ROOF MOUNT SOLAR PERMIT PACKAGE

XXXXXXXXX

7.695KW DC GRID TIED PHOTOVOLTAIC SYSTEM

XXXXXXXXXXXXX

BUILDING INFORMATION

2 STORY HOUSE
CONSTRUCTION TYPE: V-B
ROOF: W CONCRETE TILE

SINGLE FAMILY RESIDENCE
OCCUPANCY: R3/U
APN: 6402340700

PV SYSTEM SUMMARY:

SYSTEM SIZE (DC)	:	STC: 405 x 19 = 7.695kW DC
	:	PTC: 376.9 x 19 = 7.1611kW DC
SYSTEM SIZE (AC)	:	5.510kW AC @ 240V
MODULES	:	(19) MITREX: M405-I3H
MICRO-INVERTERS	:	ENPHASE: IQ8PLUS-72-2-US
MICRO-INVERTERS QTY	:	19
TILT	:	23°, 23°, 23°, 23°
AZIMUTH	:	82°, 262°, 262°, 262°
ROOF	:	W CONCRETE TILE
RAFTER/TRUSS SIZE	:	2" X 4" TRUSS @ 24" O.C.
ATTACHMENT TYPE	:	UNIVERSAL SOLARHOOK CT5 WITH UNIRAC SOLARMOUNT LIGHT RAIL
BATTERY	:	ENPHASE ENCHARGE10
BATTERY QTY.	:	3
MAIN SERVICE PANEL	:	EXITSING 125 AMPS MSP WITH 100 AMPS MAIN BREAKER ON TOP FED
INTERCONNECTION	:	PV BREAKER
OCPD RATING	:	30 AMPS
UTILITY	:	SAN DIEGO GAS & ELECTRIC COMPANY

GENERAL NOTES:

1. LOCAL UTILITY PROVIDER SHALL BE NOTIFIED PRIOR TO USE AND ACTIVATION OF ANY SOLAR PHOTOVOLTAIC INSTALLATION ·
2. THIS PROJECT SHALL COMPLY WITH LOCAL ORDINANCES ·
3. PROPER ACCESS AND WORKING CLEARANCE WILL BE PROVIDED ·
4. ALL ELECTRICAL WORK SHOWN ON THESE PLANS WILL BE COMPLETED BY THE UNDERSIGNED ·
5. ALL APPLICABLE PV EQUIPMENT LISTED AND COMPLIANT WITH UL2703, UL1741 AND UL1703
6. ALL ROOF PENETRATIONS TO BE SEALED WITH A HIGH PERFORMANCE ROOF SEALANT SUCH AS GeoCel 2300 CLEAR SEALANT ·
7. THE SYSTEM WILL NOT BE INTERCONNECTED UNTIL APPROVAL FROM THE LOCAL JURISDICTION AND THE UTILITY IS OBTAINED ·
8. THE SOLAR PHOTOVOLTAIC INSTALLATION SHALL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS ·
9. IF THE EXISTING MAIN PANEL DOES NOT HAVE VERIFIABLE GROUNDING ELECTRODE, IT IS THE NECESSARY TO INSTALL A SUPPLEMENTAL GROUNDING ELECTRODE ·
10. EACH MODULE WILL BE GROUNDED UL 2703 OR UL 1703 APPROVED USING THE SUPPLIED CONNECTION POINTS IDENTIFIED ON THE MODULE AND THE MANUFACTURER'S INSTALLATION INSTRUCTIONS" ·
11. A LADDER SHALL BE IN PLACE FOR THE INSPECTION IN COMPLIANCE WITH OSHA REGULATIONS ·
12. MAX HEIGHT OF MODULES OFF OF ROOF FACE : <6" ·
13. PHOTOVOLTAIC SYSTEM WILL COMPLY WITH 2022 CEC. ·
14. PHOTOVOLTAIC SYSTEM INVERTER IS UNGROUNDED. NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER, AND SYSTEM COMPLIES WITH 690.35. ·
15. MODULES CONFORM TO AND ARE LISTED UNDER UL 1703. ·
16. INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741. ·
17. ELECTRICAL EQUIPMENT AND MATERIAL TO BE LISTED, LABELED, AND INSTALLED PER THE CEC, THE INSTALLATION STANDARDS/MANUFACTURER'S RECOMMENDATIONS AND IF REQUIRED A RECOGNIZED ELECTRICAL TESTING LABORATORY. ·
18. CONDUITS EXPOSED TO SUNLIGHT ON ROOF SHALL BE LOCATED NOT LESS THAN 7/8" ABOVE ROOF SURFACE.
19. IN EXPOSED LOCATIONS, WIRING AND CABLING SHALL BE IN CONDUIT OR CABLE SHALL BE RATED FOR EXPOSURE; TYPE NM CABLE ALLOWED IN PROTECTED LOCATIONS. WITHIN ATTIC SPACES, ALLOWED TO RUN TYPE NM (ROMEX) 10/3 OR 12/3 CONDUCTORS THROUGH OPEN SPACE OR TYPE THHN IN MINIMUM 3/4" ALUMINUM CONDUIT
20. MATERIALS, EQUIPMENT AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS, STANDARDS, RULES AND REGULATIONS OF THE FOLLOWING AND BE MOST SUITABLE TO THE PURPOSE INTENDED:

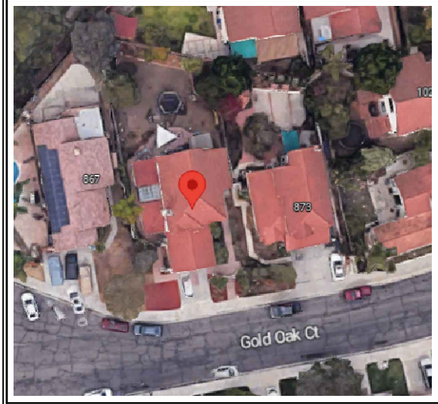
CODE INFORMATION

THE INSTALLATION OF SOLAR ARRAYS AND PHOTOVOLTAIC POWER SYSTEMS SHALL COMPLY WITH THE FOLLOWING CODES:

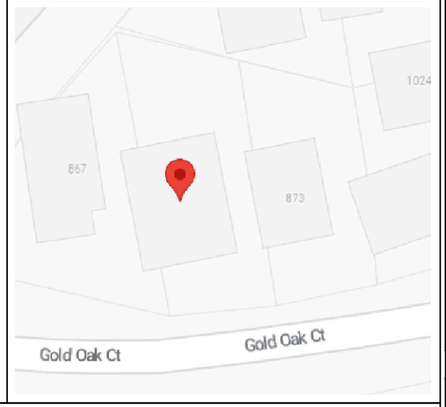
2022 CALIFORNIA BUILDING CODE
2022 CALIFORNIA FIRE CODE
2022 CALIFORNIA PLUMBING CODE
2022 CALIFORNIA MECHANICAL CODE
2022 CALIFORNIA ENERGY CODE
2022 CALIFORNIA RESIDENTIAL CODE
2022 CALIFORNIA ADMINISTRATIVE CODE
2022 CALIFORNIA ELECTRICAL CODE

AHJ: CITY OF CHULA VISTA

AERIAL VIEW



VICINITY VIEW



SHEET INDEX

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

Rev	Description	Date
A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-1.0

TITLE

COVER PAGE

R324.6.1 PATHWAYS:
NOT LESS THAN TWO MINIMUM 36-INCH WIDE PATHWAYS ON SEPARATE ROOF PLANES,
FROM LOWEST ROOF EDGE TO RIDGE, SHALL BE PROVIDED ON ALL BUILDINGS.
AT LEAST ONE PATHWAY SHALL BE PROVIDED ON THE STREET OR DRIVEWAY SIDE OF THE ROOF.
FOR EACH ROOF PLANE WITH A PHOTOVOLTAIC ARRAY,A MINIMUM 36 INCH-WIDE PATHWAY FROM THE LOWEST ROOF EDGE TO RIDGE SHALL BE PROVIDED ON THE SAME ROOF PLANE OR STRADDLING THE SAME AND ADJACENT ROOF PLANES.PATHWAYS SHALL BE OVER AREAS CAPABLE OF SUPPORTING FIRE FIGHTERS ACCESSING THE ROOF.PATHWAYS SHALL BE LOCATED IN AREAS WITH MINIMAL OBSTRUCTIONS SUCH AS VENT PIPES,CONDUIT , OR MECHANICAL EQUIPMENT.

R324.6.2 SETBACK AT RIDGE:
FOR PHOTOVOLTAIC ARRAYS OCCUPYING NOT MORE THAN 33 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA,NOT LESS THAN AN 18 INCH CLEAR SET BACK IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.
FOR PHOTOVOLTAIC ARRAYS OCCUPYING MORE THAN 33 PERCENT OF THE PLAN VIEW TOTAL ROOF AREA,NOT LESS THAN A 36-INCH CLEAR SET BACK IS REQUIRED ON BOTH SIDES OF A HORIZONTAL RIDGE.

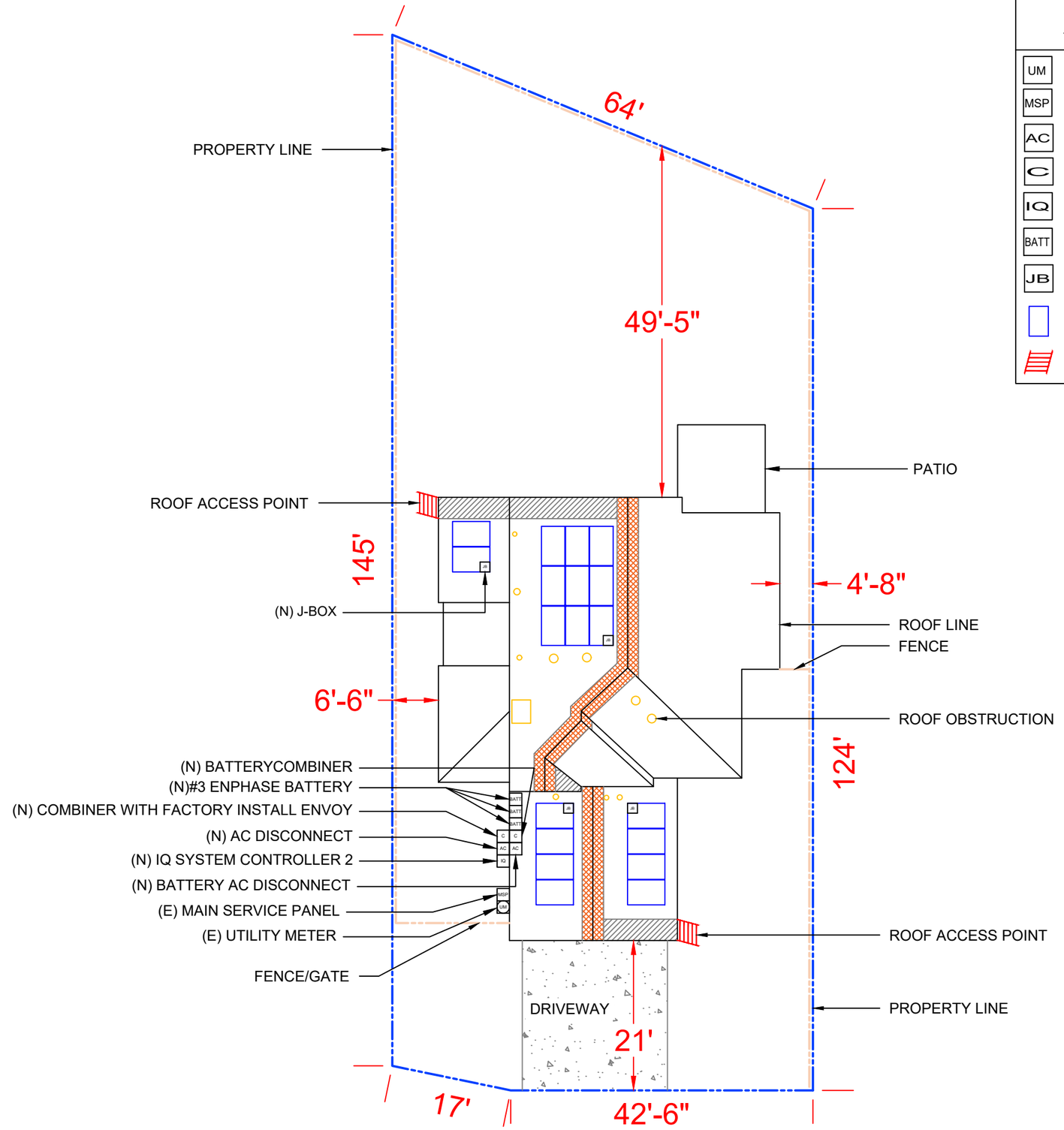
R324.6.4 EMERGENCY ESCAPE AND RESCUE OPENING: PANELS AND MODULES INSTALLED ON DWELLINGS SHALL NOT BE PLACED THE PORTION OF A ROOF THAT IS BELOW AN EMERGENCY ESCAPE AND RESCUE OPENING. A 36-INCH-WIDE PATHWAY SHALL BE PROVIDED TO THE EMERGENCY ESCAPE AND RESCUE OPENING.

A - PATHWAY ON STREET OR DRIVEWAY SIDE OF ROOF
B - FIRE ACCESS POINT

36" ACCESS PATHWAYS

18" ACCESS PATHWAYS

NOTES:
1. MINOR FIELD ADJUSTMENTS ALLOWED BASED ON ACTUAL SITE CONDITION AND MEASUREMENTS.
2. THE 30 SECOND SHUTDOWN REQUIREMENT IS INCORPORATED INTO THE 2022 CEC AND UL STANDARD 1741.
3. EXISTING ROOF VENT SHOULD NOT BE COVERED.



LEGEND

UM	UTILITY METER
MSP	MAIN SERVICE PANEL
AC	AC DISCONNECT
C	COMBINER
IQ	IQ SYSTEM CONTROLLER 2
BATT	BATTERY
JB	JUNCTION BOX
	MODULE
	ROOF ACCESS POINT

1 **SITE PLAN**
SCALE: 1/16" = 1'-0"

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

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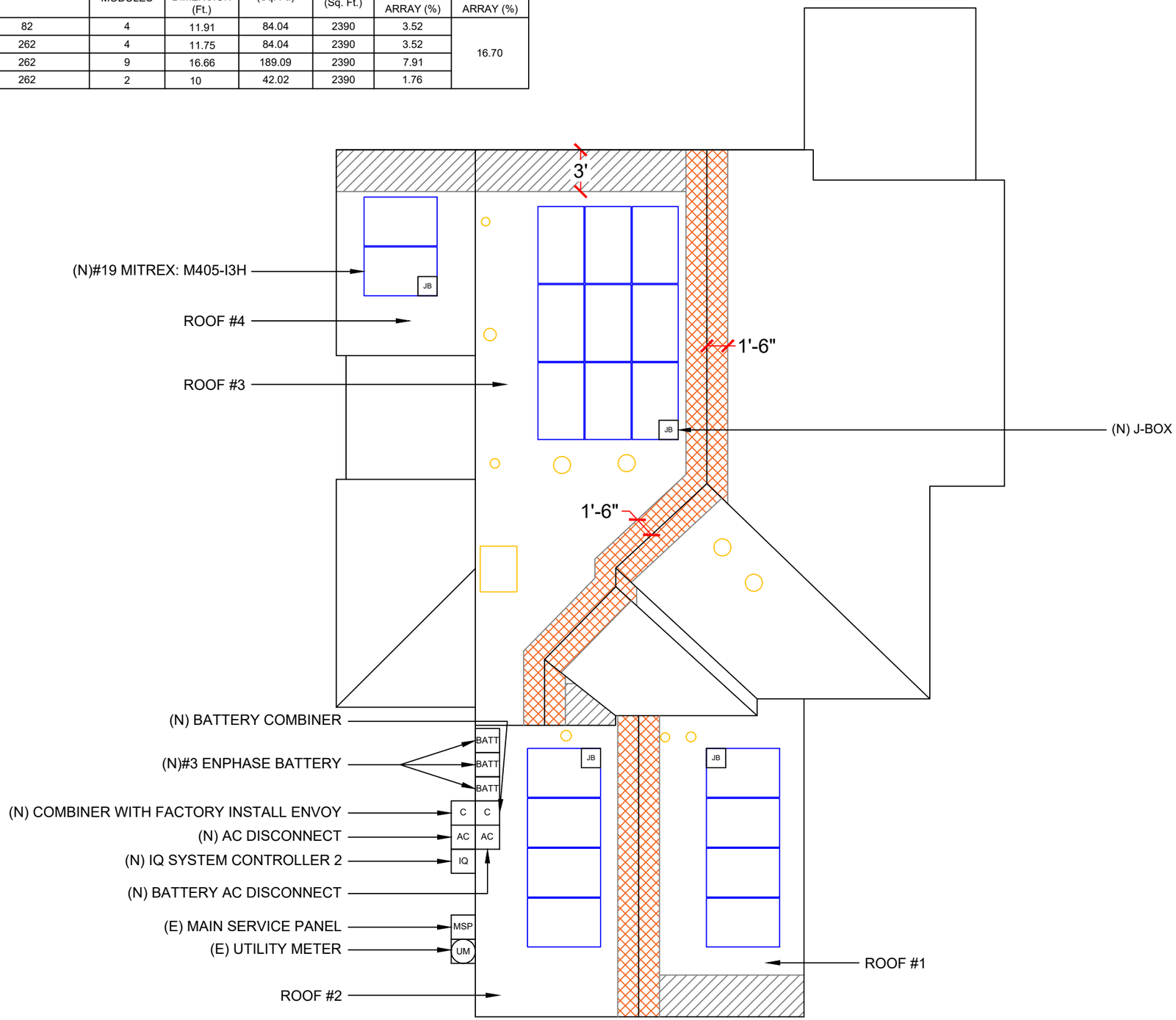
A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-2.0

TITLE
SITE PLAN

ARRAY AREA

ROOF	ROOF TYPE	AZIMUTH	# OF MODULES	EAVE TO RIDGE DIMENSION (Ft.)	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)	TOTAL AREA COVERED BY ARRAY (%)
#1	W CONCRETE TILE	82	4	11.91	84.04	2390	3.52	16.70
#2	W CONCRETE TILE	262	4	11.75	84.04	2390	3.52	
#3	W CONCRETE TILE	262	9	16.66	189.09	2390	7.91	
#4	W CONCRETE TILE	262	2	10	42.02	2390	1.76	



LEGEND

- UM — UTILITY METER
- MSP — MAIN SERVICE PANEL
- AC — AC DISCONNECT
- C — COMBINER
- IQ — IQ SYSTEM CONTROLLER 2
- BATT — BATTERY
- JB — JUNCTION BOX
- MODULE

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

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A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-3.0

TITLE

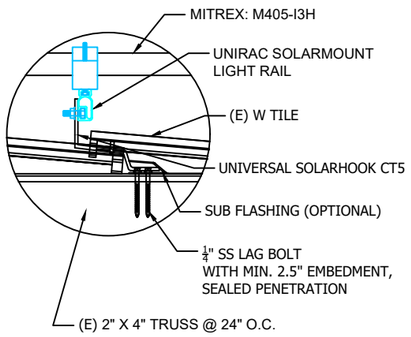
ROOF PLAN

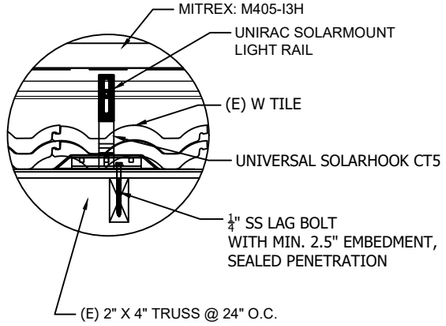
2 **ROOF PLAN**

SCALE: 1/8" = 1'-0"

GOLD OAK CT

ROOF NO	ROOF TILT	ROOFING TYPE	ATTACHMENT TYPE	NO. OF STORIES	FRAMING TYPE	FRAMING SIZE	OC SPACING	PENETRATION PATTERN	MAX PENETRATION SPACING	MAX OVERHANG
ROOF 1	23	W CONCRETE TILE	UNIVERSAL SOLARHOOK CT5	2	TRUSS	2" X 4"	24"	STAGGERED	72"	24"
ROOF 2	23	W CONCRETE TILE	UNIVERSAL SOLARHOOK CT5	2	TRUSS	2" X 4"	24"	STAGGERED	72"	
ROOF 3	23	W CONCRETE TILE	UNIVERSAL SOLARHOOK CT5	2	TRUSS	2" X 4"	24"	STAGGERED	72"	
ROOF 4	23	W CONCRETE TILE	UNIVERSAL SOLARHOOK CT5	2	TRUSS	2" X 4"	24"	STAGGERED	72"	





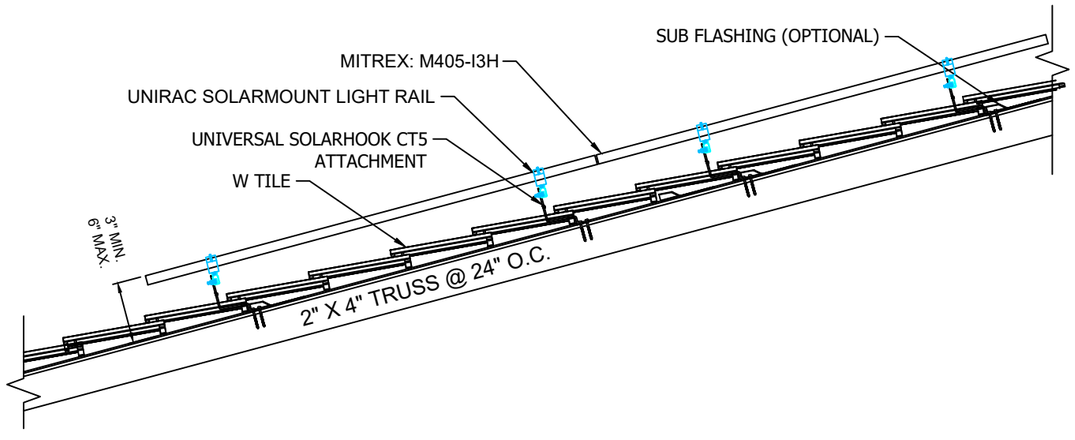
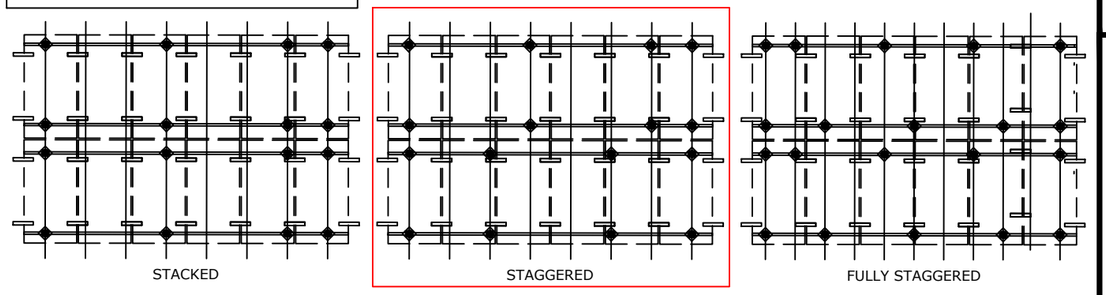


TABLE : PENETRATION GUIDE FOR INSTALL

TWO OR MORE ROW OF PANELS



ONE ROW OF PANELS

CONTRACTOR INFO

Solar Individual Permit Package

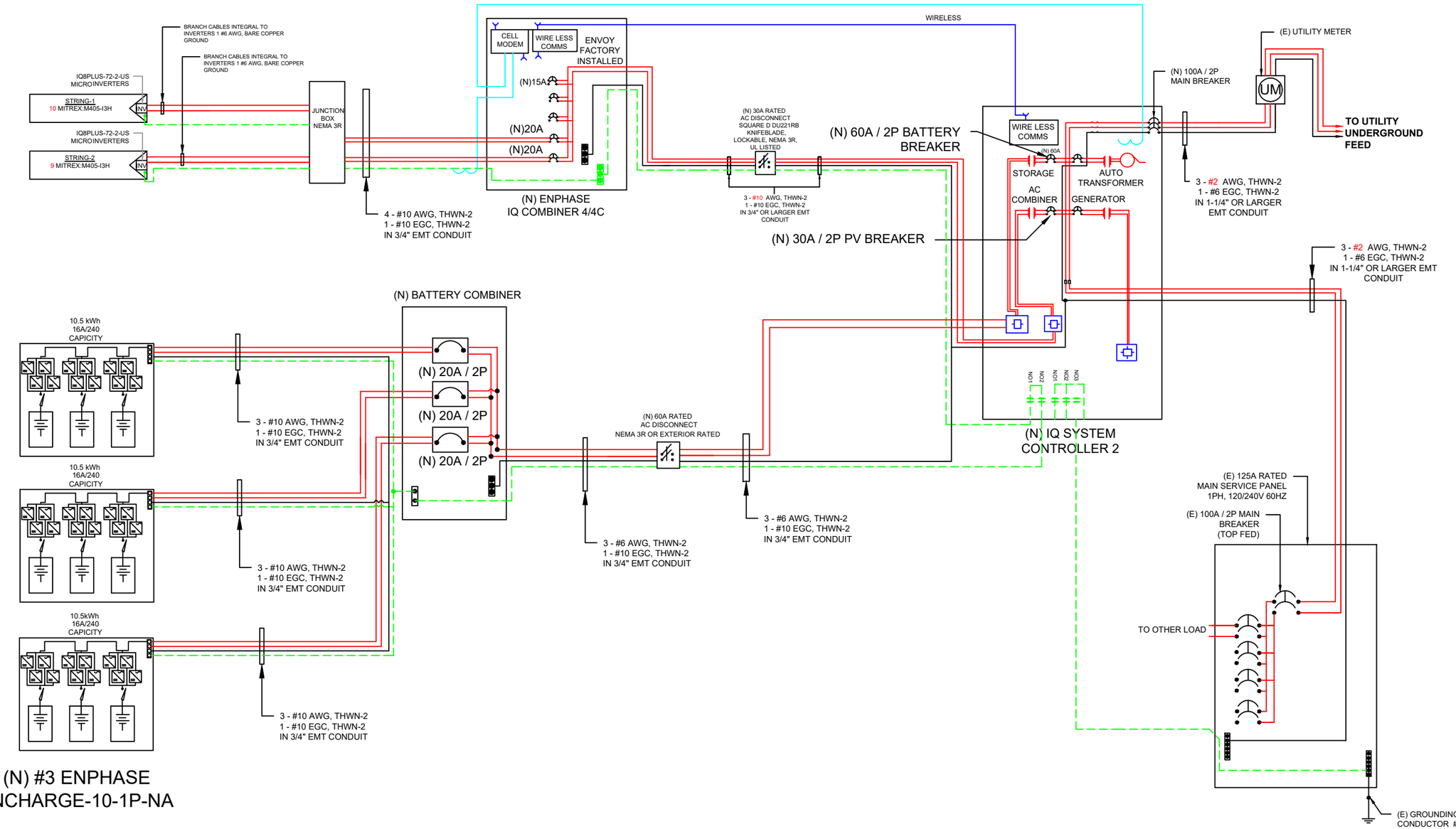
7.695KW Grid Tied Photovoltaic System

Rev	Description	Date
A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-4.0

TITLE

STRUCTURAL



BACKFEED BREAKER SIZING					
MAX. CONTINUOUS OUTPUT 1.21A @ 240V					
1.21	X	1.25	=	1.51AMPS	30A BREAKER - OK
SEE 705.12 OF 2022 CEC					
125	X	1.20	=	150	
150	-	100	=	50A ALLOWABLE BACKFEED	

NOTE:
1)CONDUIT AND CONDUCTORS SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.
2)ALL CONDUCTORS NOT UNDER ARRAY ARE TO BE IN CONDUIT MINIMUM 7/8" ABOVE ROOF WITH PROPER JUNCTION BOX AT EACH END PER 690.31A

CONTRACTOR INFO

Solar Individual Permit Package

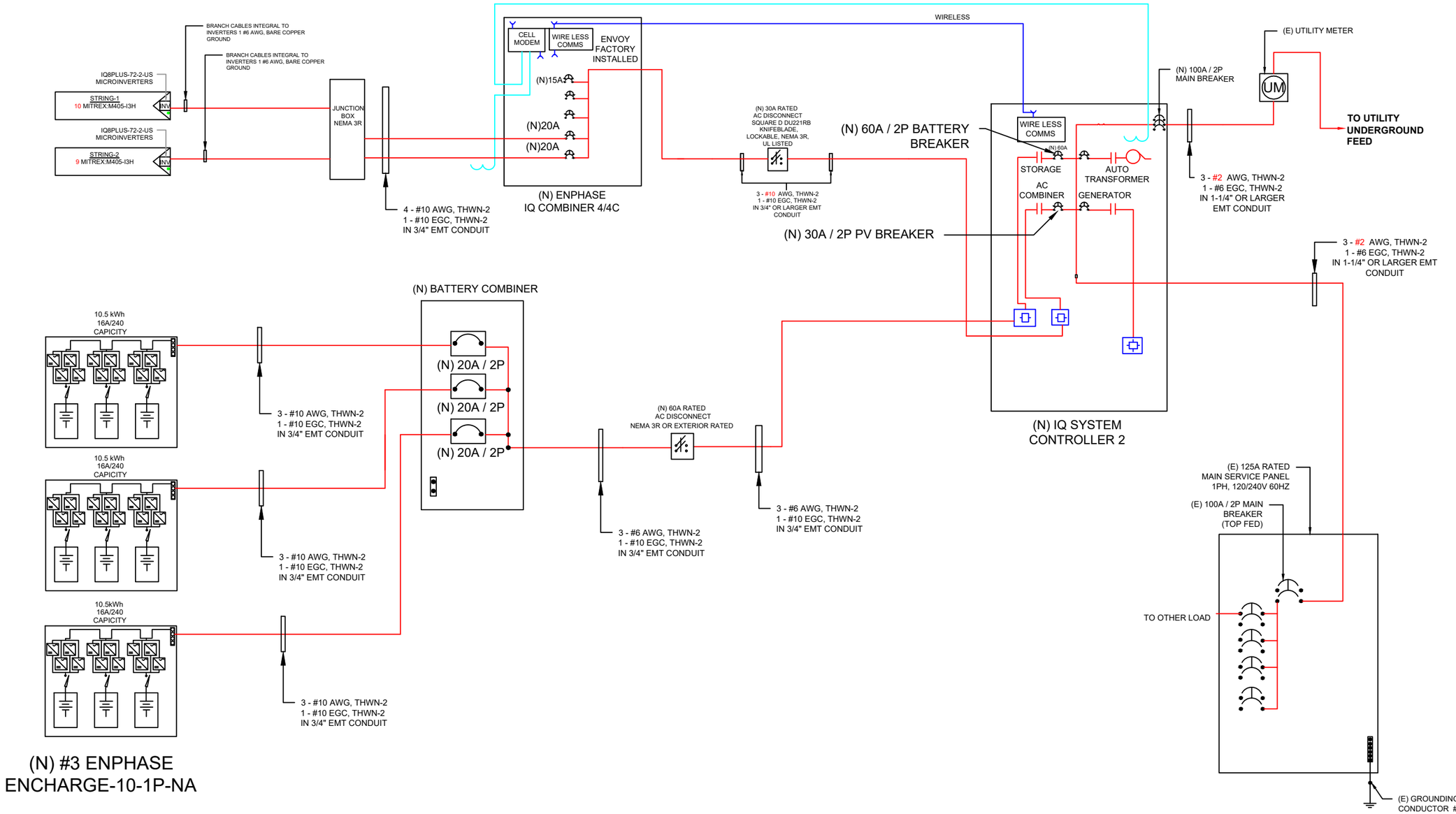
7.695KW Grid Tied Photovoltaic System

Rev	Description	Date
A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-5.0

TITLE

ELECTRICAL 3LD



BACKFEED BREAKER SIZING					
MAX. CONTINUOUS OUTPUT 1.21A @ 240V					
1.21	X	1.25	=	1.51AMPS	30A BREAKER - OK
SEE 705.12 OF 2022 CEC					
125	X	1.20	=	150	
150	-	100	=	50A ALLOWABLE BACKFEED	

NOTE:
1)CONDUIT AND CONDUCTORS SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.
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CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

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A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-6.0

TITLE

ELECTRICAL SLD

WIRE SCHEDULE

RACEWAY #	EQUIPMENT				WIRE LOCATION	CONDUCTOR QTY.	AWG WIRE SIZE	STARTING ALLOWABLE AMPACITY 310.15(B)(16)	TEMPERATURE RATING (°C)	STARTING CURRENT APPLIED TO CONDUCTORS IN RACEWAY	TEMPERATURE CORRECTION FACTOR 310.15(B)(2)(a)	ADJUSTMENT FACTOR FOR MORE THAN 3 CONDUCTORS 310.15(B)(3)(a)	ADJUSTED CONDUCTOR AMPACITY	MAXIMUM CURRENT APPLIED TO CONDUCTORS IN RACEWAY
1	DC	MODULE	TO	MICROINVERTER	ROOF/FREE-AIR	2	10	40	90°	13.73	1	1	40.00	17.16
2	AC	MICROINVERTER	TO	JUNCTION BOX	ROOF/FREE-AIR	2	10	40	90°	12.10	1	1	40.00	15.13
3	AC	JUNCTION BOX	TO	COMBINER	EXTERIOR WALL	4	10	40	90°	12.10	1	0.8	32.00	15.13
4	AC	COMBINER	TO	AC DISCONNECT	EXTERIOR WALL	3	10	35	75°	22.99	1	1	35.00	28.74
5	AC	AC DISCONNECT	TO	IQ SYSTEM CONTROLLER 2	EXTERIOR WALL	3	10	35	75°	22.99	1	1	35.00	28.74
6	AC	IQ SYSTEM CONTROLLER 2	TO	METER	EXTERIOR WALL	3	2	115	75°	80	1	1	115.00	100.00
7	AC	IQ SYSTEM CONTROLLER 2	TO	MSP	EXTERIOR WALL	3	2	115	75°	80	1	1	115.00	100.00
8	AC	BATTERY	TO	COMBINER	EXTERIOR WALL	3	10	35	75°	16	1	1	35.00	20.00
9	AC	BATTERY COMBINER	TO	AC DISCONNECT	EXTERIOR WALL	3	6	65	75°	48	1	1	65.00	60.00
10	AC	AC DISCONNECT	TO	IQ SYSTEM CONTROLLER 2	EXTERIOR WALL	3	6	65	75°	48	1	1	65.00	60.00

MODULE INFO

MAKE/MODEL	MITREX: M405-I3H
VOC	37.55V
VMP	31.11V
ISC	13.73A
IMP	13.02A
STC RATING	405 W
PTC RATING	376.9 W

BACKFEED BREAKER SIZING

MAX. CONTINUOUS OUTPUT 1.21A @ 240V

22.99 X 1.25 = 28.74AMPS 30A BREAKER - OK

SEE 705.12 OF 2022 CEC

125 X 1.20 = 150

150 - 100 = 50A ALLOWABLE BACKFEED

NOTE:
1)CONDUIT AND CONDUCTORS SPECIFICATIONS ARE BASED ON MINIMUM CODE REQUIREMENTS AND ARE NOT MEANT TO LIMIT UP-SIZING AS REQUIRED BY FIELD CONDITIONS.
2)ALL CONDUCTORS NOT UNDER ARRAY ARE TO BE IN CONDUIT MINIMUM 7/8" ABOVE ROOF WITH PROPER JUNCTION BOX AT EACH END PER 690.31A

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

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A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-7.0

TITLE

ELECTRICAL SLD

MATERIAL LIST

ELECTRICAL EQUIPMENTS

QTY.	PART	PART #	DESCRIPTION
19	MODULE	M405-I3H	MITREX: M405-I3H
4	JUNCTION BOX	480-276	600VDC NEMA 3R UL LISTED JUNCTION BOX
19	MICROINVERTER	IQ8PLUS-72-2-US	ENPHASE: IQ8PLUS-72-2-US 240V
2	AC DISCONNECT	DU221RB	30A RATED 240VAC NEMA 3R UL LISTED
2	COMBINER	X-IQ-AM1-240-4	ENPHASE COMBINER BOX X-IQ-AM1-240-4
1	IQ CONTROLLER 2	EP200G101-M240US01	IQ SYSTEM CONTROLLER 2
3	BATTERY	ENCHARGE-10-1P-NA	ENPHASE ENCHARGE 10

BREAKER AND FUSES

QTY.	PART	PART #	DESCRIPTION
1	BREAKER	30A 2-POLE BREAKER(S)	GENERAL 30A 2-POLE BREAKER(S)
1	IQ CONTROLLER BREAKER	100A 2-POLE BREAKER(S)	GENERAL 100A 2-POLE BREAKER(S)
2	COMBINER BREAKER	20A 2-POLE BREAKER(S)	GENERAL 20A 2-POLE BREAKER(S)
1	BATTERY BREAKER	60A 2-POLE BREAKER(S)	GENERAL 60A 2-POLE BREAKER(S)
3	BATTERY COMBINER BREAKER	20A 2-POLE BREAKER(S)	GENERAL 20A 2-POLE BREAKER(S)
1	COMBINER ENVOY BREAKER	15A 2-POLE ENVOY BREAKER(S)	15A 2-POLE ENVOY BREAKER(S)

RACKING

QTY.	PART	PART #	DESCRIPTION
7	RAIL 1	315168M	SM LIGHT RAIL 168" MILL
6	RAIL 2	315208M	SM LIGHT RAIL 208" MILL
6	SPLICE	303019M	BND SPLICE BAR PRO SERIES MILL
26	MID CLAMP	302030M	SM PRO SERIES MID - MILL
24	END CLAMP	302035M	SM PRO SERIES UNIV END - MILL
6	GROUNDING LUG	008009P	ILSCO LAY IN LUG (GBL4DBT)
50	FLASHING	004CT5H	CT5 UNIVERSAL
19	MICROINVERTER MOUNTING	008013S	MICRO MNT BND T-BOLT 1/4IN X 3/4IN SS

CONTRACTOR INFO

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Photovoltaic System

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OPPORTUNITY	
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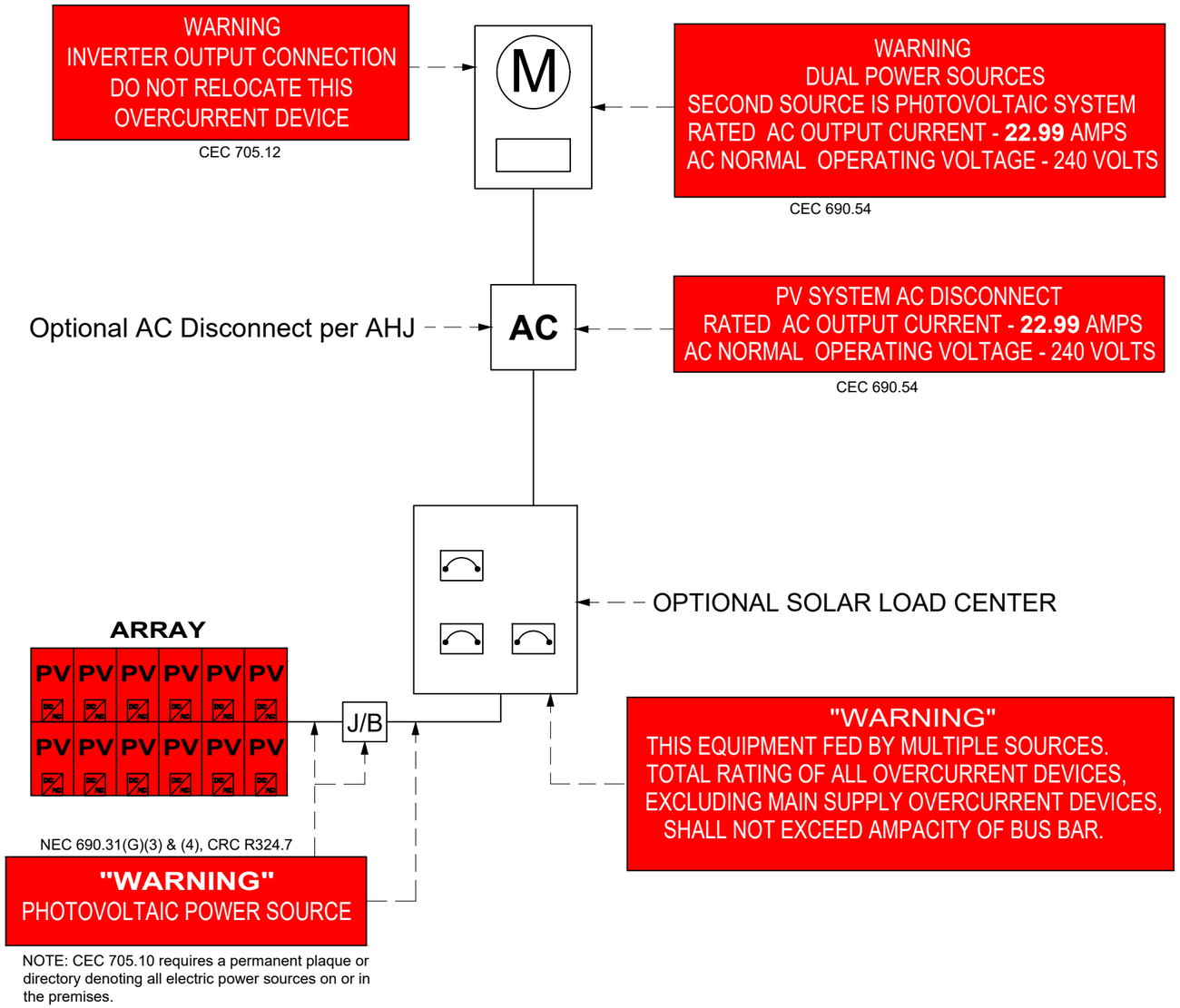
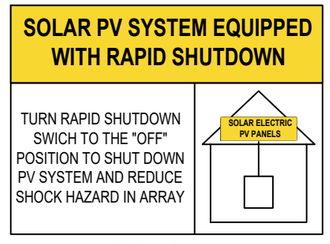
DRAWN BY	E.R
SHEET #	PV-8.0

TITLE

BOM





NOTES:

1. CEC ARTICLES 690 AND 705 AND CEC SECTION R324 MARKINGS SHOWN HEREON.
2. ALL MARKING SHALL CONSIST OF THE FOLLOWING:
   - A. UV RESISTANT SIGN MATERIAL WITH ENGRAVED OR MACHINE PRINTED LETTERS OR ELECTRO-PLATING.
   - B. RED BACKGROUND COLOR WHITE TEXT AND LINE WORK.
   - C. AERIAL FONT.
3. ALL SIGNS SHALL BE SIZED APPROPRIATELY AND PLACED IN THE LOCATIONS SPECIFIED. SIGNAGE CANNOT BE HAND-WRITTEN.
4. SIGNS SHALL BE ATTACHED TO THE SERVICE EQUIPMENT WITH POP-RIVETS OR SCREWS.

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

Rev	Description	Date
A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
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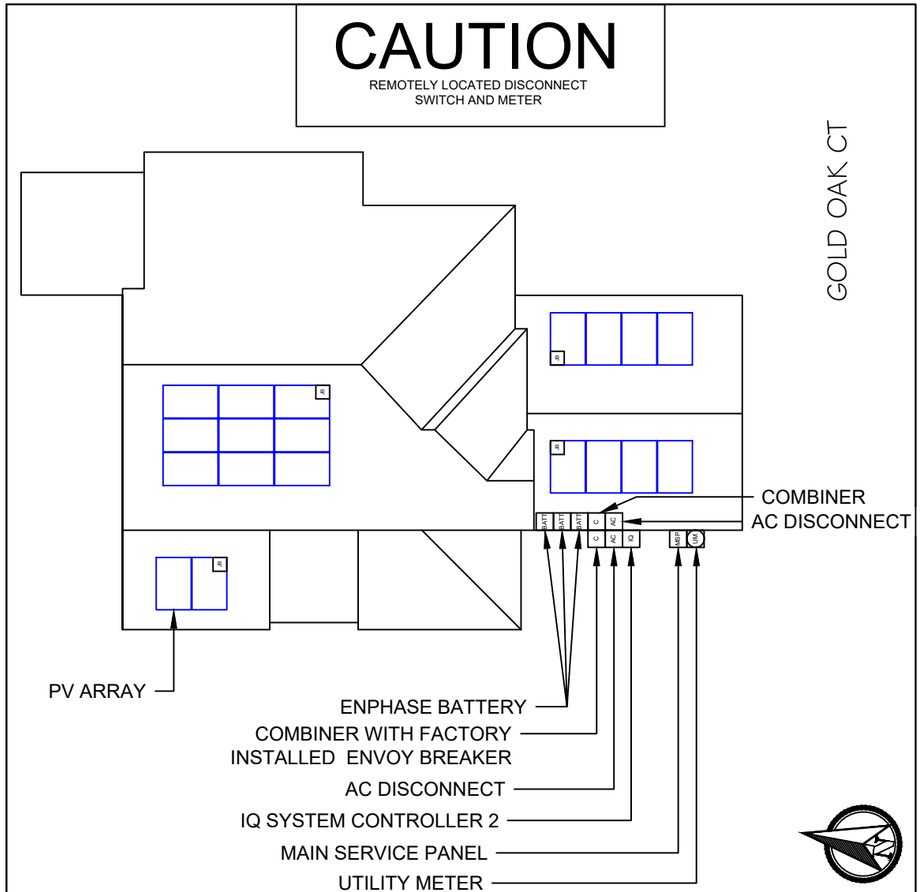
DRAWN BY	E.R
SHEET #	PV-9.0

TITLE

SIGNAGE



PHOTOVOLTAIC BACK-FED CIRCUIT BREAKER IN MAIN ELECTRICAL PANEL IS AC DISCONNECT PER CEC690.17

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

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OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-9.1

TITLE

PLACARD

MICROINVERTER CHART

	1-10	11-20	21-30	31-40	41-50	51-60
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

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SHEET #	PV-10.0

TITLE

MICROINVERTER CHART

SAFETY PLAN

INSTRUCTIONS:

1. USE SYMBOLS IN KEY TO MARK UP THIS SHEET.
2. SAFETY PLAN MUST BE MARKED BEFORE JOB STARTS AS PART OF THE PRE-PLAN
3. DOCUMENT ALL ADDITIONAL HAZARDS ON THIS PAGE & MAKE NOTES ON THE JHA SHEET

IN CASE OF EMERGENCY

NEAREST HOSPITAL OR OCCUPATIONAL/INDUSTRIAL CLINIC

NAME: _____

ADDRESS: _____

SAFETY COACH CONTACT INFORMATION

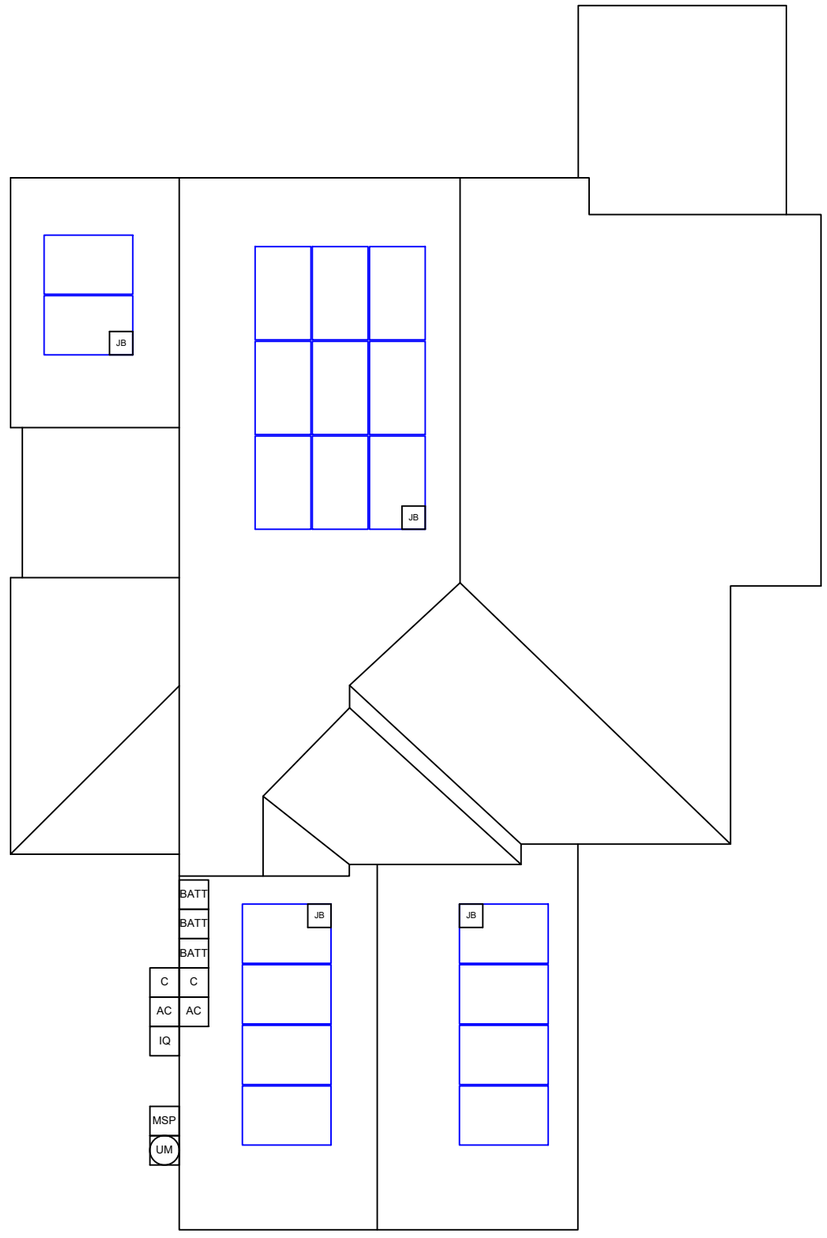
NAME: _____

ADDRESS: _____

ALL EMPLOYEES ON SITE SHALL BE MADE AWARE OF THE SAFETY PLAN AND SIGN INDICATING THAT THEY ARE AWARE OF THE HAZARDS ON-SITE AND THE PLAN FOR WORKING SAFELY.

NAME	SIGNATURE

DATE: _____ TIME:_____



MARK UP KEY

- UM — UTILITY METER
- MSP — MAIN SERVICE PANEL
- IQ — IQ SYSTEM CONTROLLER 2
- C — COMBINER
- BATT — BATTERY
- AC — AC DISCONNECT
- JB — JUNCTION BOX
- P — PERMANENT ANCHOR
- T — TEMPORARY ANCHOR
- S — STUB-OUT
- SKYLIGHT
- NO LADDER ACCESS (STEEP GRADE OR GROUND LEVEL OBSTRUCTIONS)
- RESTRICTED ACCESS
- CONDUIT
- GAS — GAS SHUT OFF
- H2O — WATER SHUT OFF
- 7 — SERVICE DROP
- Z — POWER LINES

CONTRACTOR INFO

Solar Individual Permit Package

7.695KW Grid Tied Photovoltaic System

Rev	Description	Date
A	INITIAL DESIGN	

OPPORTUNITY	
PROJECT #	N/A
DATE DRAWN	
DRAWN BY	E.R
SHEET #	PV-11.0

TITLE

SAFETY PLAN

JOB HAZARD ANALYSIS

Crew leader to fill out all sections below, hold a pre-job safety meeting with all personnel, and upload this completed document and the Safety Plan to Site Capture

Ladder Access

· Ladders must be inspected before each use.

· Extension ladders must be set up on a firm and level surface at a 4-to-1 rise to run angle (or 75 degrees) and the top must be secured to the structure. Extension style ladders placed on uneven, loose or slippery surfaces must additionally have the base firmly anchored or lashed so the base will not slip out.

- Extension ladders must be used with walk-through devices or the ladder must extend 36" above the stepping off point.
- A-frame ladders must only be climbed with the ladder spreader bars locked in the open position; A-frame ladders shall not be climbed while in the closed position (ex, closed and used while leaned against a structure).

- Additional notes:

Mobile Equipment

- Only Qualified operators will operate equipment; operators must maintain a certification on their person for the equipment being operated.
- Type(s) of mobile equipment (Type/Make/Model):
- Qualified operator(s):

Material Handling and Storage

- Materials will be staged/stored in a way that does not present a hazard to client, personnel or public. Materials stored on the roof will be physically protect from failing or sliding off.

Fall Protection

- A site-specific plan for fall prevention and protection is required prior to starting work and must remain onsite at all times until work is complete; a fall rescue plan must be outlined and discussed among the crew prior to work start.
- First-person-Up (FPU) must install their anchor and connect before any other task, including installing other anchors. The Last-Person-Down (LPD) must be the only person on a roof uninstalling fall protection.

- FPCP (name and title):

· FPU and LPD (name and title):

Electrical Safety

- The Electrical Qualified Person (EQP) is required onsite to perform electrical work.
- All electrical work will be performed with equipment in an electrically safe condition (de-energized) unless approval has been granted prior to work.
- Service drops and overhead electrical hazards will be indentified and protected from contact, as neccessary.

· EQP (name and tile):

Public Protection

- The safety of the Client and the Public must be maintained at all times.
- The Client and the Public shall be prevented from entering the work zone through the use of barriers and/or signage, as required.
- Company, Client and Public property shall be protect from falling objects.
- Pets (including dogs) shall be secured by their owners prior to work start.
- The client should not leave pets, family members, or others in the charge or care of Employees, Contractors, or Temporary Workers.

- Crew leader responsible for communication with the client:

- Client and public is excluded from work area by barricades (N/A, Yes, No):

Training and Pre-Job Safety Briefing

- All employees onsite shall be made aware of the specific hazards of this project and review this HJA during a pre-job briefing, and their signature indicates awareness of site conditions and the plan to eliminate any hazards identified prior to and during the project.

- Crew leader (name/title):
- Crew member (name/title):
- Crew member (name/title):
- Crew member (name/title):
- Crew member (name/title):
- Crew member (name/title):

Airborne Contaminants:

- Asbestos-containing (Transite) piping (ACP) - Do not disturb (move, drill, cut fracture, etc.)
- Asbestos-containing thermal insulation (ACI) and Asbestos-containing duct wrapping (ACW) - do not disturb, no attic or crawlspace access is allowed if work to be performed could cause exposure to personnel, client or public.

- If yes, list specific tasks and protection in place:

Weather and Environment

- The site supervisor shall forecast the weather conditions at the job site, prior to crew arrival, in order to mitigate any hazards associated with inclement weather (heat, cold, wind, rain, etc.)
- The site supervisor will utilized a portable wind meter (anemometer) to verify actual onsite wind conditions, by checking at the ground and on any elevated work surface (ex, rooftop) prior to work start, at midday and prior to solar panel staging on a roof.
- Elevated work involving the moving or maneuvering of solar panels shall cease at 25mph (sustained wind) until wind subsides.

· Forecasted weather maximum temp (degrees F):

Heat Related Illness Prevention

- Employees shall have access to potable drinking water that is fresh, pure, and suitably cool. The water shall be located as close as practicable to the areas where employees are working. Water shall be supplied in sufficient quantity at the beginning of the work shift to provide at least one quart per employee per hour for drinking for the entire shift. Employees may begin the shift with smaller quantities of water if they identify the location and have effective means for replenishment during the shift to allow employees to drink on quart or more per hour. The frequent drinking of water shall be encouraged.

· Shade shall be present when temperature exceeds 80 degrees Fahrenheit. When the outdoor temperature in the work exceeds 80 degrees Fahrenheit, employees shall have and maintain one or more areas with shade at all times.

· New employees must be acclimatized. New employees will be monitored by their Crew Leader (site supervisor) for the first two (2) weeks of employment or longer when necessary.

· Employees will be allowed and encouraged to implement scheduled breaks during each shift. Employees must take cool-down breaks in the shade any time they feel the need to do so to protect them from overheating. Supervisors are REQUIRED to allow employees any break period they need during high heat conditions.

- Cool Vests are encouraged for all employees at all times during periods of high heat.
- Identify the location of the closet Occupational/Industrial Clinic or Hospital in case a crew member becomes ill.

What is the specific plan to provide and replenish sufficient water for all employees on site?

- If offsite replenish is necessary, where will you go to replenish water (location/address):
- Who will replenish the drinking water (name):

Restroom facilities

- Employees shall have access to restroom facilities with hand-washing stations. Use of onsite restroom is at the client's discretion (location is annotated below). If client does not give permission, location of suitable restroom facilities with hand-washing stations offsite will be provided. The onsite supervisor will identify location and make arrangements to ensure all employees have access at any point.

- Restroom facilities will be (circle one): Onsite - Offsite
- If Offsite, add location name and address:

Incident Reporting Procedure

- Contact your Site Supervisor

  Name:

  Phone:

- Contact your Manager

  Name:

  Phone:

- Contact your Site Supervisor

  Name:

  Phone:

With: Your full name, phone number, office location, brief description of what happen and when.

NOTE ADDITIONAL HAZARDS NOT ADDRESSED ABOVE
(add as many as necessary by using additional sheets)

Define the Hazard:	Method/steps to prevent incident:
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