QUAIL RIDGE APARTMENTS - CARPORT PHOTOVOLTAIC ENERGY SYSTEM

THIS 156.42 KWSTC, CARPORT MOUNTED PHOTOVOLTAIC (PV) SYSTEM IS TO BE INSTALLED AT THE MULTI-FAMILY DWELLING [redacted] (4.74 KW/UNIT). THE ENERGY PRODUCED BY THE PV SYSTEM SHALL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ON-SITE ELECTRICAL EQUIPMENT IN 33 UNITS VIA A BACK-FED BREAKER IN A NEW BREAKOUT PANEL. THIS PROJECT INCLUDES 330 KWH OF ENERGY STORAGE BATTERIES (10KWH/UNIT).

SHEET INDEX

COMPONENTS LIST

ELECTRICAL		
QTY	NAME	DESCRIPTION
396	PV MODULE	ZNSHINE SOLAR ZXM6-72 395/M (TOTAL: 8473 SQ. FT.)
33	PV INVERTER	SOLAREDGE SE7600H-US ENERGY HUB 7.6 KW, 240 VAC, 32 A
396	POWER OPTIMIZER	SOLAREDGE P505
33	AC DISCONNECT	240 VAC, 100 A, NEMA 3R
33	AC DISCONNECT	240 VAC, 60 A, NEMA 3R
33	BACKUP INTERFACE	240 VAC, 200 A, NEMA 3R
33	PROTECTED LOADS PANEL	240 VAC, 100 A, NEMA 1

GOVERNING CODES & STANDARDS

2019 CA ELECTRICAL CODE: § 110, 240, 250, 690, 705
2019 CA BUILDING CODE: § 1507.17, 1510.7, 3111
2019 CA FIRE CODE: § 1204
UNDERWRITERS LABORATORIES (UL) STANDARDS
OSHA 29 CFR 1910.269

SITE SPECIFICATIONS

EXPOSURE CATEGORY: C
RISK CATEGORY: II
WIND SPEED (ASCE 7-16): 110 MPH
SNOW LOAD (ASCE 7-16): 0 PSF

PARCEL MAP 1

AERIAL MAP 2

PROJECT LOCATION

VICINITY MAP 3

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
COVER

Sheet Number:
T1.0

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

CONTRACTOR NOTES:

1.) THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND NOTIFY THE SYSTEM DESIGN ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS.

2.) THE CONTRACTOR SHALL SUPPLY AND INSTALL ALL WORK AS SHOWN IN THE CONSTRUCTION DOCUMENTS UNLESS OTHERWISE NOTED. ALL WORK SHALL BE PERFORMED IN AN ORDERLY, WORKMAN-LIKE AND SAFE MANNER BY WORKERS SKILLED AND EXPERIENCED IN THEIR TRADES.

3.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL INSPECTIONS TO BE WITNESSED BY THE AHJ AND/OR THE OWNER. THE CONTRACTOR SHALL WORK WITH THE OWNER'S INSPECTION AGENCY TO PLAN THE INSPECTIONS, AND NOTIFY ALL PARTIES INVOLVED SUFFICIENTLY IN ADVANCE TO ALLOW THE INSPECTIONS TO TAKE PLACE IN A TIMELY MANNER AND NOT DELAY THE PROGRESS OF THE WORK. THE OWNER AND SYSTEM DESIGN ENGINEER WILL NOT BE RESPONSIBLE FOR SCHEDULING, ARRANGING OR COORDINATING THE INSPECTIONS.

4.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE AREAS WHERE WORK IS TAKING PLACE, AS WELL AS ANY ADJOINING AREAS WHICH MAY BE AFFECTED BY THE WORK, TO PREVENT SUBJECTING THE OCCUPANTS, STRUCTURES, VEHICLES, EQUIPMENT, OR ANY OTHER PARTS OR CONTENTS OF THE SITE TO HAZARD OR DAMAGE.

5.) CONTRACTOR SHALL FURNISH ALL NECESSARY BOXES, OUTLETS, SUPPORTS, CONDUITS, FITTINGS, AND ACCESSORIES TO FULFILL APPLICABLE CODES, REGULATIONS, BUILDING STANDARDS, AND THE BEST PRACTICE OF THE TRADE FOR THE INSTALLATION OF ELECTRICAL WORK.

6.) THE CONTRACTOR SHALL, AT ALL TIMES DURING THE WORK, MAINTAIN ACCESSIBILITY FROM THE STREET TO ALL FIRE HYDRANTS, POWER OR LIGHT POLES, AND SIMILAR UTILITY AND PUBLIC SERVICE ITEMS WITHIN OR ADJACENT TO THE CONSTRUCTION SITE.

7.) WORK SHALL NOT RESTRICT CLEAR AND UNOBSTRUCTED ACCESS TO ANY WATER OR POWER DISTRIBUITION FACILITIES (POWER POLES, PULLBOXES, TRANSFORMERS, VAULTS, PUMPS, VALVES, METERS, APPURTENANCES, ETC.) OR TO THE LOCATION OF THE HOOKUP.

8.) THE OWNERS AND THE AHJ SHALL BE NOTIFIED IN WRITING IN ADVANCE OF ANY REQUIRED CONSTRUCTION OPERATION THAT WILL INVOLVE INTERRUPTION OF THE HEATING, WATER, FIRE PROTECTION SYSTEMS, TELEPHONE, GAS OR ELECTRICAL SERVICES TO THE OTHER BUILDINGS AND AREAS OF THE SITE. THE CONTRACTOR SHALL COORDINATE ANY REQUIRED SHUTDOWN OF THE UTILITIES WITH THE OWNERS, THE AHJ, AND THE UTILITY COMPANY.

9.) UPON REVIEW OF ELECTRICAL DRAWINGS, THE ELECTRICAL CONTRACTOR SHALL INFORM THE SYSTEM DESIGN ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION.

10.) THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS WHOSE WORK MIGHT AFFECT THIS INSTALLATION. CONTRACTORS SHALL ARRANGE ALL PARTS OF THIS WORK AND EQUIPMENT IN PROPER RELATION TO THE WORK AND EQUIPMENT OF OTHERS AND WITH BUILDING CONSTRUCTION AND ARCHITECTURAL FINISH SO THAT IT WILL HARMONIZE IN SERVICE AND APPEARANCE.

11.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE OWNER'S INSPECTION AGENCY TO ARRANGE FOR INSPECTIONS RELATED TO ALL SPECIAL INSPECTIONS IN A TIMELY MANNER, AND SHALL BE PRESENT AS REQUIRED AT THE INSPECTIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE APPROPRIATE SUBCONTRACTORS ARE PRESENT DURING TESTS AND INSPECTIONS OF THE SYSTEMS FOR WHICH THE SUBCONTRACTORS ARE RESPONSIBLE.

PHOTOVOLTAIC NOTES:

1.) ALL ASPECTS OF WORK RELATED TO THE SOLAR PHOTOVOLTAIC (PV) SYSTEM SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES, UTILITY REQUIREMENTS, AND THE NEC, ESPECIALLY ARTICLE 690 AND ARTICLE 705.

2.) SOLAR PV MODULE FRAMES SHALL BE BONDED TO RACKING RAIL OR BARE COPPER E.G.C. PER THE MODULE MANUFACTURER'S LISTED INSTRUCTION SHEET.

3.) SOLAR PV SYSTEMS SHALL BE GROUNDED IN ACCORDANCE WITH NEC 690 PART V: GROUNDING.

4.) COMBINER BOXES, FUSING, WIRE SIZES, QUANTITIES AND CONDUIT SIZES BETWEEN SOLAR ARRAYS AND INVERTERS TO BE VERIFIED BY CONTRACTOR WITH SOLAR MODULE AND INVERTER MANUFACTURERS BEFORE INSTALLATION.

5.) ALL PV SOURCE CIRCUIT CONDUCTORS AND CONNECTORS SHALL BE SUPPORTED AND SECURED WITHOUT EXCESSIVE STRESS. NO WIRING SHALL BE PERMITTED TO TOUCH THE ROOF SURFACE.

6.) PV SOURCE CIRCUIT CONDUCTORS EXPOSED BETWEEN ARRAYS SHALL BE SECURED ON BOTH SIDES, AND BE PROTECTED FROM PHYSICAL DAMAGE AND ABRASION, INCLUDING FROM EDGES OF RACKING, CHANNEL EDGES, WIRE TRAYS, ETC.

7.) ANY CABLE TIES USED SHALL BE HEAT STABILIZED (-40C TO 105C), UV STABILIZED AND OUTDOOR RATED, SUITABLE AND DURABLE FOR THE ENVIRONMENT AND LIFE OF THE PV SYSTEM.

8.) WHERE EXPOSED TO SUNLIGHT, CONDUCTORS SHALL BE LISTED AND MARKED AS SUNLIGHT RESISTANT.

9.) ALL EQUIPMENT GROUND CONDUCTORS SMALLER THAN AWG #6 SHALL BE PROTECTED FROM PHYSICAL DAMAGE BY AN IDENTIFIED RACEWAY OR CABLE ARMOR UNLESS INSTALLED WITHIN THE HOLLOW SPACES OF THE FRAMING MEMBERS OF BUILDINGS OR STRUCTURES AND WHERE NOT SUBJECT TO PHYSICAL DAMAGE.

EQUIPMENT NOTES:

1.) ALL MATERIALS, SUPPLIES, AND EQUIPMENT SHALL BE LISTED, USED, AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS, AND APPLICABLE NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) REQUIREMENTS.

2.) ALL EQUIPMENT SHALL BE RATED FOR THE ENVIRONMENT IN WHICH IT IS INSTALLED.

3.) WORKING SPACE AROUND ELECTRIAL EQUPMENT SHALL COMPLY WITH NEC 110.26.

4.) THE APPROXIMATE LOCATIONS OF ALL JUNCTION BOXES, COMBINER BOXES, CONDUITS, ETC. SHALL BE DETERMINED FROM THE DRAWINGS, AND VERIFIED BY THE CONTRACTOR FOR INSTALLATION.

5.) ALL JUNCTION BOXES, COMBINER BOXES, AND DISCONNECTS SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION.

6.) PROVIDE NEMA 3R RATED EQUIPMENT OR BETTER WHERE EXPOSED TO OUTDOORS.

7.) WHERE SIZES OF RACEWAYS OR BOXES ARE NOT INDICATED ON THE DRAWINGS, THE CONTRACTOR SHALL SIZE THESE ITEMS AS REQUIRED FOR THE INSTALLATION.

8.) ALL VERTICAL RUNS OF CONDUIT OR TUBING TERMINATING IN THE BOTTOM OF WALL BOXES OR CABINETS OR SIMILAR LOCATIONS, SHALL BE PROTECTED FROM THE ENTRANCE OF FOREIGN MATERIAL PRIOR TO THE INSTALLATION OF CONDUCTORS.

9.) METAL RACEWAYS, METAL ENCLOSURES OF ELECTRICAL DEVICES AND EQUIPMENT, MODULE FRAMES, AND OTHER EQUIPMENT SHALL BE COMPLETELY GROUNDED IN ACCORDANCE WITH THE NEC.

10.) PROPER HARDWARE FOR A COMPLETE GROUNDING AND BONDING SYSTEM SHALL BE INSTALLED BY THE CONTRACTOR, IF NECESSARY.

11.) GROUNDING RODS SHALL HAVE A RESISTANCE TO GROUND OF 25 OHMS OR LESS AND SHALL BE 5/8" x 8' MIN, COPPER-BONDED STEEL. ALL GROUND CLAMPS USED SHALL BE UL 467 LISTED.

12.) ALL PVC CONDUIT EXPOSED TO SUNLIGHT SHALL BE SCHEDULE 80 AND MARKED AS SUNLIGHT RESISTANT. ALL UNDERGROUND PVC CONDUIT SHALL BE SCHEDULE 40 OR 80.

ELECTRICAL NOTES:

1.) ELECTRICAL POWER MUST BE SHUT OFF PRIOR TO THE CONTRACTOR PERFORMING ANY WORK IN RACEWAYS WITH LIVE ELECTRICAL CIRCUITS OR ANY OTHER EQUIPMENT. WHEN SWITCHES OR CIRCUIT BREAKERS ARE OPENED FOR WORK ON ELECTRICAL EQUIPMENT OR WIRING, SIGNS OR TAGS SHOULD BE INSTALLED AT THE SWITCH OR BREAKER STATING THAT WORK IS BEING PERFORMED ON THEM. INCLUDE THE TIME, DATE, AND CONTRACTOR'S NAME ON THE SIGN OR TAG. IF DEVICE IS LOCKABLE, IT SHOULD BE PADLOCKED.

2.) THE ELECTRICAL WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE AHJ, NATIONAL FIRE PROTECTION AGENCY (NFPA), NATIONAL ELECTRICAL CODE (NEC), AND OSHA.

3.) PHASING OF NEW CONDUCTORS TO MATCH EXISTING CONDUCTORS. IF INSTALLATING A NEW CIRCUIT, THEN CONTRACTOR SHALL FOLLOW THE PHASING SCHEMES PROVIDED IN THE ELECTRICAL DIAGRAM.

4.) ALL CONDUCTORS SHALL BE COPPER, RATED FOR 90°C WET ENVIRONMENT, AND 1000 VOLTS DC OR 600 VOLTS AC, UNLESS OTHERWISE NOTED.

5.) GROUNDING ELECTRODE CONDUCTOR (G.E.C.) SHALL BE CONTINUOUS AND/OR IRREVERSIBLY SPLICED/WELDED.

6.) FLEXIBLE, FINE-STRANDED CABLES SHALL BE TERMINATED ONLY WITH TERMINALS, LUGS, DEVICES, OR CONNECTORS THAT ARE IDENTIFIED AND LISTED FOR SUCH USE PER NEC 690.31(F).

7.) ALL WIRES SHALL BE IDENTIFIED BY CIRCUITS IN ALL CABINETS, BOXES, WIRING TROUGHS, AND OTHER ENCLOSURES, AND AT ALL TERMINAL POINTS, I.E., RECEPTACLES, MECHANICAL LUGS, COMPRESSION FITTINGS. THE CIRCUIT DESIGNATIONS SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS OR AS DIRECTED BY THE SYSTEM DESIGN ENGINEER. LABELS OR TAGS SHALL BE APPLIED TO WIRES SO THAT THEY WILL BE READILY VISIBLE.

8.) BREAKERS SHALL BE 80% RATED UNLESS OTHERWISE SPECIFIED.

9.) FUSES FOR SWITCHES SHALL BE CURRENT-LIMITING TYPE WITH A MINIMUM INTERRUPTING CAPACITY OF 200,000 AMPERES RMS (UNLESS OTHERWISE NOTED) AND OF THE CONTINUOUS CURRENT RATINGS AS INDICATED ON THE DRAWINGS OR AS RECOMMENDED BY THE MANUFACTURER.

10.) THE SHORT-CIRCUIT INTERRUPTING RATING OF ALL NEW EQUIPMENT SHALL BE NO LESS THAN THE INTERRUPTING RATING OF THE EXISTING SERVICE EQUIPMENT, UNLESS A MINIMUM VALUE WAS CALCULATED AND SPECIFIED ON THE PLANS FOR THE NEW EQUIPMENT.

ELECTRICAL LEGEND

- = CIRCUIT CONDUCTORS
- = EQUIPMENT GROUNDING CONDUCTORS
- = TERMINAL BLOCK
- = FUSE
- = CIRCUIT BREAKER
- = THROW SWITCH (KNIFE-BLADE)
- = RECLOSING CIRCUIT BREAKER
- = RECLOSING DISCONNECT/RELAY
- = GROUNDING ELECTRODE SYSTEM
- = PV MODULE
- = INVERTER
- = MICROINVERTER
- = POWER OPTIMIZER
- = METER/MONITORING DEVICE
- = TRANSFORMER
- = GENERATOR
- = TRANSFER SWITCH
- = BATTERY
- = CURRENT TRANSFORMER (CT)

ELECTRICAL LEGEND - DC

- = POSITIVE TERMINAL (PHASED RED)
- = NEGATIVE TERMINAL (PHASED BLACK)
- G = GROUND TERMINAL (PHASED GREEN)

ELEC. LEGEND - 240 VAC

- L1 = LINE 1 TERMINAL (PHASED BLACK)
- L2 = LINE 2 TERMINAL (PHASED RED)
- L3 = LINE 3 TERMINAL (PHASED BLUE)
- N = NEUTRAL TERMINAL (PHASED WHITE)
- G = GROUND TERMINAL (PHASED GREEN)

NOTE: FOR DELTA HIGH-LEG SYSTEMS, THE HIGH-LEG SHALL BE IDENTIFIED AND PHASED ORANGE

SITE/ARRAY PLAN LEGEND

- = CONDUIT ROUTES
- = CONDUIT ROUTES (UGND OR INDOORS)
- = PV MODULE
- = PV EQUIPMENT
- = RAFTER/TRUSS
- = STANDING SEAM
- = VENT
- = CHIMNEY
- = SKYLIGHT
- = HVAC UNIT
- = ROOF HATCH
- = PV ATTACHMENT FLASHING
- = RACKING RAIL
- = SETBACKS/PATHWAYS
- = SWINGING DOOR
- = TREE/BUSH

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
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AHJ COMMENTS	10/21/2022	B

Sheet Title:
PROJECT NOTES

Sheet Number:
T1.1

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

SYMBOL LEGEND		
SYMBOL	NAME	DESCRIPTION
	NEW CARPORT PV MOD.	ZNSHINE SOLAR ZXM6-72 395/M
	EXISTING ROOFTOP PV MOD.	ZNSHINE SOLAR ZXM6-72 395/M

PV SYSTEM SUMMARY TABLE					
Array ID	Inverter ID	Mod Qty.	kW size	Tilt	Azimuth
20	Inv 1.8 - Inv 1.10	36	14.22	5°	270°
21	Inv 2.7 - Inv 2.12	72	28.44	5°	270°
22	Inv 4.6 - Inv 4.12	84	33.18	5°	180°
23	Inv 5.7 - Inv 5.10	48	18.96	5°	130°
24	Inv 7.4 - Inv 7.5	24	9.48	5°	160°
25	Inv 7.6 - Inv 7.12	84	33.18	5°	160°
26	Inv 8.9 - Inv 8.12	48	18.96	5°	160°
Totals:		396	156.42		

SYSTEM SUMMARY:
(396) ZNSHINE SOLAR ZXM6-72 395/M
(33) SolarEdge SE7600H-US Energy Hub (240V)
156.42 kWstc, 250.8 kW AC
(396) SolarEdge P505 Power Optimizers
(33) SolarEdge Energy Bank Battery
330 kWH Energy Storage Total
(33) Interconnection Meters

BUILDING DETAILS			
Building #	Existing Qty. of Systems	New Qty. of Systems	Total Qty. of Systems
1	7	3	10
2	6	6	12
3	12	0	12
4	5	7	12
5	6	4	10
6	10	0	10
7	3	9	12
8	8	4	12
Total:	57	33	90

NOTE:
SITE DIMENSIONS DERIVED FROM GOOGLE AERIAL IMAGERY:
RESOLUTION OF 6", DIMENSIONS PRECISE UP TO 1m (CE-90)

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

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AHJ COMMENTS	10/21/2022	B

Sheet Title:
PLOT PLAN

Sheet Number:
P1.0

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

SYMBOL LEGEND		
SYMBOL	NAME	DESCRIPTION
	NEW CARPORT PV MOD.	ZNSHINE SOLAR ZXM6-72 395/M
	EXISTING ROOFTOP PV MOD.	ZNSHINE SOLAR ZXM6-72 395/M

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330 kWH Energy Storage Total
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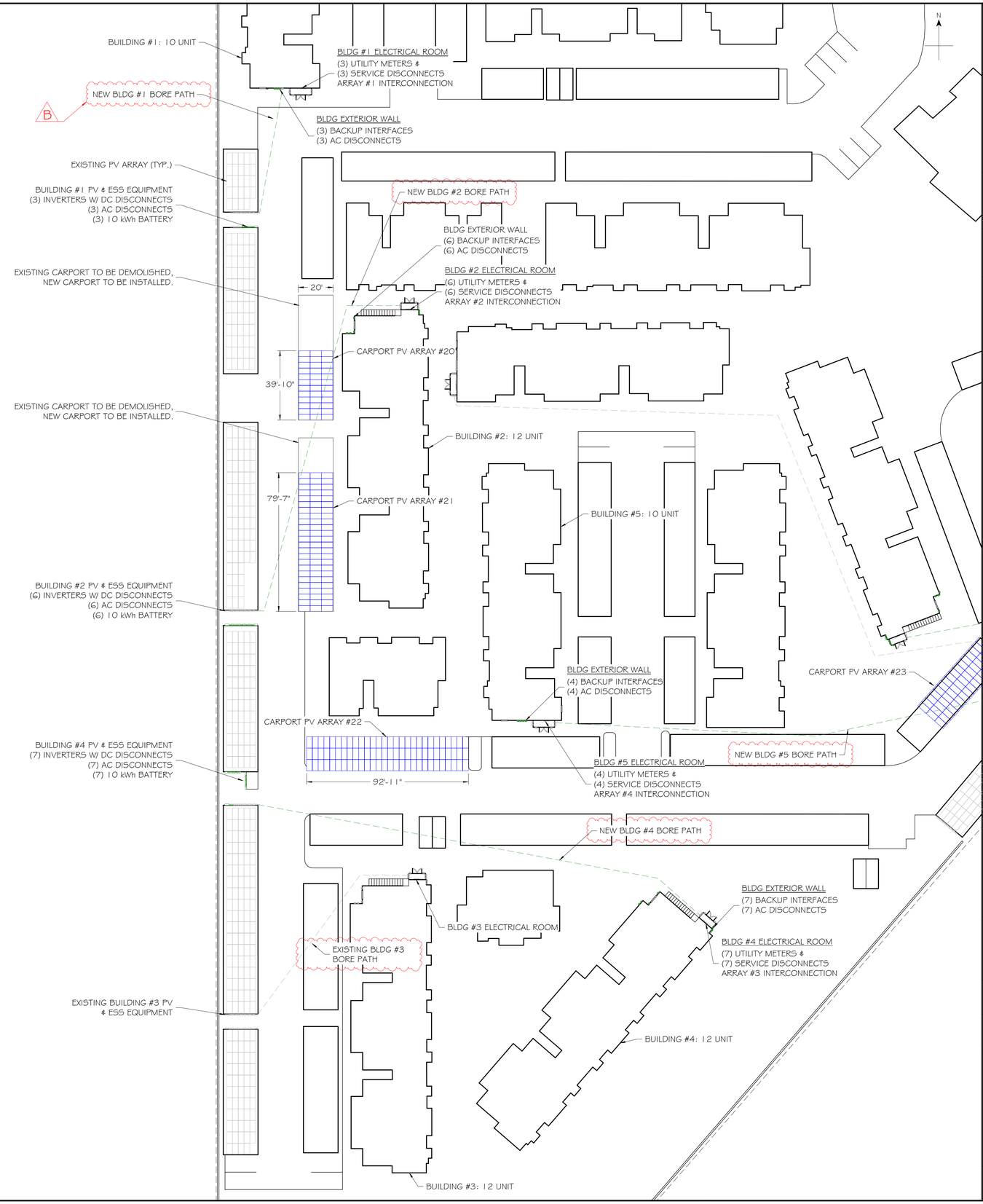
NOTE:
1. SITE DIMENSIONS DERIVED FROM GOOGLE AERIAL IMAGERY: RESOLUTION OF 6", DIMENSIONS PRECISE UP TO 1m (CE-90)
2. BUILDING DIMENSIONS DERIVED FROM AS-BUILT STRUCTURAL OR ARCHITECTURAL DRAWINGS
3. ARRAY DIMENSIONS ASSUME 1/2" CLAMP SPACING



SITE PLAN BLDG #1-4
SCALE: 1" = 30'

15 ft 30 ft 60 ft

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

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Sheet Title:
SITE PLAN
BLDG #1-4

Sheet Number:
A1.0

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

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SYMBOL	NAME	DESCRIPTION
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330 kWH Energy Storage Total
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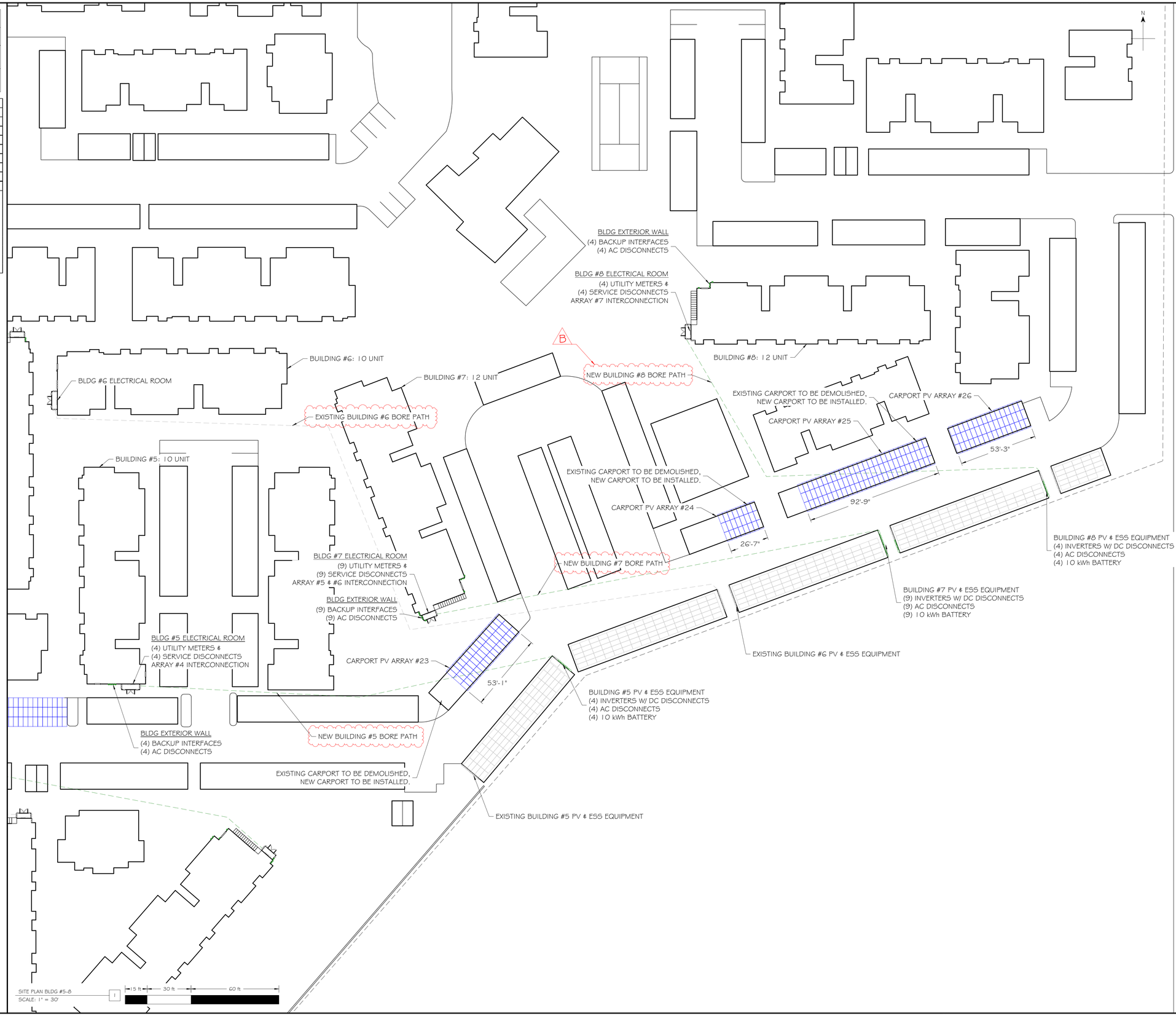

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
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(33) INTERCONNECTIONS
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90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
SITE PLAN
BLDG #5-8

Sheet Number:
A1.1

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

SYMBOL LEGEND		
SYMBOL	NAME	DESCRIPTION
	NEW CARPORT PV MOD.	ZNSHINE SOLAR ZXMG-72 395/M
	EXISTING ROOFTOP PV MOD.	ZNSHINE SOLAR ZXMG-72 395/M

STRING LEGEND:

1.8.1 (12)

- STRING LENGTH
- STRING ID #
- INVERTER ID #
- BUILDING ID #

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(33) SolarEdge Energy Bank Battery
330 kWH Energy Storage Total
(33) Interconnection Meters

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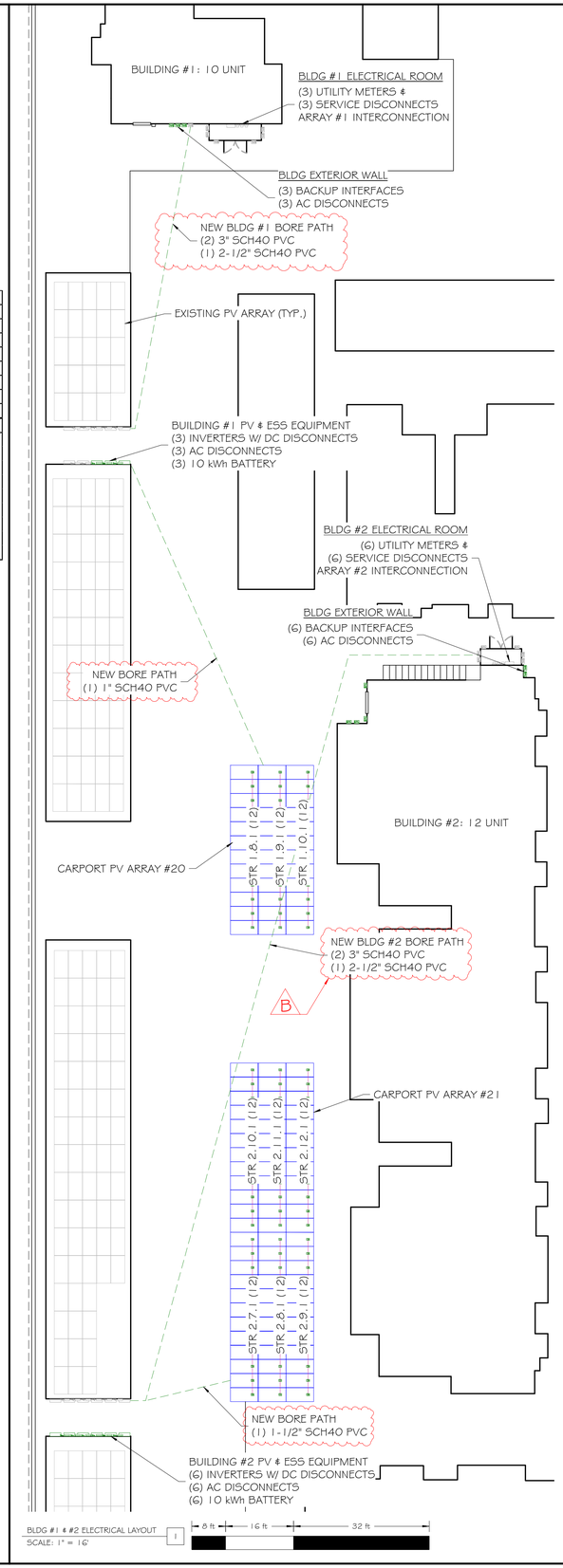
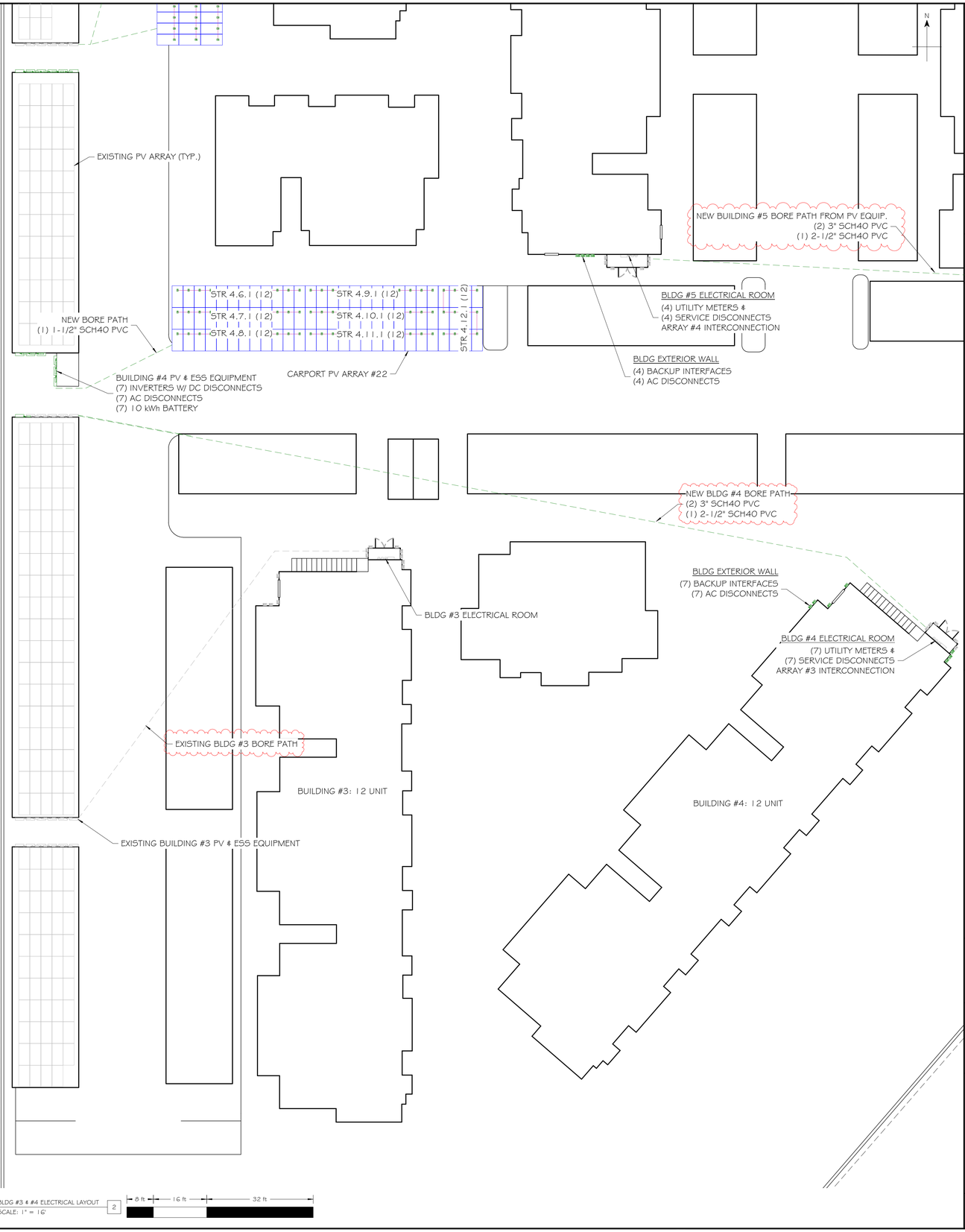


BLDG #1 & #2 ELECTRICAL LAYOUT
SCALE: 1" = 16'
1
8 ft 16 ft 32 ft



BLDG #3 & #4 ELECTRICAL LAYOUT
SCALE: 1" = 16'
2
8 ft 16 ft 32 ft

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

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Sheet Title:
ELECTRICAL
LAYOUT BLDG #1-4

Sheet Number:
E1.0

Sheet Size:
ARCH D - 36" x 24"

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Reviewed & Approved by:
RD

SYMBOL LEGEND		
SYMBOL	NAME	DESCRIPTION
	NEW CARPORT PV MOD.	ZNSHINE SOLAR ZXMG-72 395/M
	EXISTING ROOFTOP PV MOD.	ZNSHINE SOLAR ZXMG-72 395/M

STRING LEGEND:

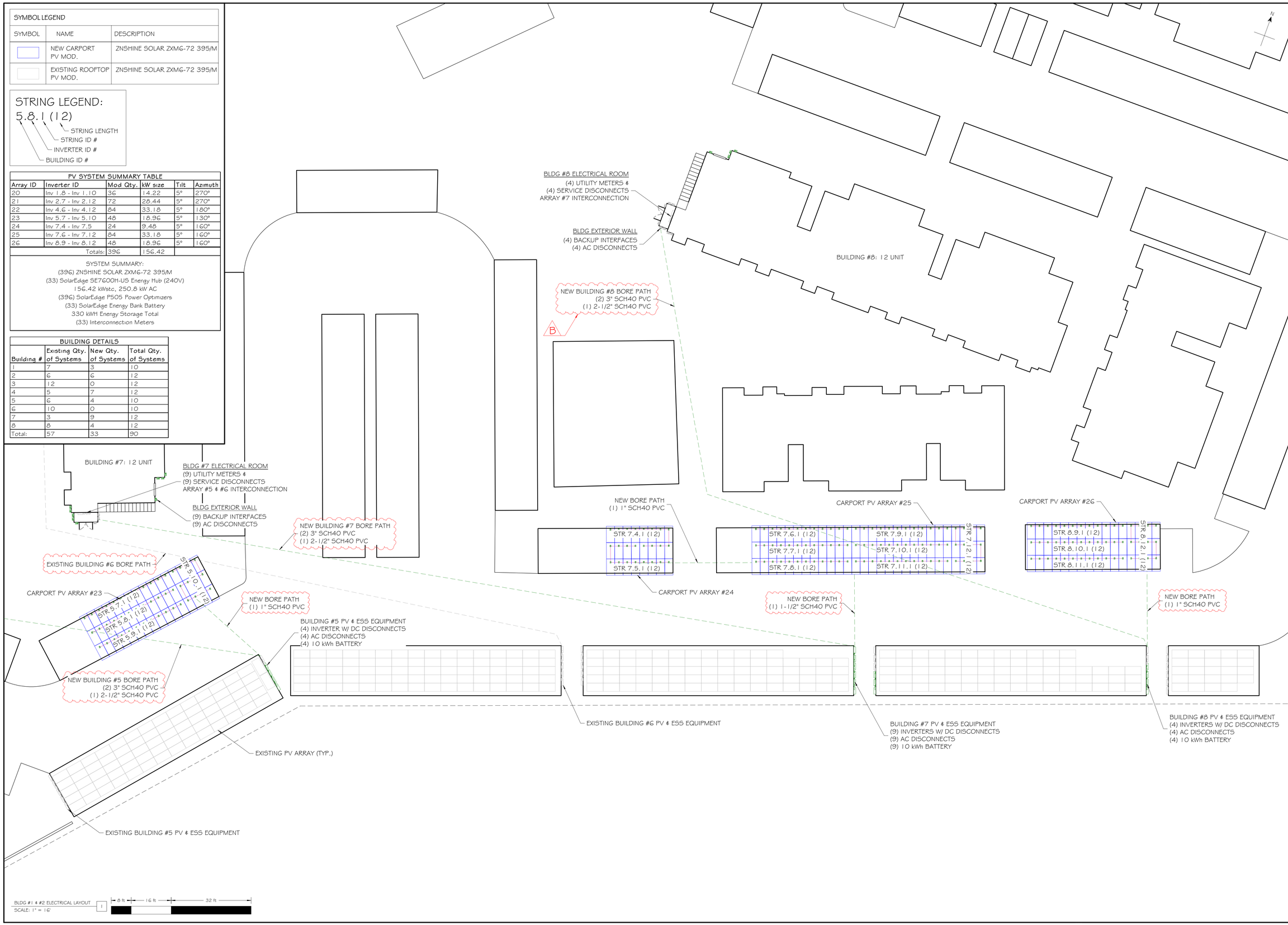
5.8.1 (12)

- STRING LENGTH
- STRING ID #
- INVERTER ID #
- BUILDING ID #

PV SYSTEM SUMMARY TABLE					
Array ID	Inverter ID	Mod Qty.	kW size	Tilt	Azimuth
20	Inv 1.8 - Inv 1.10	36	14.22	5°	270°
21	Inv 2.7 - Inv 2.12	72	28.44	5°	270°
22	Inv 4.6 - Inv 4.12	84	33.18	5°	180°
23	Inv 5.7 - Inv 5.10	48	18.96	5°	130°
24	Inv 7.4 - Inv 7.5	24	9.48	5°	160°
25	Inv 7.6 - Inv 7.12	84	33.18	5°	160°
26	Inv 8.9 - Inv 8.12	48	18.96	5°	160°
	Totals:	396	156.42		

SYSTEM SUMMARY:
(396) ZNSHINE SOLAR ZXMG-72 395/M
(33) SolarEdge SE7600H-US Energy Hub (240V)
156.42 kWstc, 250.8 kW AC
(396) SolarEdge P505 Power Optimizers
(33) SolarEdge Energy Bank Battery
330 kWH Energy Storage Total
(33) Interconnection Meters

BUILDING DETAILS			
Building #	Existing Qty. of Systems	New Qty. of Systems	Total Qty. of Systems
1	7	3	10
2	6	6	12
3	12	0	12
4	5	7	12
5	6	4	10
6	10	0	10
7	3	9	12
8	8	4	12
Total:	57	33	90



Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS		
DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
ELECTRICAL LAYOUT BLDG #5-8

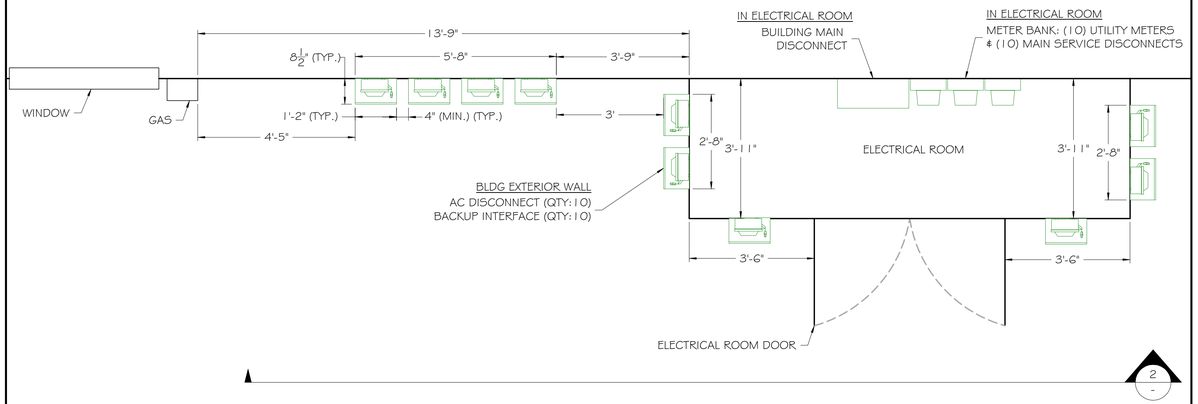
Sheet Number:
E1.1

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

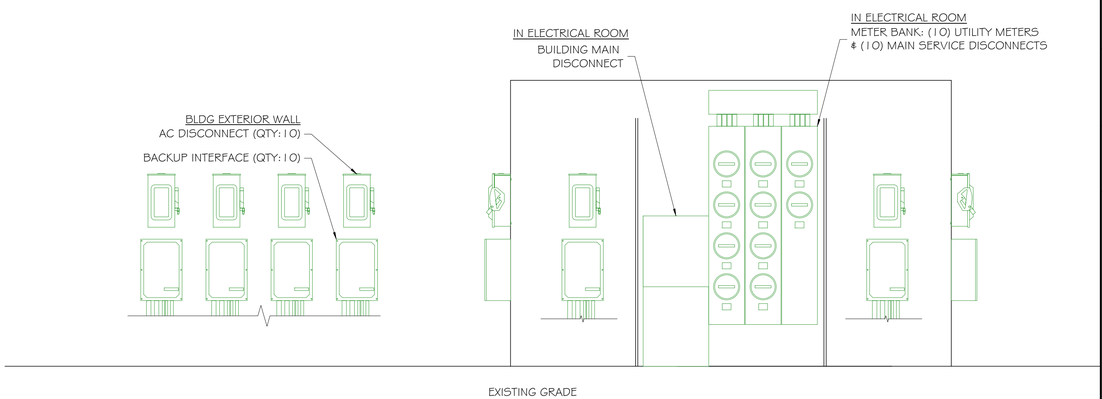
Reviewed & Approved by:
RD

NOTE: BUILDING #6 ELECTRICAL LAYOUT SHOWN (10 UNIT).
ELECTRICAL LAYOUTS & ELEVATIONS REPRESENT THE MAXIMUM NUMBER OF PIECES OF EQUIPMENT AT ANY BUILDING. ACTUAL NUMBER WILL VARY BY BUILDING.



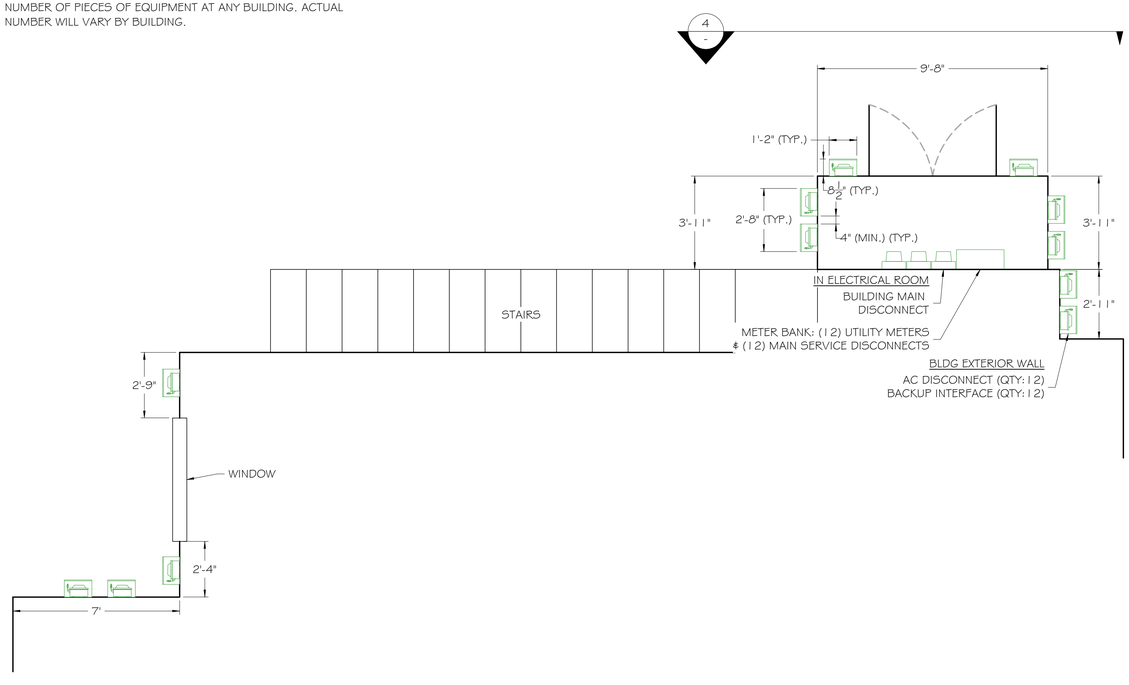
BLDG #6 ELECTRICAL ROOM LAYOUT
SCALE: 1" = 2'
1
1 ft | 2 ft | 4 ft

NOTE: TOP OF DOOR FRAME NOT SHOWN TO SEE EQUIPMENT INSIDE SHED



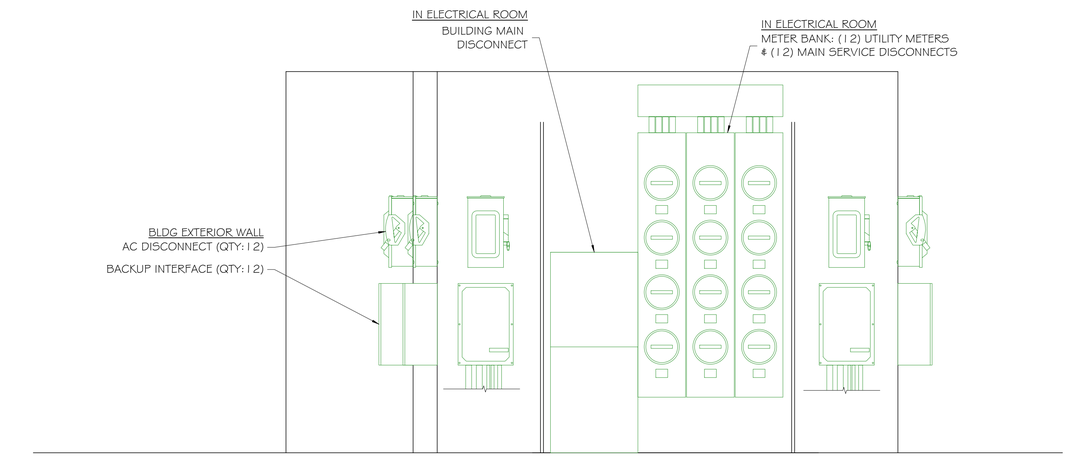
BLDG #6 EQUIPMENT ELEVATION
SCALE: 1" = 2'
2
1 ft | 2 ft | 4 ft

NOTE: BUILDING #3 ELECTRICAL LAYOUT SHOWN (12 UNIT)
ELECTRICAL LAYOUTS & ELEVATIONS REPRESENT THE MAXIMUM NUMBER OF PIECES OF EQUIPMENT AT ANY BUILDING. ACTUAL NUMBER WILL VARY BY BUILDING.



BLDG #3 ELECTRICAL ROOM LAYOUT
SCALE: 1" = 36"
3
18 in | 36 in | 72 in

NOTE: TOP OF DOOR FRAME NOT SHOWN TO SEE EQUIPMENT INSIDE SHED



BLDG #3 EQUIPMENT ELEVATION
SCALE: 1" = 18"
4
9 in | 18 in | 36 in

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
ELECTRICAL ELEVATIONS

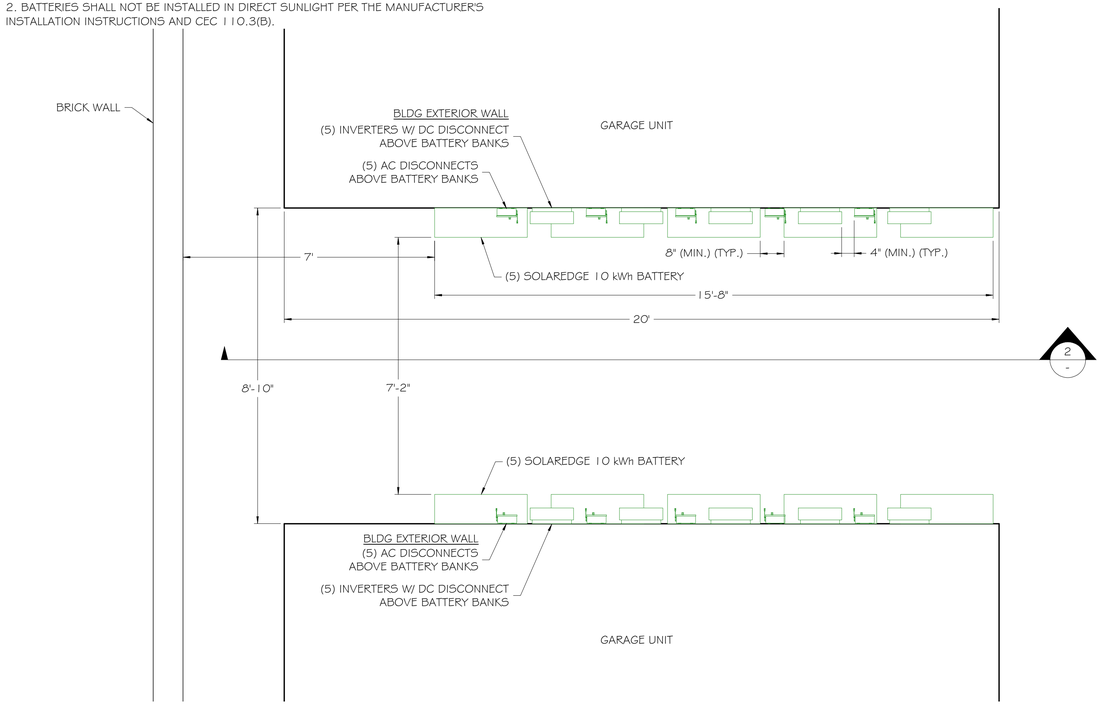
Sheet Number:
E1.2

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

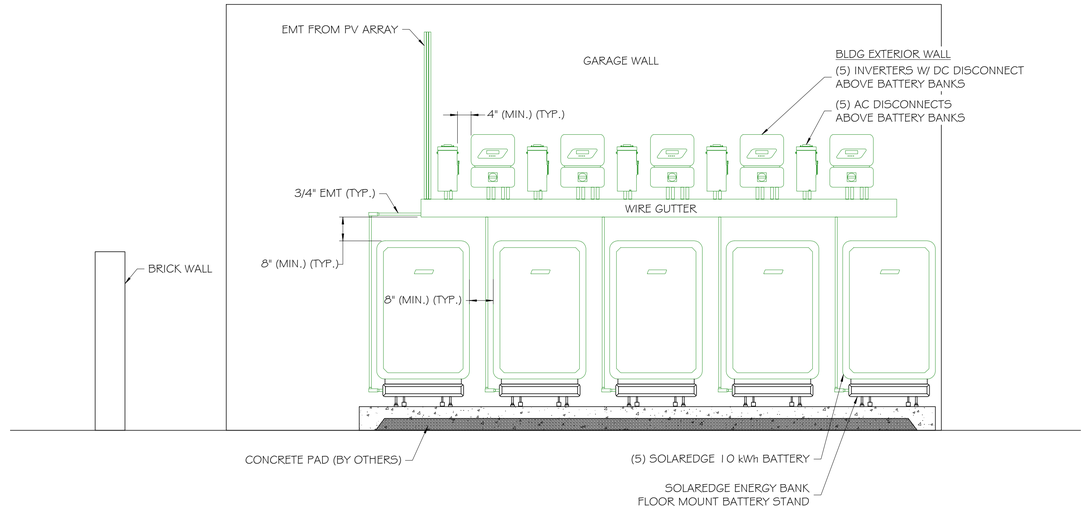
Reviewed & Approved by:
RD

NOTE:
1. BUILDING #6 PV/ESS EQUIPMENT LAYOUT SHOWN (10 UNIT) ELECTRICAL LAYOUTS & ELEVATIONS REPRESENT THE MAXIMUM NUMBER OF PIECES OF EQUIPMENT AT ANY BUILDING. ACTUAL NUMBER WILL VARY BY BUILDING.
2. BATTERIES SHALL NOT BE INSTALLED IN DIRECT SUNLIGHT PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CEC 110.3(B).



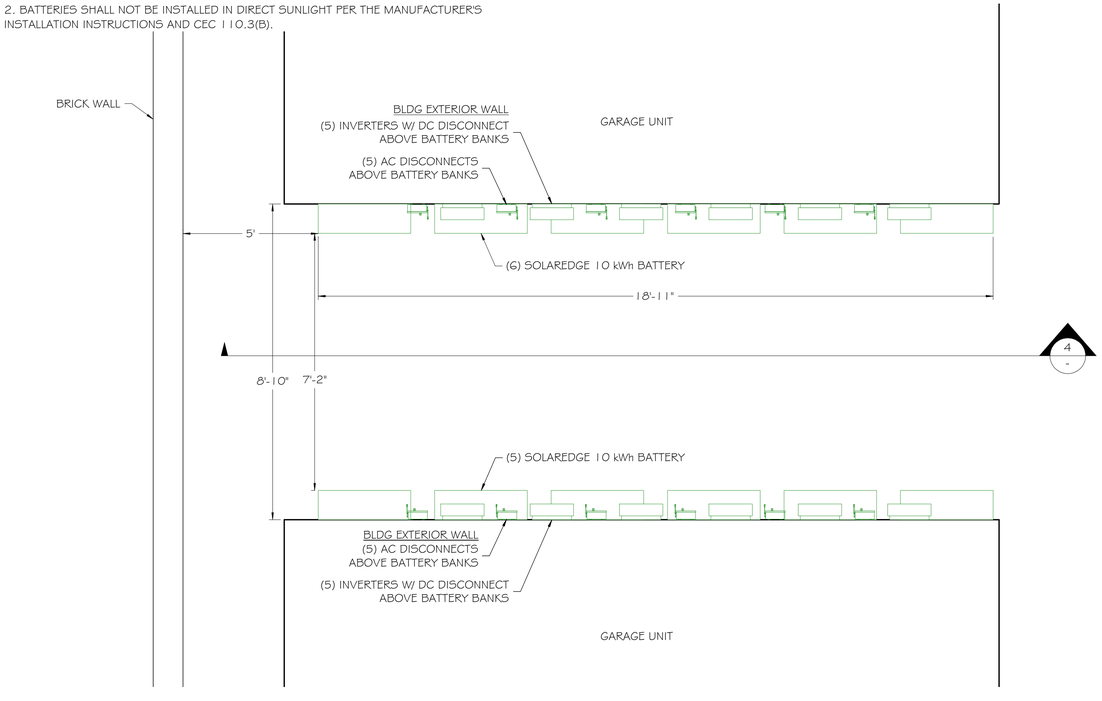
BUILDING #6 PV/ESS EQUIPMENT LAYOUT
SCALE: 1" = 2'
1 | 1 ft | 2 ft | 4 ft

NOTE: BATTERIES SHALL NOT BE INSTALLED IN DIRECT SUNLIGHT PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CEC 110.3(B).



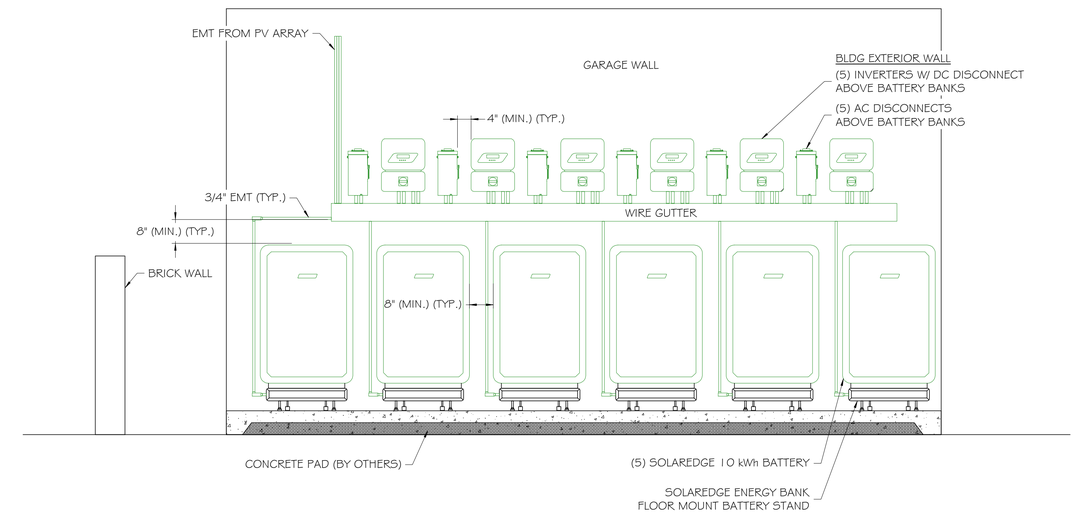
BUILDING #6 PV/ESS EQUIPMENT ELEVATION
SCALE: 1" = 2'
2 | 1 ft | 2 ft | 4 ft

NOTE:
1. BUILDING #3 PV/ESS EQUIPMENT LAYOUT SHOWN (10 UNIT) ELECTRICAL LAYOUTS & ELEVATIONS REPRESENT THE MAXIMUM NUMBER OF PIECES OF EQUIPMENT AT ANY BUILDING. ACTUAL NUMBER WILL VARY BY BUILDING.
2. BATTERIES SHALL NOT BE INSTALLED IN DIRECT SUNLIGHT PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CEC 110.3(B).



BUILDING #3 PV/ESS EQUIPMENT LAYOUT
SCALE: 1" = 2'
3 | 1 ft | 2 ft | 4 ft

NOTE: BATTERIES SHALL NOT BE INSTALLED IN DIRECT SUNLIGHT PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND CEC 110.3(B).



BUILDING #3 PV/ESS EQUIPMENT ELEVATION
SCALE: 1" = 2'
4 | 1 ft | 2 ft | 4 ft

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
ELECTRICAL ELEVATIONS

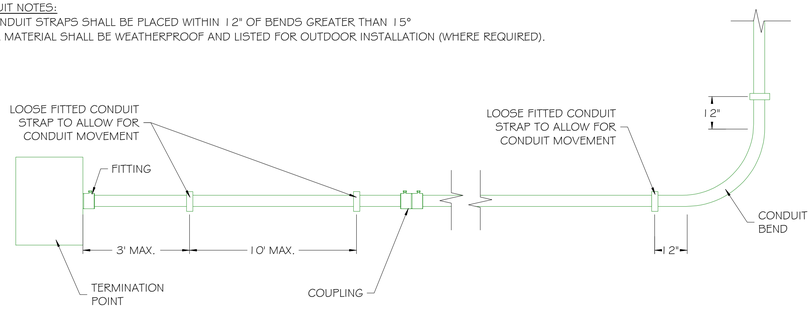
Sheet Number:
E1.3

Sheet Size:
ARCH D - 36" x 24"

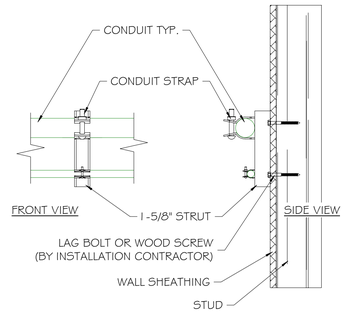
Design & Drafting by:

Reviewed & Approved by:
RD

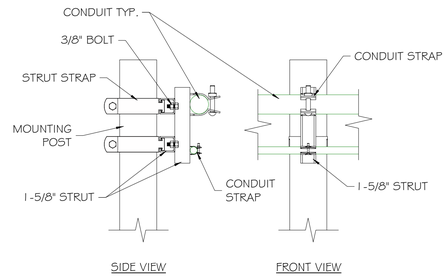
CONDUIT NOTES:
1.) CONDUIT STRAPS SHALL BE PLACED WITHIN 12" OF BENDS GREATER THAN 15°
2.) ALL MATERIAL SHALL BE WEATHERPROOF AND LISTED FOR OUTDOOR INSTALLATION (WHERE REQUIRED).



CONDUIT DETAIL
SCALE: NTS
1A

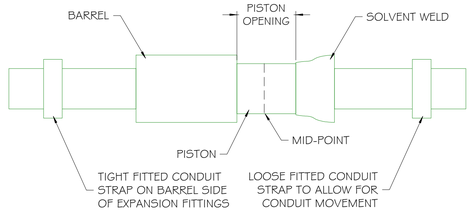


CONDUIT WALL MOUNTING
SCALE: NTS
2A



CONDUIT POLE MOUNT
SCALE: NTS
3A

CONDUIT EXPANSION NOTES:
1.) PVC CONDUIT SHALL BE INSTALLED WITH EXPANSION FITTINGS PER CALIFORNIA ELECTRICAL CODE 352.44.
2.)CONDUIT EXPANSION FITTINGS SHALL BE INSTALLED ON ANY SINGLE OUTDOOR CONDUIT RUN 25' OR GREATER IN LENGTH.
3.) MAXIMUM CONDUIT EXPANSION ALLOWANCE BEFORE AN EXPANSION FITTING IS REQUIRED IS 1/4"
4.) CONDUIT EXPANSION FITTINGS SHALL BE INSTALLED AT EVERY BUILDING EXPANSION JOINT.
5.) ALL CONDUIT EXPANSION FITTINGS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS AND NEC SECTION 300.7(B).
6.) ALL MATERIAL SHALL BE WEATHERPROOF AND LISTED FOR OUTDOOR INSTALLATION.



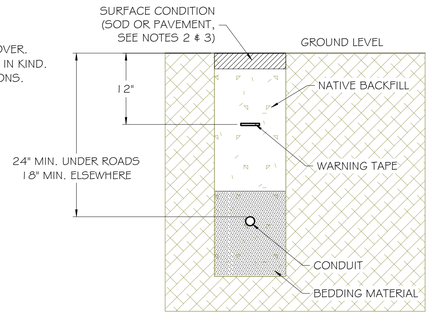
LENGTH OF RUN (FEET)	INCHES OF EXPANSION ALLOWANCE FOR TEMPERATURE CHANGES OF:				
	0-15°C	16-27°C	28-38°C	39-49°C	50°C +
25	5/8	3/4	1	1-1/4	1-3/8
50	1-1/4	1-5/8	2	2-3/8	2-3/4
75	1-3/4	2-3/8	3	3-1/2	4-1/8
100	2-3/8	3-1/8	4	4-3/4	5-1/2
125	3	4	5	6	7
150	3-5/8	4-3/4	6	7-1/8	8-1/4

ESTIMATED RANGE OF TEMPERATURE FOR SITE: 39°C

PVC EXPANSION FITTING DETAIL
SCALE: NTS
4

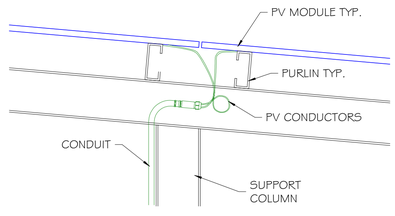
NOTES:
1.) BACKFILL WITH NATIVE MATERIAL IN COMPLIANCE WITH NEC 300.5(F).
NATIVE MATERIAL SHALL BE APPROVED BY THE OWNERS REP. PRIOR TO USE.
IF NOT ACCEPTABLE, USE FINE GRANULAR MATERIAL FOR BEDDING AND SIDE/TOP COVER.
2.) ASPHALT TO BE SAWCUT PRIOR TO TRENCHING. PAVEMENT SHALL BE REPLACED IN KIND.
3.) UNPAVED SURFACES SHALL BE RESTORED IN KIND TO MATCH EXISTING CONDITIONS.
4.) DETECTABLE WARNING TAPE SHALL BE INSTALLED 12" BELOW GRADE.
5.) REFER TO ELECTRICAL DRAWINGS FOR SIZE AND TYPE OF CONDUIT.
6.) NOTIFY UTILITY COMPANY PRIOR TO DIGGING PER "DIG SAFE" REQUIREMENTS.

811 Know what's below. Call before you dig.



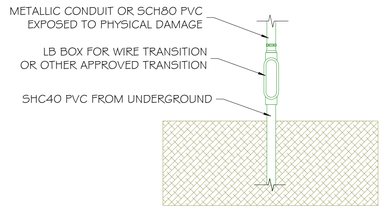
TRENCH CROSS-SECTION
SCALE: NTS
5

NOTE:
1.) CONDUCTORS SHALL BE ROUTED TO ENSURE ISOLATION OF THE EGC/GEC FROM DISSIMILAR METALS.
2.) CONDUCTORS SHALL BE PROTECTED FROM AREAS WHERE THEY ARE LIKELY TO COME IN CONTACT WITH SHARP EDGES.
3.) CONDUIT SHALL BE ATTACHED TO STRUCTURE VIA PIPE CLAMPS & STRUT WHERE NECESSARY.



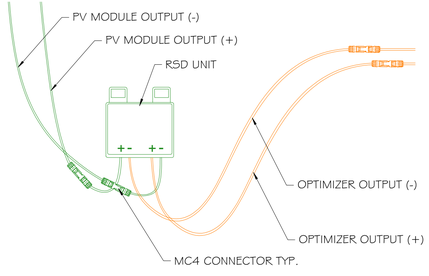
CONDUIT CABLE ENTRY
SCALE: NTS
6

NOTES:
1.) CONDUIT SHALL BE INSTALLED WHERE 1000V CONDUCTORS ARE RAN IN AN ACCESSIBLE LOCATION.
2.) WHERE EXPOSED TO PHYSICAL DAMAGE, SCH40 PVC SHALL TRANSITION TO AN APPROVED METALLIC CONDUIT OR SCH80 PVC WITHIN A REASONABLE DISTANCE FROM WHERE THE CONDUIT EXITS THE EARTH.
3.) SCH80 PVC IS PERMITTED WHERE EXPOSED TO PHYSICAL DAMAGE.



CONDUIT BODY TRANSITION
SCALE: NTS
7B

NOTE:
1.) RSD UNIT SHALL PROVIDE MODULE-LEVEL RAPID SHUTDOWN FUNCTIONALITY PER NEC 690.12 WHEN INSTALLED PER MANUFACTURER INSTRUCTIONS.
2.) DEVICE SHALL BE CONTROLLED BY MANUFACTURER-APPROVED METHODS.



RSD DETAIL
SCALE: NTS
10

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
CONSTRUCTION DETAILS

Sheet Number:
E1.4

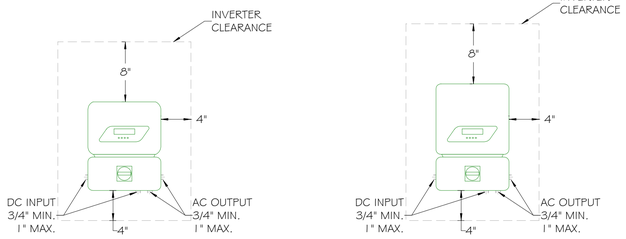
Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

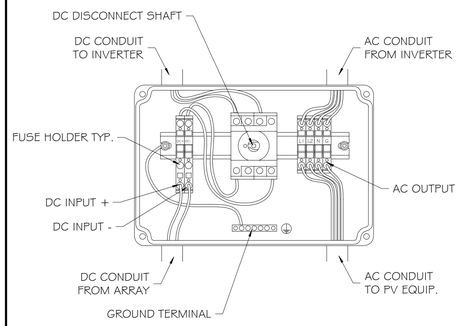
Reviewed & Approved by:
RD

NOTE:
WHEN INSTALLED OUTSIDE,
MINIMUM SIDE CLEARANCE BETWEEN
INVERTERS IS ALLOWED TO BE 2"

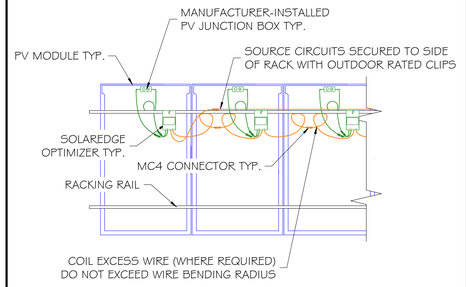
VERTICAL CLEARANCE BETWEEN
INVERTERS MUST BE MINIMUM 12"



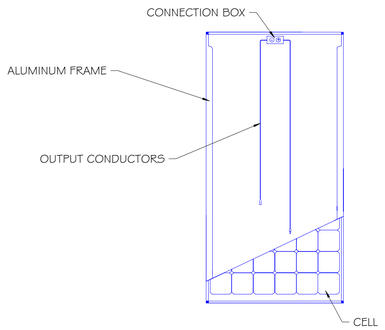
SOLAREDGE INVERTER
SCALE: NTS
1



SOLAREDGE SINGLE-PHASE
DISCONNECT/COMBINER
SCALE: NTS
2

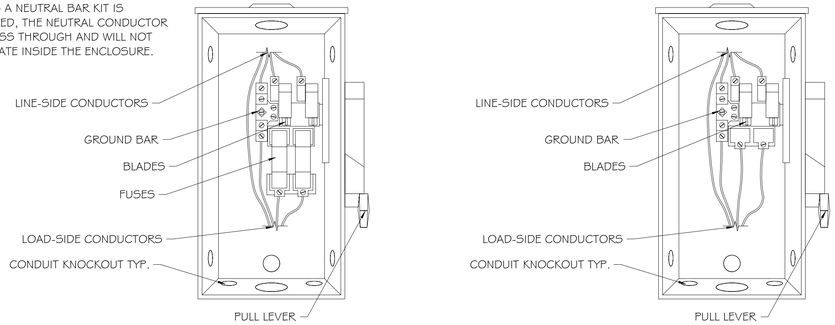


SOLAREDGE OPTIMIZER
SCALE: NTS
3A

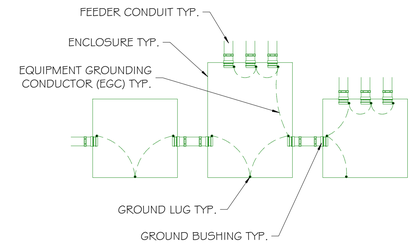


MODULE DETAIL
SCALE: NTS
4

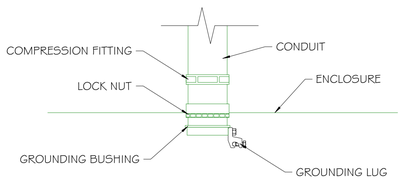
NOTE:
UNLESS A NEUTRAL BAR KIT IS
INSTALLED, THE NEUTRAL CONDUCTOR
WILL PASS THROUGH AND WILL NOT
TERMINATE INSIDE THE ENCLOSURE.



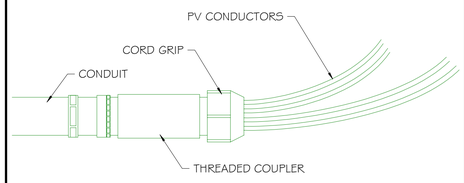
AC DISCONNECT
SCALE: NTS
5A



EQUIPMENT GROUNDING
SCALE: NTS
8

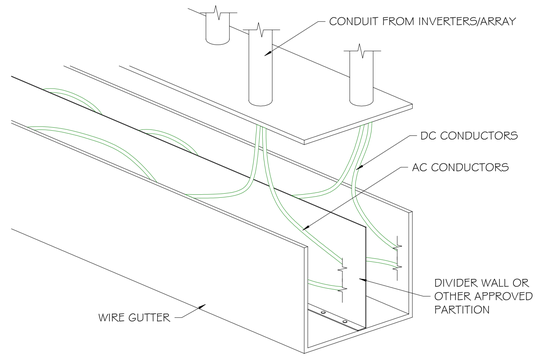


CONDUIT GROUNDING
SCALE: NTS
9



CONDUIT CORD CONNECTOR
SCALE: NTS
10

WIRE GUTTER NOTES:
1.) WIRE GUTTERS SHALL BE INSTALLED PER NEC 314.
2.) WIRE GUTTERS SHALL BE SIZED PER TABLE 314.28.
3.) PARTITIONS SHALL BE INSTALLED TO SEPARATE PV DC AND AC CONDUCTORS, PER 690.31(B).
4.) WHERE BARRIERS ARE INSTALLED IN A BOX, EACH SECTION SHALL BE CONSIDERED AS A SEPARATE BOX.
5.) WIRE GUTTERS SHALL BE CONSTRUCTED OF MATERIALS AND IN A MANNER COMPLIANT WITH NEC 314.40.



WIRE GUTTER SEPARATION DETAIL
SCALE: NTS
11

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
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PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
CONSTRUCTION DETAILS

Sheet Number:
E1.5

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

120/240V | ----- = EQUIP. GROUNDING CONDUCTOR | ——— = CIRCUIT CONDUCTOR | = FUSE | = CIRCUIT BREAKER | (N) = NEW EQUIP. | (E) = EXISTING EQUIP. | L1 = LINE 1 (BLACK) | L2 = LINE 2 (RED) | N = NEUTRAL (WHITE) | G = GROUND (GREEN) | = POSITIVE (RED) | = NEGATIVE (BLACK)

Array Configuration

System: 56.88 kWstc, 91.2 kW AC

Total PV Module Qty: 144

	Inv #1	Inv #2	Inv #3	Inv #4	Inv #5	Inv #6	Inv #7	Inv #8	Inv #9	Inv #10	Inv #11	Inv #12
Inverter I.D. #												
Inverter AC Power (kW):	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60
PV Power (kWstc):	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74
Inverter DC:AC Ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Module Total Qty:	12	12	12	12	12	12	12	12	12	12	12	12
INPUT "A" String Qty:	1	1	1	1	1	1	1	1	1	1	1	1
String Length:	12	12	12	12	12	12	12	12	12	12	12	12
Max Open Circuit Voltage:	480	480	480	480	480	480	480	480	480	480	480	480
Operating Voltage:	380	380	380	380	380	380	380	380	380	380	380	380
Max Short Circuit Current:	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Operating Current:	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

AC System Summary (Per Unit)

NOMINAL SYSTEM VOLTAGE:	240	Volts AC
MAX CURRENT PER 690.8(A):	32	Amps
MAX CURRENT PER 690.8(B):	40	Amps

PV Module Specifications

Model Number:	ZNSHINE SOLAR ZXM6-72 395/M		
Weight (lbs):	48.5		
Dimensions (in):	78.1 x 39.5 x 1.4		
Power @ STC (W):	395		
Voc (VDC):	49.2		
Vmp (VDC):	40.5	Voc Temp Coeff (%/°C):	-0.29
Isc (A):	10.22	Max Voltage (VDC):	1,500
Imp (A):	9.76	Module Quantity:	144

Inverter #1 - #12 Specifications

Model Number:	SolarEdge SE7600H-US Energy Hub [SI1-JUN20]		
Nominal Power (kW AC):	7.60		
Nominal AC Voltage (V):	240	(2/N/PE)	
Max Output Current (A):	32.0		
CEC Weighted Efficiency:	99.0%		
Maximum DC Voltage (V):	480	# of Inputs:	2
Operating DC Voltage (V):	380	Inv. Quantity:	12

Power Optimizer Specifications

Model Number:	SolarEdge P505	
Max Input Power (W):	505	
Max Input Voc (VDC):	83	
Max Input Isc (A):	14.0	
Output Current (A):	15	
Output Voltage (VDC):	80	
Min String Length:	8	Modules
Max String Length:	25	Modules
Max String Power (W):	5700	
Optimizer Quantity:	144	

PV System Maximum Voltage Calculation per NEC 690.7(A)

Local Record Low Temp: -2 °C — Data Source: MARCH AFB/RIVERSIDE

Voc Temp Coefficient	x	25°C - Record Low Temp.	+ 1 =	Voc Correction Factor
0.29%/°C	x	27°C	+ 1 =	1.078

Voc Correction Factor	x	Voc	x	Max # of Modules in Series	=	Temperature Corrected Open Circuit Voltage
1.078	x	49.2	x	1	=	53.1 Volts DC

CEC Rating Calculation

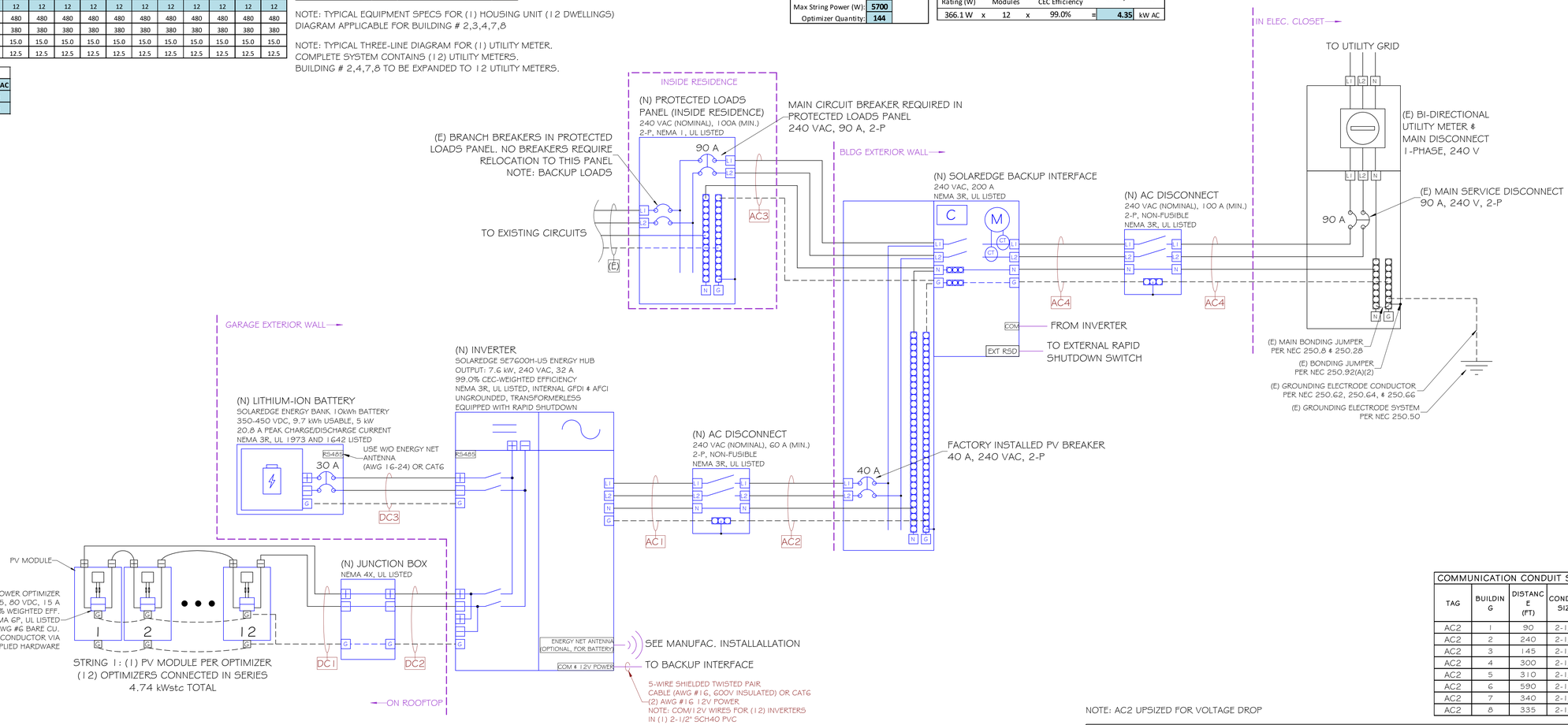
Module PTC Rating (W)	x	No. of Modules	x	Average Inverter CEC Efficiency	=	CEC System Size
366.1 W	x	12	x	99.0%	=	4.35 kW AC

Battery Specifications

Model Number:	SOLAREDGE ENERGY BANK 10kWh BATTERY		
Voltage (VDC):	350-450		
kWh rating (Usable):	9.7	Max Depth of Discharge:	100.0%
Weight (lbs):	267.0	Battery Quantity:	12

NOTE: TYPICAL EQUIPMENT SPECS FOR (1) HOUSING UNIT (12 DWELLINGS) DIAGRAM APPLICABLE FOR BUILDING # 2,3,4,7,8

NOTE: TYPICAL THREE-LINE DIAGRAM FOR (1) UTILITY METER. COMPLETE SYSTEM CONTAINS (12) UTILITY METERS. BUILDING # 2,4,7,8 TO BE EXPANDED TO 12 UTILITY METERS.



NOTE: AC2 UPSIZED FOR VOLTAGE DROP

COMMUNICATION CONDUIT SCHEDULE BY BUILDING

TAG	BUILDING	DISTANCE (FT)	CONDUIT SIZE	CONDUIT TYPE	CONDUIT QUANTITY
AC2	1	90	2-1/2"	SCH40 PVC	1
AC2	2	240	2-1/2"	SCH40 PVC	1
AC2	3	145	2-1/2"	SCH40 PVC	1
AC2	4	300	2-1/2"	SCH40 PVC	1
AC2	5	310	2-1/2"	SCH40 PVC	1
AC2	6	590	2-1/2"	SCH40 PVC	1
AC2	7	340	2-1/2"	SCH40 PVC	1
AC2	8	335	2-1/2"	SCH40 PVC	1

AC2 CONDUIT SCHEDULE BY BUILDING

TAG	BUILDING	DISTANCE (FT)	CONDUIT SIZE	CONDUIT QUANTITY	CONDUIT TYPE	PHASE CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			NEUTRAL CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			GROUND CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			Fill %	VOLTAGE DROP %
AC2	1	90	3"	2	SCH40 PVC	10	AWG #6	THWN-2	5	AWG #6	THWN-2	1	AWG #6	THWN-2	11.2%	1.02%
AC2	2	240	3"	2	SCH40 PVC	10	AWG #4	THWN-2	5	AWG #4	THWN-2	1	AWG #4	THWN-2	18.1%	1.71%
AC2	3	145	3"	2	SCH40 PVC	12	AWG #6	THWN-2	6	AWG #6	THWN-2	1	AWG #4	THWN-2	13.7%	1.65%
AC2	4	300	3"	2	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	26.7%	1.70%
AC2	5	310	3"	2	SCH40 PVC	10	AWG #3	THWN-2	5	AWG #3	THWN-2	1	AWG #3	THWN-2	21.4%	1.76%
AC2	6	590	3"	2	SCH40 PVC	10	AWG #1	THWN-2	5	AWG #1	THWN-2	1	AWG #1	THWN-2	34.4%	2.10%
AC2	7	340	3"	2	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	26.7%	1.92%
AC2	8	335	3"	2	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	26.7%	1.90%

WIRE AND CONDUIT SCHEDULE

TAG	CONDUIT SIZE	CONDUIT TYPE	PHASE CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			NEUTRAL CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			GROUND CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			EST. DIST.
DC1	N/A	N/A	2/STRING	AWG #10	PV-WIRE	N/A	N/A	N/A	1	AWG #6	BARE CU	125
DC2	3/4"	EMT	2	AWG #10	THWN-2	N/A	N/A	N/A	1	AWG #10	THWN-2	150
DC3	3/4"	EMT	2	AWG #10	THWN-2	1	AWG #10	THWN-2	1	AWG #10	THWN-2	10
AC1	3/4"	EMT	2	AWG #8	THWN-2	1	AWG #8	THWN-2	1	AWG #10	THWN-2	5
AC2	3"	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	340
AC3	1-1/4"	EMT	2	AWG #3	THWN-2	1	AWG #3	THWN-2	1	AWG #8	THWN-2	100
AC4	1-1/4"	EMT	2	AWG #3	THWN-2	1	AWG #3	THWN-2	1	AWG #8	THWN-2	55

CONDUIT FILL CALCULATIONS

TAG	CONDUCTOR AREA (SQ IN)	x	CONDUCTOR QTY	=	CONDUCTOR FILL (SQ IN)	NEUTRAL AREA (SQ IN)	x	NEUTRAL QTY	=	NEUTRAL FILL (SQ IN)	GROUND AREA (SQ IN)	x	GROUND QTY	=	GROUND FILL (SQ IN)	TOTAL WIRE FILL	CONDUIT TYPE	CONDUIT SIZE	CONDUIT AREA (SQ IN)	x 40% =	MAX CONDUIT FILL	CONDUIT FILL PERCENT
DC1	0.0531	x	N/A	=	N/A	N/A	x	0	=	0.0000	0.0206	x	1	=	0.0206	N/A	N/A	N/A	N/A	x.4 =	N/A	N/A
DC2	0.0211	x	2	=	0.0422	N/A	x	0	=	0.0000	0.0211	x	1	=	0.0211	0.0633	EMT	3/4"	0.533	x.4 =	0.2132	11.9%
DC3	0.0211	x	2	=	0.0422	N/A	x	0	=	0.0000	0.0211	x	1	=	0.0211	0.0633	EMT	3/4"	0.533	x.4 =	0.2132	11.9%
AC1	0.0366	x	2	=	0.0732	0.0366	x	1	=	0.0366	0.0211	x	1	=	0.0211	0.1309	EMT	3/4"	0.533	x.4 =	0.2132	24.6%
AC2	0.0973	x	12	=	1.1676	0.0973	x	6	=	0.5838	0.1855	x	1	=	0.1855	1.9369	SCH40 PVC	3"	7.268	x.4 =	2.9072	26.6%
AC3	0.0973	x	2	=	0.1946	0.0973	x	1	=	0.0973	0.0366	x	1	=	0.0366	0.3285	EMT	1-1/4"	1.496	x.4 =	0.5984	22.0%
AC4	0.0973	x	2	=	0.1946	0.0973	x	1	=	0.0973	0.0366	x	1	=	0.0366	0.3285	EMT	1-1/4"	1.496	x.4 =	0.5984	22.0%

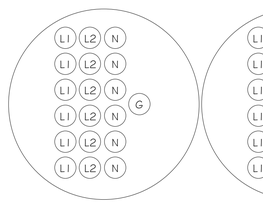
TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	CONN. TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	REQUIRED CONDUCTOR AMPACITY: OPTIMIZER OUTPUT CURRENT	x	# OF PARALLEL STRINGS	= MAX CURRENT PER 690.8(A)(1)	x CONT. OPERATION 690.8(B)(1)	= MAX CURRENT PER 690.8(B)(1)	AMPACITY CHECK #1: MAX CURRENT PER 690.8(B)(1)	< CONDUCTOR AMPACITY	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	HEIGHT ABOVE ROOF (in)	TEMP. ADDER PER 310.15(B)(3)(c)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CONDUCTOR AMPACITY	AMPACITY CHECK #2: MAX CURRENT PER 690.8(B)(2)	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
DC1	PV STRING	JUNCTION BOX	COPPER	90°C	AWG #10	55 Amps	15.0	x	1	= 15.0 Amps	x 1.25	= 18.8 Amps	18.8 Amps	< 55.0 Amps	ROOFTOP, FREE AIR	37	-	N/A	37	0.91	N/A	1.00	55	x 0.91	x 1.00	= 50.1 Amps	15.0 Amps	< 50.1 Amps	125 ft	1.24%
DC2	JUNCTION BOX	INVERTER	COPPER	75°C	AWG #10	35 Amps	15.0	x	1	= 15.0 Amps	x 1.25	= 18.8 Amps	18.8 Amps	< 35.0 Amps	ROOFTOP, IN CONDUIT	37	1	0	37	0.91	2	1.00	40	x 0.91	x 1.00	= 36.4 Amps	15.0 Amps	< 36.4 Amps	150 ft	1.42%

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	TERMINAL TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CONDUCTOR AMPACITY	AMPACITY CHECK: SPECIFIED OCPD RATING	NEXT STD. OCPD SIZE DOWN, 240.4	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
DC3	BATTERY	INVERTER	COPPER	75°C	AWG #10	35 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	40	x 0.76	x 1.00	= 30.4 Amps	30 Amps	25 Amps	< 30.4 Amps	10 ft	0.22%

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	TERMINAL TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT	x	# OF INVERTERS	= MAX CURRENT PER 690.8(A)(3)	x CONT. OPERATION 690.8(B)(1)	= CURRENT PER 690.8(B)(1)	AMPACITY CHECK #1: MAX CURRENT PER 690.8(B)(1)	< CONDUCTOR AMPACITY	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CORRECTED AMPACITY	AMPACITY CHECK #2: MAX CURRENT PER 690.8(B)(2)	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
AC1	INVERTER	AC DISCONNECT	COPPER	75°C	AWG #8	50 Amps	32.0	x	1	= 32.0 Amps	x 1.25	= 40.0 Amps	40.0 Amps	< 50 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	55	x 0.76	x 1.00	= 41.8 Amps	32.0 Amps	< 41.8 Amps	5 ft	0.09%
AC2	AC DISCONNECT	BACKUP INTERFACE	COPPER	75°C	AWG #3	100 Amps	32.0	x	1	= 32.0 Amps	x 1.25	= 40.0 Amps	40.0 Amps	< 100 Amps	UNDERGROUND (+0°C)	37	37	0.91	12	0.50	115	x 0.91	x 0.50	= 52.4 Amps	32.0 Amps	< 52.4 Amps	340 ft	1.92%

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	TERMINAL TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CORRECTED AMPACITY	AMPACITY CHECK: SPECIFIED OCPD RATING	NEXT STD. OCPD SIZE DOWN, 240.4	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
AC3	PROTECTED LOADS PANEL	BACKUP INTERFACE	COPPER	75°C	AWG #3	100 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	115	x 0.76	x 1.00	= 87.4 Amps	90 Amps	80 Amps	< 87.4 Amps	100 ft	2.04%
AC4	BACKUP INTERFACE	MAIN DISCONNECT	COPPER	75°C	AWG #3	100 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	115	x 0.76	x 1.00	= 87.4 Amps	90 Amps	80 Amps	< 87.4 Amps	55 ft	1.12%

AC2 CONDUIT DETAIL



Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
ELECTRICAL DIAGRAM #1

Sheet Number:
E2.0

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

120/240V | ----- = EQUIP. GROUNDING CONDUCTOR | ——— = CIRCUIT CONDUCTOR | = FUSE | = CIRCUIT BREAKER | (N) = NEW EQUIP. | (E) = EXISTING EQUIP. | L1 = LINE 1 (BLACK) | L2 = LINE 2 (RED) | N = NEUTRAL (WHITE) | G = GROUND (GREEN) | = POSITIVE (RED) | = NEGATIVE (BLACK)

Array Configuration

System: 47.4 kWstc, 76 kW AC

Total PV Module Qty: 120

	Inv #1	Inv #2	Inv #3	Inv #4	Inv #5	Inv #6	Inv #7	Inv #8	Inv #9	Inv #10
Inverter I.D. #:										
Inverter AC Power (kW):	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60	7.60
PV Power (kWstc):	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74	4.74
Inverter DC:AC Ratio:	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Module Total Qty:	12	12	12	12	12	12	12	12	12	12
INPUT "A" String Qty:	1	1	1	1	1	1	1	1	1	1
INPUT "A" String Length:	12	12	12	12	12	12	12	12	12	12
INPUT "A" Max Open Circuit Voltage:	480	480	480	480	480	480	480	480	480	480
INPUT "A" Operating Voltage:	380	380	380	380	380	380	380	380	380	380
INPUT "A" Max Short Circuit Current:	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
INPUT "A" Operating Current:	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

AC System Summary (Per Unit)

NOMINAL SYSTEM VOLTAGE:	240	Volts AC
MAX CURRENT PER 690.8(A):	25	Amps
MAX CURRENT PER 690.8(B):	31	Amps

PV Module Specifications

Model Number:	ZNSHINE SOLAR ZXM6-72 395/M		
Weight (lbs):	48.5		
Dimensions (in):	78.1 x 39.5 x 1.4		
Power @ STC (W):	395		
Voc (VDC):	49.2		
Vmp (VDC):	40.5	Voc Temp Coeff (%/°C):	-0.29
Isc (A):	10.22	Max Voltage (VDC):	1,500
Imp (A):	9.76	Module Quantity:	120

Inverter #1- #10 Specifications

Model Number:	SolarEdge SE7600H-US Energy Hub [SI1-JUN20]		
Nominal Power (kW AC):	7.60		
Nominal AC Voltage (V):	240	(2/N/PE)	
Max Output Current (A):	32.0		
CEC Weighted Efficiency:	99.0%		
Maximum DC Voltage (V):	480	# of Inputs:	2
Operating DC Voltage (V):	380	Inv. Quantity:	10

Power Optimizer Specifications

Model Number:	SolarEdge P505	
Max Input Power (W):	505	
Max Input Voc (VDC):	83	
Max Input Isc (A):	14.0	
Output Current (A):	15	
Output Voltage (VDC):	80	
Min String Length:	8	Modules
Max String Length:	25	Modules
Max String Power (W):	5700	
Optimizer Quantity:	120	

PV System Maximum Voltage Calculation per NEC 690.7(A)

Local Record Low Temp: -2 °C — Data Source: MARCH AFB/RIVERSIDE

Voc Temp Coefficient		25°C - Record Low Temp.			Voc Correction Factor		Voc		Max # of Modules in Series	=	Temperature Corrected Open Circuit Voltage
0.29%/°C	x	27°C	+ 1 =	1.078	1.078	x	49.2	x	1	=	53.1 Volts DC

CEC Rating Calculation

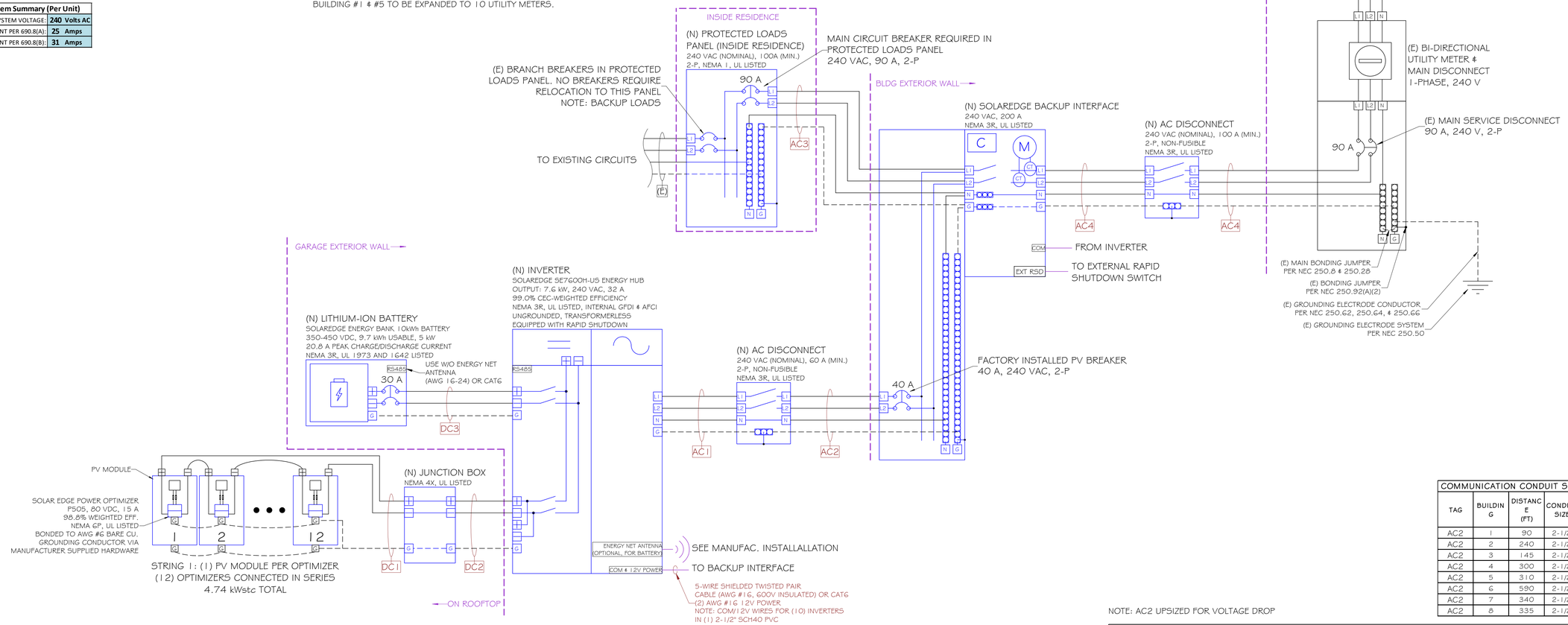
Module PTC Rating (W)		No. of Modules		Average Inverter CEC Efficiency	=	CEC System Size
366.1 W	x	12	x	99.0%	=	4.35 kW AC

Battery Specifications

Model Number:	SOLAREDGE ENERGY BANK [BAT-10K1P]		
Voltage (VDC):	350-450		
kWh rating (Usable):	9.7	Max Depth of Discharge:	100.0%
Weight (lbs):	267.0	Battery Quantity:	10

NOTE: TYPICAL EQUIPMENT SPECS FOR (1) HOUSING UNIT (10 DWELLINGS) DIAGRAM APPLICABLE FOR BUILDING #6

NOTE: TYPICAL THREE-LINE DIAGRAM FOR (1) UTILITY METER. COMPLETE SYSTEM CONTAINS (10) UTILITY METERS. BUILDING #1 & #5 TO BE EXPANDED TO 10 UTILITY METERS.



NOTE: AC2 UPSIZED FOR VOLTAGE DROP

COMMUNICATION CONDUIT SCHEDULE BY BUILDING

TAG	BUILDING	DISTANCE (FT)	CONDUIT SIZE	CONDUIT TYPE	CONDUIT QUANTITY
AC2	1	90	2-1/2"	SCH40 PVC	1
AC2	2	240	2-1/2"	SCH40 PVC	1
AC2	3	145	2-1/2"	SCH40 PVC	1
AC2	4	300	2-1/2"	SCH40 PVC	1
AC2	5	310	2-1/2"	SCH40 PVC	1
AC2	6	590	2-1/2"	SCH40 PVC	1
AC2	7	340	2-1/2"	SCH40 PVC	1
AC2	8	335	2-1/2"	SCH40 PVC	1

AC2 CONDUIT SCHEDULE BY BUILDING

TAG	BUILDING	DISTANCE (FT)	CONDUIT SIZE	CONDUIT QUANTITY	CONDUIT TYPE	PHASE CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			NEUTRAL CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			GROUND CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			Fill %	VOLTAGE DROP %
AC2	1	90	3"	2	SCH40 PVC	10	AWG #6	THWN-2	5	AWG #6	THWN-2	1	AWG #6	THWN-2	11.2%	1.02%
AC2	2	240	3"	2	SCH40 PVC	10	AWG #4	THWN-2	5	AWG #4	THWN-2	1	AWG #4	THWN-2	18.1%	1.71%
AC2	3	145	3"	2	SCH40 PVC	12	AWG #6	THWN-2	6	AWG #6	THWN-2	1	AWG #4	THWN-2	13.7%	1.65%
AC2	4	300	3"	2	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	26.7%	1.70%
AC2	5	310	3"	2	SCH40 PVC	10	AWG #3	THWN-2	5	AWG #3	THWN-2	1	AWG #3	THWN-2	21.4%	1.76%
AC2	6	590	3"	2	SCH40 PVC	10	AWG #1	THWN-2	5	AWG #1	THWN-2	1	AWG #1	THWN-2	34.4%	2.10%
AC2	7	340	3"	2	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	26.7%	1.92%
AC2	8	335	3"	2	SCH40 PVC	12	AWG #3	THWN-2	6	AWG #3	THWN-2	1	AWG #1/0	THWN-2	26.7%	1.90%

WIRE AND CONDUIT SCHEDULE

TAG	CONDUIT SIZE	CONDUIT TYPE	PHASE CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			NEUTRAL CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			GROUND CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			EST. DIST.
DC1	N/A	N/A	2/STRING	AWG #10	PV-WIRE	N/A	N/A	N/A	1	AWG #6	BARE CU	125
DC2	3/4"	EMT	2	AWG #10	THWN-2	N/A	N/A	N/A	1	AWG #10	THWN-2	150
DC3	3/4"	EMT	2	AWG #10	THWN-2	N/A	N/A	N/A	1	AWG #10	THWN-2	10
AC1	3/4"	EMT	2	AWG #8	THWN-2	1	AWG #8	THWN-2	1	AWG #10	THWN-2	5
AC2	3"	SCH40 PVC	10	AWG #1	THWN-2	5	AWG #1	THWN-2	1	AWG #1	THWN-2	590
AC3	1-1/4"	EMT	2	AWG #3	THWN-2	1	AWG #3	THWN-2	1	AWG #6	THWN-2	100
AC4	1-1/4"	EMT	2	AWG #3	THWN-2	1	AWG #3	THWN-2	1	AWG #6	THWN-2	55

CONDUIT FILL CALCULATIONS

TAG	CONDUCTOR AREA (SQ IN)	x	CONDUCTOR QTY	=	CONDUCTOR FILL (SQ IN)	NEUTRAL AREA (SQ IN)	x	NEUTRAL QTY	=	NEUTRAL FILL (SQ IN)	GROUND AREA (SQ IN)	x	GROUND QTY	=	GROUND FILL (SQ IN)	TOTAL WIRE FILL	CONDUIT TYPE	CONDUIT SIZE	CONDUIT AREA (SQ IN)	x 40% =	MAX CONDUIT FILL	CONDUIT FILL PERCENT
DC1	0.0531	x	N/A	=	N/A	N/A	x	0	=	0.0000	0.0206	x	1	=	0.0206	N/A	N/A	N/A	N/A	x.4 =	N/A	N/A
DC2	0.0211	x	2	=	0.0422	N/A	x	0	=	0.0000	0.0211	x	1	=	0.0211	0.0633	EMT	3/4"	0.533	x.4 =	0.2132	11.9%
DC3	0.0211	x	2	=	0.0422	N/A	x	0	=	0.0000	0.0211	x	1	=	0.0211	0.0633	EMT	3/4"	0.533	x.4 =	0.2132	11.9%
AC1	0.0366	x	2	=	0.0732	0.0366	x	1	=	0.0366	0.0211	x	1	=	0.0211	0.1309	EMT	3/4"	0.533	x.4 =	0.2132	24.6%
AC2	0.1562	x	10	=	1.5620	0.1562	x	5	=	0.7810	0.1562	x	1	=	0.1562	2.4992	SCH40 PVC	3"	7.268	x.4 =	2.9072	34.4%
AC3	0.0973	x	2	=	0.1946	0.0973	x	1	=	0.0973	0.0366	x	1	=	0.0366	0.3285	EMT	1-1/4"	1.496	x.4 =	0.5984	22.0%
AC4	0.0973	x	2	=	0.1946	0.0973	x	1	=	0.0973	0.0366	x	1	=	0.0366	0.3285	EMT	1-1/4"	1.496	x.4 =	0.5984	22.0%

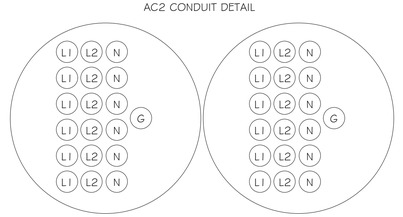
TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	CONN. TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	REQUIRED CONDUCTOR AMPACITY: OPTIMIZER OUTPUT CURRENT	x # OF PARALLEL STRINGS	= MAX CURRENT PER 690.8(A)(1)	x CONT. OPERATION 690.8(B)(1)	= MAX CURRENT PER 690.8(B)(1)	AMPACITY CHECK #1: MAX CURRENT PER 690.8(B)(1)	< CONDUCTOR AMPACITY	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	HEIGHT ABOVE ROOF (in)	TEMP. ADDER PER 310.15(B)(3)(c)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CONDUCTOR AMPACITY	AMPACITY CHECK #2: MAX CURRENT PER 690.8(B)(2)	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
DC1	PV STRING	JUNCTION BOX	COPPER	90°C	AWG #10	55 Amps	15.0	x 1	= 15.0 Amps	x 1.25	= 18.8 Amps	18.8 Amps	< 55.0 Amps	ROOFTOP, FREE AIR	37	-	N/A	37	0.91	N/A	1.00	55	x 0.91	x 1.00	= 50.1 Amps	15.0 Amps	< 50.1 Amps	125 ft	1.24%
DC2	JUNCTION BOX	INVERTER	COPPER	75°C	AWG #10	35 Amps	15.0	x 1	= 15.0 Amps	x 1.25	= 18.8 Amps	18.8 Amps	< 35.0 Amps	ROOFTOP, IN CONDUIT	37	1	0	37	0.91	2	1.00	40	x 0.91	x 1.00	= 36.4 Amps	15.0 Amps	< 36.4 Amps	150 ft	1.42%

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	TERMINAL TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CONDUCTOR AMPACITY	AMPACITY CHECK: SPECIFIED OCPD RATING	NEXT STD. OCPD SIZE DOWN, 240.4	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
DC3	BATTERY	INVERTER	COPPER	75°C	AWG #10	35 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	40	x 0.76	x 1.00	= 30.4 Amps	30 Amps	25 Amps	< 30.4 Amps	10 ft	0.22%

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	TERMINAL TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	REQUIRED CONDUCTOR AMPACITY: INVERTER OUTPUT CURRENT	x # OF INVERTERS	= MAX CURRENT PER 690.8(A)(3)	x CONT. OPERATION 690.8(B)(1)	= CURRENT PER 690.8(B)(1)	AMPACITY CHECK #1: MAX CURRENT PER 690.8(B)(1)	< CONDUCTOR AMPACITY	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CORRECTED AMPACITY	AMPACITY CHECK #2: MAX CURRENT PER 690.8(B)(2)	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
AC1	INVERTER	AC DISCONNECT	COPPER	75°C	AWG #8	50 Amps	32.0	x 1	= 32.0 Amps	x 1.25	= 40.0 Amps	40.0 Amps	< 50 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	55	x 0.76	x 1.00	= 41.8 Amps	32.0 Amps	< 41.8 Amps	5 ft	0.09%
AC2	AC DISCONNECT	BACKUP INTERFACE	COPPER	75°C	AWG #1	130 Amps	32.0	x 1	= 32.0 Amps	x 1.25	= 40.0 Amps	40.0 Amps	< 130 Amps	UNDERGROUND (+0°C)	37	37	0.91	10	0.50	145	x 0.91	x 0.50	= 66 Amps	32.0 Amps	< 66.0 Amps	590 ft	2.10%

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS: MATERIAL	TERMINAL TEMP. RATING	TRADE SIZE	AMPACITY PER 310.15(B)(16) & 310.15(B)(17)	CONDUCTOR TEMPERATURE DERATING: CIRCUIT ENVIRONMENT	LOCAL 2% AVG. HIGH TEMP (°C)	EXPECTED OPERATING TEMP (°C)	AMPACITY CORRECTION 310.15(B)(2)(a)	CONDUIT FILL DERATING: # OF UNGROUNDED CONDUCTORS	AMPACITY CORRECTION 310.15(B)(3)(a)	CORRECTED AMPACITY CALCULATION: 90°C CONDUCTOR AMPACITY	x TEMP DERATE	x CONDUIT FILL DERATE	= DERATED CORRECTED AMPACITY	AMPACITY CHECK: SPECIFIED OCPD RATING	NEXT STD. OCPD SIZE DOWN, 240.4	< DERATED CONDUCTOR AMPACITY	VOLTAGE DROP: EST. ONE-WAY DISTANCE	VOLTAGE DROP
AC3	PROTECTED LOADS PANEL	BACKUP INTERFACE	COPPER	75°C	AWG #3	100 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	115	x 0.76	x 1.00	= 87.4 Amps	90 Amps	80 Amps	< 87.4 Amps	100 ft	2.04%
AC4	BACKUP INTERFACE	MAIN DISCONNECT	COPPER	75°C	AWG #3	100 Amps	EXT. BLDG. WALL (+15°C)	37	52	0.76	2	1.00	115	x 0.76	x 1.00	= 87.4 Amps	90 Amps	80 Amps	< 87.4 Amps	55 ft	1.12%

AC2 CONDUIT DETAIL



Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

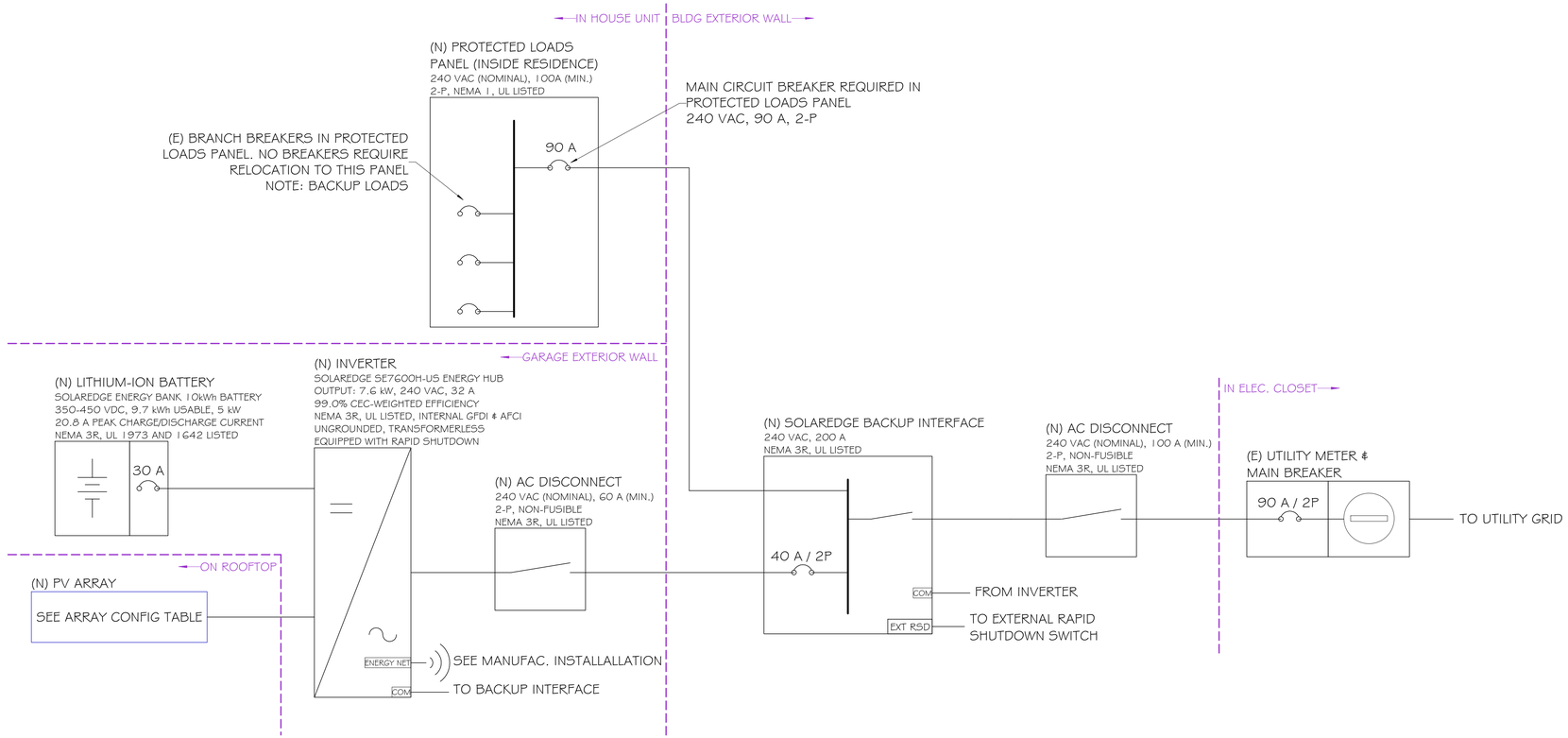
Sheet Title:
ELECTRICAL DIAGRAM #2

Sheet Number:
E2.1

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD



SOLAR AC DISCONNECT

REQD BY: NEC 690.13(B) — 1
APPLY TO:
AC DISCONNECT SWITCHES

SOLAR DC DISCONNECT

REQD BY: NEC 690.13(B) — 2
APPLY TO:
DC DISCONNECT SWITCHES

⚠ WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

REQD BY: NEC 690.13(B) — 3
APPLY TO:
DISCONNECTS, FUSES, CIRCUIT BREAKERS

WARNING: PHOTOVOLTAIC POWER SOURCE

REQD BY: CEC 690.31 & CRC R331.2 — 4
APPLY TO:
JUNCTION BOXES, RACEWAYS, CABLE TRAYS, CONDUIT BODIES WITH AVAILABLE OPENINGS, EVERY 10', WITHIN 1' OF TURNS/PENETRATIONS

⚠ WARNING
DUAL POWER SUPPLY
SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

REQD BY: NEC 705.12(B)(3) — 5
APPLY TO:
ANY/ALL ELECTRICAL PANELS CONNECTED TO MULTIPLE POWER SOURCES

⚠ WARNING
POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

REQD BY: NEC 705.12(B)(2)(3)(b) — 6
APPLY TO:
PV BACKFED CIRCUIT BREAKER(S)

PHOTOVOLTAIC SYSTEM DISCONNECT
AC CURRENT: 32 A
VOLTAGE: 240 VAC

REQD BY: NEC 690.54 — 7
APPLY TO:
POINT OF INTERCONNECTION

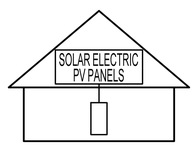
GRID TIED PHOTOVOLTAIC POWER SOURCE
MAX SYSTEM VOLTAGE: 480 V
MAX SYSTEM CURRENT: 15 A
MAX RATED OUTPUT CURRENT OF THE DC/DC CONVERTER: 15 A
MAX INVERTER OUTPUT: 7.6 kW, 32 A, 240 VAC

REQD BY: NEC 690.53 — 8
APPLY TO:
INVERTER(S)

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

REQD BY: NEC 690.56(C) — 9
APPLY TO:
RAPID SHUTDOWN SWITCH

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

REQD BY: NEC 690.12 & 690.56(C) — 10
APPLY TO:
RAPID SHUTDOWN INITIATION SWITCH.

SIGNAGE REQUIREMENTS

1.) RED BACKGROUND W/ WHITE LETTERING, OR:
2.) WHITE BACKGROUND W/ BLACK LETTERING
3.) MIN. 3/8" LETTER HEIGHT
4.) ALL CAPITAL LETTERS
5.) ARIAL OR SIMILAR FONT
6.) WEATHER RESISTANT MATERIAL, PER UL 969

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
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60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
BLOCK DIAGRAM & SAFETY PLACARDS

Sheet Number:
E3.0

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

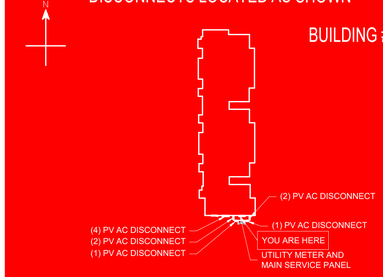
Reviewed & Approved by:
RD

SIGNAGE REQUIREMENTS
1.) RED BACKGROUND W/ WHITE LETTERING, OR:
2.) WHITE BACKGROUND W/ BLACK LETTERING
3.) MIN. 3/8" LETTER HEIGHT
4.) ALL CAPITAL LETTERS
5.) ARIAL OR SIMILAR FONT
6.) WEATHER RESISTANT MATERIAL, PER UL 969

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #1



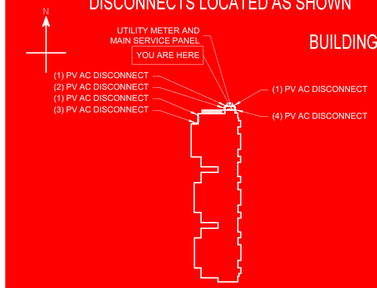
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 1
APPLY TO: BUILDING #1 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #2



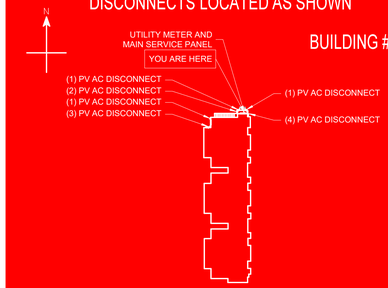
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 2
APPLY TO: BUILDING #2 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #3



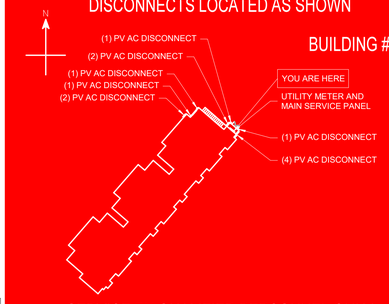
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 3
APPLY TO: BUILDING #3 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #4



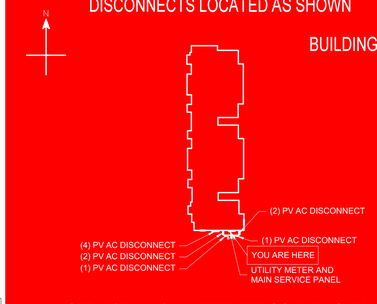
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 4
APPLY TO: BUILDING #4 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #5



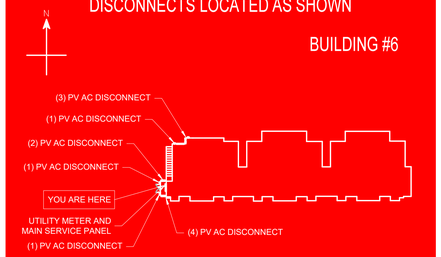
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 5
APPLY TO: BUILDING #5 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #6



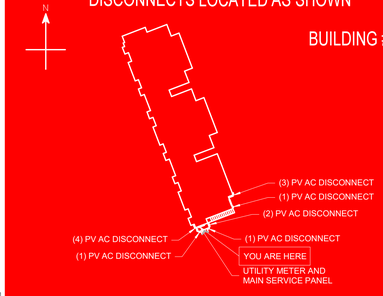
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 6
APPLY TO: BUILDING #6 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #7



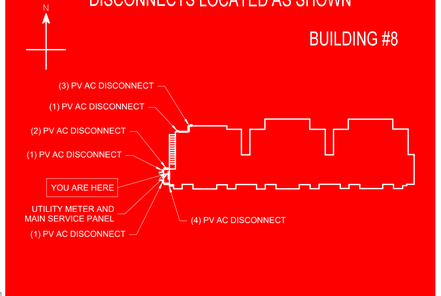
SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 7
APPLY TO: BUILDING #7 MAIN SERVICE DISCONNECT

CAUTION

POWER FROM THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING POWER SOURCES WITH DISCONNECTS LOCATED AS SHOWN

BUILDING #8



SERVICE BY QUALIFIED PERSONNEL ONLY

REQD BY: NEC 690.56 — 8
APPLY TO: BUILDING #8 MAIN SERVICE DISCONNECT

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
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60% DELIVERABLE	1/28/2022	3
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PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
SAFETY PLACARDS

Sheet Number:
E3.1

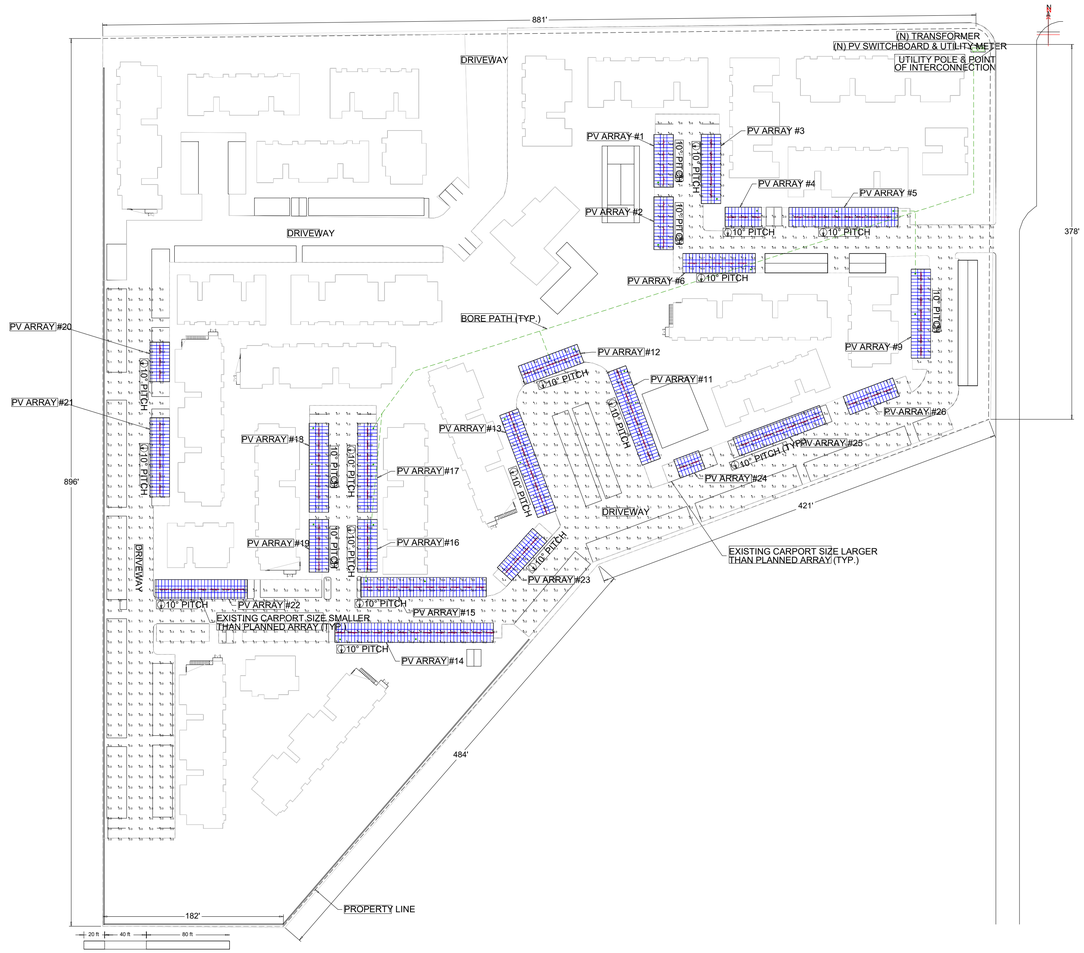
Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Lumens Per Lamp	Description	LLF
	134	A	SINGLE	6182	T1-G2SLED8-U-MW68W-MCCT	0.900

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
LOT_Planar	Illuminance	Fc	4.40	23.1	0.0	N.A.	N.A.



FOR PURCHASING INFORMATION OF APPROVED EQUIPMENT SPECIFIED ON THIS PLAN CONTACT:

LED Spot
5620 S. Willow Dr.
Houston, TX 77035
PH: 281-972-5006

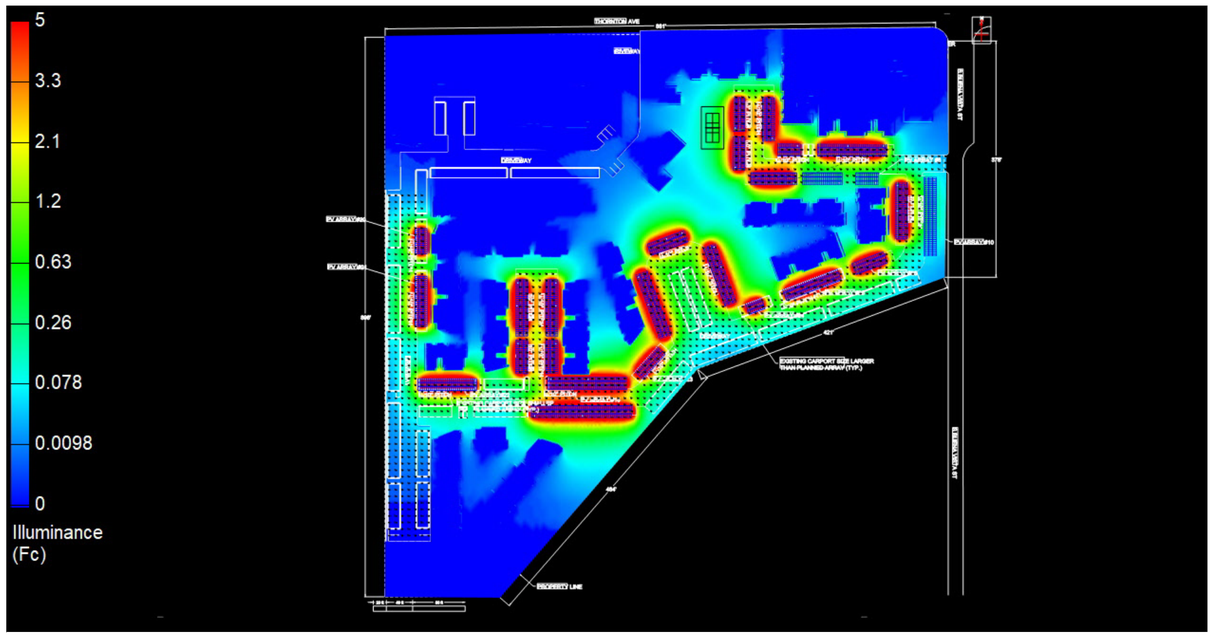
PROJECT: Quail Ridge Apartments

LOCATION: [redacted]

CONTACT: Dañiel Luna-Fuller

DATE: 7/14/2022

Page Number: 1



FOR PURCHASING INFORMATION OF APPROVED EQUIPMENT SPECIFIED ON THIS PLAN CONTACT:

LED Spot
5620 S. Willow Dr.
Houston, TX 77035
PH: 281-972-5006

PROJECT: Quail Ridge Apartments

LOCATION:

CONTACT: Dañiel Luna-Fuller

DATE: 7/14/2022

Page Number: 2

ZXM6-72 Series

Znshinesolar 5BB Monocrystalline PV Module

ZNSHINESOLAR

72

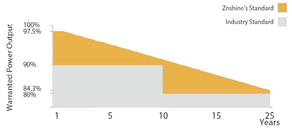
Mono Poly Solutions

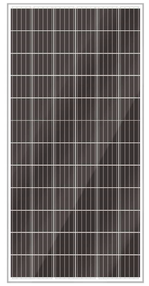
380W | 385W | 390W | 395W

Made with selected materials and components to grant quality, dura tion, efficiency and through outputs, the ZXM6-72 monocrystalline modules by ZNSHINE SOLAR(power output 380 up to 395Wp, repre- sent a highly flexible solution for diverse installation types, from industrial rooftop plants to small home PV systems or large ground surfaces. This allows you to produce clean energy whilst reducing your energy bill.

ZNSHINE SOLAR' S ZXM6-72 monocrystalline solar modules are tested and approved by international acknowledged laboratories, so that we can offer our customers a reliable and price-quality optimized product. The linear warranty on product outputs further ensures increased security and return on investments over time.

12 years product warranty for general application
15 years product warranty for Rooftop PV system
25 years output warranty/0.55% linear degradation p.a.





5 Busbar Solar Cell
No power loss thanks to improved temperature co-efficient caused by 5 busbar solar cell

Easy to install
The module is very light in weight so the installation is easier and transport costs are lower

Better Weak Illumination Response
Lower temperature coefficient and wide spectral response, higher power output, even under low-light settings

ZNShine PV-Tech Co., LTD. founded in 1988, is a world-leading high-performance PV module manufacturer, PV power station developer, EPC and power station operator. With its state-of-the-art production lines, the company boasts module output of 5GW. Bloomberg has listed ZNShine as a global Tier 1 PV manufacturer and Top 4 reliable PV supplier.

www.znshinesolar.com

ZXM6-72 Series | Znshinesolar 5BB Monocrystalline Module

ZNSHINESOLAR

ELECTRICAL PROPERTIES | STC*

Module Type	ZXM6-72-380/M	ZXM6-72-385/M	ZXM6-72-390/M	ZXM6-72-395/M
Nominal Power Watt Pmax(W)	380	385	390	395
Power Output Tolerance Pmax(%)	380±3%	385±3%	390±3%	395±3%
Maximum Power Voltage Vmp(V)	39.9	40.1	40.3	40.5
Maximum Power Current Imp(A)	9.53	9.61	9.68	9.76
Open Circuit Voltage Voc(V)	48.6±3%	48.8±3%	49.0±3%	49.2±3%
Short Circuit Current Isc(A)	10.03±3%	10.09±3%	10.16±3%	10.22±3%
Module Efficiency (%)	19.11	19.37	19.62	19.87

*STC (Standard Test Condition): Irradiance 1000W/㎡, Module Temperature 25°C, AM 1.5
*The data above is for reference only and the actual data is in accordance with the pratical testing

ELECTRICAL PROPETIES | NOCT *

Maximum Power Pmax(Wp)	281.1	284.8	288.3	292.1
Maximum Power Voltage Vmppp(V)	36.9	37.1	37.3	37.5
Maximum Power Current Imppp(A)	7.62	7.67	7.72	7.78
Open Circuit Voltage Voc(V)	44.9	45.1	45.3	45.5
Short Circuit Current Isc(A)	8.10	8.15	8.21	8.26

*NOCT:Irradiance 800W/㎡,Ambient Temperature 20°C,AM 1.5,Wind Speed 1m/s
*The data above is for reference only and the actual data is in accordance with the pratical testing

TEMPERATURE RATINGS

NOCT	45°C ±2°C
Temperature coefficient of Pmax	-0.37%/°C
Temperature coefficient of Voc	-0.29%/°C
Temperature coefficient of Isc	0.05%/°C

*Do not connect Fuse in Combiner Box with two or more strings in parallel connection

WORKING CONDITIONS

Maximum system voltage	1500 V DC
Operating temperature	-40°C~+85°C
Maximum series fuse	15 A
Maximum load front/back	3600/1600 for 8 M8 screws with safety factor 1.5

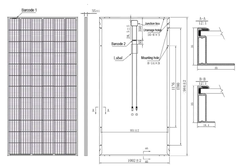
MECHANICAL DATA

Solar cells	Mono 158.75×158.75 mm
Cells orientation	72 (6×12)
Module dimension	1984×1002×35 mm
Weight	22 kg
Glass	High transparency,low iron,tempered Glass 3.2 mm (AR-coating)
Junction box	IP 68 , 3 diodes
Cables	H1Z2Z2-K 1×4.0mm²
Connectors	LJQ-1 Taizhou Jinxiu Electrical Science & Technology Co Ltd
	manufactured in China

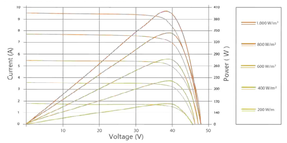
PACKAGING INFORMATION

Packing Type	40' HQ
Piece/Box	30
Piece/Container	720

DIMENSION OF THE PV MODULE (mm)



I-V CURVES OF THE PV MODULE



Add : 1#, Zhixi Industrial Zone , Jintan,Jiangsu 213251 , P.R. China
Tel : +86 519 6822 0233 E-mail : info@znshinesolar.com

Remark: please read safety and installation instructions before using the product | Subject to change without prior notice © ZNSHINE SOLAR 2020 | Version: ZXM6-72-2006.1

Certificate of Compliance

Certificate: 80049804 **Master Contract:** 262247

Project: 80049804 **Date Issued:** 2020-07-21

Issued to: ZNSHINE PV-TECH Co.,Ltd.
#1 Zhixi Industry Zone,
Jintan, Jiangsu, 213251
China

Attention: Xingjuan Rui

The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only

Issued by: *Tom Yang*
Tom Yang

PRODUCTS
CLASS - C531110 - POWER SUPPLIES-Photovoltaic Modules and Panels
CLASS - C531190 - POWER SUPPLIES-Photovoltaic Modules and Panels - Certified to US Standards

Mono Crystalline-Si photovoltaic modules with maximum system voltage of 1500 V dc, Safety Class II PV modules.

Models with 166 mm Cells
ZXM6-NH156-xxx/M, xxx=455 to 485, in step of 5 W
ZXM6-NH144-xxx/M, xxx=420 to 450, in step of 5 W
ZXM6-NH132-xxx/M, xxx=385 to 410, in step of 5 W
ZXM6-NH120-xxx/M, xxx=350 to 375, in step of 5 W

ZXM6-NP156-xxx/M, xxx=455 to 485, in step of 5 W
ZXM6-NP144-xxx/M, xxx=420 to 450, in step of 5 W
ZXM6-NP132-xxx/M, xxx=385 to 410, in step of 5 W
ZXM6-NP120-xxx/M, xxx=350 to 375, in step of 5 W

ZXM6-NO156-xxx/M, xxx=455 to 485, in step of 5 W
ZXM6-NO144-xxx/M, xxx=420 to 450, in step of 5 W

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Certificate: 80049804 **Master Contract:** 262247
Project: 80049804 **Date Issued:** 2020-07-21

ZXM6-NO132-xxx/M, xxx=385 to 410, in step of 5 W
ZXM6-NO120-xxx/M, xxx=350 to 375, in step of 5 W

Models with 158.75 mm or 156.75 mm Cells
ZXM6-NH156-xxx/M, xxx=420 to 440, in step of 5 W
ZXM6-NH144-xxx/M, xxx=390 to 410, in step of 5 W
ZXM6-NH132-xxx/M, xxx=355 to 375, in step of 5 W
ZXM6-NH120-xxx/M, xxx=325 to 340, in step of 5 W

ZXM6-NP156-xxx/M, xxx=420 to 440, in step of 5 W
ZXM6-NP144-xxx/M, xxx=390 to 410, in step of 5 W
ZXM6-NP132-xxx/M, xxx=355 to 375, in step of 5 W
ZXM6-NP120-xxx/M, xxx=325 to 340, in step of 5 W

ZXM6-NO156-xxx/M, xxx=420 to 440, in step of 5 W
ZXM6-NO144-xxx/M, xxx=390 to 410, in step of 5 W
ZXM6-NO132-xxx/M, xxx=355 to 375, in step of 5 W
ZXM6-NO120-xxx/M, xxx=325 to 340, in step of 5 W

ZXM6-78-xxx/M, xxx=400 to 430, in step of 5 W
ZXM6-72-xxx/M, xxx=355 to 400, in step of 5 W
ZXM6-66-xxx/M, xxx=340 to 365, in step of 5 W
ZXM6-60-xxx/M, xxx=295 to 330, in step of 5 W
Note:
1. All electrical data are shown as relative to standard test conditions (STC) (1 000 W/m2, (25 ± 2) °C, AM 1,5 according to IEC 60904-3).
2. Manufacturer's stated tolerance is ±3% for Voc and Pm, and Isc.

APPLICABLE REQUIREMENTS

CAN/CSA-C22.2 No. 61730-1:19	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction
CAN/CSA-C22.2 No. 61730-2:19	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing
UL 61730-1:2017	Photovoltaic (PV) Module Safety Qualification - Part 1: Requirements for Construction
UL 61730-2:2017	Photovoltaic (PV) Module Safety Qualification - Part 2: Requirements for Testing

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Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

HOME BACKUP

Optimized battery storage with HD-Wave technology

- Record-breaking 99% weighted efficiency with 200% DC oversizing
- Small, lightweight, and easy to install
- Modular design, future ready with optional upgrades to:
  - DC-coupled storage for full or partial home backup
  - Built-in consumption monitoring
  - Direct connection to the SolarEdge smart EV charger
- Multi-inverter, scalable storage solution
  - With enhanced battery power up to 10kW
- Integrated arc fault protection and rapid shutdown for NEC 2014, NEC 2017 and NEC 2020, per article 690.11 and 690.12
- Embedded revenue grade production data, ANSI C12.20 Class 0.5

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Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	UNITS
OUTPUT - AC ON GRID							
Rated AC Power	3000	3800 @ 240V 3300 @ 208V	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	W
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	W
AC Frequency Range (min - nom - max)	59.3 - 60 - 60.5[4]						Hz
Maximum Continuous Output Current @ 240V	12.5	16	25	32	42	47.5	A
Maximum Continuous Output Current @ 208V	-	16	24	-	-	48.5	A
GFDI Threshold	1						A
Total Harmonic Distortion (THD)	<3						%
Power Factor	1, adjustable -0.85 to 0.85						
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
Charge Battery from AC, (if allowed)	Yes						
Typical Nighttime Power Consumption	<2.5						W
OUTPUT - AC BACKUP[2][3]							
Rated AC Power in Backup Operation[4]	3000	3800 7600*	6000	7600 10300*	10000	10300	W
AC L-L Output Voltage Range in Backup	211 - 264						Vac
AC L-N Output Voltage Range in Backup	105 - 132						Vac
AC Frequency Range in Backup (min - nom - max)	55 - 60 - 65						Hz
Maximum Continuous Output Current in Backup Operation	12.5	16 32*	25	32 43*	42	43	A
GFDI	1						A
THD	<5						%
OUTPUT - SMART EV CHARGER AC							
Rated AC Power	9600						W
AC Output Voltage Range	211 - 264						Vac
On-Grid AC Frequency Range (min - nom - max)	59.3 - 60 - 60.5						Hz
Maximum Continuous Output Current @240V (grid, PV and battery)	40						Aac
INPUT - DC (PV AND BATTERY)							
Transformer-less, Ungrounded	Yes						
Max Input Voltage	480						Vdc
Nom DC Input Voltage	380						Vdc
Reverse-Polarity Protection	Yes						
Ground-Fault Isolation Detection	600kΩ Sensitivity						
INPUT - DC (PV)							
Maximum DC Power @ 240V	6000	7600 15200*	12000	15200 22900*	22000	22800	W
Maximum DC Power @ 208V	-	6600	10000	-	-	20000	W
Maximum Input Current[5] @ 240V	8.5	10.5 20*	16.5	20 31*	27	31	Adc
Maximum Input Current[5] @ 208V	-	9	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45						Adc
Maximum Inverter Efficiency	99	99.2					%
CEC Weighted Efficiency	99					99 @ 240V 98.5 @ 208V	%
2-pole Disconnection	Yes						

* Supported with PN SExxxH-USMMxxxxx or SExxxH-USMNxxxxx

(1) These specifications apply to inverters with part numbers SExxxH-USMMxxxxx or SExxxH-USNNxxxxx and connection unit model number DCD-3PH-US-PxH-F-x
(2) For other regional settings please contact SolarEdge support
(3) Not designed for standalone applications and requires AC for commissioning. backup functionality is only supported for 240V grid
(4) Rated AC power in Backup Operation are valid for installations with multiple inverters. For a single backup inverter operation, rated AC power in backup is 90% of the value stated
(5) A higher current source may be used; the inverter will limit its input current to the values stated

Single Phase Energy Hub Inverter with Prism Technology

For North America

SE3000H-US / SE3800H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US[1]

	SE3000H-US	SE3800H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	UNITS
INPUT - DC (BATTERY)							
Supported Battery Types	SolarEdge Energy Bank, LG RESU Prime[6]						
Number of Batteries per Inverter	Up to 3 SolarEdge Energy Bank up to 21 LG RESU Prime						
Continuous Power[7]	6000	7600	10000				W
Peak Power[8]	6000	7600	10000				W
Max Input Current	16	20	26.5				Adc
2-pole Disconnection	Yes						
SMART ENERGY CAPABILITIES							
Consumption Metering	Built - in[9]						
Backup & Battery Storage	With Backup Interface (purchased separately) for service up to 200A; Up to 3 inverters						
EV Charging	Direct connection to Smart EV charger						
ADDITIONAL FEATURES							
Supported Communication Interfaces	RS485, Ethernet, Cellular[10], Wi-Fi (optional), SolarEdge Energy Net (optional)						
Revenue Grade Metering, ANSI C12.20	Built - in[9]						
Integrated AC, DC and Communication Connection Unit	Yes						
Inverter Commissioning	With the SetApp mobile application using built -in Wi-Fi Access Point for local connection						
DC Voltage Rapid Shutdown (PV and Battery)	Yes, according to NEC 2014, NEC 2017 and NEC 2020 690.12						
STANDARD COMPLIANCE							
Safety	UL1741, UL1741SA, UL1741 PCS, UL9998, UL1998, UL9540, CSA 22.2						
Grid Connection Standards	IEEE1547, Rule 21, Rule 14H						
Emissions	FCC part 15 class B						
INSTALLATION SPECIFICATIONS							
AC Output and EV AC Output Conduit Size / AWG Range	1" maximum / 14-4 AWG						
DC Input (PV and Battery) Conduit Size / AWG Range	1" maximum / 14-6 AWG						
Dimensions with Connection Unit (H x W x D)	17.7 x 14.6 x 6.8 / 450 x 370 x 174			17.7 x 14.6 x 6.8 / 450 x 370 x 260 17.7 x 14.6 x 6.8 / 450 x 370 x 174*	17.7 x 14.6 x 6.8 / 450 x 370 x 174		in / mm
Weight with Connection Unit	26 / 11.8			26 / 11.8 30.2 / 13.7*	30.2 / 13.7		lb / kg
Noise	< 25	< 25 < 50*	< 25	< 50			dBA
Cooling	Natural Convection						
Operating Temperature Range	-40 to +140 / -40 to +60[11]						°F / °C
Protection Rating	NEMA 4						

(6) The part numbers SExxxxH-USxSMxxxxx only support the SolarEdge Energy Bank. The part numbers SExxxxH-USxSNxxxxx support both SolarEdge Energy Bank and LG RESU Prime batteries
Requires supporting inverter firmware
(7) Discharge power is limited up to the inverter rated AC power for on-grid and backup applications
(8) For consumption metering current transformers should be ordered separately: SECT-SPL-225A-T-20 or SEACT0750-400NA-20 units per box. Revenue grade metering is only for production metering
(9) Information concerning the Data Plans terms & conditions is available in the following link:
https://www.solaredge.com/sites/default/files/se-communication-plan-terms-and-conditions-eng.pdf
(10) Full power up to at least 50°C / 122°F, for power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-de-rating-note-na.pdf

RoHS

CSA GROUP

Supplement to Certificate of Compliance

Certificate: 80049804 **Master Contract:** 262247

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80049804	2020-07-21	Original certification

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Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
EQUIPMENT DATA SHEETS

Sheet Number:
D1.0

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

SolarEdge Energy Bank 10kWh Battery

For North America

HOME BACKUP

Optimized for SolarEdge Energy Hub Inverters[1]

- Maximized system performance, gaining more energy to store and use for on-grid and backup power applications
- Integrates with the complete SolarEdge residential offering, providing a single point of contact for warranty, support, training, and simplified logistics & operations
- DC coupled battery featuring superior overall system efficiency, from PV to battery to grid
- Scalable solution for increased power and capacity with multiple SolarEdge inverters and batteries
- Solar, storage, EV charging, and smart devices all monitored and managed by a single app to optimize solar production, consumption and backup* power
- Wireless communication to the inverter, reducing wiring, labor and installation faults
- Simple plug and play installation, with automatic SetApp-based configuration
- Includes multiple safety features for battery protection

* Backup application are subject to local regulation and may require additional components and firmware upgrade

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SolarEdge Energy Bank 10kWh Battery

For North America

BAT-10K1P[2]		
BATTERY SPECIFICATION		
Usable Energy (100% depth of discharge)	9700	Wh
Continuous Output Power	5000	W
Peak Output Power (for 10 seconds)	7500	W
Peak Roundtrip Efficiency	>94.5	%
Warranty[3]	10	Years
Voltage Range	350-450	Vdc
Communication Interfaces	Wireless*	
Batteries per Inverter	Up to 3[4]	
STANDARD COMPLIANCE		
Safety	UL9540, UL1973, UL1642, UN38.3	
Emissions	FCC Part 15 Class B	
MECHANICAL SPECIFICATIONS		
Dimensions (W x H x D)	31.1 x 46.4 x 9.84 / 790 x 1179 x 250	in / mm
Weight	267 / 121	lb / kg
Mounting[5]	Floor or wall mount[6]	
Operating Temperature[7]	+14 to +122 / -10 to +50	°F / °C
Storage Temperature (more than 3 months)	+14 to +86 / -10 to +30	°F / °C
Storage Temperature (less than 3 months)	-22 to + 140 / -30 to +60	°F / °C
Altitude	6562 / 2000	ft / m
Enclosure Protection	IP55 / NEMA 3R - indoor and outdoor (water and dust protection)	
Cooling	Natural convection	
Noise (at 1m distance)	<25	dBA

* The SolarEdge Energy Bank is designed for use with SolarEdge Energy Net for wireless communication. The inverter might require a matching SolarEdge Energy Net Plug-in (more details below). Using RS485 could reduce the usable energy to 9500Wh.
(1) Please refer to the SolarEdge Energy Bank battery connections and configuration application note for compatible inverters.
(2) These specifications apply to part number BAT-10K1P5S01-01.
(3) For warranty details please refer to the SolarEdge Energy Bank battery Limited Warranty.
(4) Installations with multiple SolarEdge Energy Bank batteries connected to a single inverter require a pair of branch connectors (DC + and DC -) per battery excluding the last battery. Support for 3 batteries is pending supporting inverter firmware. The branch connectors should be purchased separately.
(5) Installation and mounting requires handles that should be purchased separately. Please refer to the Accessories' PN table below.
(6) The floor stand is purchased separately. One floor stand is required per SolarEdge Energy Bank battery. Please refer to the Accessories' PN table below.
(7) Please note that operating the SolarEdge Energy Bank at extreme temperatures for extended durations of time may void the Energy Bank's warranty coverage. Please see the Energy Bank Limited Product Warranty for additional details.

SolarEdge Energy Bank Battery – Accessories (purchased separately)	
Accessory	**PN**
Floor stand	IAC-RBAT-FLRSTD-01
Branch connectors set (includes a pair of DC + and DC - connectors). Required for installations with multiple SolarEdge Energy Bank batteries with a single inverter	IAC-RBAT-USYCBL-01
Handles	IAC-RBAT-HANDLE-01
SolarEdge Energy Net Plug-in	ENET-HBNP-01
Battery inverter extension cable 2m long (MC4 to terminal block)	IAC-RBAT-10M420-01

CE RoHS

Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505

POWER OPTIMIZER

PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

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Power Optimizer

For North America

P370 / P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT						
Rated Input DC Power[8]	370	400	430	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60	80	60	125[10]	83[10]	Vdc
MPPT Operating Range	8 - 60	8 - 80	8-60	12.5 - 105	12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11	10.1	12.5	11	14	Adc
Maximum DC Input Current	13.75	12.5	14.65	12.5	17.5	
Maximum Efficiency	99.5					%
Weighted Efficiency	98.8					%
Overvoltage Category	II					
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)						
Maximum Output Current	15					Adc
Maximum Output Voltage	60		80			Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)						
Safety Output Voltage per Power Optimizer	1 ± 0.1					Vdc
STANDARD COMPLIANCE						
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3					
Safety	IEC62109-1 (class II safety), UL1741, NEC/PVRSS					
Material	UL94 V-0 , UV Resistant					
RoHS	Yes					
INSTALLATION SPECIFICATIONS						
Maximum Allowed System Voltage	1000					Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters					
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	630 / 1.4	750 / 1.7	655 / 1.5	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4[9]			MC4[9]	MC4[9]	
Input Wire Length	0.16 / 0.5					m / ft
Output Wire Type / Connector	Double Insulated / MC4					
Output Wire Length	1.2 / 3.9					m / ft
Operating Temperature Range[10]	-40 to +85 / -40 to +185					°C / °F
Protection Rating	IP68 / Type6B					
Relative Humidity	0 - 100					%

(8) Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed
(9) NEC 2017 requires max input voltage be not more than 80V
(10) For other connector types please contact SolarEdge
(11) Longer inputs wire lengths are available for use. For 0.9m input wire length order P401-xxxLxxx
(12) For ambient temperature above +85°C / +185°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf

PV System Design Using a SolarEdge Inverter[11][12]		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P370, P400, P401	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Power per String		5700[13] (6000 with SE7600-US - SE11400-US)	5250[13]	6000[13]	12750[14]	W
Parallel Strings of Different Lengths or Orientations		Yes				

(8) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(9) It is not allowed to mix P485/P505 with P370/P400/P401 in one string
(10) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(11) For 208V grid: it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W
(12) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W

Intertek RoHS

Backup Interface for North America

BI-EUSGN-01 / BI-NUSGN-01

STOREDGE®

Backup Interface for Flexible Backup

- Automatically provides backup power to home loads in the event of grid interruption
- Full flexibility in which loads to backup - the entire home or selected loads
- Scalable solution to support higher power & higher capacity(*)
- Built-in Auto Transformer and Energy Meter for easier and faster installation
- Seamless integration with the Energy Hub Inverter with Prism Technology to manage and monitor both PV generation and energy storage
- Generator connection support(*)

(*) Requires supporting inverter firmware

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Backup Interface for North America

BI-EUSGN-01 / BI-NUSGN-01

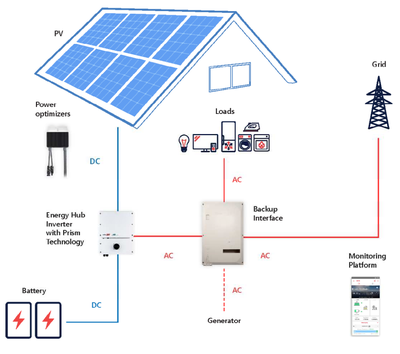
	BI-EUSGN-01	BI-NUSGN-01	
INPUT FROM GRID			
AC Current Input	200		A
AC Output Voltage (Nominal)	240		Vac
AC Output Voltage Range	211 - 264		Vac
AC Frequency (Nominal)	60		Hz
AC Frequency Range	59.3 - 60.5		Hz
Microgrid Interconnection Device Rated Current	200		A
Service Side AC Main Circuit Breaker Rated Current	200	N/A	A
Service Side AC Main Circuit Breaker Interrupt Current	10k	N/A	A
Grid Disconnection Switchover Time	<100		ms
OUTPUT TO MAIN DISTRIBUTION PANEL			
Maximum AC Current Output	200		A
AC L-L Output Voltage (Nominal)	240		Vac
AC L-L Output Voltage Range	211 - 264		Vac
AC Frequency (Nominal)	60		Hz
AC Frequency Range	59.3 - 60.5		Hz
Maximum Inverters AC Current Output in Backup Operation	78		A
Imbalance Compensation in Backup Operation	5000		W
AC L-N Output Voltage in Backup (Nominal)	120		V
AC L-N Output Voltage Range in Backup	105 - 132		V
AC Frequency Range in Backup	55 - 65		Hz
INPUT FROM INVERTER			
Number of Inverter Inputs	3		#
Rated AC Power	7,600		W
Maximum Continuous Input Current @ 240V	32		A
Rated AC Power in Continuous Backup Operation	6,100		W
Maximum Continuous Input Current in Backup Operation	26		A
Peak AC Power (<10 sec) in Backup Operation	7,000		W
Peak AC Current (<10 sec) in Backup Operation	30		A
Inverter Input AC Circuit Breaker	40		A
Upgradability	Up to 3 x 63A CB[1]		
GENERATOR[2]			
Maximum Rated AC Power	15,000		W
Maximum Continuous Input Current	63		Adc
Dry Contact Switch Voltage Rating	250/30		Vac/Vdc
Dry Contact Switch Current Rating	5		A
2-wire Start Switch	Yes		
ADDITIONAL FEATURES			
Installation Type	Suitable for use as service equipment	For main lug only	
Number of Communication Inputs	2		
Communication	RS485		
Energy Meter (for Import/Export)	1% accuracy		
Manual Control Over Microgrid Interconnection Device	Yes		

(1) Each 40A CB supports up to one 7.6kW inverter, with each 63A CB supporting one 10kW and one 11.4kW inverter. The CB upgrade kit is available with the following part numbers: for 40A CB, CB-LBG-40A-2E; for 63A, CB-CBLBG-63A-2E
(2) Requires supporting inverter firmware

Backup Interface for North America

BI-EUSGN-01 / BI-NUSGN-01

	BI-EUSGN-01	BI-NUSGN-01	
STANDARD COMPLIANCE			
Safety	UL1741, CSA 22.2 NO. 107		
	UL869A	N/A	
Emissions	FCC part 15 class B		
INSTALLATION SPECIFICATIONS			
Supported Inverters	StorEdge single phase inverter, Single phase Energy Hub inverter with Prism technology		
AC From Grid Conduit Size / AWG Range	2" conduits / #0 - 4/0 AWG		
AC Inverter Conduit Size / AWG Range	1" conduit / 14 - 4 AWG		
AC Generator Input Conduit Size / AWG Range	1" conduit / 8 - 3 AWG		
Communication Conduit Size / AWG Range	3/4" / 24 - 10 AWG		
Weight	73 / 33		lb / Kg
Cooling	Fan (user replaceable)		
Noise	< 50		dBA
Operating Temepratrure Range	-40 to +122 / -40 to +50		°F / °C
Protection Rating	NEMA 3R, IP44		
Dimensions (HxWxD)	20.59 x 13.88 x 8.62 / 523.5 x 352.5 x 219		in / mm



CE FC

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS

DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

Sheet Title:
EQUIPMENT DATA SHEETS

Sheet Number:
D1.1

Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

Reviewed & Approved by:
RD

Product data sheet

Specifications

Safety switch, general duty, non fusible, 60A, 2 poles, 10 hp, 240 VAC, NEMA 3R, bolt-on provision

DU222RB

Product availability : Stock - Normally stocked in distribution facility

Price* : 353.00 USD

Main

Product	Single Throw Safety Switch
Duty Rating	General duty
Device Application	Residential
Disconnect Type	Non-fusible disconnect switch
Factory Installed Neutral	None
Phase	3 phase
Number of Poles	2
Current Rating	60 A
Voltage Rating	240 V AC
Enclosure Rating NEMA	NEMA 3R
Maximum Horse Power Rating	10 hp 240 V at AC 60 Hz for 1 phase conforming to NEC 430.52

Complementary

Mounting Type	Surface
Electrical Connection	Lugs
Wiring configuration	2 wires
Wire Size	AWG 12...AWG 3 aluminium AWG 14...AWG 3 copper
Tightening torque	35 lbf.in (3.95 N.m) 0.00…0.01 in² (2.08…5.26 mm²) (AWG 14...AWG 10) 35 lbf.in (3.95 N.m) (AWG 14...AWG 10) 45 lbf.in (5.08 N.m) 0.01 in² (8.37 mm²) (AWG 8) 45 lbf.in (5.08 N.m) 0.02…0.03 in² (12.3…21.12 mm²) (AWG 6...AWG 4) 50 lbf.in (5.65 N.m) 0.04 in² (26.67 mm²) (AWG 3)
Depth	3.75 in (95.25 mm)
Width	7.75 in (196.85 mm)
Height	9.63 in (244.60 mm)
Net Weight	16.98 lb(US) (7.7 kg)

Environment

Certifications	UL listed file E2875

* Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Ordering and shipping details

Category	00106-D & DU SW,NEMA3R, 30-200A
Discount Schedule	DE1A
GTIN	785901491491
Number of Units in Package 1	1
Package 1 Weight	4.65 lb(US) (2.109 kg)
Returnability	Yes
Country of origin	MX

Packing Units

Unit Type of Package 1	PCE
Package 1 Height	5.30 in (13.462 cm)
Package 1 Width	7.20 in (18.288 cm)
Package 1 Length	10.00 in (25.4 cm)
Unit Type of Package 2	PAL
Number of Units in Package 2	120
Package 2 Weight	610.00 lb(US) (276.691 kg)
Package 2 Height	36.50 in (92.71 cm)
Package 2 Width	40.00 in (101.6 cm)
Package 2 Length	48.00 in (121.92 cm)
Unit Type of Package 3	CAR
Number of Units in Package 3	5
Package 3 Weight	24.60 lb(US) (11.158 kg)
Package 3 Height	10.70 in (27.178 cm)
Package 3 Width	10.20 in (25.908 cm)
Package 3 Length	23.50 in (59.69 cm)

Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACh Regulation	REACh Declaration
REACh free of SVHC	Yes
EU RoHS Directive	Compliant EU RoHS Declaration
Toxic heavy metal free	Yes
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration Pro-active China RoHS declaration (out of China RoHS legal scope)
Environmental Disclosure	Product Environmental Profile
PVC free	Yes

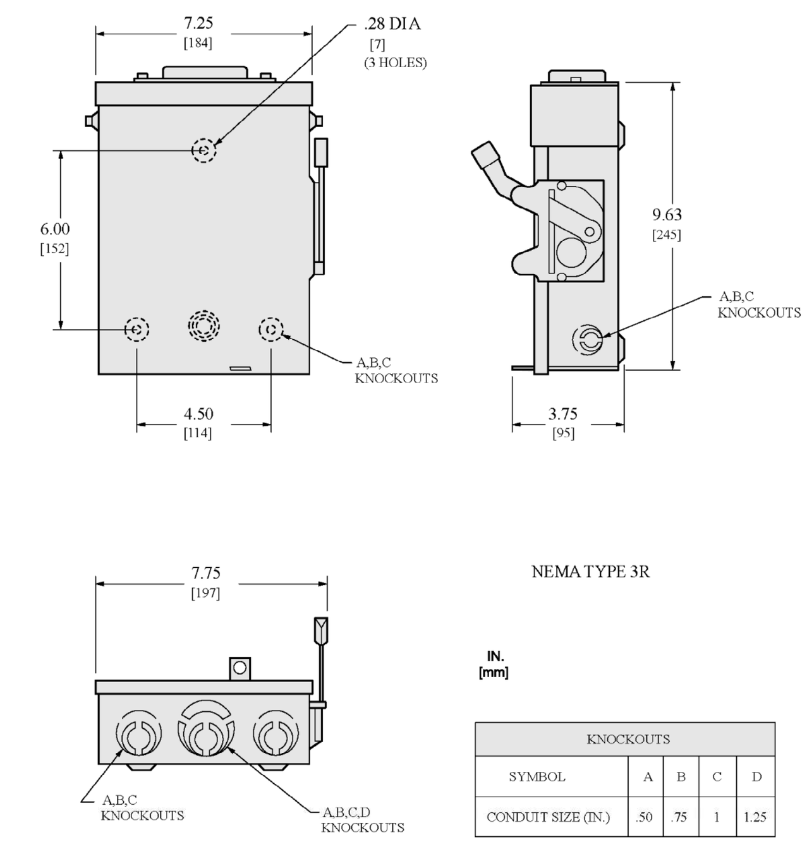
Contractual warranty

Warranty	18 months

Product data sheet DU222RB

Technical Illustration

Dimensions



NEMA TYPE 3R

IN.
[mm]

KNOCKOUTS				
SYMBOL	A	B	C	D
CONDUIT SIZE (IN.)	.50	.75	1	1.25

TOP OF NEMA TYPE 3R SWITCHES H AVE PROVISIONS FOR MAXIMUM 2 1/2" BO LT-ON HUB.
ALL DIMENSIONS ARE APPROXIMATE. REFER TO TECHNICAL DRAWINGS AND DOCUMENTATION.

Product data sheet

Specifications

Safety switch, general duty, non fusible, 100A, 3 wire, 3 poles, 30hp, 240VAC, Type 3R, bolt on hub provision

DU323RB

Product availability : Stock - Normally stocked in distribution facility

Price* : 816.00 USD

Main

Product	Single Throw Safety Switch
Duty Rating	General duty
Device Application	Residential
Disconnect Type	Non-fusible disconnect switch
Factory Installed Neutral	None
Phase	3 phase
Number of Poles	3
Current Rating	100 A
Voltage Rating	240 V AC
Enclosure Rating NEMA	NEMA 3R
Maximum Horse Power Rating	15 hp 240 V at AC 60 Hz for 1 phase conforming to NEC 430.52 30 hp 240 V at AC 60 Hz for 3 phase conforming to NEC 430.52

Complementary

Mounting Type	Surface
Electrical Connection	Lugs
Wiring configuration	3-wire
Wire Size	AWG 14...AWG 1 copper AWG 12...AWG 1 aluminium
Tightening torque	35 lbf.in (3.95 N.m) 0.00…0.01 in² (2.08…5.26 mm²) (AWG 14...AWG 10) 35 lbf.in (3.95 N.m) (AWG 14...AWG 10) 40 lbf.in (4.52 N.m) 0.01 in² (8.37 mm²) (AWG 8) 45 lbf.in (5.08 N.m) 0.02…0.03 in² (12.3…21.12 mm²) (AWG 6...AWG 4) 50 lbf.in (5.65 N.m) (AWG 3...AWG 1)
Depth	6.5 in (165.10 mm)
Width	10.5 in (266.70 mm)
Height	17.5 in (444.50 mm)
Net Weight	15.43 lb(US) (7 kg)

Environment

Certifications	UL listed file E2875

* Price is "List Price" and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

Ordering and shipping details

Category	00106-D & DU SW,NEMA3R, 30-200A
Discount Schedule	DE1A
GTIN	785901491828
Number of Units in Package 1	1
Package 1 Weight	14.78 lb(US) (6.704 kg)
Returnability	Yes
Country of origin	US

Packing Units

Unit Type of Package 1	PCE
Package 1 Height	7.30 in (18.542 cm)
Package 1 Width	10.50 in (26.67 cm)
Package 1 Length	19.90 in (50.546 cm)
Unit Type of Package 2	PAL
Number of Units in Package 2	40
Package 2 Weight	632.00 lb(US) (286.67 kg)
Package 2 Height	40.00 in (101.6 cm)
Package 2 Width	40.00 in (101.6 cm)
Package 2 Length	48.00 in (121.92 cm)

Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: Lead and lead compounds, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACh Regulation	REACh Declaration
REACh free of SVHC	Yes
EU RoHS Directive	Compliant EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration Product out of China RoHS scope. Substance declaration for your information.
Environmental Disclosure	Product Environmental Profile
PVC free	Yes

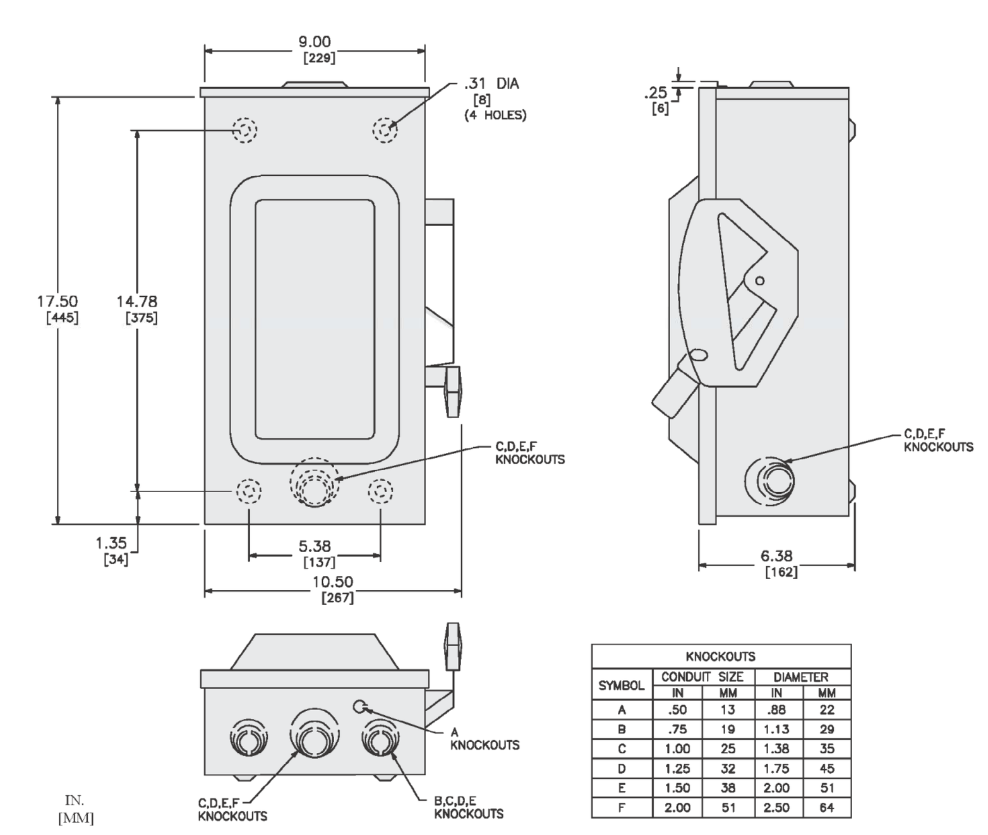
Contractual warranty

Warranty	18 months

Product data sheet DU323RB

Technical Illustration

Dimensions



IN.
[MM]

KNOCKOUTS				
SYMBOL	CONDUIT SIZE IN	CONDUIT SIZE MM	DIAMETER IN	DIAMETER MM
A	.50	13	.88	22
B	.75	19	1.13	29
C	1.00	25	1.38	35
D	1.25	32	1.75	45
E	1.50	38	2.00	51
F	2.00	51	2.50	64

WHEN MOUNTING, ALLOW 4.00/[102] MIN. CLEARANCE BETWEEN ENCLOSURES FOR OPENING OF SIDE HINGED DOOR.
TOP OF NEMA TYPE 3R DEVICES H AVE PROVISIONS FOR MAX 2.50/[64] BO LT-ON HUB.
DU323RB REQUIRES FIELD INS TALLATION OF EQUIPMEN T GROUNDING KIT GTK0610 WHEN USED AS SE RVICE EQUIPMEN T.
ALL DIMENSIONS ARE APPROXIMATE. REFER TO TECHNICAL DRAWINGS AND DOCUMENTATION FOR COMPLETE DE TAILS.

TI_DIM_GD1003R

Contractor:

Project:
QUAIL RIDGE APARTMENTS
[redacted]

Project Details:
156.42 kWstc, 250.80 kW AC
(33) INTERCONNECTIONS
[redacted]

Engineering Approval:

REVISIONS		
DESCRIPTION	DATE	REV
PRELIMINARY LAYOUT	1/17/2021	1
30% DELIVERABLE	1/21/2022	2
60% DELIVERABLE	1/28/2022	3
90% DELIVERABLE	2/1/2022	4
PERMIT SET	8/2/2022	A
AHJ COMMENTS	10/21/2022	B

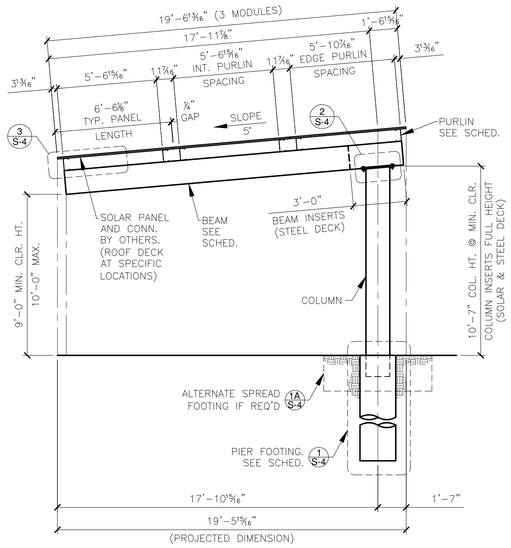
Sheet Title:
EQUIPMENT DATA SHEETS

Sheet Number:
D1.2

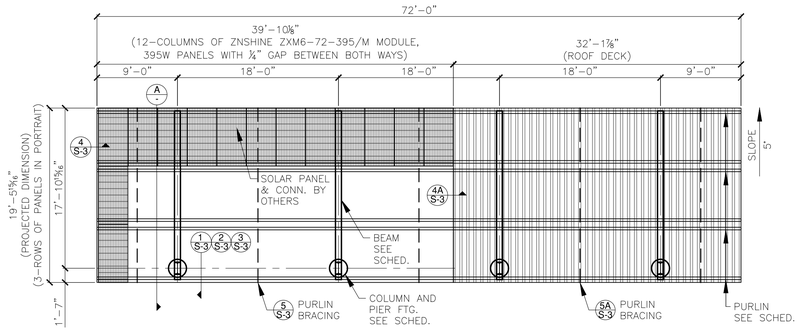
Sheet Size:
ARCH D - 36" x 24"

Design & Drafting by:

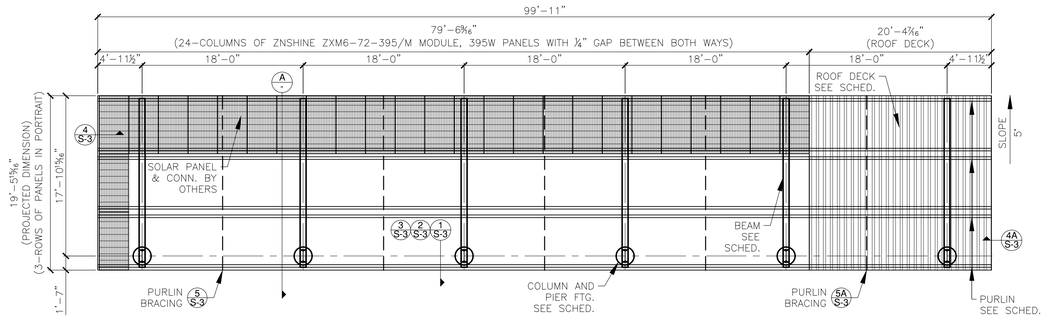
Reviewed & Approved by:
RD



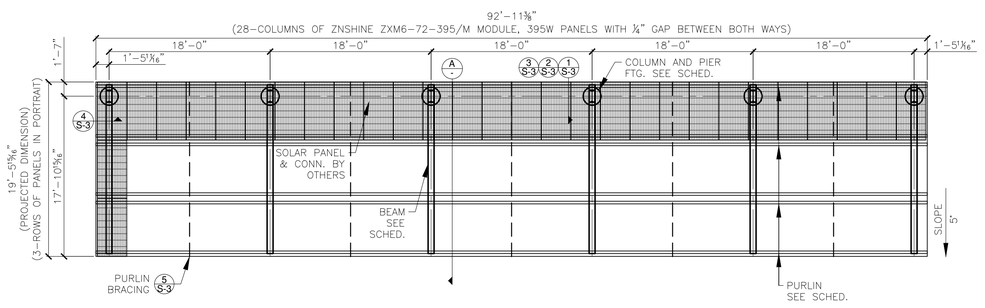
CROSS SECTION: ARRAYS 20-26 SCALE: 1/4"=1'-0" A



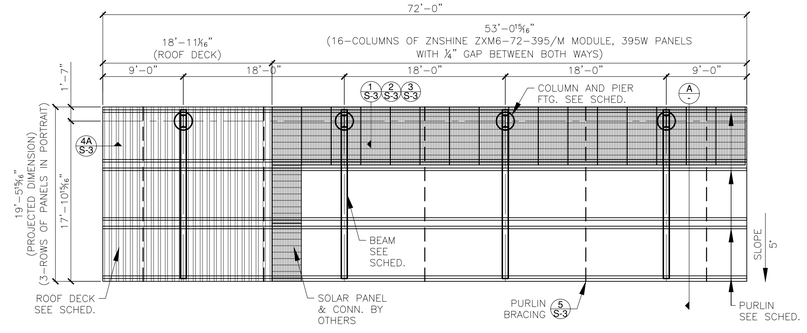
FRAMING AND FOUNDATION PLAN: ARRAY 20 (36 PANELS TOTAL) SCALE: 1/8"=1'-0" 20



FRAMING AND FOUNDATION PLAN: ARRAY 21 (72 PANELS TOTAL) SCALE: 1/8"=1'-0" 21



FRAMING AND FOUNDATION PLAN: ARRAYS 22 (84 PANELS EACH) SCALE: 1/8"=1'-0" 22



FRAMING AND FOUNDATION PLAN: ARRAY 23 (48 PANELS TOTAL) SCALE: 1/8"=1'-0" 23

NOT USED

LICENSED PROFESSIONAL ENGINEER
JOHN B. ELDER
S 6534
10/24/2022
STRUCTURAL
STATE OF CALIFORNIA

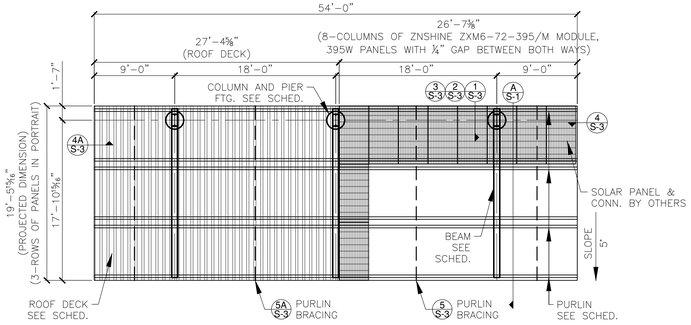
CROSS SECTION
FRAMING PLAN

QUAIL RIDGE APARTMENTS - PHASE 1

REV. NO.	DATE:	BY:	DESCRIPTION:
1	10/21/22	JJC	(NOT ON THIS PAGE)

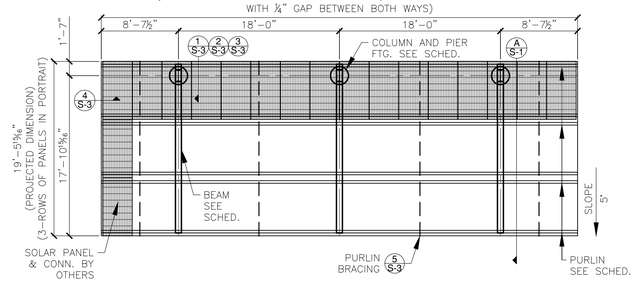
PROJ. NO.:	DATE:
22-1845	10/21/22
DRAWN: JJC	CHECKED: IJT

SHEET: S-1



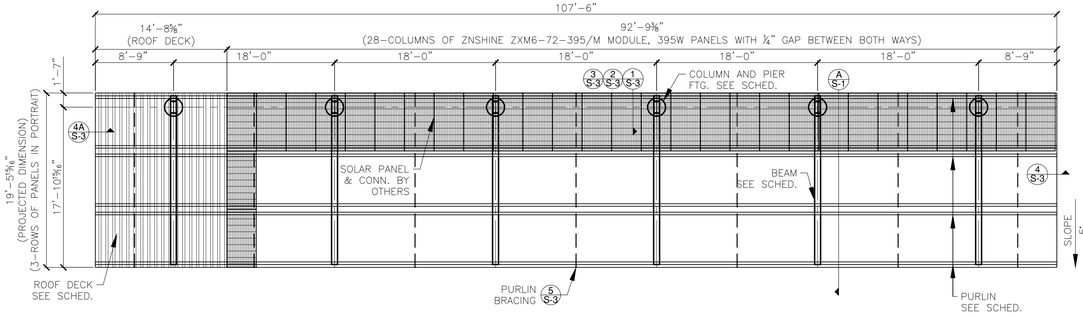
FRAMING AND FOUNDATION PLAN: ARRAY 24 (24 PANELS TOTAL)

SCALE: ⅛"=1'-0" | 24



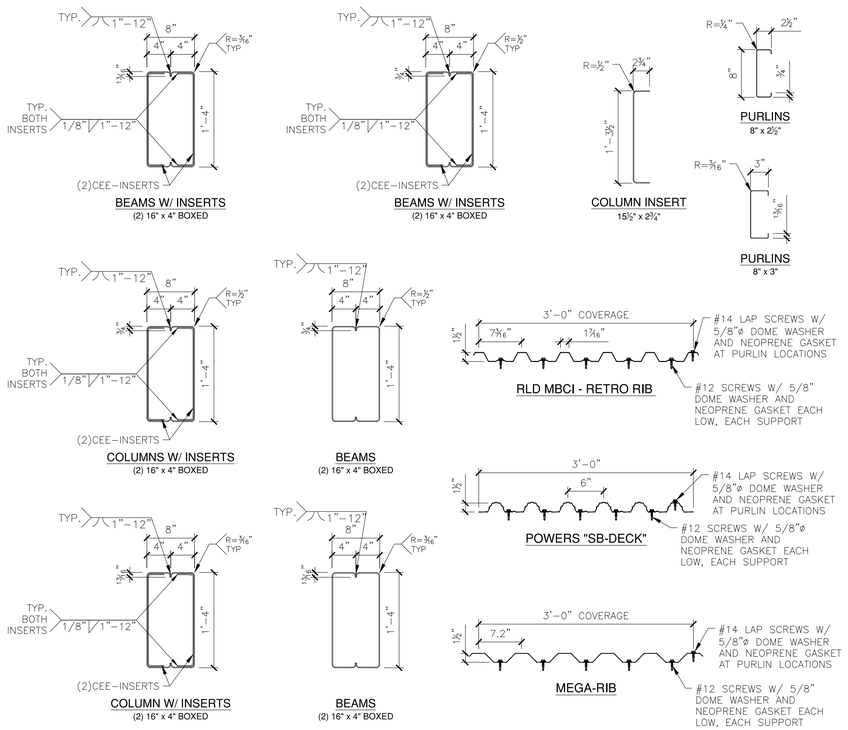
FRAMING AND FOUNDATION PLAN: ARRAY 26 (48 PANELS TOTAL)

SCALE: ⅛"=1'-0" | 26



FRAMING AND FOUNDATION PLAN: ARRAY 25 (84 PANELS TOTAL)

SCALE: ⅛"=1'-0" | 25



SEE SCHEDULE FOR MEMBER THICKNESS (GA)

MEMBER PROFILE

SCALE: 1"=1'-0" | 6

SCHEDULE

MODEL	STEEL DECK	SOLAR
DEPTH OF CAR SPACE	9'-0"	9'-0"
BAY WIDTH	18'-0"	18'-0"
ROOF DECK	POWERS "SB29" METAL DECK (Fy=80 KSI) OR 29GA McELROY RIB (Fy=80 KSI) OR 26GA RLD MBCI – RETRO RIB (Fy=60 KSI)	N/A
ROOF PURLINS	CEE 8" x 3" x 1 3/16" LIP x 16GA [0.0579"] FY=55 KSI OR CEE 8" x 2.5" x ¾" LIP x 14GA [0.0750"] FY=80 KSI	
ROOF BEAM	(2) CEE 16" x 4" x 1 3/16" x 10GA [0.1337"] WITH (2) 1½" x 2¼" x 10GA [0.1337"] INSERTS FY=70 KSI OR (2) CEE 16" x 4" x ¾" LIP x 10GA [0.1347"] WITH (2) 1½" x 2¼" x 10GA [0.1347"] INSERTS FY=80 KSI	(2) CEE 16" x 4" x 1 3/16" x 10GA [0.1337"] FY=70 KSI OR (2) CEE 16" x 4" x ¾" LIP x 10GA [0.1347"] FY=80 KSI
COLUMN	(2) CEE 16" x 4" x 1 3/16" LIP x 10GA [0.1337"] WITH (2) 1½" x 2¼" x 10GA [0.1337"] INSERTS FY=70 KSI OR (2) CEE 16" x 4" x ¾" LIP x 10GA [0.1347"] WITH (2) 1½" x 2¼" x 10GA [0.1347"] INSERTS FY=80 KSI	
PIER FOOTING	30"ø x 12'-0" DEEP UNCONSTRAINED	30"ø x 11'-6" DEEP UNCONSTRAINED
ALTERNATE SPREAD FOOTING	8'-6" SQUARE x 30" DEEP WITH (14) #6 REINF. BARS EA. WAY	8'-0" SQUARE x 28" DEEP WITH (11) #6 REINF. BARS EA. WAY

MEMBER SCHEDULE

SCALE: N.T.S. | 7

1. CODE
2019 CALIFORNIA BUILDING CODE
2016 NAS-AISI COLD-FORMED STEEL DESIGN MANUAL
ASCE 7-16

2. LOADS
BUILDING OCCUPANCY CATEGORY II
ROOF LIVE LOAD: 20 PSF (REDUCIBLE)

BASIC WIND SPEED (3-SECOND GUST): 96 MPH (ULTIMATE), EXP. "C"
WIND IMPORTANCE FACTOR = 1.0
Kz = 0.85 Kzt = 1.0 G = 0.85

SEISMIC DESIGN CATEGORY "D"
SEISMIC IMPORTANCE FACTOR = 1.0
SITE CLASS "D"–DEFAULT Ss = 1.935 S1 = 0.763 Sds =1.548
SEISMIC FORCE RESISTING SYSTEM: CANTILEVERED COLUMN
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
DESIGN BASE SHEAR = Cs(W) Cs = 0.867

3. FOUNDATION
FOUNDATION DESIGN BASED ON CBC TABLE 1806.2, SOIL CLASS 5. TWICE THE LATERAL BEARING PRESSURE MAY BE USED FOR STRUCTURES NOT AFFECTED BY ½" GROUND MOTION PER SECTION 1806.3.4
– ALLOWABLE SOIL BEARING PRESSURE = 1500 PSF
– LATERAL BEARING PRESSURE = 100 PSF/FT

4. CONCRETE
ALL CONCRETE REQUIRED HERE-IN SHALL BE DONE IN ACCORDANCE W/ ACI STANDARD 318-14, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", WHICH IS HEREBY MADE A PART OF THESE DOCUMENTS, WITH THE FOLLOWING MODIFICATIONS:

PARA 2.1.2: CEMENT SHALL COMPLY W/ ASTM C150, TYPE II.

PARA 3.2: F'c SHALL BE 3000 PSI AT 28 DAYS FOR ALL CONCRETE.

PARA 4.1.3: THE USE OF EARTH CUTS FOR FORMS IS PERMITTED.

PARA 5.2: REINFORCING SHALL BE NEW BILLET STEEL COMPLYING W/ ASTM A615, GRADE 60.

5. STEEL ROOF DECK
STEEL ROOF DECK SHALL CONFORM WITH THE AISI-NAS COLD-FORMED STEEL DESIGN MANUAL SPECIFICATIONS AS REFERENCED BY THE IBC: ASTM A792, ASTM A653, OR ASTM A611 WITH A MINIMUM YIELD STRENGTH AND A MINIMUM TENSILE STRENGTH AS SPECIFIED.

6. SOLAR PANELS
CONTRACTOR SHALL VERIFY ALL FRAME DIMENSIONS AND PANEL DIMENSIONS PRIOR TO STARTING CONSTRUCTION.

SOLAR PANELS, SOLAR PANEL COMPONENTS AND CONNECTORS SHALL BE DESIGNED, SUPPLIED BY OTHERS (NOT BY BAJA CONSTRUCTION). MODULES ARE MOUNTED AT ¾ INCH BETWEEN PANELS BOTH WAYS. THE SOLAR MODULE SIZE USED TO DETERMINE THE DIMENSIONS SHOWN ON THIS DRAWING WERE 1983.99mm (~78.11") X 1002.03mm (~39.45") (ZNSHINE, ZXM6-72-395/M, 395 WATT MODULE). THE BEAM LENGTH NEEDS TO BE REVISED IF SOLAR MODULES OF DIFFERENT SIZES ARE USED. IF THE BEAM LENGTH INCREASES, THE STRUCTURAL ENGINEER MUST CHECK THE CALCULATIONS.

7. LIGHT GAUGE STRUCTURAL STEEL FRAMING
ALL STRUCTURAL STEEL FRAMING MATERIALS AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS": MINIMUM YIELD STRENGTH Fy=55 KSI AND MINIMUM TENSILE STRENGTH Fu=70 KSI

ALL FRAMING MEMBERS SHALL BE MINIMUM G60 GALVANIZED FOR CORROSION PROTECTION.

ALL WELDING SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE AWS D1.1 "STRUCTURAL WELDING CODE – STEEL" AND AWS D1.3 "STRUCTURAL WELDING CODE – SHEET STEEL". REINFORCING BARS WELDED TO STEEL SHALL CONFORM TO ASTM A706 AND AWS D1.4 "STRUCTURAL WELDING CODE – REINFORCING STEEL". USE E70xx LOW HYDROGEN ELECTRODES. ALL WELDING TO BE PERFORMED BY WELDERS HOLDING A VALID CERTIFICATE AND HAVING CURRENT EXPERIENCE IN LIGHT GAGE STEEL. CERTIFICATES SHALL BE ISSUED BY AN ACCEPTED TESTING AGENCY. DO NOT DRILL OR NOTCH MEMBERS WITHOUT PRIOR APPROVAL OF THE STRUCTURAL ENGINEER.

STRUCTURAL STEEL MEMBERS SHALL BE FURNISHED TO THE SPECIFIED MINIMUM YIELD POINT OR GREATER. THE ASTM, GRADE, AND OTHER SPECIFICATIONS SHALL BE INDICATED BY SUITABLE MEANS ON EACH LIFT OR BUNDLE OF FABRICATED MATERIAL.

8. FASTENERS
STEEL SCREW FASTENERS SHALL BE ITW BUILDEX SELF-DRILLING SCREWS (ER-1976) OR EQUAL.

9. CONTRACTORS
THE CONTRACTOR MUST SUBMIT IN WRITING ANY REQUEST FOR MODIFICATIONS TO THE PLANS AND SPECIFICATIONS. NO STRUCTURAL CHANGES FROM THE APPROVED PLANS SHALL BE MADE IN THE FIELD UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. SHOP DRAWINGS SUBMITTED TO THE ENGINEER FOR HIS REVIEW DO NOT CONSTITUTE "IN WRITING" UNLESS IT IS NOTED THAT SPECIFIC CHANGES ARE BEING REQUESTED. IF CHANGES ARE MADE WITHOUT WRITTEN APPROVAL, SUCH CHANGES SHALL BE THE LEGAL AND FINANCIAL RESPONSIBILITY OF THE CONTRACTORS OR SUBCONTRACTORS INVOLVED AND IT SHALL BE THEIR RESPONSIBILITY TO REPLACE OR REPAIR THE CONDITION AS DIRECTED BY THE ENGINEER.

CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING ERECTION. THESE PROVISIONS SHALL REMAIN IN POSITION UNTIL SUFFICIENT PERMANENT MEMBERS ARE ERECTED TO INSURE THE SAFETY OF THE PARTIALLY ERECTED STRUCTURES. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

10. ENGINEER OF RECORD
[redacted] AND/OR THEIR ENGINEERING CONSULTANTS IS ONLY RESPONSIBLE FOR THE CONTENTS OF THESE DRAWINGS AND STRUCTURAL CALCULATIONS AS PROVIDED FOR THIS PROJECT. [redacted] AND THEIR ENGINEERING CONSULTANTS ARE NOT CONSIDERED THE ENGINEER OF RECORD FOR ANYTHING OTHER THAN THE PREFABRICATED STEEL SYSTEM CANOPY/CARPORT/RV & BOAT STORAGE/OR MINI-STORAGE SYSTEMS THAT IS SHOWN ON THESE PLANS.

THESE PLANS ARE APPLICABLE ONLY TO THE SPECIFIC PROJECT NOTED ON THE PLANS. IN ADDITION, THESE PLANS ARE ONLY APPLICABLE TO THIS PROJECTS PROVIDED BAJA CONSTRUCTION PROVIDES AND INSTALLS ALL MATERIAL SPECIFIED HEREIN.

11. ALTERNATE FOOTING AND OPTIONAL TRIM
IF THE ALTERNATE FOOTING SHOWN IN THIS DRAWING IS REQUIRED, THERE WILL BE AN ADDITIONAL CHARGE FROM [redacted]

SPECIAL INSPECTIONS:

1. SPECIAL INSPECTIONS CONFORMING TO CHAPTER 17 OF THE CBC SHALL BE PROVIDED FOR THE FOLLOWING:
   A. HIGH STRENGTH BOLTING
   B. FIELD WELDING
   C. HIGH STRENGTH CONCRETE
2. SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION AGENCY. JOB SITE VISITS BY THE STRUCTURAL ENGINEER DOES NOT CONSTITUTE INSPECTION AND ARE NOT A SUBSTITUTE FOR SPECIAL INSPECTION.
3. SPECIAL INSPECTION REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT IN A TIMELY FASHION, NOTING ANY DISCREPANCIES WHETHER CORRECTED OR NOT. A LOG SHALL BE MAINTAINED ON-SITE FOR REVIEW BY THE CITY INSPECTOR.
4. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SEE THAT THESE INSPECTIONS ARE PERFORMED.

STRUCTURAL NOTES

SCALE: N.T.S. | 8

LICENSED PROFESSIONAL ENGINEER
JOHN B. ELDER
S 6534
10/24/2022
STRUCTURAL
STATE OF CALIFORNIA

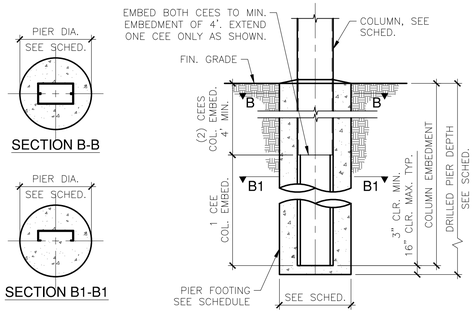
FRAMING PLAN, PROFILE, SCHEDULE, & NOTES

QUAIL RIDGE APARTMENTS - PHASE 1

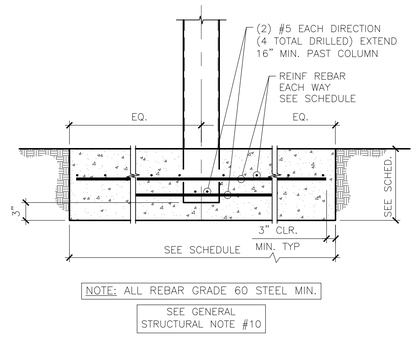
REV. NO.	DATE:	BY:	DESCRIPTION:
1	10/21/22	JJC	PLAN CHECK – SPECIAL INSPECTIONS

PROJ. NO.:	DATE:
22-1845	10/21/22
DRAWN:	CHECKED:
JJC	IJT

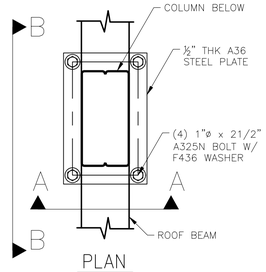
SHEET: S-2



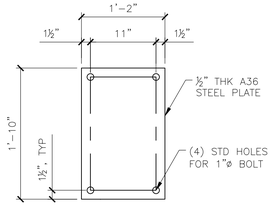
PIER FOOTING — SCALE: N.T.S. — 1



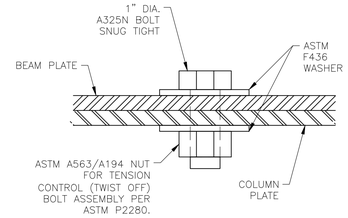
ALTERNATE FOOTING — SCALE: N.T.S. — 1A



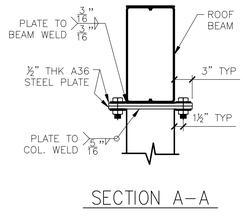
PLAN



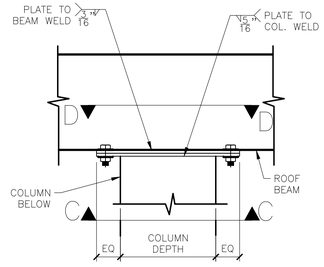
4 HOLES BOLT LAYOUT



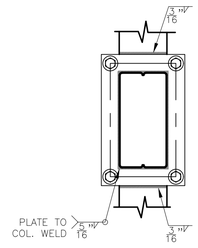
BOLT ASSEMBLY



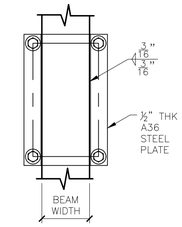
SECTION A-A



SECTION B-B



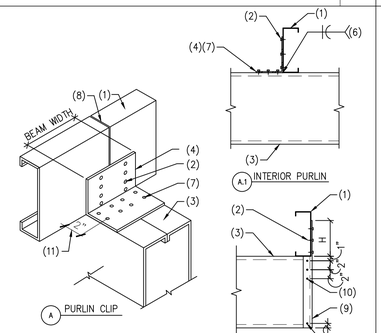
SECTION C-C



SECTION D-D

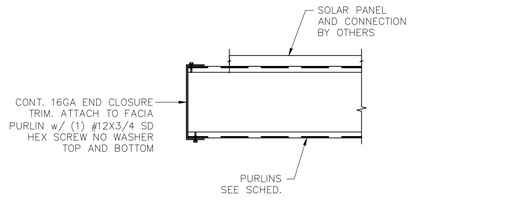
NOTES FOR OPTION A:

1. PURLIN. ½" MAX GAP BETWEEN BOTTOM OF PURLIN AND TOP OF BEAM.
2. 8 #12 DIA. x3/4" LONG SCREWS TO PURLIN – TYP. NOTE THAT IF OPTIONAL SPLICE IS PRESENT, PLACE 4 SCREWS INTO EACH SIDE OF CLIP TO THE PURLIN.
3. BEAM.
4. H"x4"x8" LONG x14 GAGE STEEL CLIP ANGLE. Fy = 55 KSI MIN. WHERE H=PURLIN HT.-2"
5. 1 #12 DIA. SCREW TO BEAM EACH SIDE.
6. USE SCREWS AS NOTED OR WELD CLIP ANGLE TO BEAM WITH 4" MIN. LENGTH WELD AS AN OPTIONAL CONNECTION.
7. 8-#12 SCREWS (4-SCREWS INTO EACH SIDE OF THE BOXED BEAM) OR USE OPTIONAL WELDING CLIP TO BEAM CONNECTION.
8. OPTIONAL SPLICE LOCATION AT INTERIOR FRAMES.
9. 12 GAGE Fy = 55 KSI MIN. CEE END CAP. FLANGES REMOVED ABOVE BEAM.
10. 3 #12 DIA. SCREWS TO STEEL BEAM EACH SIDE.
11. ATTACH 4 SCREWS WITHIN 2" FROM THE STEEL CLIP ANGLE BEND



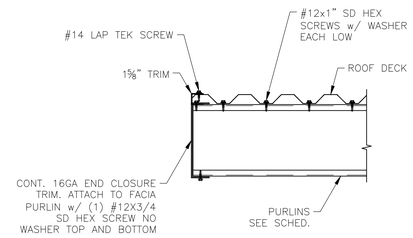
NOTE:
ANY OF THESE CONNECTIONS SHOWN MAY BE USED AT CONTRACTOR'S OPTION.

PURLIN TO BEAM CONNECTION — SCALE: ¾"=1'-0" — 3

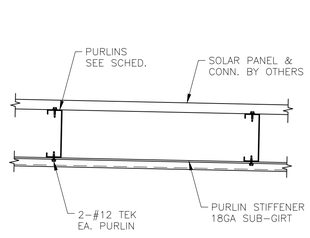


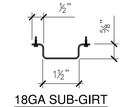
PURLIN CLOSURE — SCALE: 1"=1'-0" — 4

BEAM TO COLUMN CONNECTION — SCALE: 1"=1'-0" — 2



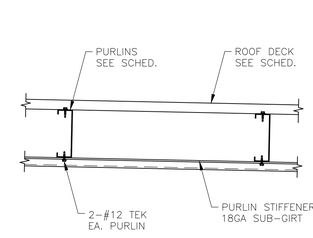
PURLIN CLOSURE — SCALE: 1"=1'-0" — 4A

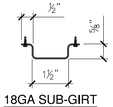




18GA SUB-GIRT

PURLIN BRACING — SCALE: 1"=1'-0" — 5

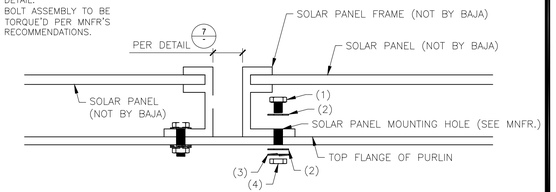




18GA SUB-GIRT

PURLIN BRACING — SCALE: 1"=1'-0" — 5A

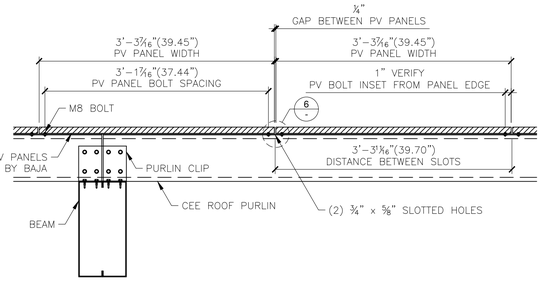
NOTE:
(A) SOLAR PANELS TO BE MOUNTED USING (4) MOUNTING HOLES AS SHOWN ON MNFR'S OEM DATA SHEET.
(B) MNFR'S PANEL INSTALLATION DETAIL SHALL SUPERCEDE THIS DETAIL.
(C) BOLT ASSEMBLY TO BE TORQUE'D PER MNFR'S RECOMMENDATIONS.



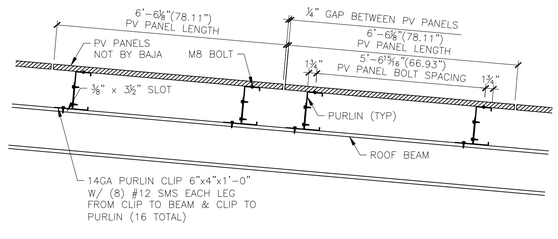
HARDWARE SIZE CHART

	M8 BOLT
1	M8 STAINLESS STEEL BOLT (GRADE 18-8 OR 316) @ ALL MOUNTING LOCATIONS
2	M8 STAINLESS STEEL FLAT WASHER @ ALL MOUNTING LOCATIONS
3	M8 STAINLESS STEEL SPLIT LOCK WASHER @ ALL MOUNTING LOCATIONS
4	M8 STAINLESS STEEL HEX NUT @ ALL MOUNTING LOCATIONS

STANDARD SOLAR PANEL MOUNTING DETAIL — SCALE: N.T.S. — 6



SOLAR PANEL SECTION (WIDTH) — SCALE: 1"=1'-0" — 7



SOLAR PANEL SECTION (LENGTH) — SCALE: N.T.S. — 8

NOT USED

LICENSED PROFESSIONAL ENGINEER
JOHN B. ELDER
S 6534
10/24/2022
STRUCTURAL
STATE OF CALIFORNIA

DETAILS

QUAIL RIDGE APARTMENTS - PHASE 1

REV. NO.	DATE:	BY:	DESCRIPTION:
1	10/21/22	JJC	(NOT ON THIS PAGE)

PROJ. NO.:	DATE:
22-1845	10/21/22
DRAWN: JJC	CHECKED: IJT

SHEET:

S-3

3 OF 3