TOWN OF FRIDAY HARBOR
Post Office Box 219 • Friday Harbor, Washington 98250
(360) 378 - 2810 • www.fridayharbor.org

AGENDA

HISTORIC PRESERVATION REVIEW BOARD

Thursday, May 14, 2026 at 4:00 PM

Town Council Chambers - 60 Second Street

Zoom Webinar : https://us02web.zoom.us/j/86273936602

Meeting ID: 862 7393 6602

Heritage resources are a vital part of the character and economy of Friday Harbor. The Historic Preservation Review Board stewards Friday Harbor's historic sense of place.

Call to Order / Roll Call

Public Comments

Minutes

Design Review

- ACE Solar Panels

Community Development Update

Adjourn

NEW PHOTOVOLTAIC SYSTEM 66.08 KW DC
340 ARGYLE AVE, FRIDAY HARBOR, WA 98250, USA
(48°31'59.8"N 123°01'00.7"W)

GENERAL NOTES

1.1.1 PROJECT NOTES:
1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC) ARTICLE 690, ALL MANUFACTURER'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.
1.1.3 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION
1.1.4 GROUND FAULT DETECTION AND INTERRUPTION (GFDI) DEVICE IS IN ACCORDANCE WITH NEC 690.41(B)
1.1.5 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4: PV MODULES: UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE INVERTERS: UL 1741 CERTIFIED, IEEE 1547, 929, 519 COMBINER BOX(ES): UL 1703 OR UL 1741 ACCESSORY
1.1.6 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.
1.1.7 ALL INVERTERS, PHOTOVOLTAIC MODULES,PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].
1.1.8 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

1.2.1 SCOPE OF WORK:
1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR ROOF-MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT
1.2.3 INSTALLING CONTRACTOR IS RESPONSIBLE FOR FOLLOWING EQUIPMENT MANUFACTURER'S INSTALLATION AND COMMISSIONING MEANS AND METHODS.

1.3.1 WORK INCLUDES:
1.3.2 PV RACKING SYSTEM INSTALLATION - UNIRAC SOLARMOUNT LIGHT RAIL 168" WITH S-5! S-5-N STANDING SEAM CLAMP ATTACHMENT
1.3.3 PV MODULE AND INVERTER INSTALLATION - SEG SOLAR SEG-590-BTA-BG (590W) MODULES / SOLAREDGE SE17.3KUS (208V) INVERTERS / SOLAREDGE U650 POWER OPTIMIZERS
1.3.4 PV EQUIPMENT ROOF MOUNT
1.3.5 PV SYSTEM WIRING TO A ROOF-MOUNTED JUNCTION BOX
1.3.6 PV LOAD CENTERS (IF INCLUDED)
1.3.7 PV METERING/MONITORING (IF INCLUDED)
1.3.8 PV DISCONNECTS
1.3.9 PV GROUNDING ELECTRODE & BONDING TO (E) GEC
1.3.10 PV FINAL COMMISSIONING
1.3.11 (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV
1.3.12 SIGNAGE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE

PROJECT INFORMATION

PROJECT NAME
NAME: ACE HARDWARE
OWNER NAME: LYNN DANAHER

CONTRACTOR INFORMATION:
CONTRACTOR NAME: SWIFTWATER ELECTRIC AND SOLAR

SCOPE OF WORK
SYSTEM SIZE : STC : 112 X 590W= 66.08 KW DC
PTC : 112 X 564.4W = 63.21 KW DC
AC SIZE: 51.90 KW AC

(112) SEG SOLAR SEG-590-BTA-BG (590W) MODULES
(112) SOLAREDGE U650 POWER OPTIMIZERS
(03) SOLAREDGE SE17.3KUS (208V) INVERTERS

ATTACHMENT TYPE: UNIRAC SOLARMOUNT LIGHT RAIL 168" WITH S-5! S-5-N STANDING SEAM CLAMP ATTACHMENT

MSP UPGRADE: NO

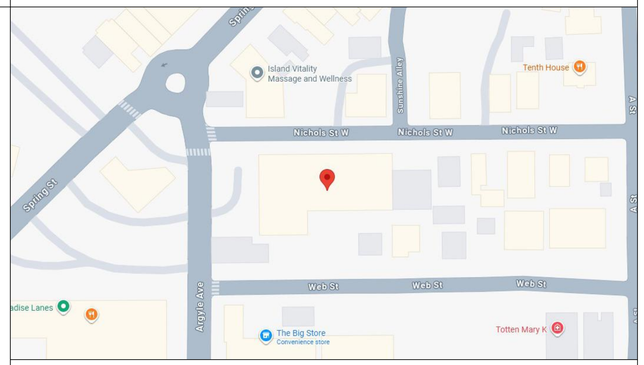
AUTHORITIES HAVING JURISDICTION
BUILDING : TOWN OF FRIDAY HARBOR
UTILITY : OPALCO

DESIGN SPECIFICATION

OCCUPANCY	- GROUP B
CONSTRUCTION	- TYPE 2
ZONING	- TOWN OF FRIDAY HARBOR
GROUND SNOW LOAD	- 25 PSF
WIND EXPOSURE	- D
WIND SPEED	- 110 MPH
RISK CATEGORY	- I
SEISMIC ZONE	- 3

APPLICABLE CODES & STANDARDS
BUILDING: 2021 WASHINGTON STATE BUILDING CODE
ELECTRICAL: 2020 NATIONAL ELECTRICAL CODE
FIRE: 2021 WASHINGTON STATE FIRE CODE

VICINITY MAP



SATELLITE VIEW

SHEET INDEX

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR
Swiftwater ELECTRIC & SOLAR
SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

REVISIONS

REV	DESCRIPTION	DATE
A.0	PERMIT PLAN	04/06/2026

SHEET TITLE
COVER PAGE

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
T-001

NOTES

1. EXISTING PLUMBING VENTS, SKYLIGHTS,EXHAUST OUTLETS, VENTILATIONS INTAKE AIR OPENINGS SHALL NOT BE COVERED BY THE SOLAR PHOTOVOLTAIC SYSTEM.
2. EQUIPMENT. INVERTERS, MOTOR GENERATORS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AC PHOTOVOLTAIC MODULES, SOURCE-CIRCUIT COMBINERS, AND CHARGE CONTROLLERS INTENDED FOR USE IN PHOTOVOLTAIC POWER SYSTEMS SHALL BE IDENTIFIED AND LISTED FOR THE APPLICATION. (NEC 690.4(B))
3. ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED, INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND NON ROOF SWITCHES. ROOF SWITCHES TO BE NEMA 4 RATED.
4. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
5.PROTECTION DEVICES FOR PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS ALSO CONNECTED TO SOURCES HAVING SIGNIFICANTLY HIGHER CURRENT AVAILABILITY (E.G., PARALLEL STRINGS OF MODULES, UTILITY POWER), SHALL BE PROTECTED AT THE SOURCE FROM OVERCURRENT. [NEC 690.9(A)]
6.PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION THAT CONTROLS SPECIFIC CONDUCTORS.
[NEC 690.12]
7.THE UTILITY INTERACTIVE INVERTERS SHALL AUTOMATICALLY DE-ENERGIZE ITS OUTPUT TO THE CONNECTED ELECTRICAL PRODUCTION AND DISTRIBUTION NETWORK UPON LOSS OF VOLTAGE IN THE SYSTEM AND SHALL REMAIN IN THAT STATE UNTIL THE ELECTRICAL PRODUCTION AND DISTRIBUTION NETWORK VOLTAGE HAS BEEN RESTORED.
[NEC 705.41]
8.ALL CONDUCTOR EXPOSED TO WEATHER SHALL BE LISTED & IDENTIFIED FOR USE IN DIRECT SUNLIGHT. [NEC 310.10(D)(1)]
9.THE MODULE CONDUCTORS MUST BE TYPE USE-2 OR LISTED FOR PHOTOVOLTAIC (PV) WIRE. (NEC 690.31(C)
10.ALL CONDUCTORS SHALL BE MARKED ON EACH END FOR UNIQUE IDENTIFICATION.
11.AN INSULATED GROUNDED CONDUCTOR OF 6 AWG OR SMALLER SHALL BE IDENTIFIED AS A CONTINUOUS WHITE FINISH.[NEC 200.6]
12.THE OUTPUT OF AN INTERCONNECTED ELECTRICAL POWER SOURCE SHALL BE PERMITTED TO BE CONNECTED TO THE LOAD SIDE. INTERCONNECTING PROVISIONS FOR OTHER POWER SOURCES SHALL COMPLY WITH 705.12(B)(1) THROUGH 705.12(B)(5)
13. EACH SOURCE INTERCONNECTION OF ONE OR MORE POWER SOURCES INSTALLED IN ONE SYSTEM SHALL BE MADE AT A DEDICATED CIRCUIT BREAKER OR FUSIBLE DISCONNECTING MEANS [NEC 705.12(B)(1)]
14.THE SUM OF THE AMPERE RATING OF THE OVERCURRENT DEVICES IN CIRCUITS SUPPLYING POWER TO THE BUSBAR OR CONDUCTOR SHALL NOT EXCEED 120% OF THE RATING OF BUSBAR OR CONDUCTOR.[NEC 705.12(B)(3)(2)]
15.A CONNECTION AT EITHER END, BUT NOT BOTH ENDS, OF A CENTER-FED PANEL BOARD IN DWELLINGS SHALL BE PERMITTED WHERE THE SUM OF 125 PERCENT OF THE POWER SOURCE(S) OUTPUT CIRCUIT CURRENT AND THE RATING OF THE OVERCURRENT DEVICE PROTECTING THE BUSBAR DOES NOT EXCEED 120 PERCENT OF THE CURRENT RATING OF THE BUSBAR. [NEC 705.12(B)(3)(2)]
16.EQUIPMENT CONTAINING OVERCURRENT DEVICES IN CIRCUITS SUPPLYING POWER TO A BUS BAR OR CONDUCTOR SHALL BE MARKED TO INDICATE THE PRESENCE OF ALL SOURCES. [NEC 705.12(B)(3)]
17.CIRCUIT BREAKER, IF BACKFED, SHALL BE SUITABLE FOR SUCH OPERATION. [NEC 705.12(B)(4)]
18.TO MINIMIZE OVERHEATING OF THE BUSBAR IN PANELBOARD, THE PANELBOARD MAIN CIRCUIT BREAKER AND THE PV POWER SOURCE CIRCUIT BREAKER SHALL BE PHYSICALLY LOCATED AT THE OPPOSITE END OF THE BUSBAR.
19. ALL THE NEC REQUIRED WARNING SIGNS, MARKINGS, AND LABELS SHALL BE POSTED ON EQUIPMENT AND DISCONNECTS PRIOR TO ANY INSPECTIONS TO BE PERFORMED BY THE BUILDING DEPARTMENT INSPECTOR.
20.WHERE PV SYSTEM DC CIRCUIT'S RUN INSIDE A BUILDING, THEY SHALL BE CONTAINED IN METAL RACEWAYS TYPE MC METAL CLAD CABLE OR METAL ENCLOSURES FROM POINT OF PENETRATION OF THE SURFACE OF THE BUILDING TO THE FIRST READILY ACCESSIBLE DISCONNECTING MEANS. [NEC 690.31(G)]
21.FLEXIBLE, FINE-STRANDED CABLES SHALL BE TERMINATED ONLY WITH TERMINALS, LUGS, DEVICES OR CONNECTOR THAT ARE IS IN ACCORDANCE WITH NEC 110.14
22.CONNECTORS SHALL BE OF LATCHING OR LOCKING TYPE. CONNECTORS THAT ARE READILY ACCESSIBLE AND OPERATING AT OVER 30V DC OR 15V AC SHALL REQUIRE TOOL TO OPEN AND MARKED "DO NOT DISCONNECT UNDER LOAD" OR "NOT FOR CURRENT INTERRUPTING".
[NEC 690.33(C) & (E)(2)]
23. EQUIPMENT GROUNDING CONDUCTOR FOR PV MODULES SMALLER THAN 6AWG SHALL BE PROTECTED FROM PHYSICAL DAMAGE BY A RACEWAY OR CABLE ARMOR. NEC 690.46 & 250.120(C)]
24. AN EQUIPMENT GROUNDING CONDUCTOR SHALL NOT BE SMALLER THAN 14 AWG. [NEC 690.45]
25. FINE STRANDED CABLES USED FOR BATTERY TERMINALS, DEVICES, AND CONNECTIONS REQUIRE LUGS AND TERMINALS IS IN ACCORDANCE WITH NEC 110.14
26.GROUNDING ELECTRODE CONDUCTOR(S) SHALL BE INSTALLED IN ONE CONTINUOUS LENGTH WITHOUT A SPLICE OR JOINT. IF NECESSARY,SPLICES OR CONNECTIONS SHALL BE MADE AS PERMITTED. (NEC 250.64 C)

GENERAL CONDUCTOR INSULATION KEY

DC CONDUCTORS

POSITIVE(UNGROUNDED)	RED
NEGATIVE(UNGROUNDED)	BLACK

480/277V AC CONDUCTORS

PHASE L1	BROWN
PHASE L2	ORANGE
PHASE L3	YELLOW

120/208V OR 240V AC CONDUCTORS

PHASE L1	BLACK
PHASE L2	RED (SEE NOTE)
PHASE L3	BLUE
NEUTRAL	WHITE OR GREY
GROUND	GREEN OR BARE Cu

NOTE:THREE PHASE HIGH LEG MUST BE IN ORANGE COLOR PER NFPA 70.

GROUND FAULT PROTECTION

1. PHOTOVOLTAIC INVERTERS SHALL BE EQUIPPED WITH DC GROUND FAULT PROTECTION. INVERTERS ARE ALSO EQUIPPED WITH ANTI-ISLANDING CIRCUITRY.

DISCONNECTING MEANS

1. MEANS SHALL BE PROVIDED TO ISOLATE EACH SOURCE CIRCUIT FROM THE SYSTEM.
2. WHERE A CIRCUIT GROUNDING CONNECTION IS NOT DESIGNED TO BE AUTOMATICALLY INTERRUPTED AS PART OF THE GROUND-FAULT PROTECTION, A SWITCH OR CIRCUIT BREAKER USED AS A DISCONNECTING MEANS SHALL NOT HAVE A POLE ON THE GROUNDED CONDUCTOR.
3. THE GROUNDED CONDUCTOR MAY HAVE A BOLTED OR TERMINAL DISCONNECTING MEANS TO ALLOW MAINTENANCE OR TROUBLESHOOTING BY QUALIFIED PERSONNEL.
4. EQUIPMENT SUCH AS PHOTOVOLTAIC SOURCE CIRCUITS, OVER CURRENT DEVICES, AND BLOCKING DIODES SHALL BE PERMITTED ON THE PHOTOVOLTAIC SIDE OF THE PHOTOVOLTAIC DISCONNECTING MEANS.
5. MEANS SHALL BE PROVIDED TO DISCONNECT INVERTERS FROM ALL UNGROUNDED CONDUCTORS OF ALL SOURCES. IF THE EQUIPMENT IS ENERGIZED FROM MORE THAN ONE SOURCE, THE DISCONNECTING MEANS SHALL BE GROUPED AND IDENTIFIED.
6. A SINGLE DISCONNECTING MEANS SHALL BE PERMITTED FOR THE COMBINED OUTPUT OF ONE OR MORE INVERTERS IN A GRID INTERACTIVE SYSTEM.
7. DISCONNECTING MEANS SHALL BE PROVIDED TO DISCONNECT A FUSE FROM ALL SOURCES OF SUPPLY IF THE FUSE IS ENERGIZED FROM BOTH DIRECTIONS AND IS ACCESSIBLE TO OTHER THAN QUALIFIED PERSONS. SUCH A FUSE IN A PHOTOVOLTAIC SOURCE CIRCUIT SHALL BE CAPABLE OF BEING DISCONNECTED INDEPENDENTLY OF FUSES IN OTHER PHOTOVOLTAIC SOURCE CIRCUITS.

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR
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BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

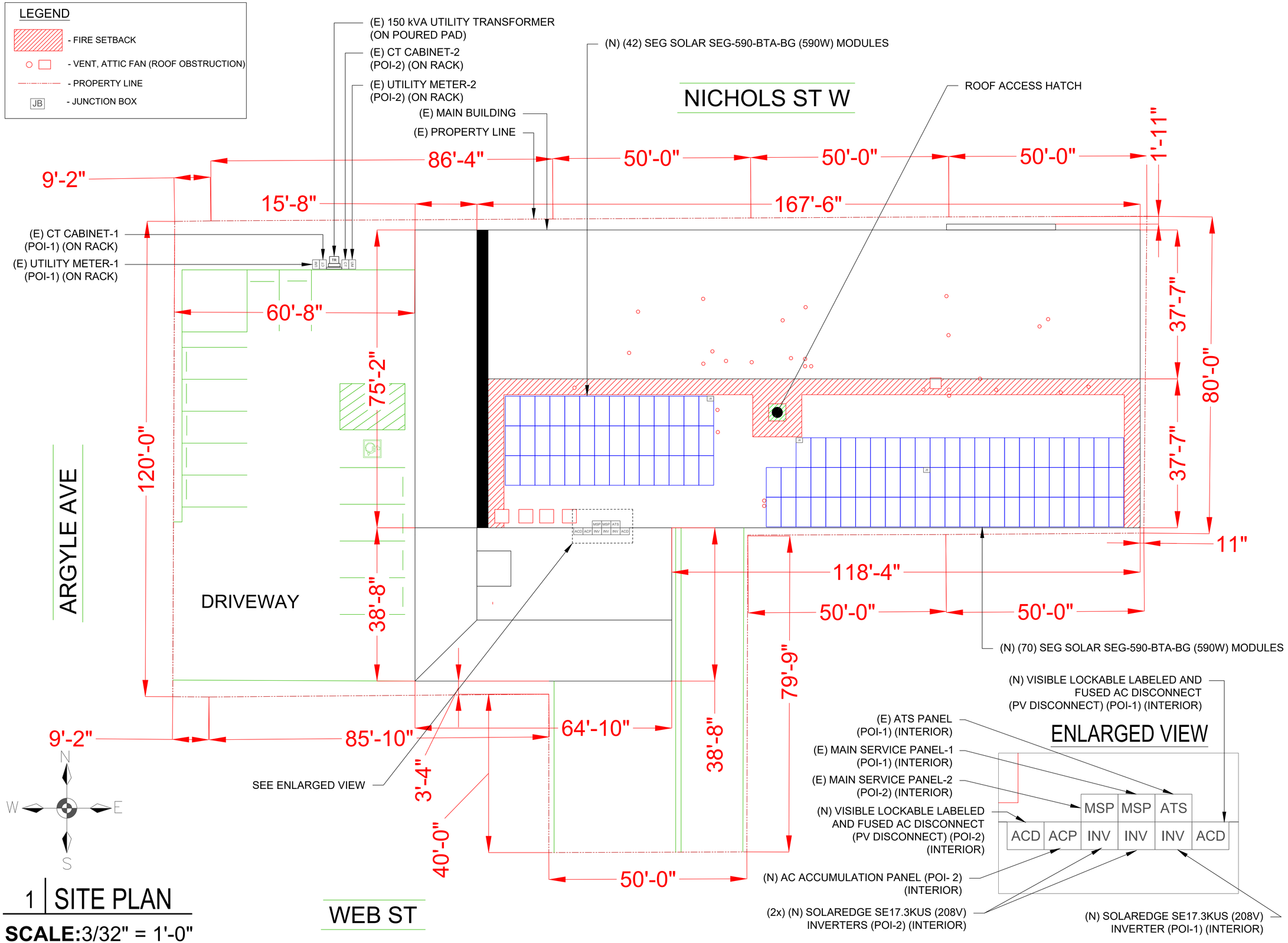
REVISIONS

REV	DESCRIPTION	DATE
A.0	PERMIT PLAN	04/06/2026

SHEET TITLE
NOTES

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
G-001



1 | SITE PLAN

SCALE:3/32" = 1'-0"

GREENTECH -RENEWABLES- DESIGN SERVICES

GREENTECH RENEWABLES

CONTRACTOR

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SITE PLAN

DRAWN DATE	04/06/2026
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REVIEWED BY	AMV

SHEET NUMBER

A-101

ROOF SECTION(S)

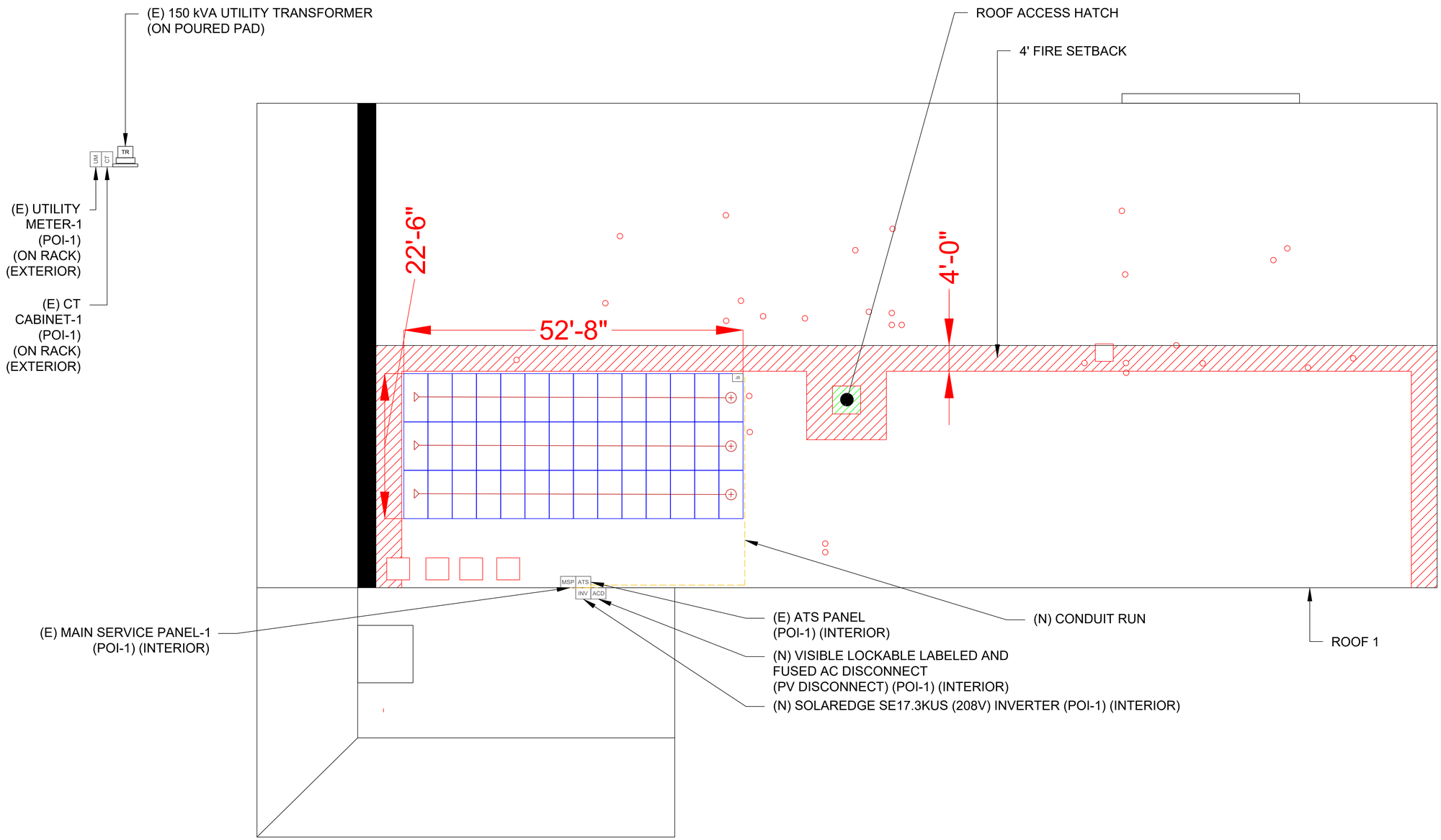
ROOF 1	TILT - 10° AZIMUTH - 180° MODULE - 42

(42) SEG SOLAR SEG-590-BTA-BG (590W) MODULES
WITH (42) SOLAREDGE U650 POWER OPTIMIZERS
FOR (01) SOLAREDGE SE17.3KUS (208V) INVERTER
(03) STRINGS OF (14) MODULES CONNECTED IN SERIES

DC SYSTEM SIZE: 24.78 kW DC
AC SYSTEM SIZE: 17.30 kW AC

LEGEND

- FIRE SETBACK
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- JB - JUNCTION BOX



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1 | ELECTRICAL PLAN (POI-1)

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

POI-1

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

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SHEET TITLE
ELECTRICAL PLAN (POI-1)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
A-102

ROOF SECTION(S)

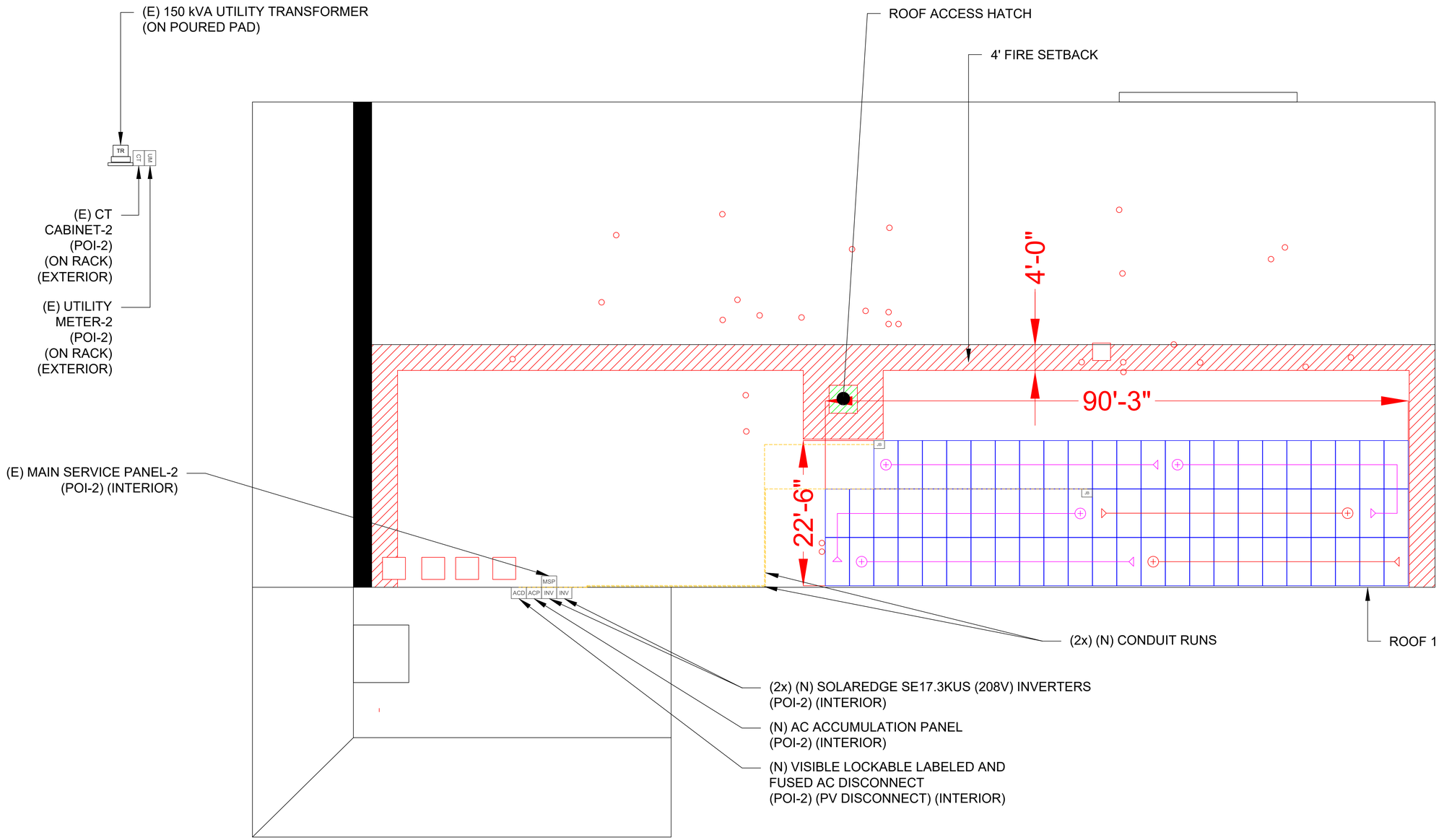
ROOF 1	TILT - 10° AZIMUTH - 180° MODULE - 70

(70) SEG SOLAR SEG-590-BTA-BG (590W) MODULES
WITH (70) SOLAREDGE U650 POWER OPTIMIZERS
FOR (02) SOLAREDGE SE17.3KUS (208V) INVERTERS
(04) STRINGS OF (12) MODULES CONNECTED IN SERIES
(02) STRINGS OF (11) MODULES CONNECTED IN SERIES

DC SYSTEM SIZE: 41.30 kW DC
AC SYSTEM SIZE: 34.60 kW AC

LEGEND

- FIRE SETBACK
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- JB - JUNCTION BOX



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1 | ELECTRICAL PLAN (POI-2)

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

POI-2

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

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REV	PERMIT PLAN	04/06/2026
A.0		

SHEET TITLE
ELECTRICAL PLAN (POI-2)

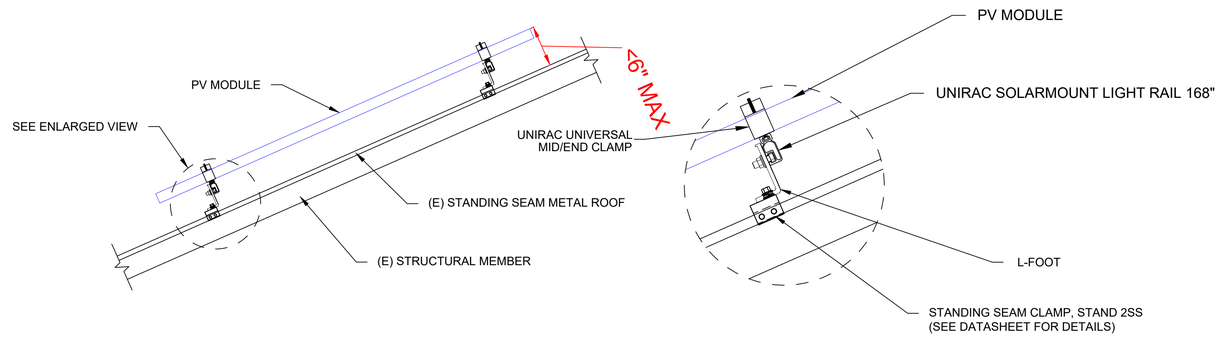
DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
A-102.1

POINT LOAD CALCULATIONS

MODULE TYPE:	SEG SOLAR SEG-590-BTA-BG (590W) MODULES
MODULE WEIGHT:	70.55 LBS
NUMBER OF MODULES:	112
TOTAL WEIGHT OF MODULES:	7901.60 LBS
TYPE OF RACKING:	UNIRAC SOLARMOUNT LIGHT RAIL 168"
DISTRIBUTED WEIGHT OF RACKING:	0.5 PSF
TOTAL WEIGHT OF ARRAY:	9458.97 LBS
TYPE OF ATTACHMENT:	S-5! S-5-N STANDING SEAM CLAMP ATTACHMENT
NUMBER OF ATTACHMENTS:	227
POINT LOAD AT EACH ATTACHMENT:	34.87LBS
AREA OF MODULE:	27.81SQFT
TOTAL ARRAY AREA:	3114.73 SQFT
DISTRIBUTED LOAD:	2.55 PSF
TOTAL ROOF AREA:	16321.89 SQFT
PERCENTAGE OF ROOF COVERED BY ARRAY:	19.08%

ATTACHMENT DETAILS



ENLARGED VIEW

- CLAMP
- S-5! S-5-N STANDING SEAM CLAMP ATTACHMENT
- UNIRAC SOLARMOUNT LIGHT RAIL 168"
- SEAM SPACING @ 24" O.C.

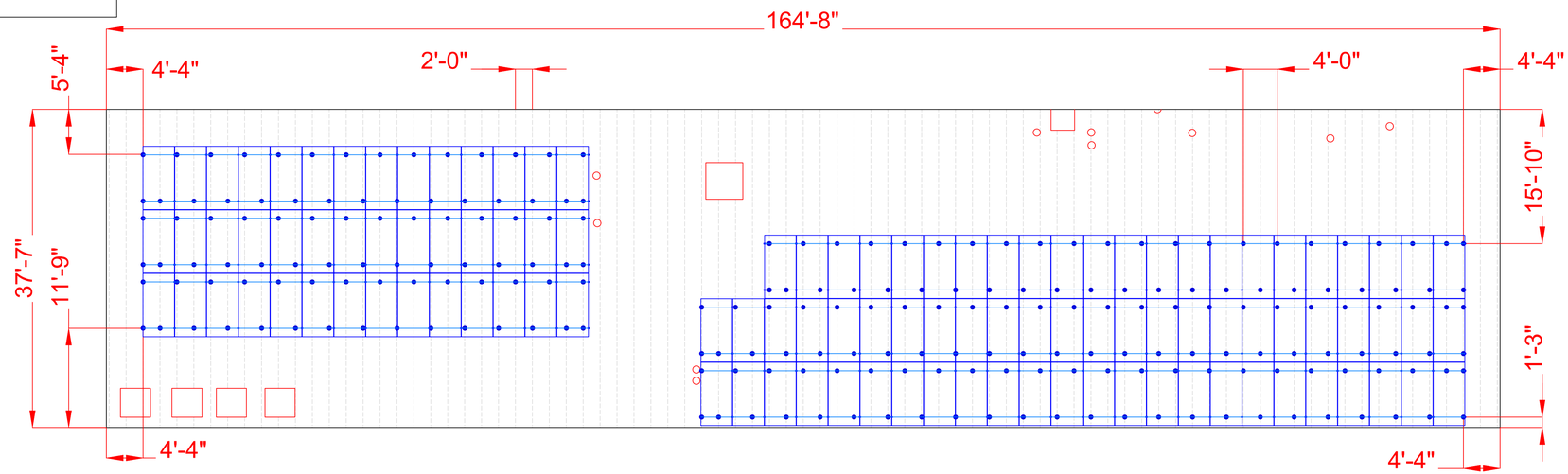
227 - TOTAL MOUNT

DESIGN CRITERIA
NUMBER OF PANELS IN ARRAY = 112 MODULES
MODULE TYPE = SEG SOLAR SEG-590-BTA-BG (590W) MODULES
ATTACHMENT= UNIRAC SOLARMOUNT LIGHT RAIL 168" WITH S-5! S-5-N STANDING SEAM CLAMP ATTACHMENT
ROOF TYPE: STANDING SEAM METAL

NOTE: DESIGN ASSUMES A STRUCTURAL ENGINEER IS TO REVIEW SEAM ATTACHMENT SPACING TO ENSURE PROPER CONNECTION TO ROOF STRUCTURE

ROOF SECTION(S)

ROOF 1	ROOF MATERIAL - STANDING SEAM METAL SEAM SPACING @ 24" O.C.



ROOF 1
TILT - 10°
AZIMUTH - 180°

1 ATTACHMENT PLAN

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

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

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ATTACHMENT PLAN

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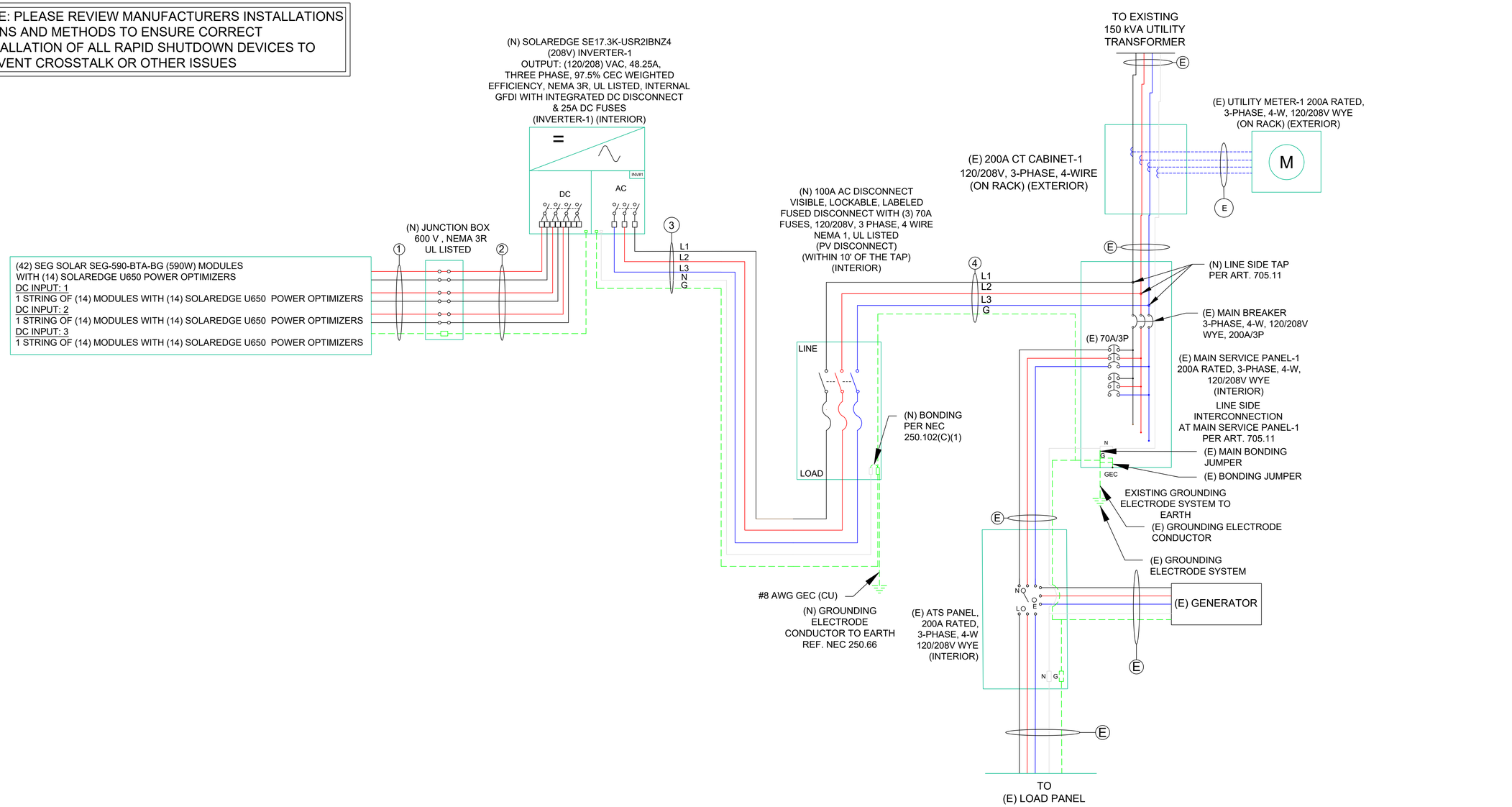
SHEET NUMBER
A-103

DC SYSTEM SIZE: 24.78 kW DC
AC SYSTEM SIZE: 17.30 kW AC

(42) SEG SOLAR SEG-590-BTA-BG (590W) MODULES
WITH (42) SOLAREDGE U650 POWER OPTIMIZERS
FOR (01) SOLAREDGE SE17.3KUS (208V) INVERTER
(03) STRINGS OF (14) MODULES CONNECTED IN SERIES

POI-1

NOTE: PLEASE REVIEW MANUFACTURERS INSTALLATIONS MEANS AND METHODS TO ENSURE CORRECT INSTALLATION OF ALL RAPID SHUTDOWN DEVICES TO PREVENT CROSSTALK OR OTHER ISSUES



ID	PARALLEL FEEDER	PHASE CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			NEUTRAL			GROUND CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			CONDUIT SIZE	CONDUIT TYPE
1	1	6	#10 AWG	PV-WIRE/USE-2, CU		N/A		1	AWG #6	BARE,COPPER EGC	N/A	FREE AIR
2	1	6	#10 AWG	THWN-2,COPPER		N/A		1	AWG #10	THWN-2,COPPER EGC	3/4"	EMT
3	1	3	AWG #4	THWN-2,COPPER	1	AWG #8	THWN-2,COPPER	1	AWG #8	THWN-2,COPPER EGC	1"	EMT
4	1	3	AWG #4	THWN-2,COPPER		N/A		1	AWG #8	THWN-2,COPPER EGC	1"	EMT
E	EXISTING											

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR
Swiftwater ELECTRIC & SOLAR
SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

REVISIONS

REV	DESCRIPTION	DATE
A.0	PERMIT PLAN	04/06/2026

SHEET TITLE
ELECTRICAL LINE DIAGRAM (POI-1)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
E-601

SOLAR MODULE SPECIFICATIONS		
MANUFACTURER / MODEL #	SEG SOLAR SEG-590-BTA-BG (590W) MODULES	
	STC	5% BI-FACIAL GAIN
VMP	44.43V	44.43V
IMP	13.28A	13.94A
VOC	52.37V	52.37V
ISC	13.94A	14.63A
TEMP. COEFF. VOC	-0.25%/°C	
PTC RATING	564.4W	
MODULE DIMENSION	89.69×44.65×1.18 (In Inch)	

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	SOLAREDGE SE17.3KUS (208V) INVERTER
NOMINAL AC POWER	17300 W
NOMINAL OUTPUT VOLTAGE	208 VAC
NOMINAL OUTPUT CURRENT	48.25 A

OPTIMIZER: SOLAREDGE U650 POWER OPTIMIZERS	
MAXIMUM OUTPUT VOLTAGE	60 VDC
MAXIMUM OUTPUT CURRENT	15 ADC

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-7°C
AMBIENT TEMP (HIGH TEMP 2%)	26°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	26°C
CONDUCTOR TEMPERATURE RATE	90°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20

5% BIFACIAL GAIN CALCULATION
IMP = 13.28A X 1.05 = 13.94A
ISC = 13.94A X 1.05 = 14.63A

DC WIRE CALCULATION

WIRE ID	PARALLEL FEEDERS	EXPECTED WIRE TEMP (In Celsius)	TEMP. CORRECTION PER TABLE 310.15(B)(1)	NO. OF CURRENT CARRYING CONDUCTORS	CONDUIT FILL CORRECTION PER NEC 310.15(C)(1)	CIRCUIT CONDUCTOR SIZE	CIRCUIT CONDUCTOR AMPACITY @75°(PER FEEDER SET)	CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B) Isc X 1.25	DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16 TEMP. CORRECTION PER TABLE 310.15(B)(1) X CONDUIT FILL CORRECTION PER NEC 310.15(C)(1) X CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	DERATED AMPACITY OF CIRCUIT CONDUCTOR IS GREATER THAN REQUIRED	ESTIMATED DISTANCE (FT)	EXPECTED VOLTAGE DROP (%)
1	1	26°	1	6	1	#10 AWG	35A	40A	18.75A	40A	YES	55	0.41
2	1	26°	1	6	0.8	#10 AWG	35A	40A	18.75A	32A	YES	65	0.48
												TOTAL DC VOLTAGE DROP (%)	0.89

AC WIRE CALCULATION

WIRE ID	PARALLEL FEEDERS	EXPECTED WIRE TEMP (In Celsius)	TEMP. CORRECTION PER TABLE 310.15(B)(1)	NO. OF CURRENT CARRYING CONDUCTORS	CONDUIT FILL CORRECTION PER NEC 310.15(C)(1)	CIRCUIT CONDUCTOR SIZE	CIRCUIT CONDUCTOR AMPACITY @75°(PER FEEDER SET)	CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A)(1)(e) TOTAL INVERTER OUTPUT CURRENT	MIN OCPD REQUIRED PER NEC 690.9(B) TOTAL INVERTER OUTPUT CURRENT X 1.25	DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16 TEMP. CORRECTION PER TABLE 310.15(B)(1) X CONDUIT FILL CORRECTION PER NEC 310.15(C)(1) X CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	DERATED AMPACITY OF CIRCUIT CONDUCTOR IS GREATER THAN REQUIRED	ESTIMATED DISTANCE (FT)	EXPECTED VOLTAGE DROP (%)
3	1	26°	1	3	1	#4 AWG	85A	95A	48.25A	60.31A	95A	YES	10	0.12
4	1	26°	1	3	1	#4 AWG	85A	95A	48.25A	60.31A	95A	YES	10	0.12
													TOTAL AC VOLTAGE DROP (%)	0.24

POI-1

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR
Swiftwater ELECTRIC & SOLAR
SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

NOT FOR CONSTRUCTION UNLESS SIGNED BY THE CONTRACTOR OR SEALED BY PROFESSIONAL ENGINEER

REVISIONS

REV	DESCRIPTION	DATE
A.0	PERMIT PLAN	04/06/2026

SHEET TITLE
ELECTRICAL CALCULATIONS (POI-1)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

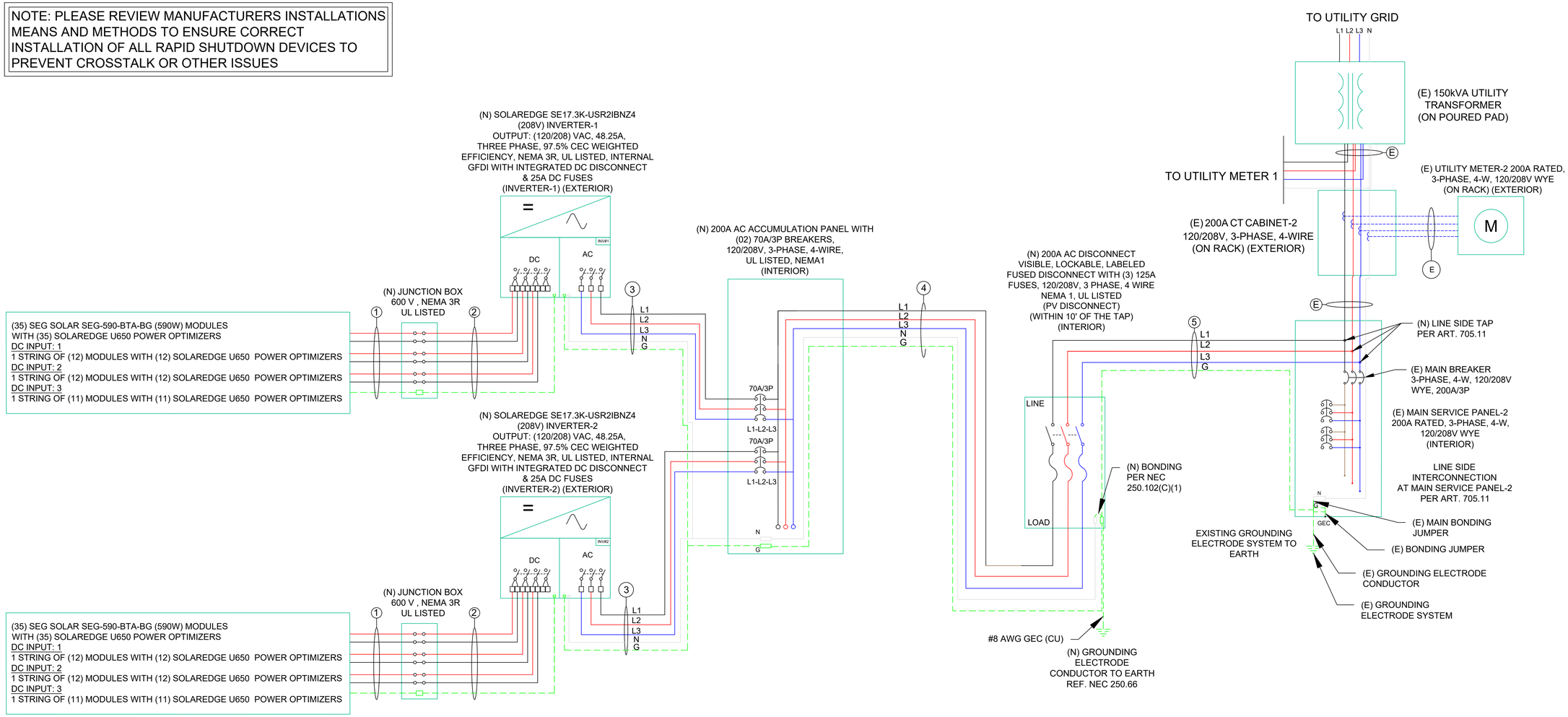
SHEET NUMBER
E-602

DC SYSTEM SIZE: 41.30 kW DC
AC SYSTEM SIZE: 34.60 kW AC

(70) SEG SOLAR SEG-590-BTA-BG (590W) MODULES
WITH (70) SOLAREDGE U650 POWER OPTIMIZERS
FOR (02) SOLAREDGE SE17.3KUS (208V) INVERTERS
(04) STRINGS OF (12) MODULES CONNECTED IN SERIES
(02) STRINGS OF (11) MODULES CONNECTED IN SERIES

NOTE: PLEASE REVIEW MANUFACTURERS INSTALLATIONS MEANS AND METHODS TO ENSURE CORRECT INSTALLATION OF ALL RAPID SHUTDOWN DEVICES TO PREVENT CROSSTALK OR OTHER ISSUES

POI-2



ID	PARALLEL FEEDER	PHASE CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			NEUTRAL			GROUND CONDUCTOR QTY, SIZE AND TYPE PER CONDUIT			CONDUIT SIZE	CONDUIT TYPE
1	1	6	#10 AWG	PV-WIRE/USE-2, CU		N/A		1	AWG #6	BARE,COPPER EGC	N/A	FREE AIR
2	1	6	#10 AWG	THWN-2,COPPER		N/A		1	AWG #10	THWN-2,COPPER EGC	3/4"	EMT
3	1	3	AWG #4	THWN-2,COPPER	1	AWG #8	THWN-2,COPPER	1	AWG #8	THWN-2,COPPER EGC	1"	EMT
4	1	3	AWG #1	THWN-2,COPPER	1	AWG #6	THWN-2,COPPER	1	AWG #6	THWN-2,COPPER EGC	1-1/4"	EMT
5	1	3	AWG #1	THWN-2,COPPER		N/A		1	AWG #6	THWN-2,COPPER EGC	1-1/4"	EMT
E	EXISTING											

GREENTECH -RENEWABLES- DESIGN SERVICES

GREENTECH RENEWABLES

CONTRACTOR

Swiftwater ELECTRIC & SOLAR

SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS

ACE HARDWARE

340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

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REVISIONS	DESCRIPTION	DATE
	PERMIT PLAN	04/06/2026
REV	A.0	

SHEET TITLE
ELECTRICAL LINE DIAGRAM (POI-2)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
E-601.1

SOLAR MODULE SPECIFICATIONS		
MANUFACTURER / MODEL #	SEG SOLAR SEG-590-BTA-BG (590W) MODULES	
	STC	5% BI-FACIAL GAIN
VMP	44.43V	44.43V
IMP	13.28A	13.94A
VOC	52.37V	52.37V
ISC	13.94A	14.63A
TEMP. COEFF. VOC	-0.25%/°C	
PTC RATING	564.4W	
MODULE DIMENSION	89.69×44.65×1.18 (In Inch)	

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	SOLAREDGE SE17.3KUS (208V) INVERTER
NOMINAL AC POWER	17300 W
NOMINAL OUTPUT VOLTAGE	208 VAC
NOMINAL OUTPUT CURRENT	48.25 A

OPTIMIZER: SOLAREDGE U650 POWER OPTIMIZERS	
MAXIMUM OUTPUT VOLTAGE	60 VDC
MAXIMUM OUTPUT CURRENT	15 ADC

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-7°C
AMBIENT TEMP (HIGH TEMP 2%)	26°C
CONDUIT HEIGHT	7/8"
ROOF TOP TEMP	26°C
CONDUCTOR TEMPERATURE RATE	90°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
0.80	4-6
0.70	7-9
0.50	10-20

5% BIFACIAL GAIN CALCULATION
IMP = 13.28A X 1.05 = 13.94A
ISC = 13.94A X 1.05 = 14.63A

DC WIRE CALCULATION

WIRE ID	PARALLEL FEEDERS	EXPECTED WIRE TEMP (In Celsius)	TEMP. CORRECTION PER TABLE 310.15(B)(1)	NO. OF CURRENT CARRYING CONDUCTORS	CONDUIT FILL CORRECTION PER NEC 310.15(C)(1)	CIRCUIT CONDUCTOR SIZE	CIRCUIT CONDUCTOR AMPACITY @75°(PER FEEDER SET)	CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A&B) Isc X 1.25	DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16 TEMP. CORRECTION PER TABLE 310.15(B)(1) X CONDUIT FILL CORRECTION PER NEC 310.15(C)(1) X CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	DERATED AMPACITY OF CIRCUIT CONDUCTOR IS GREATER THAN REQUIRED	ESTIMATED DISTANCE (FT)	EXPECTED VOLTAGE DROP (%)
1	1	26°	1	6	1	#10 AWG	35A	40A	18.75A	40A	YES	50	0.37
2	1	26°	1	6	0.8	#10 AWG	35A	40A	18.75A	32A	YES	100	0.56
												TOTAL DC VOLTAGE DROP (%)	0.93

AC WIRE CALCULATION

WIRE ID	PARALLEL FEEDERS	EXPECTED WIRE TEMP (In Celsius)	TEMP. CORRECTION PER TABLE 310.15(B)(1)	NO. OF CURRENT CARRYING CONDUCTORS	CONDUIT FILL CORRECTION PER NEC 310.15(C)(1)	CIRCUIT CONDUCTOR SIZE	CIRCUIT CONDUCTOR AMPACITY @75°(PER FEEDER SET)	CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	REQUIRED CIRCUIT CONDUCTOR AMPACITY PER NEC 690.8(A)(1)(e) TOTAL INVERTER OUTPUT CURRENT	MIN OCPD REQUIRED PER NEC 690.9(B) TOTAL INVERTER OUTPUT CURRENT X 1.25	DERATED AMPACITY OF CIRCUIT CONDUCTOR PER NEC TABLE 310.16 TEMP. CORRECTION PER TABLE 310.15(B)(1) X CONDUIT FILL CORRECTION PER NEC 310.15(C)(1) X CIRCUIT CONDUCTOR AMPACITY @90°(PER FEEDER SET)	DERATED AMPACITY OF CIRCUIT CONDUCTOR IS GREATER THAN REQUIRED	ESTIMATED DISTANCE (FT)	EXPECTED VOLTAGE DROP (%)
3	1	26°	1	3	1	#4 AWG	85A	95A	48.25A	60.31A	95A	YES	10	0.12
4	1	26°	1	3	1	#1 AWG	130A	145A	96.5A	120.62A	145A	YES	10	0.13
5	1	26°	1	3	1	#1 AWG	130A	145A	96.5A	120.62A	145A	YES	10	0.13
													TOTAL AC VOLTAGE DROP (%)	0.38

POI-2

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR
Swiftwater ELECTRIC & SOLAR
SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

NOT FOR CONSTRUCTION UNLESS SIGNED BY THE CONTRACTOR OR SEALED BY PROFESSIONAL ENGINEER

REVISIONS

DESCRIPTION	DATE
PERMIT PLAN	04/06/2026
REV A.0	

SHEET TITLE
ELECTRICAL CALCULATIONS (POI-2)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
E-602.1

1

⚠WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION: COMBINER PANEL, AC DISCONNECT, POINT OF INTERCONNECTION
PER CODE: NEC 706.15(C)(4), NEC 690.13(B)

2

⚠WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LABEL LOCATION: COMBINER PANEL(S), MAIN SERVICE DISCONNECT
PER CODE: NEC 110.27(C), OSHA 1910.145(f)(7)

3

PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION: DC CONDUIT/RACEWAYS
PER CODE: NEC 690.31(D)(2)

4

SOLAR PV DC CIRCUIT

LABEL LOCATION: DC CONDUIT/RACEWAYS
PER CODE: NEC 690.31(D)(2)

5

PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT: **48.25** A
NOMINAL OPERATING AC VOLTAGE: 208 V

LABEL LOCATION: AC DISCONNECT/POINT OF INTERCONNECTION
PER CODE: NEC 690.54

6

⚠WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION: MAIN SERVICE DISCONNECT, PRODUCTION/NET METER
PER CODE: NEC 690.59, 705.12(C)

7

PV SYSTEM

DISCONNECT

LABEL LOCATION: AC DISCONNECT
PER CODE: NEC 690.13(B)

8

⚠WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES:
TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN POWER SUPPLY SHALL NOT EXCEED AMPACITY OF BUSBAR

LABEL LOCATION: AC DISCONNECT
PER CODE: NEC 705.12(B)(3)(3)

9

⚠WARNING

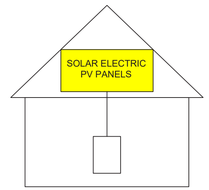
POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

LABEL LOCATION: POINT OF INTERCONNECTION
PER CODE: NEC 705.12(B)(3)(2)

10

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



LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 690.56(C)

11

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL LOCATION: MAIN SERVICE DISCONNECT, UTILITY METER
PER CODE: NEC 690.13(B)

12

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION: RSD INITIATION DEVICE, AC DISCONNECT
PER CODE: NEC 690.56(C)(2)

13

⚠ CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 705.12(D), NEC 690.59

14

DO NOT DISCONNECT UNDER LOAD

LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 690.15(B) & NEC 690.33(D)(2)

15

MAXIMUM DC VOLTAGE

OF PV SYSTEM 600V

LABEL LOCATION: DC DISCONNECT/INVERTER/PV DIST. EQUIPMENT
PER CODE: NEC 690.53

16

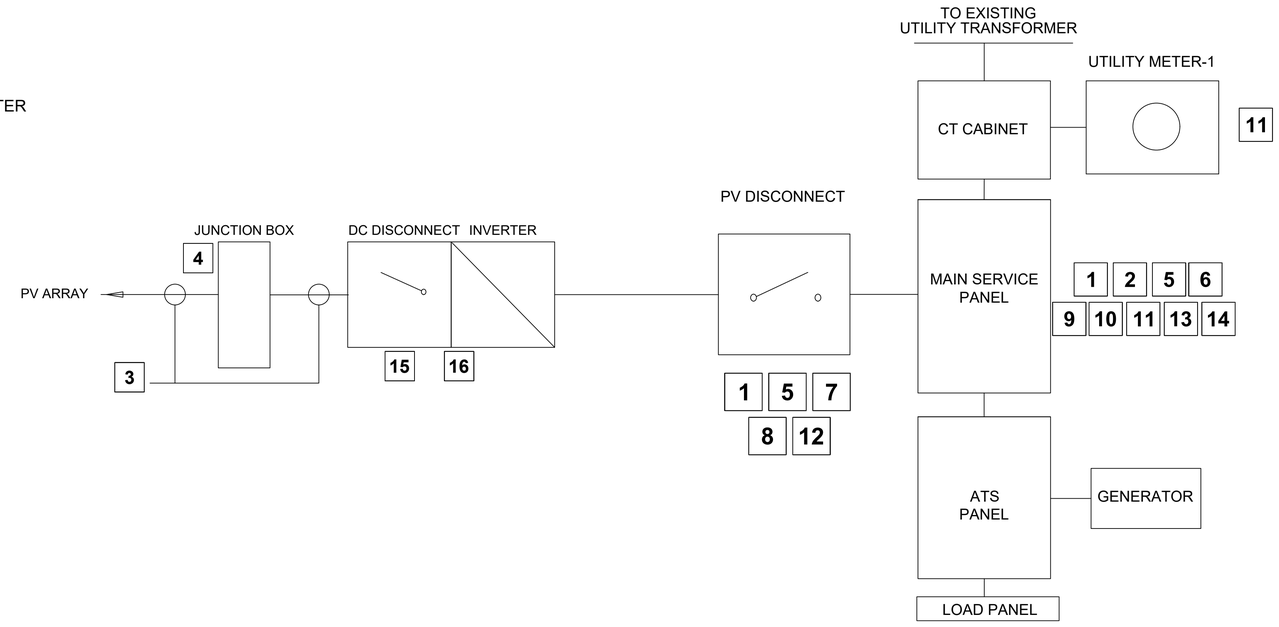
⚠WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

LABEL LOCATION: DC DISCONNECT
PER CODE: NEC 690.13(B)



POI-1

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR

Swiftwater ELECTRIC & SOLAR
SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
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98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

NOT FOR CONSTRUCTION UNLESS SIGNED BY THE CONTRACTOR OR SEALED BY PROFESSIONAL ENGINEER

REVISIONS	DESCRIPTION	DATE
REV	PERMIT PLAN	04/06/2026
A.0		

SHEET TITLE
WARNING LABELS (POI-1)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
E-603

1

⚠WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL LOCATION: COMBINER PANEL, AC DISCONNECT, POINT OF INTERCONNECTION
PER CODE: NEC 706.15(C)(4), NEC 690.13(B)

2

⚠WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

LABEL LOCATION: COMBINER PANEL(S), MAIN SERVICE DISCONNECT
PER CODE: NEC 110.27(C), OSHA 1910.145(f)(7)

3

PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION: DC CONDUIT/RACEWAYS
PER CODE: NEC 690.31(D)(2)

4

SOLAR PV DC CIRCUIT

LABEL LOCATION: DC CONDUIT/RACEWAYS
PER CODE: NEC 690.31(D)(2)

5

PHOTOVOLTAIC SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT: 96.5 A
NOMINAL OPERATING AC VOLTAGE: 208 V

LABEL LOCATION: AC DISCONNECT/POINT OF INTERCONNECTION
PER CODE: NEC 690.54

6

⚠WARNING DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL LOCATION: MAIN SERVICE DISCONNECT, PRODUCTION/NET METER
PER CODE: NEC 690.59, 705.12(C)

7

PV SYSTEM

DISCONNECT

LABEL LOCATION: AC DISCONNECT
PER CODE: NEC 690.13(B)

8

⚠WARNING

THIS EQUIPMENT FED BY MULTIPLE SOURCES:
TOTAL RATING OF ALL OVERCURRENT DEVICES EXCLUDING MAIN POWER SUPPLY SHALL NOT EXCEED AMPACITY OF BUSBAR

LABEL LOCATION: AC DISCONNECT
PER CODE: NEC 705.12(B)(3)(3)

9

⚠WARNING

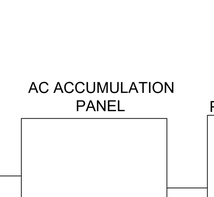
POWER SOURCE OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE.

LABEL LOCATION: POINT OF INTERCONNECTION
PER CODE: NEC 705.12(B)(3)(2)

10

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



LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 690.56(C)

11

MAIN PHOTOVOLTAIC SYSTEM DISCONNECT

LABEL LOCATION: MAIN SERVICE DISCONNECT, UTILITY METER
PER CODE: NEC 690.13(B)

12

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL LOCATION: RSD INITIATION DEVICE, AC DISCONNECT
PER CODE: NEC 690.56(C)(2)

13

⚠ CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 705.12(D), NEC 690.59

14

DO NOT DISCONNECT UNDER LOAD

LABEL LOCATION: MAIN SERVICE DISCONNECT
PER CODE: NEC 690.15(B) & NEC 690.33(D)(2)

15

MAXIMUM DC VOLTAGE

OF PV SYSTEM 600V

LABEL LOCATION: DC DISCONNECT/INVERTER/PV DIST. EQUIPMENT
PER CODE: NEC 690.53

16

⚠WARNING

ELECTRICAL SHOCK HAZARD

TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

LABEL LOCATION: DC DISCONNECT
PER CODE: NEC 690.13(B)

POI-2

GREENTECH -RENEWABLES- DESIGN SERVICES
GREENTECH RENEWABLES

CONTRACTOR
Swiftwater ELECTRIC & SOLAR
SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS
ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

NOT FOR CONSTRUCTION UNLESS SIGNED BY THE CONTRACTOR OR SEALED BY PROFESSIONAL ENGINEER

REVISIONS	DESCRIPTION	DATE
REV	PERMIT PLAN	04/06/2026
A.0		

SHEET TITLE
WARNING LABELS (POI-2)

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

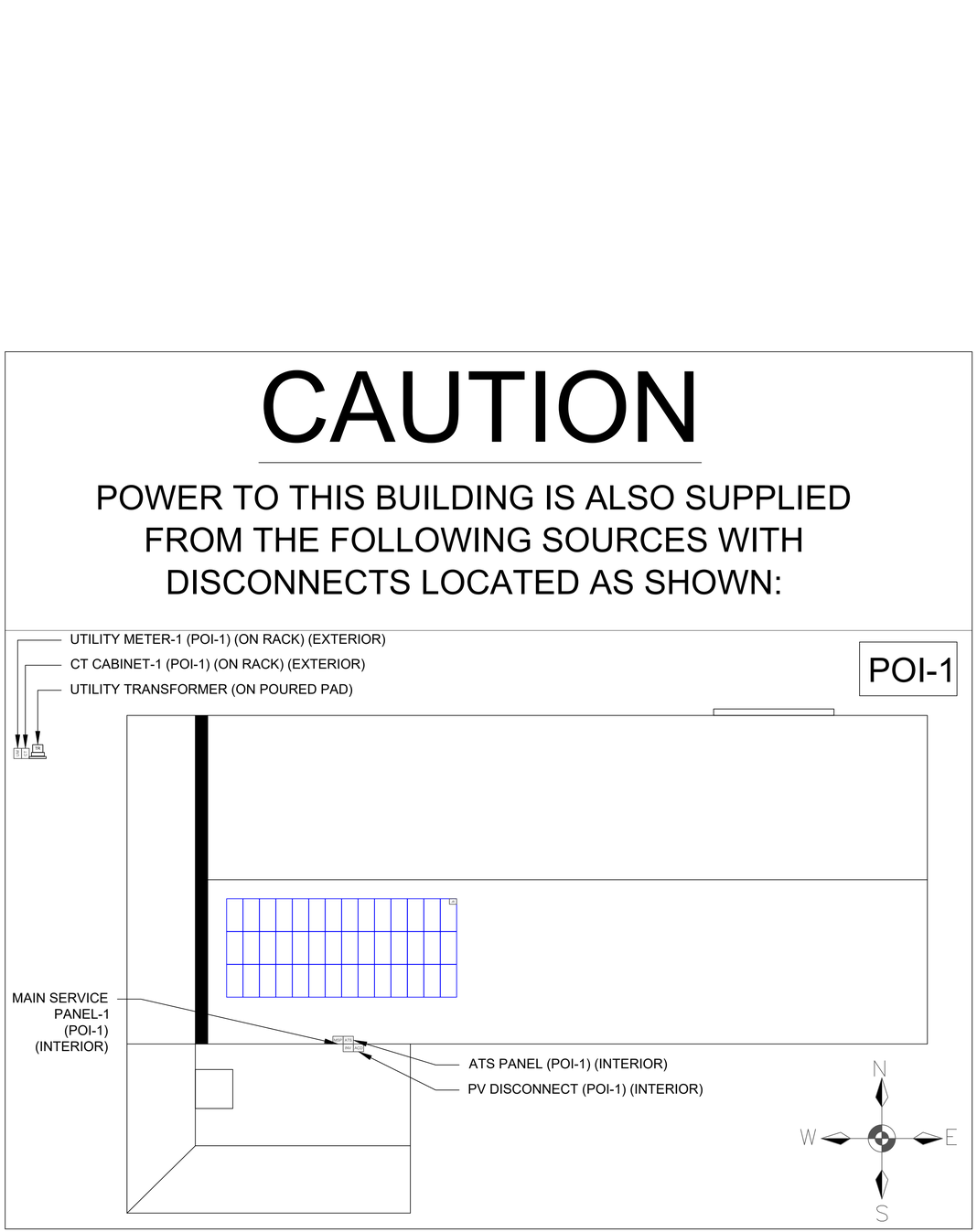
SHEET NUMBER
E-603.1

CAUTION

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

POI-1

UTILITY METER-1 (POI-1) (ON RACK) (EXTERIOR)
CT CABINET-1 (POI-1) (ON RACK) (EXTERIOR)
UTILITY TRANSFORMER (ON POURED PAD)

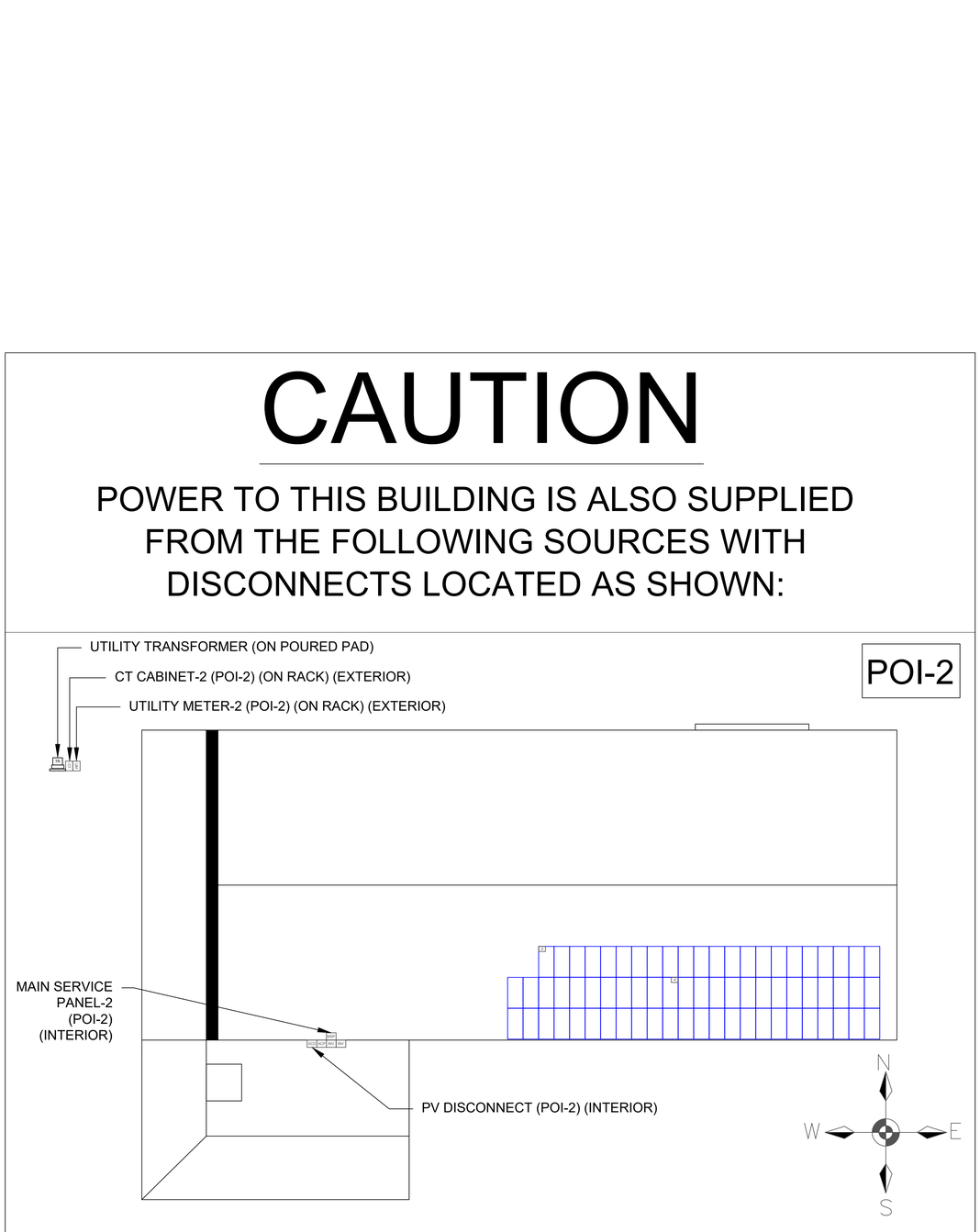


CAUTION

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

POI-2

UTILITY TRANSFORMER (ON POURED PAD)
CT CABINET-2 (POI-2) (ON RACK) (EXTERIOR)
UTILITY METER-2 (POI-2) (ON RACK) (EXTERIOR)



GREENTECH -RENEWABLES- DESIGN SERVICES

GREENTECH RENEWABLES

CONTRACTOR

Swiftwater ELECTRIC & SOLAR

SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS

ACE HARDWARE

340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

NOT FOR CONSTRUCTION UNLESS SIGNED BY THE CONTRACTOR OR SEALED BY PROFESSIONAL ENGINEER

REVISIONS

REV	DESCRIPTION	DATE
A.0	PERMIT PLAN	04/06/2026

SHEET TITLE

PLACARDS

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER

E-604

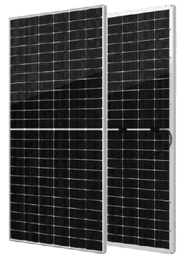
SEG SOLAR

www.segsolar.com

YUKON N Series

Half-Cell N-Type Bifacial Module

575-590Wp Module Power Output | **22.84%** Max Efficiency



Key Features

- High module conversion efficiency
- Better temperature coefficient
- Super multi busbar technology
- Low attenuation long warranty
- Superior load capacity
- Higher bifacially
- USA based liability insurance
- Houston, Texas based company

Warranty

15 Years Guarantee on product material and workmanship

30 Years Linear power output warranty

Product Certification

IEC61215:2016; IEC 61730:2016; UL61215; UL61730	
IEC62804	PID
IEC61701	Salt Mist
IEC62716	Ammonia Resistance
IEC60068	Dust and Sand
IEC61215	Hailstone
Fire Type (UL61730): Type 29	
ISO14001:2015; ISO9001:2015; ISO45001:2018	

Intertek · PV CYCLE · CE · CQC · CGC · CALIFORNIA ENERGY COMMISSION · FSEC

About SEG Solar

Founded in 2016, SEG is a leading vertically integrated PV manufacturer headquartered in Houston, Texas, U.S., and is dedicated to delivering reliable and cost-effective solar modules to the utility, commercial and residential markets. By the end of 2023, SEG has shipped over 5 GW of solar modules worldwide. The company is expected to exceed a production capacity of 5.5 GW by the end of 2024.

Download Datasheet

SEG SOLAR

YUKON N Series SEG-XXX-BTA-BG-144Cells

Electrical Characteristics

Module Type	SEG-575-BTA-BG			SEG-580-BTA-BG			SEG-585-BTA-BG			SEG-590-BTA-BG		
	Front STC	Front NOCT	Back NOCT	Front STC	Front NOCT	Back NOCT	Front STC	Front NOCT	Back NOCT	Front STC	Front NOCT	Back NOCT
Maximum Power -Pmp(Wp)*	575	433	460	580	437	464	585	441	468	590	445	472
Open Circuit Voltage -Voc(V)	51.73	50.01	51.71	51.95	50.29	51.93	52.16	50.56	52.14	52.37	50.79	52.35
Short Circuit Current -Isc(A)	13.79	11.04	11.04	13.84	11.08	11.08	13.89	11.12	11.12	13.94	11.17	11.17
Maximum Power Voltage -Vmp(V)	43.82	41.24	43.80	44.02	41.42	44.00	44.22	41.64	44.20	44.43	41.86	44.41
Maximum Power Current -Imp(A)	13.12	10.50	10.50	13.17	10.55	10.55	13.23	10.59	10.59	13.28	10.63	10.63
Module Efficiency(%)	22.26			22.45			22.65			22.84		
Power Tolerance(W)	(0, +4.99)											
Maximum System Voltage	1500V DC											
Maximum Series Fuse Rating	30 A											
Bifaciality	80±10%											

STC: Irradiance 1000 W/m² module temperature 25°C AM=1.5 NOCT: Irradiance 800W/m² ambient temperature 20°C module temperature 45°C wind speed: 1m/s

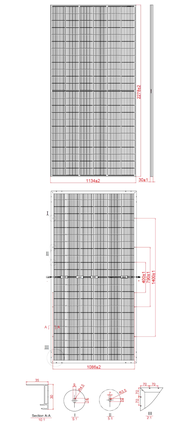
*Measuring tolerance: ±3%

Mechanical Specifications

External Dimension	2278 x 1134 x 30 mm
Weight	32.0 kg
Solar Cells	N-Type 182 x 91 mm(144 pcs)
Front Glass	2.0 mm AR coating semi-tempered glass
Back Glass	2.0 mm Semi-tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP68 / 3 diodes
Connector Type	PV-CO02-xy / MC4
Cable Type Cable Length	12 AWG PV Wire(UL) Portrait: 400 mm(+) / 200 mm(-) Landscape: 1200 mm(+) / 1200 mm(-) or customized length
Mechanical Load(Front)	5400 Pa / 113 psf*
Mechanical Load(Rear)	2400 Pa / 50 psf*

*Refer to SEG installation manual for details

Technical Drawing



*Refer to SEG installation manual for details

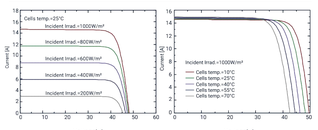
Temperature Characteristics

Pmax Temperature Coefficient	-0.30 %/°C
Voc Temperature Coefficient	-0.25 %/°C
Isc Temperature Coefficient	+0.046 %/°C
Operating Temperature	-40~+85 °C
Nominal Operating Cell Temperature (NOCT)	45±2 °C

Packing Configuration

Container	20'GP	40'HQ	40'HQ (For USA)
Pieces per Pallet	36	36	36
Pallets per Container	4	20	16
Pieces per Container	144	720	576

I-V Curve



www.segsolar.com

Three Phase Inverters for the 120/208V Grid

For North America

SE10KUS / SE17.3KUS

INVERTERS

The best choice for SolarEdge enabled systems

- Specifically designed to work with power optimizers
- Quick and easy inverter commissioning directly from a smartphone using SolarEdge SetApp
- Fixed voltage inverter for superior efficiency and longer strings
- Built-in type 2 DC and AC Surge Protection, to better withstand lightning events
- Small, lightest in its class, and easy to install outdoors or indoors on provided bracket
- Integrated arc fault protection and rapid shutdown for NEC 2014, 2017, and 2020, per article 690.11 and 690.12
- Built-in module-level monitoring with Ethernet, wireless or cellular communication for full system visibility
- Integrated Safety Switch
- UL1741 SA and SB certified, for CPUC Rule 21 grid compliance

solaredge.com

solaredge

/ Three Phase Inverters for the 120/208V Grid(1)

For North America

SE10KUS / SE17.3KUS

Model Number	SE10KUS	SE17.3KUS	
Applicable to inverters with part number	SEXXK-USX2IXXXX		
OUTPUT			
Rated AC Power Output	10000	17300	W
Maximum Apparent AC Output Power	10000	17300	VA
AC Output Line Connections	3W + PE, 4W + PE		
AC Output Voltage Minimum-Nominal-Maximum(2) (L-N)	105 – 120 – 132.5		Vac
AC Output Voltage Minimum-Nominal-Maximum(2) (L-L)	183 – 208 – 229		Vac
AC Frequency Minimum-Nominal-Maximum(2)	59.3 – 60 – 60.5		Hz
Continuous Output Current (per Phase)	27.8	48.25	Aac
GFDI Threshold	1		A
Utility Monitoring, Islanding Protection, Country Configurable Set Points	Yes		
THD	< 3		%
Power Factor Range	+/- 0.85 to 1		
INPUT			
Maximum DC Power (Module STC)	17500	30275	W
Transformer-less, Ungrounded	Yes		
Maximum Input Voltage DC+ to DC-	600		Vdc
Operating Voltage Range	370 – 600		Vdc
Maximum Input Current	27.8	48.25	Adc
Maximum Input Short Circuit Current	55		Adc
Reverse-Polarity Protection	Yes		
Ground-Fault Isolation Detection	167kΩ Sensitivity(3)		
CEC Weighted Efficiency	97	97.5	%
Night-time Power Consumption	< 4		W
ADDITIONAL FEATURES			
Supported Communication Interfaces	2 x RS485, Ethernet, Cellular (optional)		
Inverter Commissioning	With the SetApp mobile application using built-in Wi-Fi access point for local connection		
Rapid Shutdown	NEC2014, NEC2017 and NEC2020 compliant/certified		
RS485 Surge Protection Plug-in	Supplied with the inverter, Built-in		
AC, DC Surge Protection	Type II, field replaceable, Built-in		
DC Fuses (Single Pole)	25A, Built-in		
Smart Energy Management	Export Limitation		
DC SAFETY SWITCH			
DC Disconnect	Integrated		
STANDARD COMPLIANCE			
Safety	UL1741, UL1741 SA, UL1741 SB, UL16998, CSA C22.2, Canadian AFCI according to T.I.L. M-07		
Grid Connection Standards	IEEE1547-2018, Rule 21, Rule 14 (HI)		
Emissions	FCC part15 class A		
INSTALLATION SPECIFICATIONS			
AC Output Conduit size / AWG range	¾" or 1" / 6 - 10 AWG		
DC Input Conduit size / AWG range	¾" or 1" / 6 - 12 AWG		
Number of DC inputs pairs	4		
Dimensions with Safety Switch (H x W x D)	31.8 x 12.5 x 11.8 / 808 x 317 x 300		in / mm
Weight with Safety Switch	78.2 / 35.5		lb / kg
Cooling	Fans (user replaceable)		
Noise	< 62		dBA
Operating Temperature Range	-40 to +140 / -40 to +60(4)		°F / °C
Protection Rating	NEMA 3R		
Mounting	Bracket provided		

(1) For 277/480V inverters refer to the Three Phase Inverters for the 277/480V Grid for North America datasheet
(2) For other regional settings please contact SolarEdge support.
(3) Where permitted by local regulations
(4) For power de-rating information refer to the Temperature De-rating - Technical Note (North America)

CE

Power Optimizer

USA Domestic Content Eligible*

For North America

U650 / U650B

POWER OPTIMIZER

Made in the USA

SolarEdge's USA-manufactured offering for PV power optimization at the module level

- Eligible for domestic content: SolarEdge USA-manufactured Power Optimizers*, when paired with certain SolarEdge inverters, are intended to be eligible for the enhanced federal income tax credit for domestic content
- Specifically designed to work with SolarEdge inverters
- Supports high open circuit voltage (Voc) modules with U650B
- U650B provides improved design flexibility of multifaceted, complex roofs, with extended output voltage that reduces yield factor losses
- Superior efficiency (99.5%)
- Mitigates diverse types of module mismatch loss, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Faster installations with simplified wire management and easy assembly using a single bolt
- Compatible with a wide range of modules, including high-powered and bifacial PV modules
- Advanced safety:
  - Patented Sense Connect technology, designed to automatically detect and prevent potential electric arcs at the connector level before an arc is created
  - Patented SafeDC™ – module-level voltage shutdown, for installer and firefighter safety
  - Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)

* Manufactured by SolarEdge with the intent to be eligible for inclusion under the elective safe harbor in calculating the Domestic Cost Percentage under the "Rooftop (MLPE)" category (under IRS Notice 2024-41). The PCBA, Electrical Parts, and Enclosure are domestically manufactured to meet the requirements of eligibility to be considered for the ITC domestic content bonus adder. SolarEdge does not provide tax and/or legal advice. You should consult with your own legal and/or tax advisor(s) regarding the eligibility of your project for the ITC or PTC, including the 10% domestic content bonus, to determine how the applicable rules apply to your particular project. The forward-looking statements in this datasheet are accurate as of the date herein and are subject to change. For more information, please contact your local SolarEdge sales representative.

solaredge.com

solaredge

/ Power Optimizer

USA Domestic Content Eligible, for North America

U650 / U650B

	U650	U650B	Units
INPUT			
Rated Input DC Power(1)	650		W
Absolute Maximum Input Voltage (Voc)	60	100	Vdc
MPPT Operating Range	8 – 60	12.5 – 100	Vdc
Maximum Continuous Input Current	15		Adc
Maximum Short-Circuit Current (Isc) of Connected PV Module for SolarEdge Home Hub Single Phase Inverters	16.5		Adc
Maximum Short-Circuit Current (Isc) of Connected PV Module for SolarEdge Home Wave Single Phase Inverters	15		Adc
Maximum Short-Circuit Current (Isc) with Safety Factor(2)	21		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.6		%
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 INVERTER OFF)			
Safety Output Voltage per Power Optimizer	1 ± 0.1		Vdc
STANDARD COMPLIANCE			
Photovoltaic Rapid Shutdown System	CSA C22.2#330, NEC 2014 – 2023		
EMC	FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3		
Safety	CSA C22.2#107.1, IEC 62109-1 (Class II safety), UL 1741		
Material	UL 94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 155 x 30 / 5.07 x 6.10 x 1.18	129 x 165 x 45 / 5.07 x 6.49 x 1.77	mm / in
Weight	720 / 1.6	790 / 1.74	gr / lb
Input Connector	MC4		
Input Wire Length	0.1 / 0.32		m / ft
Output Connector	MC4		
Output Wire Length	(+) 2.3; (-) 0.10 / (+) 7.54; (-) 0.32		m / ft
Operating Temperature Range(3)	-40 to +85		°C
Protection Rating	IP68 / NEMA6P		
Relative Humidity	0 – 100		%

(1) The Rated Power of the module at STC will not exceed the power optimizer's Rated Input DC Power. Modules with up to +5% power tolerance are allowed.
(2) The Maximum Isc with Safety Factor is a 1.25 x the Maximum Isc of Connected PV Module. Adjusted for worst case conditions of ambient temperature, irradiance, bifacial gain, and so on, in accordance with NEC and CSA.
(3) Power derating is applied for ambient temperatures above +85°C / +185°F for U650 and for ambient temperatures above +75°C / 167°F for U650B. Refer to the Power Optimizers Temperature Derating technical note for details.

PV System Design Using a SolarEdge Inverter		SolarEdge Home Hub Single Phase	Three Phase for 208V Grid	Three Phase for 277/480V Grid	Units
Minimum String Length (Power Optimizers)	U650	8	10(4)	18	
	U650B	6	8	14	
Maximum String Length (Power Optimizers)		25		50(5)	
Maximum Usable Power Delivered per String		5700	6000	12,750	W
Maximum Allowed Connected Power per String(6)(7)	Inverters with Rated AC Power ≤ 5760W	Per the inverter's maximum input DC power(8)	One string: 7200 Two strings or more: 7800	15,000	W
	Inverters with Rated AC Power ≥ 7600W	One string: 5700 Two strings or more: 6800			
Parallel Strings of Different Lengths or Orientations		Yes			

(4) For the SE7.6KUS Three Phase Inverter and the SE5KUS Three Phase Inverter with Synergy Technology, the minimum string length is 11 Power Optimizers.
(5) A string with more than 27 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement.
(6) For the 208V grid, the maximum is permitted only when the difference in connected power between strings is 1000W or less.
(7) For the 240V or 277/480V grids, the maximum is permitted only when the difference in connected power between strings 2000W or less.
(8) Refer to the Single String Design Guidelines application note for more details.

RoHS

SOLARMOUNT®

STANDARD RAIL-BASED RACKING SYSTEM FOR RESIDENTIAL AND COMMERCIAL INSTALLATIONS

UNIRAC BETTER SOLAR STARTS HERE

STREAMLINED INSTALLATION

- Mid and End Clamp options to fit 30–51mm modules.
- Attachments are packaged with all required hardware to reduce SKU complexity and limit the number of boxes on the roof.
- Works with tilt legs for angled setups.
- Optional front trim delivers a clean, finished look.

SMART, INTEGRATED DESIGN

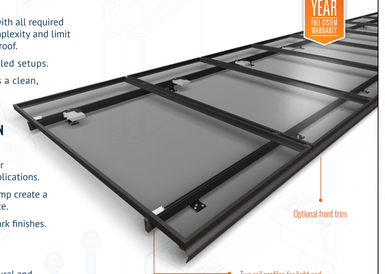
- Meets the UL2703 standard.
- UL 3741 compliant system for residential & commercial applications.
- End caps and hidden end clamp create a clean, streamlined appearance.
- Parts available in Mill and Dark finishes.

MAXIMUM VERSATILITY

- Two rail profiles meet structural and span needs.
- Multiple clamp styles to match aesthetic and installation preferences.
- Cross-compatible with a variety of Unirac attachments for flexible designs.

DOMESTICALLY MANUFACTURED PARTS AVAILABLE

#UNIRAC 25 YEAR FULL SYSTEM WARRANTY



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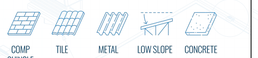


FOR QUESTIONS OR CUSTOMER SERVICE CONTACT:
505-242-6411 | SALES@UNIRAC.COM | WWW.UNIRAC.COM
PUB20250DC12-V1

CONFORMS TO UL 3741 CONFORMS TO UL 2703 ISO 9001:2015 & 14001:2015 CERTIFIED

SOLARMOUNT®

STANDARD RAIL-BASED RACKING SYSTEM FOR RESIDENTIAL AND COMMERCIAL INSTALLATIONS

UNIRAC BETTER SOLAR STARTS HERE

RAILS

LIGHT AND STANDARD PROFILE

The Light Rail offers a sleek, low-profile option with spans up to 7 feet, while the Standard Rail delivers robust performance for higher wind and snow conditions with spans up to 10 feet.

SPLICE

Joins and aligns rail sections while providing reliable electrical bonding. Forms a 4" rigid joint using pre-assembled bonding hardware.

CLAMPS

UNIVERSAL AF MID CLAMP

Offers a self-standing, twist-and-lock installation. Accommodates modules 30-46mm.

UNIVERSAL AF END CLAMP

Provides an aesthetic end clamp along with a twist-and-lock design for quick engagement. Supports module frame heights from 30-46mm.

STANDARD MID CLAMP

Offers the smallest module gap at ½". SKUs available to accommodate modules 30-51mm.

STANDARD END CLAMP

Features a built-in washer that keeps the clamp and bolt upright for easy installation.

THE PRO SERIES HIDDEN END CLAMP

A hidden clamp delivers the cleanest aesthetic. This preassembled clamp secures the module to the rail at the flange and sits flush with the module edge.

ATTACHMENTS

SOLARMOUNT® BUTYL

The go-to attachment for comp shingle roofs, offering fast, reliable performance with the SOLARMOUNT® system. No flashings needed, the pre-applied butyl pad makes installation simple: peel, place, and fasten. ***Product is approved for High Velocity Hurricane Zone of the Florida Building Code. NOA No. 24-0621.03.***

OTHERS

E-BOSS AND ACCESSORIES

A full range of E-BOSS accessories supports wire management, bonding, and grounding needs. This includes the new U-LUG, pre-assembled with a single bolt for faster, easier wire engagement. Optional adjustable tilt legs to accommodate tilt angles from 10° to 30° for added flexibility in system design.

FOR QUESTIONS OR CUSTOMER SERVICE CONTACT:
505-242-6411 | SALES@UNIRAC.COM | WWW.UNIRAC.COM
PUB20250DC12-V1

CONFORMS TO UL 3741 CONFORMS TO UL 2703 ISO 9001:2015 & 14001:2015 CERTIFIED

GREENTECH -RENEWABLES- DESIGN SERVICES

GREENTECH RENEWABLES

CONTRACTOR

Swiftwater ELECTRIC & SOLAR

SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS

ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N,123°01'00.7"W)

SIGNATURE WITH SEAL

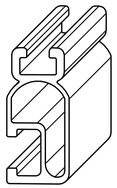
REVISIONS	DESCRIPTION	DATE
REV	PERMIT PLAN	04/06/2026
A.0		

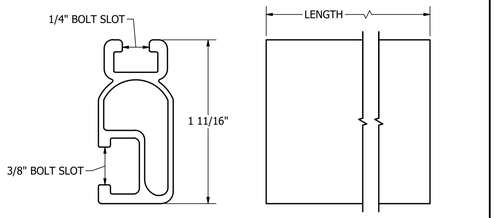
SHEET TITLE
RESOURCE DOCUMENTS

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

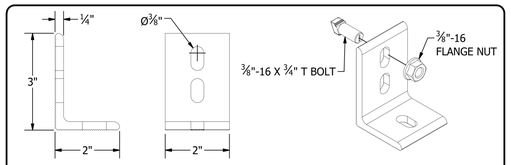
SHEET NUMBER
R-001

PART # TABLE			
P/N -US	P/N	DESCRIPTION	LENGTH
315168D-US	315168D	SM LIGHT RAIL 168" DARK	168"
315168M-US	315168M	SM LIGHT RAIL 168" MILL	168"
315185D-US	315185D	SM LIGHT RAIL 185" DARK	185"
315185M-US	315185M	SM LIGHT RAIL 185" MILL	185"
315246D-US	315246D	SM LIGHT RAIL 246" DARK	246"
315246M-US	315246M	SM LIGHT RAIL 246" MILL	246"



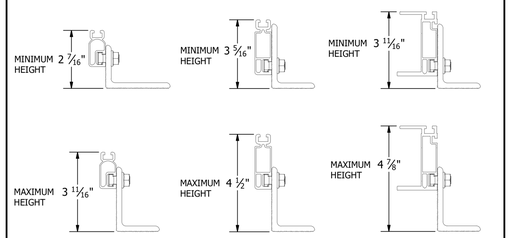


UNIRAC 1411 BROADWAY BLVD. NE ALBUQUERQUE, NM 87102 USA PHONE: 505.242.6411 WWW.UNIRAC.COM	PRODUCT LINE:	SOLARMOUNT	DRAWING NOT TO SCALE ALL DIMENSIONS ARE NOMINAL PRODUCT PROTECTED BY ONE OR MORE US PATENTS LEGAL NOTICE
	DRAWING TYPE:	PART DETAIL	
	DESCRIPTION:	LIGHT RAIL	
	REVISION DATE:	10/13/2025	SM-P02 SHEET



L-FOOT

PART # TABLE	
P/N	DESCRIPTION
304001C	L-FOOT SERR W/T-BOLT CLR
304001D	L-FOOT SERR W/T-BOLT DRK



SOLARMOUNT LIGHT ON L-FOOT | SOLARMOUNT STANDARD ON L-FOOT | SOLARMOUNT HD ON L-FOOT

NOTES:
1. L-FOOT CAN BE INSTALLED IN TWO ORIENTATIONS, PLEASE REFER TO INSTRUCTIONS IN THE QUICK START GUIDE.

UNIRAC 1411 BROADWAY BLVD. NE ALBUQUERQUE, NM 87102 USA PHONE: 505.242.6411 WWW.UNIRAC.COM	PRODUCT LINE:	SOLARMOUNT	DRAWING NOT TO SCALE ALL DIMENSIONS ARE NOMINAL PRODUCT PROTECTED BY ONE OR MORE US PATENTS LEGAL NOTICE
	DRAWING TYPE:	PART & ASSEMBLY	
	DESCRIPTION:	L-FOOT	
	REVISION DATE:	9/27/2017	SM-A04 SHEET

S-5!®
The Right Way!®

S-5-N Clamp

S-5! introduces the new and improved S-5-N clamps. The new design features an innovative insert that ensures a superior fit for new and wider nail strip profiles as well as older ones.

The S-5-N (standard) clamp is the best choice for snow retention and other heavy and load-critical applications. It is designed for use on the most popular 1" nail strip metal roofs, including: Taylor Metal's Easy LockTM, ASC Building Products' Skyline Roofing®, McElroy Metal's Meridian, New Tech Machinery's FF100, Schlebach 1" Nail Strip, and roofing types with similar profiles.

S-5-N Mini Clamp

The S-5-N Mini offers correct fit to the same profiles as the standard S-5-N but is shorter and has one setscrew rather than two. The Mini is ideal for attaching various rooftop accessories, such as solar arrays, signs, walkways, satellite dishes, lightning protection systems, antennas, rooftop lighting, conduit, condensate lines and other lighter load applications*

*S-5! Mini clamps are not compatible with, and should not be used with S-5! SnoRail™/SnoKenez™ or ColorGard® snow retention systems.

The right way to attach almost anything to metal roofs!

S-5-N and S-5-N Mini

888-825-3432 | www.S-5.com | ©2021

FEATURES AND BENEFITS

- Angled setscrews for easier installation - no special tools required
- Fits seam profiles having base of rib dimension < .82"
- Structural aluminum (6061-T6) clamp body and 300 series SS fasteners offer superior corrosion resistance & strength
- Clamp insert to facilitate installation and fit
- New design ensures straighter clamp position on seam

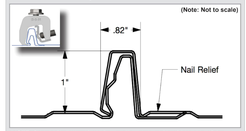
S-5!® The Right Way!®

The new and improved S-5-N features angled setscrews, a wider throat, and an insert for easy installation and best fit for wider nail strip profiles.

The **S-5-N** and **S-5-N Mini clamps** are each supplied with the hardware shown to the right. Each box also includes a bit tip for tightening setscrews using an electric screw gun. The S-5-N is a structural aluminum attachment clamp, compatible with most common metal roofing materials (excluding copper). All included hardware is 300 series stainless steel. Please **visit www.S-5.com** for more information including CAD details, metallurgical compatibilities, and specifications.

S-5!® holding strength is unmatched in the industry.

Fits Panels Up to .82"

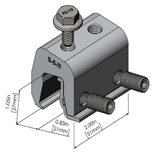


(NOTE: Seams that exceed maximum allowance at the widest part of the seam will require hand crimping to allow the clamp to fit).

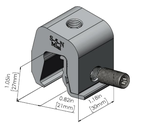
Ease of Installation...in 1...2...3

Installation Simplified: The S-5-N is still just as quick and easy to install as other S-5 clamps. But now, we've angled the setscrews toward the installer, allowing easier access with a screw gun, simplifying tool removal once the setscrew has been tightened - ensuring the clamp sits straighter on the seam. Choose the S-5-N for a non-penetrating solution that protects the roof while providing excellent holding strength.

S-5-N Clamp



S-5-N Mini Clamp



S-5!® Warning! Please use this product responsibly!

Products are protected by multiple U.S. and foreign patents. Visit the website at www.S-5.com for complete information on patents and trademarks. For maximum holding strength, setscrews should be tensioned and re-tensioned as the seam material compresses. Clamp setscrew tension should be verified using a calibrated torque wrench between 160 and 180 inch pounds when used on 22ga steel, and between 180 and 240 inch pounds for all other metals and thinner gauges of steel. Consult the S-5! website at www.S-5.com for published data regarding holding strength.

Distributed by

GREENTECH -RENEWABLES- DESIGN SERVICES

GREENTECH RENEWABLES

CONTRACTOR

Swiftwater ELECTRIC & SOLAR

SWIFTWATER ELECTRIC AND SOLAR
2795 E BAKERVIEW RD #14
BELLINGHAM, WASHINGTON 98226
LICENSE NO: SWIFTEI802K2
PHONE NO: (360) 305-3518

PROJECT NAME & ADDRESS

ACE HARDWARE
340 ARGYLE AVE,
FRIDAY HARBOR, WA
98250, USA
(48°31'59.8"N, 123°01'00.7"W)

SIGNATURE WITH SEAL

REVISIONS					
REV	DESCRIPTION	DATE			
A.0	PERMIT PLAN	04/06/2026			

SHEET TITLE
RESOURCE DOCUMENTS

DRAWN DATE	04/06/2026
DRAWN BY	RM
REVIEWED BY	AMV

SHEET NUMBER
R-002

Town of Friday Harbor
PO Box 219 / Friday Harbor / WA / 98250
(360) 378-2810 / fax (360) 378-2380 / www.fridayharbor.org

Date Received: Town of Friday Harbor
Community Development
April 21, 2026
RECEIEVED

Historic Preservation Review Board
Review Process & Request

Application date	Tax parcel number	Job site address/physical location of property
4/21/2026	351358022000	340 Argyle Ave, Friday Harbor, WA 98250

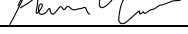
Name of legal property owner Danmoor LLC	Phone number (808) 755-8045 Email address 4islandlynx@gmail.com
Property owner mailing address PO Box 2627, Friday Harbor WA, 98250	
Authorized agent (Letter of Agent Authorization req.) Kevin O'Connor, Project Coordinator SwiftwaterElectric	Phone number (360) 317-8281 Email address kevin@swiftwaterelectricandsolar.com
Authorized agent mailing address 50 Malcolm St Unit #614, Friday Harbor WA, 98250	
Are you seeking Historic Preservation incentives (height or parking) for this project? If yes, please describe. No	

Historic Preservation Review Board: Review Process

The Historic Preservation Review Board (HPRB) meets twice a month on the second and fourth Wednesday. To get your project on the HPRB Agenda we must receive 7 (seven) sets of the materials outlined below, on 8.5"x 11" paper, no later than noon on Tuesday, the week preceding the HPRB meeting. Questions? Call 360.378.2810 ext. 241. In order to provide help with design solutions and offer informed recommendations to applicants during the review process, the Historic Preservation Review Board (HPRB) relies upon the following applicant information:

1. **A comprehensive written description** of the proposed modifications to the existing building or of the proposed new construction including scope of work, materials, areas of demolition/new construction, etc.
2. **A site plan to scale** that indicates the dimensions of the lot, the location of existing buildings, and the location of additions or new buildings. Also to be indicated: parking, signs, fencing, & landscaping.
3. **A plan to scale showing elevations, and section drawings**. Drawings should include materials to be used, window design, signs, exterior lighting with keyed dimensions.
4. **Detailed drawings** of new or altered architectural features and trim.
5. **A description or sample of new exterior materials** to be used, including the types of windows, roofing, and siding. (Product pamphlets describing the materials/products you propose to use can be obtained from the product vendor and/or from their websites online.)
6. **Photographs**: When the HPRB is reviewing projects within the Historic District, it is helpful to have photographs of applicable buildings, sites, and streetscapes. Applicants are encouraged to include vintage or contemporary photographs that illustrate what you are proposing. Look around Friday Harbor, can you find examples of similar features that will demonstrate your concept?

Please refer to the Town of Friday Harbor's *Historic Preservation Manual* for guidelines applicable to your proposed project and the historic district. Copies are available at Town Hall.

Signature of Owner or Authorized Agent*  **Date** **4/21/2026**

***If signed by the Authorized Agent, please attach a Letter of Agent Authorization signed by owner or a letter from and signed by the owner authorizing representation of the proposed work.**

TOWN OF FRIDAY HARBOR USE ONLY:

Date of HPRB Design Review: _____ **Number of Documents Received:** _____

HPRB Decision: **Complies** _____ **Does Not Comply** _____ **Design Review Summary is Attached** _____

Town of Friday Harbor
PO Box 219 / Friday Harbor / WA / 98250
(360) 378-2810 / fax (360) 378-5339 / www.fridayharbor.org

BUILDING PERMIT GUIDELINES

1. **PREPARE AND SUBMIT CONSTRUCTION DRAWINGS IN PDF VIA EMAIL.** Submit drawings with a complete building permit application packet. Drawings must be formatted on 11" x 17" (minimum), up to 24" x 36" (maximum), and must include the following:

a. THE BUILDING AND SITE PLAN MUST INCLUDE THE FOLLOWING DETAILS (only if a formal Site Plan Review was not required): 1) Location of all existing and proposed utility lines including stormwater, and location of utility connections in conjunction with building, 2) Dimensioned lot drawing including any easements (recorded survey may be required), 3) All buildings existing and those proposed, 4) Existing and proposed landscaping, and 5) Show existing and proposed parking. **BUILDING PLANS MUST BE DRAWN TO SCALE OF 1/4 INCH = 1 FEET.**

b. FOUNDATION PLAN showing size, shape, and height of foundation walls, all footings, posts, beams, size and direction of all floor joists in all areas, and all vents.

c. CROSS (WALL) SECTION showing excavation, foundation and finished grade, posts, beams, floor joists, studs, bracing, roof rafters and bracing, roof pitch and overhang, ceiling joists, and type of roofing materials.

d. FLOOR PLAN showing partitions, windows, (location, size and percent of opening), doors (size and swing), and plumbing fixtures. Label any future construction as "Not a part of this application".

e. ELEVATION drawings that show original grade at all building corners, finished floor and roof peak elevations, as well as all exterior decks, porches, patios, and covered walkways.

f. DETAILS showing stairs, rise and run, landings, and headroom.

g. IF YOUR CONSTRUCTION REQUIRES PUBLIC WORKS PERMITS (i.e., water or sewer service applications, or excavation in the public right of way permits), you must obtain proper permits prior to starting work.

2. **HISTORIC DISTRICT -** If you are planning to build a new structure or remodel an existing structure that is within the Historic District (map and application attached), please arrange to **meet with the Town Historic Preservation Coordinator.**

3. **MANUFACTURED HOMES** – A building permit application and installation drawings are required. Include a foundation plan showing tie down and pier locations with details. Units must have Washington State Labor & Industries approval since they are built off site; provide PDF copies of documentation.

4. **PLUMBING AND MECHANICAL PERMITS –** Plumbing and/or mechanical permit applications are required when plumbing and/or mechanical work is proposed.

5. Building permit fees are calculated based on project valuation (time and materials). **The total fees for the building, plumbing, mechanical, and stormwater applications will be due before plan check begins**. Make checks payable to: Town of Friday Harbor.

6. The plan check will require a minimum of 15 working days.

7. Electrical permits can be obtained from the Orcas Power and Light Company or the Department of Labor and Industries at 360.416.3000.

POST THE BUILDING INSPECTION CARD ON SITE UNTIL FINAL INSPECTION IS COMPLETE.
A 24-HOUR NOTICE IS REQUIRED FOR INSPECTIONS, CALL: 360-378-2810

See T:\TownClerk\FORMS\Bldg Permit Guidelines.doc

Town of Friday Harbor
PO Box 219 / Friday Harbor / WA / 98250
(360) 378-2810 / fax (360) 378-5339 / www.fridayharbor.org

Checklist
Public Works Permits / Building Permits / Land Use Permits

Property Owner: Danmoor LLC Telephone (808) 755-8045

Address of job site: 340 Argyle Ave, Friday Harbor, WA 98 Tax Parcel 351358022000

If your construction requires the following applications, have you obtained?

☐	☐	☑	Water and Sewer Service applications? (**Each application requires a site plan showing location of proposed water & sewer lines in conjunction with construction.)**
☐	☐	☑	If your construction involves the addition of residential units, have you paid for additional sewer connection fees? Do you still comply with the current density regulations for your zone?
☐	☐	☑	Does your project require an Excavation Within a Public Right of Way Permit application for work within the public right of way?
☐	☐	☑	Application to Construct Curb, Gutter, Sidewalk, Storm Drainage, Street?
☐	☐	☑	If your construction is 10,000 square feet or larger, have you submitted an Environmental Checklist (SEPA) for review and public comment period?
☐	☐	☑	If your construction is planned within the designated shoreline, have you obtained an application for Exemption from Substantial Development or a Substantial Shoreline Development Permit application?
☐	☐	☑	Land Clearing, Grading, or Filling Permit application?
☑	☐	☐	Does the construction take place in the Historic Preservation District? See map attached. If so, see Historic Preservation Coordinator 360-378-2810 at least three weeks before construction application submittal.
☐	☐	☑	If your construction requires a Storm Water Management Plan obtain review and approval four weeks before construction application submittal.

For your building permit application have you submitted the following?

☐	☐	☐	Was a Site Plan Review required?
☐	☐	☑	Have you met the Zoning, Parking, Land Use or Set Back requirements?
☑	☐	☐	A completed building permit application with signature or agent authorization.
☑	☐	☐	Two sets of construction drawings showing a site plan, parking plan, landscaping, foundation, walls, footings, beams, floor joists, etc? Guidelines attached.
☐	☐	☑	Utility Checklist – must be signed by all companies and by owner/agent.
☐	☐	☑	Energy calculations.
☑	☐	☐	Mechanical Permit application?
☐	☐	☑	Plumbing Permit application?
☐	☐	☑	Storm Water Service application?

Signed by: [signature] 4088D53024C6463... 3/24/2026

Signature of Property Owner or Authorized Agent Date

See T:\TownClerk\FORMS\Client Checklist for Building Permit09.doc

TOWN OF FRIDAY HARBOR
Post Office Box 219 ● Friday Harbor, Washington 98250
(360) 378 – 2810 ● FAX: (360) 378 – 5339 ● www.fridayharbor.org

Building Permit Application

Application date 3/23/2026	Tax parcel number 351358022000	**Office Use Only** BP#	Date Permitted
Name of legal property owner Danmoor LLC		Property owner phone number (808) 755-8045	
Property Owner email address 4islandlynx@gmail.com			
Property owner mailing address PO Box 2627, Friday Harbor WA, 98250			
Authorized Agent (Letter of Agent Authorization required) Kevin O'Connor, PC, Swiftwater Electric & Solar		Authorized Agent phone number (360) 317-8281	
Authorized Agent email address kevin@swiftwaterelectricandsolar.com			
Authorized Agent address 50 Malcolm St. Unit 613, Friday Harbor, WA, 981250			
Job site address/physical location of property 340 Argyle Ave, Friday Harbor, WA 98250			
Description of work to be performed Roof Mounted PV System			

Is the project or site within 200 feet of the body of water?	☐	**Yes.** *If yes, must show on plans.*	☑	**No**
Is project located within the Historic District? (see attached map)	☑	**Yes.** *If yes, must submit HPRB Review App.*	☐	**No**

Type of permit requested - check the appropriate box(es).

☐	New Residence	☐	Residential Addition	☐	Residential Remodel
☐	Accessory Building	☐	Garage (attached)	☐	Garage (not attached)
☐	Carport	☐	Agriculture	☑	Commercial
☐	Deck	☐	Other (specify)		

Bldg. Dimensions 76 X 168	Main Floor 12,768 sq. ft.	Second Floor 12,768 sq. ft.
Basement N/A sq. ft.	Garage N/A sq. ft.	Other N/A sq. ft.

Construction Company name Swiftwater Electric & Solar			
Contractor name Swiftwater Electric & Solar			
Contractor email address kevin@swiftwaterelectricandsolar.com			Phone # (360) 317-8281
Contractor's Washington State License # SWIFTEI802K2			Expiration date 5/22/2026
UBI # 602475230			Expiration date 5/22/2026
Manufactured home company name N/A			Model N/A
Size N/A X N/A		Year Built N/A	Serial # N/A

Total valuation of work to be performed (required to calculate fees)		Signature of Owner or Authorized Agent Signed by: Kevin O'Connor 40B853024C6463...	Date 3/24/2026
Building Permit Fee(s) $	**Plan Review** $	**SBCC Fee** $	**Total Fees** $

Town of Friday Harbor
PO Box 219 / Friday Harbor / WA / 98250
(360) 378-2810 / fax (360) 378-5339 / www.fridayharbor.org

LETTER OF AGENT AUTHORIZATION

I, Danmoor LLC
(Legal Property Owner(s)

authorize Kevin O'Connor, PC, Swiftwater Electric & Solar to act on
(Agent)

my behalf during the processing of:

Building Permit
(Application Type)

DocuSigned by:
Lynn Danaher
ED6A5BC8FD8C40C...
4/1/2026
(Signature of legal property owner) (Date)

DocuSigned by:
796817AB6850454...
4/2/2026
(Signature of legal property owner) (Date)