPUT: 60 KW, 72.2 A, 480V/3PH (90.25A CONT.)
 QTY: (1)

SYSTEM SIZE
 DC: (138) x (545W) = 75.21 KW
 AC: (1) x (60 KW) = 60.00 KW
 DC/AC RATIO: 1.25
 CEC-AC: (138) x (502.2 PTC) x (0.985 EFF) = 68.264 KW

Temperature Information	
LOCATION (CITY, STATE)	HOLLISTER, CA
MIN TEMP (°F)	14
MAX TEMP (°F)	110
NEC TEMP CORRECTION FACTOR	1.14

PV Racking Information	
MANUFACTURER	IRONRIDGE
MODEL	XR RAIL SYSTEM
TYPE	FLUSH MOUNTED RAIL

Inverter Information	
MANUFACTURER	YASKAWA SOLECTRIA
MODEL	PVI-60TL-480
NUMBER OF INVERTERS	1
INVERTER REAL POWER (KW)	60.0
SYSTEM TOTAL POWER (KW)	60.0
INVERTER APPARENT POWER (KVA)	60.0
SYSTEM TOTAL POWER (KVA)	60.0
OUTPUT AC	480Y/277V 3PH 4W
MAX INPUT (V)	1000
MAX MPPT (V)	850
MIN MPPT (V)	480
ENCLOSURE	NEMA 4X
MAXIMUM INVERTER CURRENT (A)	72.2
TOTAL MAXIMUM CURRENT (A)	72.2
EFFICIENCY	98.5%

PV Module Information	
MANUFACTURER	LONGI
MODEL	LR5-72HBD-545M
POWER P _{max} (W)	545
PTC RATING (W)	502.2
OPEN CIRCUIT VOLTAGE V _{oc} (V)	49.65
MAX POWER VOLTAGE V _{mp} (V)	41.85
SHORT CIRCUIT CURRENT I _{sc} (A)	13.85
MAX POWER CURRENT I _{mp} (A)	12.97
TEMP COEF. V _{oc} (%/K)	-0.265
MODULE QUANTITY	138

Rapid Shutdown Optimizer	
MANUFACTURER	AP SMART
MODEL	RSD-D-20
QUANTITY	72

STRING INFORMATION "INV-1"				
	MPPT-1	MPPT-2	MPPT-3	TOTAL
MAX POWER POINT TRACKER	MPPT-1	MPPT-2	MPPT-3	TOTAL
STRINGS PER MPPT	3	3	3	9
MODULES PER STRING	15	16	15	138
STRING V _{oc} (V) [STC]	849.0	905.6	849.0	905.6
ADJUSTED MAX VOLTAGE (V)	813.8	868.1	813.8	868.1
STRING V _{mp} (V) [STC]	624.8	667.4	624.8	667.4
STRING I _{sc} (A)	52.1	52.1	52.1	156.4
NOMINAL OPERATING CURRENT (A)	38.9	38.9	38.9	116.7
DC POWER (KW) [STC]	24.5	26.2	24.5	75.2
INVERTER AC TO DC RATIO	0.41	0.44	0.41	1.25



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REVISIONS:

PROJECT #: 23-005
 SUBMITTAL: 90%CD
 DRAWN BY: CDS
 REVIEWED BY: AJS
 SCALE: AS NOTED
 DATE: 10/07/2025

SHEET NAME:
SINGLE LINE DIAGRAM

SHEET NUMBER:
E-401



Raising the bar in innovative DC MLPE solar power systems



RSD-D

- Meets NEC 2017 & 2020 (690.12) requirements
- Executes rapid shutdown of system when Transmitter-PLC signal is absent
- Meets SunSpec requirements
- Dual input channel

RSD-D meets SunSpec requirements, maintaining normal function by continually receiving a heartbeat signal from the APsmart Transmitter. The RSD-D executes rapid system shutdown when the Transmitter signal is absent. Users can manually execute rapid shutdown using Transmitter breaker switch.

RSD-D TECHNICAL DATA

MODEL	RSD-D-15	RSD-D-20
INPUT DATA (DC)		
Range of Input Operating Voltage	8-65V Per Channel	
Maximum Cont. Input Current (Imax)	15A Per Channel	20A Per Channel
Maximum Short Circuit Current (Isc)	25A	
OUTPUT DATA (DC)		
Range of Output Operating Voltage	15-130V	
Maximum Cont. Output Current	15A	20A
Maximum System Voltage	1000V/1500V	
Maximum Series Fuse Rating	30A	
MECHANICAL DATA		
Operating Ambient Temperature Range	-40 °F to +167 °F (-40 °C to +75 °C)	
Dimensions (without cable & connectors)	5.5" x 2" x 0.81/1.40 mm x 50.6 mm x 20 mm	
Cable Length	Input 500mm/Output 2400mm	
Cable Cross Section Size	TUV-4mm ² /UL12AWG	
Connector	Input: Stäubli MC4 PV-KBT48&ST4 or Customize Output: APsystems specified or Customized	
Enclosure Rating	NEMA Type 6P/IP68	
Protection Temperature	100°C	
FEATURES & COMPLIANCE		
Communication Compliance	PLC	
Safety Compliance	NEC 2017 & 2020 (690.12); UL1741; CSA C22.2 No. 330-17; IEC/EN62109-1	
EMC Compliance	FCC Part15; ICES-003	



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Rev.2.0 2022-05-27

Hi-MO5

LR5-72HBD 530~550M

- Suitable for distributed projects
- Advanced module technology delivers superior module efficiency
 - 102 Cells in 60 Cells (Integrated Segmented Ribbons - 18 Substrate/Four Cell)
- Globally validated bifacial energy yield
- High module quality ensures long-term reliability

- 12-year Warranty for Materials and Processing
- 30-year Warranty for Extra Linear Power Output

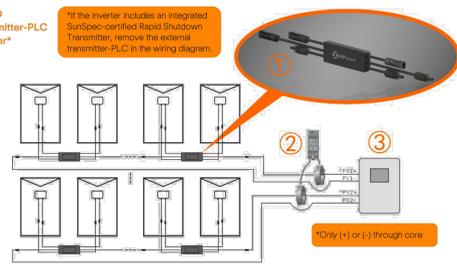
Complete System and Product Certifications
 IEC 61215, IEC 61701, UL 61709
 ISO 9001:2015 ISO 14001:2015
 ISO 14001:2015 ISO 45001:2018
 ISO 45001:2018 Occupational Health and Safety
 IEC 62941: guideline for module design qualification and type approval



RSD-D WIRING DIAGRAM

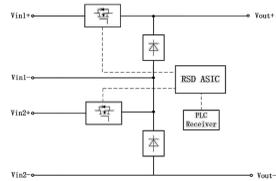
- 1 RSD-D
- 2 Transmitter-PLC
- 3 Inverter

If the inverter includes an integrated SunSpec-certified Rapid Shutdown Transmitter, remove the external transmitter-PLC in the wiring diagram.



*Only (+) or (-) through core

WORKING SCHEMATIC DIAGRAM



ORDERING INFORMATION

426101	1500V UL1000V TUV, 15A, 2.4m cable, Stäubli MC4 PV-KBT48&ST4
446101	1500V UL1000V TUV, 20A, 2.4m cable, Stäubli MC4 PV-KBT48&ST4
4261xx*	15A, 2.4m cable, Customize connector
4461xx*	20A, 2.4m cable, Customize connector

*Please see the RSD Series Ordering Information

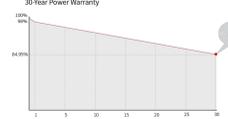
APsmart
8701 N. Mopac Exp. Ste 180, Austin, TX 78750 | +1-737-218-8486 | +1-866-374-8638 | support@APsmartGlobal.com | APsmartGlobal.com

Rev.2.0 2022-05-27

Hi-MO5

21.5% MAXIMUM EFFICIENCY | 0~3% POWER TOLERANCE | <2% FIRST-YEAR POWER DEGRADATION | 0.45% PER 25°C POWER DEGRADATION | HALF-CELL LITING OPERATING TEMPERATURE

Additional Value



Mechanical Parameters

Cell Orientation	1440x246
Junction Box	90A
Connector Type	EV03
Output Cable	4mm ² ±1400mm/length can be customized
Glass	Dual glass, 2.0-2.0mm Semi-tempered glass
Frame	Anodized aluminum alloy frame
Weight	12.5kg
Dimension	2256x1133x35mm 88.82x44.61x1.38
Packaging	33pcs per pallet 588 pcs (only for USA) per 40' HC

Electrical Characteristics

Module Type	STC: AM1.5, 1000W/m ² , 25°C		NOCT: AM1.5, 800W/m ² , 20°C, 1m/s	
	LR5-72HBD-530M	LR5-72HBD-535M	LR5-72HBD-540M	LR5-72HBD-550M
Rating Condition	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	330	395.2	345	407.6
Open Circuit Voltage (Voc)	49.20	46.36	49.50	46.54
Short Circuit Current (Isc)	13.71	13.07	13.85	13.17
Voltage at Maximum Power (Vmp)	41.35	36.58	41.50	36.86
Current at Maximum Power (Imp)	12.82	10.27	12.89	10.39
Module Efficiency(%)	20.7	20.9	21.3	21.5

Electrical characteristics with different rear side power gain (reference to 540W front)

Power W	Imp A	Vmp V	Imp A	Vmp V
567	49.50	44.54	46.65	41.61
594	49.50	45.23	46.65	42.36
621	49.50	45.92	46.75	43.11
648	49.50	46.62	46.75	43.86
675	49.50	47.31	46.75	44.61

Operating Parameters

Operational Temperature	-40°C ~ +85°C
Power Output Tolerance	-3%
Maximum System Voltage	DC1500V (IEC/UL)
Maximum Series Fuse Rating	30A
Nominal Operating Cell Temperature	45±2°C
Protection Class	Class I
IP Rating	IP68
Fire Rating	UL type 165 IEC Class C

Mechanical Loading

Front Side Maximum Static Loading	5400Pa
Rear Side Maximum Static Loading	2400Pa
Hailstone Test	25mm Hailstone at the speed of 23m/s

Temperature Ratings (STC)

Temperature Coefficient of Isc	+0.050%/°C
Temperature Coefficient of Voc	-0.260%/°C
Temperature Coefficient of Pmax	-0.340%/°C

Specifications included in this database are subject to change without notice. LONGI reserves the right of final interpretation. 02024050_V5B16_06

EQUIPMENT SELECTED



SOLECTRIA® PVI-50TL-480 / PVI-60TL-480

3-PHASE TRANSFORMERLESS COMMERCIAL STRING INVERTERS

FEATURES

- Certified to IEEE 1547-2018 and UL 1741B
- Dual rated listing allows selection of either 50/60 kVA (factory default) or 55/66 kVA (allowing full rated power down to 50/60 PF)
- Wirebox models with built-in SunSpec compliant transmitters for Module-Level Rapid Shutdown for simple, safe NEC compliance
- UL Listed as a PV Rapid Shutdown System with APsmart
- Integrated UL-listed Arc-Fault protection
- 15-90° mounting angle allows low-profile rooftop installations
- 3 MPPT's with 5 inputs each for PV array flexibility
- Industry-leading DC/AC ratio of 1.8 (50TL) and 1.5 (60TL)
- Integrated AC and DC disconnects
- Remote firmware upgrades and diagnostics
- NEMA 4X outdoor-rated enclosure with proven performance
- Copper and Aluminum compatible AC connections
- Compatible with Bifacial PV Modules

OPTIONS

- Shade cover
- DC fuse bypass
- Web-based monitoring

Yaskawa Solectria Solar's PVI-50TL-480 and PVI-60TL-480 are transformerless 3-phase inverters, ideal for rooftops, carports and ground-mount PV systems



The PVI-50TL-480 and PVI-60TL-480 come standard with AC and DC disconnects, three MPPTs, and a wiring box with 15 fuse positions. For rooftop PV systems, both Module-Level Rapid Shutdown (MLRSD) wirebox models provide PV Rapid Shutdown System (PVSS) compliance and include a built-in SunSpec compliant powerline communication transmitter.

Rapid-shutdown-ready wireboxes provide compatibility with APsmart rapid shutdown products. Yaskawa Solectria Solar's family of PVI-50/60TL-480 inverters, including standard wireboxes and the rapid-shutdown ready wirebox models, provides flexibility and convenience unmatched in the industry.

Standard Wirebox

- 20A fuses, positive polarity only
- No built-in PVSS transmitter



Module-Level Rapid Shutdown Wireboxes

- 20A fuses, positive polarity only
- Built-in PVSS transmitter
- Compatible with APsmart module-level rapid shutdown devices



Yaskawa Solectria Solar | 1-978-683-9700 | Email: sales@solectria.com | solectria.com
Document No. FL-PSV060TL01 | 07/17/2024 | © 2021 Yaskawa America, Inc.

PVI-50TL-480 / PVI-60TL-480 TECHNICAL DATA

SPECIFICATIONS

Inverter Model (Listing File Name)	PVI-50TL-480 (PVI-50TL-480) 50 kVA (5.5 per MPPT)	PVI-60TL-480 (PVI-60TL-480) 60 kVA (6.6 per MPPT)
DC Input	Maximum PV Power: 90 kW (23.5 per MPPT) Maximum Input Voltage: 1000 VDC DC Voltage Range (Operating/Max. Power (MPPT)): 200-950 VDC / 240-950 VDC Start-up DC Input Voltage/Power: 330 V / 80 W Number of MPPT Traces/Inputs: 3 Traces/5 (3 fused input each) Maximum Available PV Current (Isc x 1.25): 204 A (88 A per MPPT) Maximum Operating Input Current (clipping point): 108 A (38 A per MPPT) DC Surge Protection: Type 1 MOV, 2800 V, 20 kA (8.00 kA) Rated AC Real Power (Available Power/Output Current): 60 kW / 50 kVA / 60.2 A Overhead Module Real Power/Output Current: 90 kW / 66 kVA / 72.4 A Nominal Output Voltage/Range: 480 VAC / ±2% to ±7% Nominal Output Frequency/Range: 60 Hz / 0.1-43 Hz	Maximum PV Power: 90 kW (5.5 per MPPT) Maximum Input Voltage: 1000 VDC DC Voltage Range (Operating/Max. Power (MPPT)): 200-950 VDC / 240-950 VDC Start-up DC Input Voltage/Power: 330 V / 80 W Number of MPPT Traces/Inputs: 3 Traces/5 (3 fused input each) Maximum Available PV Current (Isc x 1.25): 204 A (88 A per MPPT) Maximum Operating Input Current (clipping point): 108 A (38 A per MPPT) DC Surge Protection: Type 1 MOV, 2800 V, 20 kA (8.00 kA) Rated AC Real Power (Available Power/Output Current): 60 kW / 50 kVA / 60.2 A Overhead Module Real Power/Output Current: 90 kW / 66 kVA / 72.4 A Nominal Output Voltage/Range: 480 VAC / ±2% to ±7% Nominal Output Frequency/Range: 60 Hz / 0.1-43 Hz
AC Output	Power Factor: UNF, >0.99 (Adjustable 0.8 leading to 0.8 lagging) Fault Current Contribution (1 Cycle RMS): 641 A Total Harmonic Distortion (THD) @ Rated Load: <3% Grid Connection Type: 3-Phase, N (neutral conductor optional) Maximum DC/DC Device AC Surge Protection: Type 3 MOV, 1340 V, 15 kA, 18,200 J Peak Efficiency: 98.8% CFC Efficiency: 98.9% Iron Loss: <1 W Ambient Temperature Range: -22°F to +140°F (32°C to +40°C). Derating occurs over +10°F (+40°C) Storage Temperature Range: No low temp minimum to +150°F (+70°C) Relative Humidity (non-condensing): 0-100% Operating Altitude: 15,125 ft (4,600 m). Derating occurs from 9,842.5 ft (3,000 m) Modbus Protocol: Proprietary / SunSpec Substrate: Web-based Monitoring Service: Optional	Power Factor: UNF, >0.99 (Adjustable 0.8 leading to 0.8 lagging) Fault Current Contribution (1 Cycle RMS): 641 A Total Harmonic Distortion (THD) @ Rated Load: <3% Grid Connection Type: 3-Phase, N (neutral conductor optional) Maximum DC/DC Device AC Surge Protection: Type 3 MOV, 1340 V, 15 kA, 18,200 J Peak Efficiency: 98.8% CFC Efficiency: 98.9% Iron Loss: <1 W Ambient Temperature Range: -22°F to +140°F (32°C to +40°C). Derating occurs over +10°F (+40°C) Storage Temperature Range: No low temp minimum to +150°F (+70°C) Relative Humidity (non-condensing): 0-100% Operating Altitude: 15,125 ft (4,600 m). Derating occurs from 9,842.5 ft (3,000 m) Modbus Protocol: Proprietary / SunSpec Substrate: Web-based Monitoring Service: Optional
Efficiency	Peak Efficiency: 98.8% CFC Efficiency: 98.9% Iron Loss: <1 W	Peak Efficiency: 98.8% CFC Efficiency: 98.9% Iron Loss: <1 W
Environment	Ambient Temperature Range: -22°F to +140°F (32°C to +40°C). Derating occurs over +10°F (+40°C) Storage Temperature Range: No low temp minimum to +150°F (+70°C) Relative Humidity (non-condensing): 0-100% Operating Altitude: 15,125 ft (4,600 m). Derating occurs from 9,842.5 ft (3,000 m) Modbus Protocol: Proprietary / SunSpec Substrate: Web-based Monitoring Service: Optional	Ambient Temperature Range: -22°F to +140°F (32°C to +40°C). Derating occurs over +10°F (+40°C) Storage Temperature Range: No low temp minimum to +150°F (+70°C) Relative Humidity (non-condensing): 0-100% Operating Altitude: 15,125 ft (4,600 m). Derating occurs from 9,842.5 ft (3,000 m) Modbus Protocol: Proprietary / SunSpec Substrate: Web-based Monitoring Service: Optional
Communications	Reverse Grid Metering: Optional, External Communications Interface: RS-485 Modbus RTU Remote Firmware Upgrades: Ethernet Network Card required Remote Diagnostics: Ethernet Network Card required	Reverse Grid Metering: Optional, External Communications Interface: RS-485 Modbus RTU Remote Firmware Upgrades: Ethernet Network Card required Remote Diagnostics: Ethernet Network Card required
Safety	Certifications and Standards: IEEE 1547-2018, UL 1741, UL 1741-5B, UL 1741-5C, UL 1741-5D, UL 1741-5E, UL 1741-5F, UL 1741-5G, UL 1741-5H, UL 1741-5I, UL 1741-5J, UL 1741-5K, UL 1741-5L, UL 1741-5M, UL 1741-5N, UL 1741-5O, UL 1741-5P, UL 1741-5Q, UL 1741-5R, UL 1741-5S, UL 1741-5T, UL 1741-5U, UL 1741-5V, UL 1741-5W, UL 1741-5X, UL 1741-5Y, UL 1741-5Z, UL 1741-5AA, UL 1741-5AB, UL 1741-5AC, UL 1741-5AD, UL 1741-5AE, UL 1741-5AF, UL 1741-5AG, UL 1741-5AH, UL 1741-5AI, UL 1741-5AJ, UL 1741-5AK, UL 1741-5AL, UL 1741-5AM, UL 1741-5AN, UL 1741-5AO, UL 1741-5AP, UL 1741-5AQ, UL 1741-5AR, UL 1741-5AS, UL 1741-5AT, UL 1741-5AU, UL 1741-5AV, UL 1741-5AW, UL 1741-5AX, UL 1741-5AY, UL 1741-5AZ, UL 1741-5BA, UL 1741-5BB, UL 1741-5BC, UL 1741-5BD, UL 1741-5BE, UL 1741-5BF, UL 1741-5BG, UL 1741-5BH, UL 1741-5BI, UL 1741-5BJ, UL 1741-5BK, UL 1741-5BL, UL 1741-5BM, UL 1741-5BN, UL 1741-5BO, UL 1741-5BP, UL 1741-5BQ, UL 1741-5BR, UL 1741-5BS, UL 1741-5BT, UL 1741-5BU, UL 1741-5BV, UL 1741-5BW, UL 1741-5BX, UL 1741-5BY, UL 1741-5BZ, UL 1741-5CA, UL 1741-5CB, UL 1741-5CC, UL 1741-5CD, UL 1741-5CE, UL 1741-5CF, UL 1741-5CG, UL 1741-5CH, UL 1741-5CI, UL 1741-5CJ, UL 1741-5CK, UL 1741-5CL, UL 1741-5CM, UL 1741-5CN, UL 1741-5CO, UL 1741-5CP, UL 1741-5CQ, UL 1741-5CR, UL 1741-5CS, UL 1741-5CT, UL 1741-5CU, UL 1741-5CV, UL 1741-5CW, UL 1741-5CX, UL 1741-5CY, UL 1741-5CZ, UL 1741-5DA, UL 1741-5DB, UL 1741-5DC, UL 1741-5DD, UL 1741-5DE, UL 1741-5DF, UL 1741-5DG, UL 1741-5DH, UL 1741-5DI, UL 1741-5DJ, UL 1741-5DK, UL 1741-5DL, UL 1741-5DM, UL 1741-5DN, UL 1741-5DO, UL 1741-5DP, UL 1741-5DQ, UL 1741-5DR, UL 1741-5DS, UL 1741-5DT, UL 1741-5DU, UL 1741-5DV, UL 1741-5DW, UL 1741-5DX, UL 1741-5DY, UL 1741-5DZ, UL 1741-5EA, UL 1741-5EB, UL 1741-5EC, UL 1741-5ED, UL 1741-5EE, UL 1741-5EF, UL 1741-5EG, UL 1741-5EH, UL 1741-5EI, UL 1741-5EJ, UL 1741-5EK, UL 1741-5EL, UL 1741-5EM, UL 1741-5EN, UL 1741-5EO, UL 1741-5EP, UL 1741-5EQ, UL 1741-5ER, UL 1741-5ES, UL 1741-5ET, UL 1741-5EU, UL 1741-5EV, UL 1741-5EW, UL 1741-5EX, UL 1741-5EY, UL 1741-5EZ, UL 1741-5FA, UL 1741-5FB, UL 1741-5FC, UL 1741-5FD, UL 1741-5FE, UL 1741-5FF, UL 1741-5FG, UL 1741-5FH, UL 1741-5FI, UL 1741-5FJ, UL 1741-5FK, UL 1741-5FL, UL 1741-5FM, UL 1741-5FN, UL 1741-5FO, UL 1741-5FP, UL 1741-5FQ, UL 1741-5FR, UL 1741-5FS, UL 1741-5FT, UL 1741-5FU, UL 1741-5FV, UL 1741-5FW, UL 1741-5FX, UL 1741-5FY, UL 1741-5FZ, UL 1741-5GA, UL 1741-5GB, UL 1741-5GC, UL 1741-5GD, UL 1741-5GE, UL 1741-5GF, UL 1741-5GG, UL 1741-5GH, UL 1741-5GI, UL 1741-5GJ, UL 1741-5GK, UL 1741-5GL, UL 1741-5GM, UL 1741-5GN, UL 1741-5GO, UL 1741-5GP, UL 1741-5GQ, UL 1741-5GR, UL 1741-5GS, UL 1741-5GT, UL 1741-5GU, UL 1741-5GV, UL 1741-5GW, UL 1741-5GX, UL 1741-5GY, UL 1741-5GZ, UL 1741-5HA, UL 1741-5HB, UL 1741-5HC, UL 1741-5HD, UL 1741-5HE, UL 1741-5HF, UL 1741-5HG, UL 1741-5HH, UL 1741-5HI, UL 1741-5HJ, UL 1741-5HK, UL 1741-5HL, UL 1741-5HM, UL 1741-5HN, UL 1741-5HO, UL 1741-5HP, UL 1741-5HQ, UL 1741-5HR, UL 1741-5HS, UL 1741-5HT, UL 1741-5HU, UL 1741-5HV, UL 1741-5HW, UL 1741-5HX, UL 1741-5HY, UL 1741-5HZ, UL 1741-5IA, UL 1741-5IB, UL 1741-5IC, UL 1741-5ID, UL 1741-5IE, UL 1741-5IF, UL 1741-5IG, UL 1741-5IH, UL 1741-5IJ, UL 1741-5IK, UL 1741-5IL, UL 1741-5IM, UL 1741-5IN, UL 1741-5IO, UL 1741-5IP, UL 1741-5IQ, UL 1741-5IR, UL 1741-5IS, UL 1741-5IT, UL 1741-5IU, UL 1741-5IV, UL 1741-5IW, UL 1741-5IX, UL 1741-5IY, UL 1741-5IZ, UL 1741-5JA, UL 1741-5JB, UL 1741-5JC, UL 1741-5JD, UL 1741-5JE, UL 1741-5JF, UL 1741-5JG, UL 1741-5JH, UL 1741-5JI, UL 1741-5JJ, UL 1741-5JK, UL 1741-5JL, UL 1741-5JM, UL 1741-5JN, UL 1741-5JO, UL 1741-5JP, UL 1741-5JQ, UL 1741-5JR, UL 1741-5JS, UL 1741-5JT, UL 1741-5JU, UL 1741-5JV, UL 1741-5JW, UL 1741-5JX, UL 1741-5JY, UL 1741-5JZ, UL 1741-5KA, UL 1741-5KB, UL 1741-5KC, UL 1741-5KD, UL 1741-5KE, UL 1741-5KF, UL 1741-5KG, UL 1741-5KH, UL 1741-5KI, UL 1741-5KJ, UL 1741-5KL, UL 1741-5KM, UL 1741-5KN, UL 1741-5KO, UL 1741-5KP, UL 1741-5KQ, UL 1741-5KR, UL 1741-5KS, UL 1741-5KT, UL 1741-5KU, UL 1741-5KV, UL 1741-5KW, UL 1741-5KX, UL 1741-5KY, UL 1741-5KZ, UL 1741-5LA, UL 1741-5LB, UL 1741-5LC, UL 1741-5LD, UL 1741-5LE, UL 1741-5LF, UL 1741-5LG, UL 1741-5LH, UL 1741-5LI, UL 1741-5LJ, UL 1741-5LK, UL 1741-5LL, UL 1741-5LM, UL 1741-5LN, UL 1741-5LO, UL 1741-5LP, UL 1741-5LQ, UL 1741-5LR, UL 1741-5LS, UL 1741-5LT, UL 1741-5LU, UL 1741-5LV, UL 1741-5LW, UL 1741-5LX, UL 1741-5LY, UL 1741-5LZ, UL 1741-5MA, UL 17	

LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS
 1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:

PROJECT #: 23-005

SUBMITTAL: 90%CD

DRAWN BY: CDS

REVIEWED BY: AJS

SCALE: AS NOTED

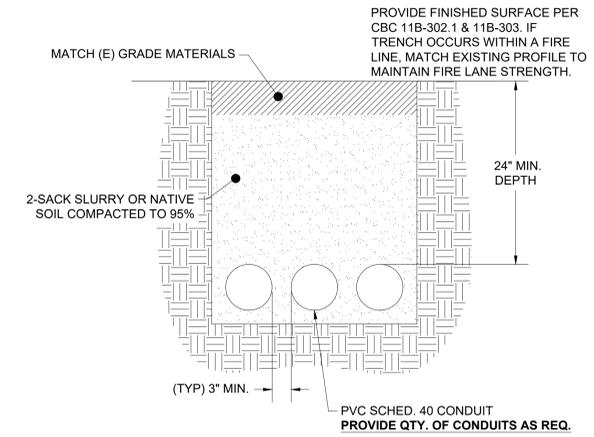
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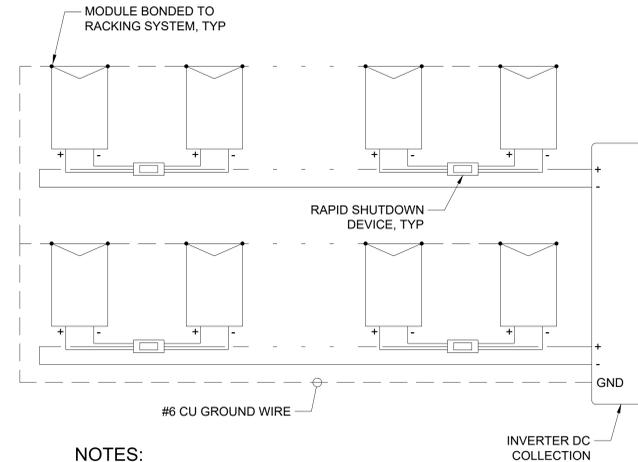
DETAILS

SHEET NUMBER:

E-504

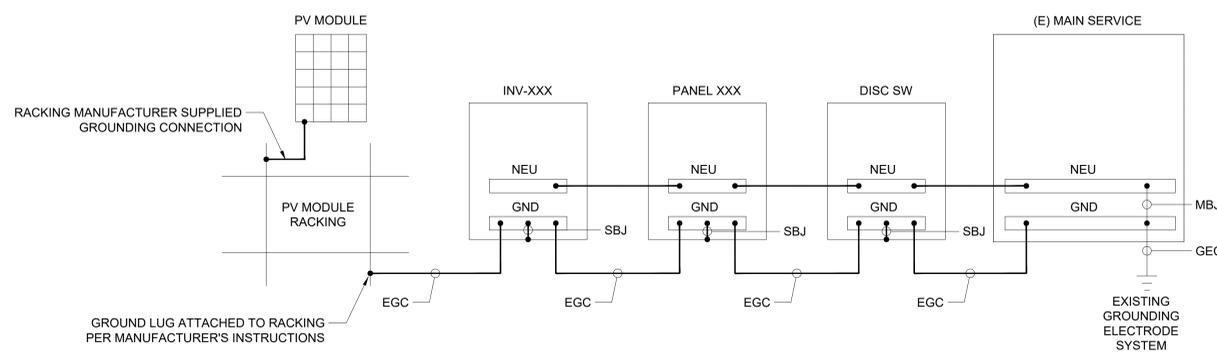


2 CONDUIT TRENCH



- NOTES:**
1. PROVIDE NUMBER OF MODULES AND STRINGS AS INDICATED IN STRINGING TABLE.
 2. STRING CONNECTION TO HOMERUN MUST BE MADE WITH SAME MAKE/MODEL AS THE MODULE CONNECTIONS.
 3. GROUND MODULE TO RACKING SYSTEM THROUGH MANUFACTURER APPROVED GROUNDING METHOD.
 4. MODULE CONNECTIONS SHALL BE UL LISTED.

1 PV MODULE STRINGING DIAGRAM - ROOFTOP



- NOTES:**
1. REFER TO SINGLE LINE DIAGRAM FOR GROUND WIRE SIZE.
 - 1.1. GROUNDING ELECTRODE CONDUCTOR (GEC) SHALL BE PROVIDED IN ACCORDANCE WITH NEC TABLE 250.66.
 - 1.2. MAIN BONDING JUMPER (MBJ), SYSTEM BONDING JUMPER (SBJ), AND SUPPLY SIDE BONDING JUMPER (SSBJ) SHALL BE PROVIDED IN ACCORDANCE WITH NEC TABLE 250.102(C)(1).
 - 1.3. EQUIPMENT GROUNDING CONDUCTOR (EGC) SHALL BE PROVIDED IN ACCORDANCE WITH NEC TABLE 250.122.
 2. ALL GROUND CONNECTIONS TO BE MADE WITH IRREVERSIBLE BONDS.
 3. MODULE TO BE GROUNDED TO RACKING SYSTEM THROUGH RACKING MANUFACTURER'S SUPPLIED CLAMPS. SEE SHEET E-401 FOR ADDITIONAL DETAIL.
 4. GROUND RESISTANCE TO BE UNDER 25 OHMS PER NEC 250.53.
 5. DC STRING GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.43 & IDENTIFIED PER NEC 690.31. PROVIDE CONTINUOUS PATH FOR EQUIPMENT GROUNDS TO DC BUS BAR WITH ALL EXPOSED NON-CURRENT CARRYING METAL PARTS GROUNDED.
 6. EQUIPMENT TO BE GROUNDED PER NEC 250.110 & 250.134.
 7. ALL EQUIPMENT ENCLOSURES, METALLIC CONDUITS, JUNCTION BOXES, FIXTURES, ETC. SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED.

3 PV SYSTEM GROUNDING DIAGRAM - LOAD SIDE CONNECTION



**Sunnyslope County
Water District**
3570 AIRLINE HWY
HOLLISTER, CA 95023

PRIME
EVA GREEN POWER
2445 IMPALA DRIVE
CARLSBAD, CA 92010

STAMP



**LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS**
1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:

PROJECT #:	23-005
SUBMITTAL:	90%CD
DRAWN BY:	CDS
REVIEWED BY:	AJS
SCALE:	AS NOTED
DATE:	10/07/2025

SHEET NAME:
**LABELS AND
PLACARDS**

SHEET NUMBER:
E-601

SHEET NOTES:

PROVIDE THE FOLLOWING FOR ALL LABELS AND PLACARDS UNLESS OTHERWISE INDICATED.

1. WHITE LETTERING ON A RED BACKGROUND.
2. ALL LETTERS SHALL BE CAPITALIZED.
3. ARIAL OR SIMILAR FONT, NON-BOLD.
4. SELF-ADHERING AND WEATHER-RESISTANT.

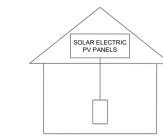
⚡ WARNING ⚡

SOLAR PV OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

1C PV BREAKER - QTY(1)
3" X 1-1/2" NEC 705.12(B)(3)(2)

**SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN**

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY.



NOTES:

1. TOP: BLACK LETTERING ON A YELLOW BACKGROUND.
2. BOTTOM: BLACK LETTERING ON A WHITE BACKGROUND.

1B MAIN SERVICE - QTY(1)
7" X 3-1/2" NEC 690.56(C)

"PV-DISC"

2C AC PV DISCONNECT PLACARD - QTY(1)
3" X 1"

⚡ WARNING ⚡

ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS.
TERMINALS ON BOTH LINE
AND LOAD SIDES MAY STILL
BE ENERGIZED WHEN IN THE
OPEN POSITION.

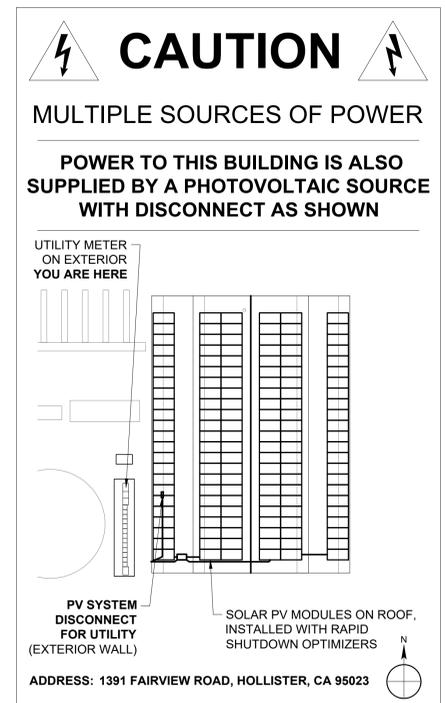
2B AC PV DISCONNECT PLACARD - QTY(1)
4" X 3" NEC 690.13(B)

⚡ PV SYSTEM ⚡

AC DISCONNECT

RATED AC OUTPUT CURRENT 72.2 A
NOMINAL OPERATING AC VOLTAGE 480 V

2A AC PV DISCONNECT PLACARD - QTY(1)
5" X 2" NEC 690.54



1A MAIN SERVICE PLACARD - QTY(1)
6" X 10" NEC 705.10

"INV-1"

3B PV INVERTER "INV-1" PLACARD - QTY(1)
3" X 1"

PHOTOVOLTAIC SYSTEM DC DISCONNECT	
OPERATING VOLTAGE	667.4 VDC
OPERATING CURRENT	116.7 A
MAX SYSTEM VOLTAGE	905.6 VDC
SHORT CIRCUIT CURRENT	156.4 A

3A PV INVERTER PLACARD - QTY(1)
4" X 3"

**DC PHOTOVOLTAIC
SOLAR CIRCUIT**

PLACE MARKINGS ON INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES, AND CABLE ASSEMBLIES EVERY 10-FEET, WITHIN 1-FOOT OF TURNS OR BENDS, AND WITHIN 1-FOOT ABOVE AND BELOW PENETRATIONS OF ROOF/CEILING ASSEMBLIES, WALLS, OR BARRIERS, ALL DC COMBINERS, AND JUNCTION BOXES.

4A DC RACEWAYS, BOXES, EQUIPMENT
STICKER - QTY(AS NEEDED)
6" X 1" NEC 690.31(D)(2)

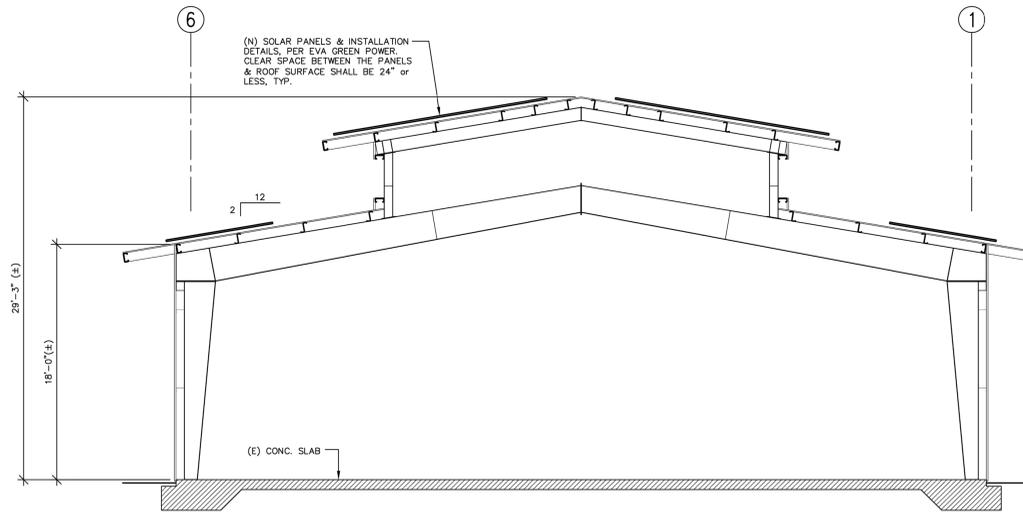
STRUCTURAL NOTES

- ALL CONSTRUCTION not specifically detailed shall conform to the requirements of the 2022 California Building Code (CBC) and any local code requirements. All details, sections and notes shown on the drawings are intended to be typical and shall apply to similar situations elsewhere unless otherwise noted.
- CHECK ALL DIMENSIONS in relation to site conditions before starting work. The contractor shall coordinate work of all trades. All discrepancies shall be called to the attention of the engineer and resolved before proceeding with work. During construction phase the contractor is responsible for the safety of the building and personnel. Provide adequate shoring and/or bracing in accordance with appropriate Local, State and National safety codes.
- STRUCTURAL AND MISCELLANEOUS STEEL shall be in accordance with AISC "Specification for the Fabrication and Erection of Structural Steel for Buildings". Wide flanges shall be 50 ksi ASTM A-992; Channels, angles and other miscellaneous steel shapes shall be 36 ksi ASTM A-36; Steel tubes shall be "HSS" ASTM A-500 grade B unless otherwise noted on the plans. All bolt holes shall be punched or drilled (burning of holes is not permitted). All structural steel shall have one coat of shop primer & at least one final coat with type & color per Architects or owners specification.
- WELDING shall comply with the pertinent recommendations of the American Welding Society (AWS). Quality welding processes and welding operators in accordance with AWS "Standard Qualification Procedures". Electrodes shall be E-70 series and shall conform with AISC specifications.

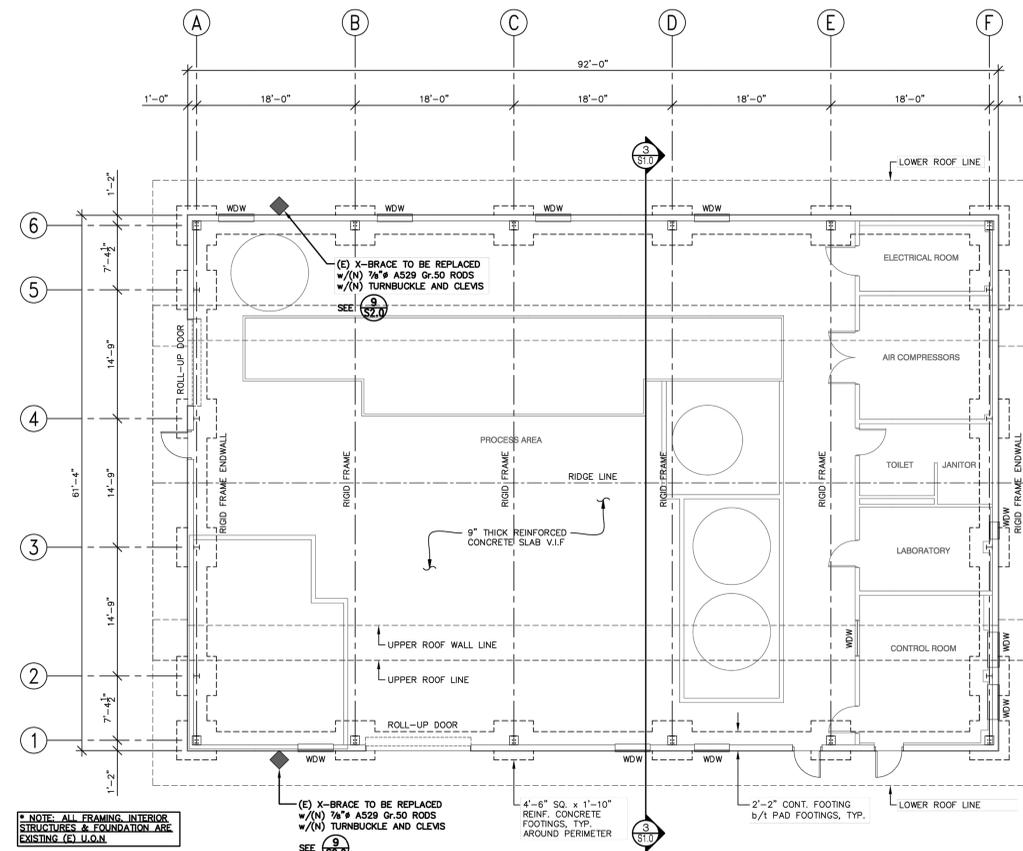
DESIGN LOADS

SCOPE: PROVIDE STRUCTURAL ANALYSIS ALONG WITH PERMIT LEVEL DRAWINGS & CALCULATIONS FOR RETROFITS, AS REQUIRED, FOR INSTALLATION OF PROPOSED SOLAR PANELS.

SECTION 1604.5 & TABLE 1604.5 - RISK CATEGORY	II
SECTION 1606 - DEAD LOADS	
ROOF DEAD LOAD	4 PSF
SOLAR PANELS (INCLUDING SUPPORT FRAMING)	3 PSF
SECTION 1607 - LIVE LOADS	
ROOF LIVE LOAD (REDUCIBLE)	20 PSF
SECTION 1608 - SNOW LOAD	N/A
SECTION 1609 - WIND DESIGN DATA	
BASIC DESIGN WIND SPEED	92 MPH
WIND EXPOSURE	C
SECTION 1613 - EARTHQUAKE DESIGN DATA	
LATITUDE	36.837°
LONGITUDE	-121.363°
SITE CLASS	D
SPECTRAL RESPONSE @ 0.2 SEC PERIOD, S_s	2.14
SPECTRAL RESPONSE @ 1.0 SEC PERIOD, S_1	0.795
SHORT PERIOD SITE COEFFICIENT @ 0.2 SEC PERIOD, F_a	1.2
LONG PERIOD SITE COEFFICIENT @ 1.0 SEC PERIOD, F_v	N/A
MODIFIED SPECTRAL RESPONSE @ 0.2 SEC PERIOD, S_{ms}	2.568
MODIFIED SPECTRAL RESPONSE @ 1.0 SEC PERIOD, S_{m1}	N/A
DESIGN SPECTRAL RESPONSE COEFFICIENTS, S_{DS}	1.712
S_{D1}	N/A
CHAPTER 12 - EQUIVALENT LATERAL FORCE PROCEDURE (ASCE7-16 SECTION 12.8.1)	
SEISMIC IMPORTANCE FACTOR, I_e	1.5
SEISMIC DESIGN CATEGORY	E (S1>0.75)
BASIC SEISMIC FORCE RESISTING SYSTEM	SOMF & SOCBF
RESPONSE MODIFICATION FACTOR, R	3.5 & 3.25
SEISMIC RESPONSE COEFFICIENT, C_s	0.489 & 0.527
DESIGN BASE SHEAR	$V = C_s W$
CHAPTER 13 - ELEMENTAL DESIGN (ASCE 7-16 SECTION 13.3.1)	
SEISMIC DESIGN CATEGORY	E (S1>0.75)
BASIC SEISMIC FORCE RESISTING SYSTEM	SOLAR PANELS
SEISMIC IMPORTANCE FACTOR, I_e	1.0
AMPLIFICATION FACTOR, a_p (TABLE 13.6-1)	1.0
RESPONSE MODIFICATION FACTOR, R_n (TABLE 13.6-1)	1.5
HEIGHT FACTOR, z/h (ANCHORS TO SLAB; $z=0$)	1.0
SEISMIC DESIGN FORCE, F_p	$F_p = 0.4 a_p S_{DS} W_p \left[1 + 2 \frac{z}{h} \right]$
SEISMIC DESIGN FORCE, F_p	1.369 W _p
MINIMUM SEISMIC DESIGN FORCE, F_{pmin}	$F_{pmin} = 0.3(S_{DS})W_p = 0.514 W_p$



3 TYP. BUILDING SECTION
S1.0 SCALE: 1/8" = 1'-0"



1 (E) FOUNDATION PLAN
S1.0 SCALE: 1/8" = 1'-0"

Pacific Engineering Group, Inc.
9699 Blue Larkspur Ln. Suite 104 Monterey, CA 93940
pht: (831) 333-0644



Sunnyslope Water District
Hollister, California
1590 Fairview Road

Frame Analysis for Solar Panels
Structural Notes, Design Data, (E) Foundation Plan & Typical Building Section

ACTION/REVISIONS	BY
RELEASE FOR PERMIT	E.J.I.

SCALE	AS NOTED
DRAWN	N.R.
JOB	25-028
SHEET	
S1.0	
1 OF 2 SHEET	

CLIENT
Sunnyslope County Water District
3570 AIRLINE HWY
HOLLISTER, CA 95023

PRIME
EVA GREEN POWER
2445 IMPALA DRIVE
CARLSBAD, CA 92010

STAMP

LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS

1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:	

PROJECT #:	23-005
SUBMITTAL:	90%CD
DRAWN BY:	CDS
REVIEWED BY:	AJS
SCALE:	AS NOTED
DATE:	10/07/2025

SHEET NAME:
STRUCTURAL
SHEET NUMBER:
S1.0

Pacific Engineering Group, Inc.
 9699 Blue Larkspur Ln. Suite 104 Monterey, CA 93940
 ph: (831) 333-0444



Sunnyslope Water District
 Hollister, California
 1590 Fairview Road
 Hollister, California 95023

Frame Analysis for Solar Panels
 (E) Framing Plan w/Lower Roof, (E) Upper Roof Framing Plan, & Details

ACTION/REVISIONS:	BY
05/13/2025	E.I.
RELEASE FOR PERMIT	

SCALE	AS NOTED
DRAWN	N.R.
JOB	25-028
SHEET	

S2.0
 2 OF 2 SHEET

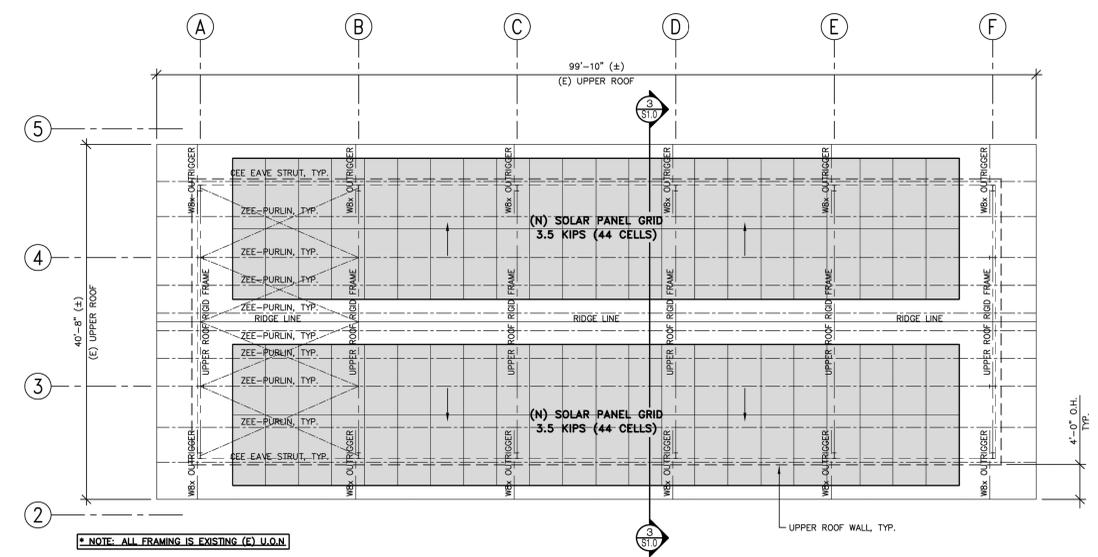
LESSALT WATER TREATMENT PLANT
ROOFTOP SOLAR AND STRUCTURAL IMPROVEMENTS
 1391 FAIRVIEW ROAD, HOLLISTER, CALIFORNIA 95023

REVISIONS:

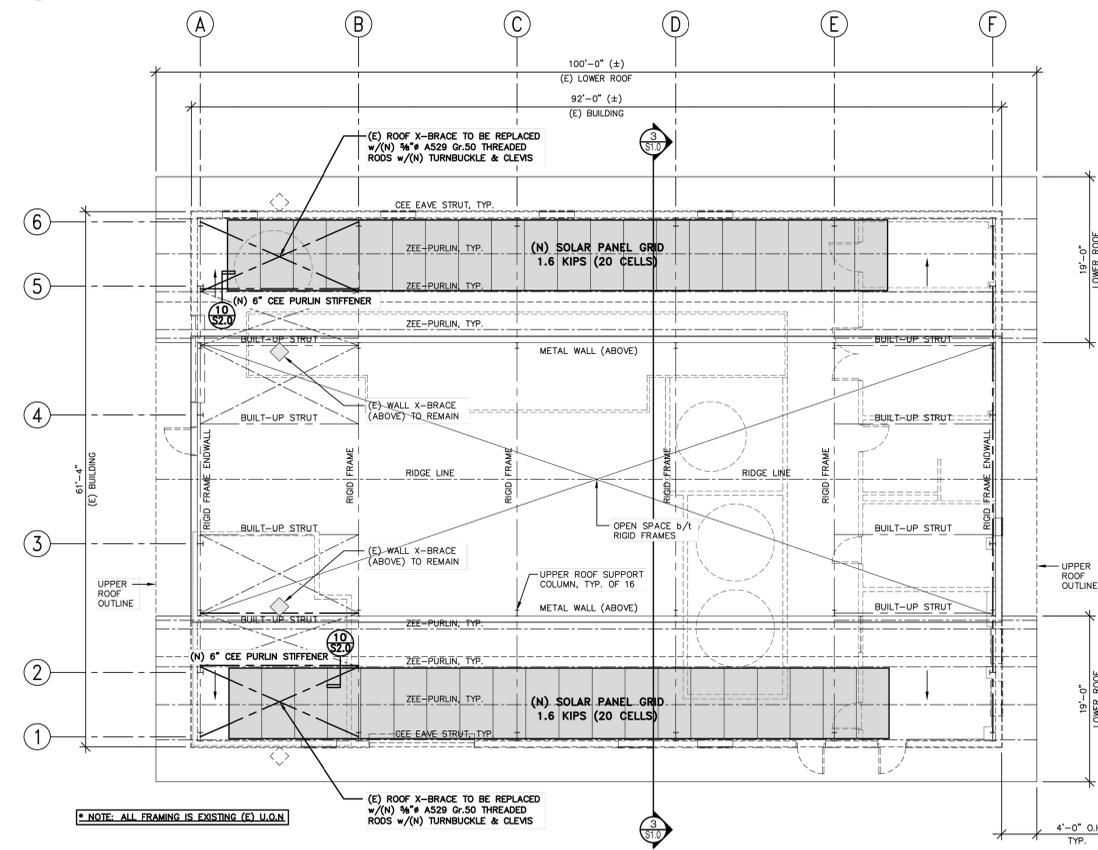
PROJECT #: 23-005
 SUBMITTAL: 90%CD
 DRAWN BY: CDS
 REVIEWED BY: AJS
 SCALE: AS NOTED
 DATE: 10/07/2025

SHEET NAME:
STRUCTURAL

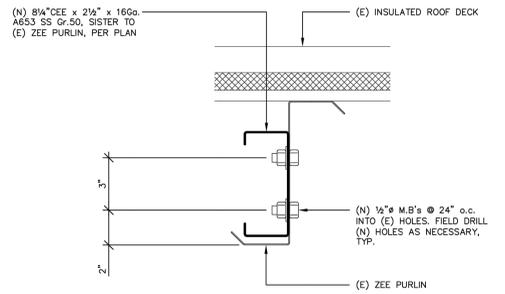
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S2.0



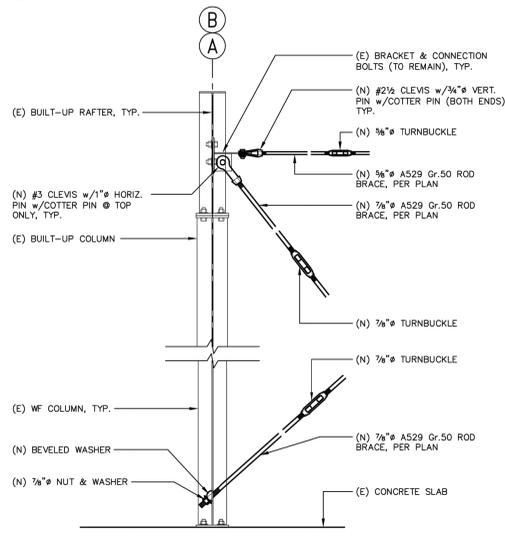
7 (E) UPPER ROOF FRAMING PLAN
 S2.0 SCALE: 1/8" = 1'-0"



5 (E) FRAMING PLAN w/LOWER ROOF
 S2.0 SCALE: 1/8" = 1'-0"



10 (E) PURLIN REINFORCEMENT
 S2.0 SCALE: 3" = 1'-0"



9 (N) ROD BRACE DETAIL
 S2.0 SCALE: 3/4" = 1'-0"