WYSSLING CONSULTING
CONSIDERABLE EXPERIENCE WITH SMALL BUSINESS VALUE

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November 17, 2021

Scott E Wyssling

Digitally signed by Scott E Wyssling
DN: C=US, S=Utah, L=Alpine, O=Wyssling Consulting, CN=Scott E Wyssling + E=swyssling@wysslingconsulting.com
Reason: I am the author of this document
Location: your signing location here
Date: 2021.11.17 13:57:17-07'00'
Foxit PDF Editor Version: 11.1.0

Ken Trappen
Advanced Solar Solutions
39650 Mallard
Bass Lake, CA 93604

Re: Engineering Services
Dodsworth Residence
3035 County Road 18, Lake City FL
6.500 kW System

To Whom It May Concern:

Pursuant to your request, we have reviewed the following information regarding ground mount solar panel installation at the above referenced location:

1. Structural calculations/requirements prepared by IronRidge identifying specific site requirements for the proposed ground mount system.
2. Design drawings of the proposed system including a site plan, and details for the solar panels. This information was prepared by Advanced Solar Solutions and will be utilized for approval and construction of the proposed system.

Based on our review of the Photovoltaic Array installed at 5 modules high and 4 modules wide. The PV array shall have an East/West spacing of 13'-4" feet on center and a North/South spacing of 9'-0" feet max. Based on a wind speed of 120 mph, Exposure C, it was determined that the minimum required footing depth is 60 inches below grade with a 18" diameter pier footing and the min post size is 2" Dia. The footing size based upon the worst case loading due to horizontal and vertical wind loading.

Based on the above evaluation, it is the opinion of this office that with appropriate construction the footing and post assembly will adequately support the proposed solar array. This evaluation is in conformance with the FBC 2020, 7th Edition, current industry and standards, and based on information supplied to us at the time of this report.

Should you have any questions regarding the above or if you require further information do not hesitate to contact me.

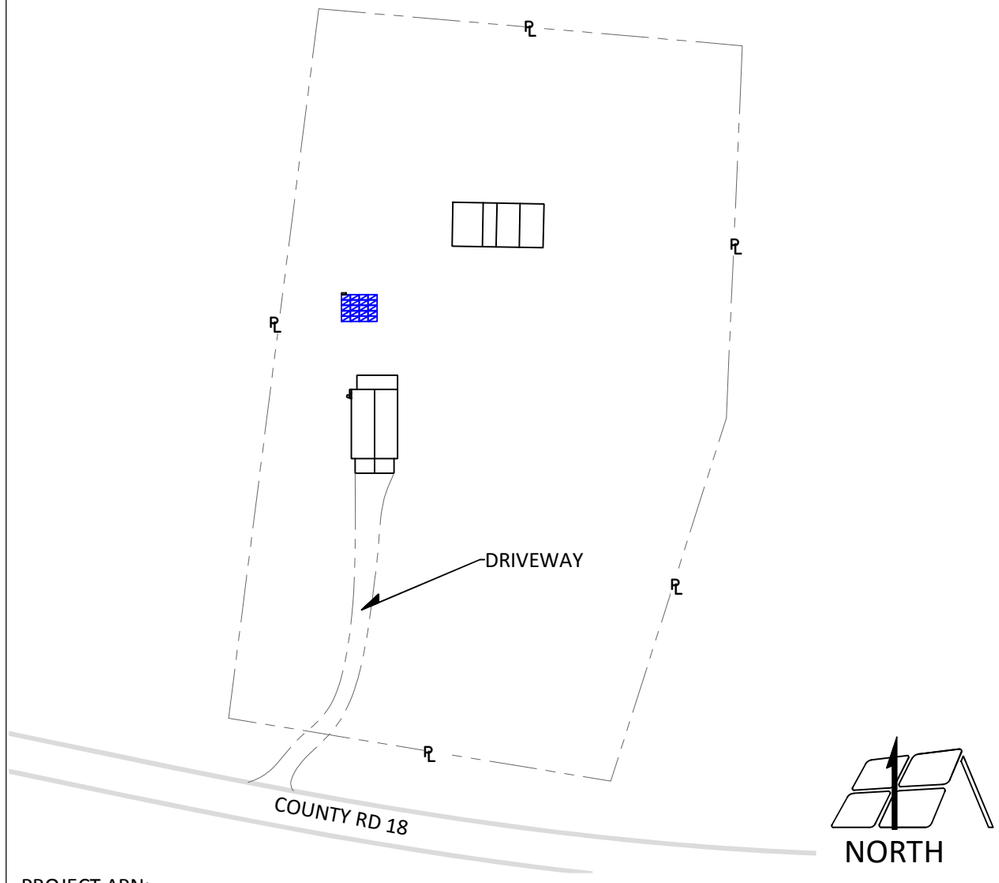
Very truly yours,

Scott E. Wyssling, PE
Florida License No. 81558

SCOTT E. WYSSLING
LICENSE
NO. 81558
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

PARCEL MAP

GPS COORDINATES : 29.950234648540064, -82.55676162239034



PROJECT APN:

GENERAL PROJECT & JURISDICTIONAL NOTES

INSPECTION REQUIREMENTS

1. A LADDER SHALL BE IN PLACE FOR INSPECTION IN COMPLIANCE WITH ALL OSHA REGULATIONS.

2. PENDING LOCAL JURISDICTIONAL REQUIREMENTS AND WHEN APPLICABLE ALL ELECTRICAL ENCLOSURE DEAD FRONTS, COVERS, DOORS, ETC. SHALE BE OPEN AND ACCESSIBLE FOR INSPECTIONS. WHEN TRENCH AND ROOF INSPECTIONS ARE REQUIRED WORK SHALL BE OPEN AND ACCESSIBLE FOR INSPECTOR.

JURISDICTIONAL & LISTING REQUIREMENTS

1. WHEN APPLICABLE A SMOKE DETECTOR, APPROVED AND LISTED BY THE STATE FIRE MARSHAL OR ANSI/UL 217 CERTIFIED TO NATIONAL FIRE ALARM AND SIGNALING CODE, NFPA 72 SHALL BE VERIFIED FUNCTIONAL OR INSTALLED IN ALL APPLICABLE CODE REQUIRED LOCATIONS.

2. ALL APPLICABLE EQUIPMENT TO BE UL LISTED OR LISTED BY OTHER JURISDICTIONAL AND UTILITY APPROVED ASSOCIATION OR NATIONALLY RECOGNIZED ORGANIZATION.

3. FULL SCOPE OF WORK SHALL COMPLY WITH ALL APPLICABLE CODES LISTED IN GOVERNING CODES SECTION, ALL MANUFACTURES' LISTINGS, INSTALLATION INSTRUCTIONS AND SPECIFICATIONS AND JURISDICTIONAL REQIREMENTS.

4. REVISED PLANS WILL BE REQUIRED TO BE RESUBMITTED TO THE LOCAL JURISDICTION IF THE INSTALLED ARRAY AND ASSOCIATED EQUIPMENT DOES NOT MATCH THE APPROVED BUILDING PLANS. ADDITIONAL FEES MAY ALSO APPLY.

5. THE PLACEMENT OF A UTILITY PV PRODUCTION METER SHALL BE PROVIDED AND PLACED BY THE CONTRACTOR AS PER APPLICABLE UTILITY OR AHJ REQUIREMENTS.

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GOVERNING CODES

APPLICABLE BUILDING CODES:

2018 INTERNATIONAL BUILDING CODE
2018 INTERNATIONAL RESIDENTIAL CODE
2018 INTERNATIONAL FIRE CODE
2017 NATIONAL ELECTRIC CODE
2020 FLORIDA BUILDING CODE
2020 FLORIDA RESIDENTIAL CODE

DESIGN CRITERIA

BUILDING OCCUPANCY: U
RISK CATEGORY: II
ASCE 7-16 WIND SPEED: 120
EXPOSURE CATEGORY: Exposure C
SNOW LOAD: 0
SNOW EXPOSURE: N/A
CONSTRUCTION TYPE: N/A

PROJECT LOCATION

SCOPE OF WORK

GROUND MOUNTED PV (SOLAR) PROJECT GRID-TIED W/O BATTERY STORAGE

PROPOSED SOLAR EQUIPMENT

QTY.	EQUIPMENT	DESCRIPTION/MFG/MODEL
20	MODULES	PEIMAR SM325M (FB)
1	INVERTER(S)	SolarEdge SE5000H-US (240V)
N/A	RACKING	IronRidge Ground Mt W/ XR1000 Rail
0	STANCHIONS	
N/A	RSD DEVICE	INTEGRATED IN INV & OPT
0	BATTERIES	
0	COMBINER(S)	
(E)	MSP RATINGS	200A BUS/200A MAIN BREAKER

SITE / PROJECT DETAILS

CONNECTION	WIRE TAP
SYSTEM SIZE DC	6.500 KW
SYSTEM SIZE AC	5.000 KW
QTY. STRING/CKT.	2
ELECT. SERVICE	120/240V - 1Φ
ROOF COVERING	N/A
MAX ARRAY HGT.	6.94 FEET
TILT	20°
AZIMUTH	181°

PROJECT TEAM LIST

CONTRACTOR:
Daybreak Install LLC
2100 N Main St Ste. 212
Fort Worth, TX 76164
CONTRACTOR LIC #: CVC56966
PHONE: (817) 995-9572
CONTACT NAME: Sherrie Ledbetter
PHONE: (817) 501-4922
EMAIL: sherrie.ledbetter@DaybreakInstall.com

DESIGN BY:
Sherrie Ledbetter
PHONE: (817) 501-4922
EMAIL: sherrie.ledbetter@DaybreakInstall.com

PROJECT DRAFTER:
Advanced Solar Solutions
2372 Morse Ave #912
Irvine, CA 92614
PHONE: 559-321-7000
EMAIL: info@advpermits.com

HOME OWNER PROJECT LOCATION:
Dodsworth, Janet
3035 County Rd 18, Lake City, FL 32025

CONTACT NAME: Dodsworth, Janet
PHONE:
EMAIL:

ELECTRICAL UTILITY:
FPL - Florida Power & Light
METER NUMBER:
PHONE:

AUTHORITY HAVING JURISDICTION:
BUILDING: County Of Columbia
PHONE:

ENGINEERED BY:
Scott E. Wyssling
76 North Meadowbrook Dr
Alpine, UT 84004
LICENSE #: 81558
LICENSE TYPE: Civil
PHONE: (202) 874-3483
EMAIL: swyssling@wysslingconsulting.com

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # RY34912
Signed 11-17-21

SHEET INDEX

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N-001	GENERAL NOTES
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PV-101G	DETAILED LAYOUT
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E-002	WIRE AND COND. CALCS
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REV | DATE | RELEASE
11/16/2021 | SUBMIT FOR PERMIT

PV-001

COVER SHEET

6.500 kW PHOTOVOLTAIC PLANS

NAME: Dodsworth, Janet
ADDRESS: 3035 County Rd 18
ADDRESS: Lake City, FL 32025
APN:

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

GENERAL NOTES:*

PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL BE PROVIDED AS PER SECTION *NEC 110.26.*

PV SYSTEM COMPONENTS; INCLUDING BUT NOT LIMITED TO, MODULES, INVERTERS AND SOURCE CIRCUIT COMBINERS ARE IDENTIFIED AND LISTED FOR USE IN PV SYSTEMS IN COMPLIANCE WITH *NEC 690.4 AND 690.6* AND *ALL UL, IEC, IEEE* CLASSIFICATIONS AS REQUIREMENTS.

RAPID SHUTDOWN NOTES:*

PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDIDNG SHALL INCLUDE A **RAPID SHUTDOWN FUNCTION** THAT CONTROLS SPECIFIC PV CONDUCTORS IN ACCORDANCE WITH *2017 NEC 690.12(A)-(D)*

EQUIPMENT LOCATIONS & ELECTRICAL NOTES:*

JUNCTION AND PULL BOXES ARE PERMITTED TO BE INSTALLED UNDER PV MODULES IN COMPLIANCE WITH *NEC 690.34*.

ADDITIONAL AC DISCONNECT(S) SHALL BE PROVIDED WHERE THE INVERTER IS NOT WITHIN SIGHT OF THE AC SERVICING DISCONNECT. *2017 NEC 690.15(A)*

ALL EQUIPMENT SHALL BE INSTALLED **ACCESSIBLE TO QUALIFIED PERSONNEL** IN COMPLIANCE *WITH NEC* APPLICABLE CODES.

ALL COMPONENTS ARE **LISTED FOR THEIR INTENDED PURPOSE AND RATED FOR OUTDOOR USAGE** WHEN APPLICABLE.

STRUCTURAL AND INSTALLATION NOTES:*

RACKING SYSTEM & PV PANELS MOUNTED ON A ROOFTOP SHALL BE LISTED AND LABELED IN ACCORDANCE WITH *UL 1703* AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER INSTALLATION INSTRUCTIONS.

ALL PV RACKING ATTACHMENT POINTS SHALL NOT EXCEED THE PRE-ENGINEERED **MAX SPANS** OUTLINED BY THE RACKING MANUFACTURES ENGINEER OF RECORD.

GROUNDING NOTES:*

IN UNGROUNDED SYSTEMS ONLY THE DC CONDUCTORS ARE UNGROUNDED AND REQUIRE AN EQUIPMENT GROUNDING CONDUCTOR. ALL METAL ELECTRICAL EQUIPMENT AND STRUCTURAL COMPONENTS BONDED TO GROUND, IN COMPLIANCE WITH *NEC 250.134* AND *NEC 250.136(A)*.

PV EQUIPMENT INCLUDING **MODULE FRAMES AND OTHER METAL PARTS SHALL BE GROUNDED** IN COMPLIANCE WITH *NEC 690.43* AND MINIMUM GROUND CONDUCTORS SIZED IN ACCORDANCE WITH *NEC TABLE 250.122*.

CONDUCTIVE PARTS OF MODULE FRAMES, MODULE RACKING, AND ENCLOSURES SHALL BE GROUNDED IN COMPLIANCE WITH *NEC 250.134 AND NEC 250.136(A)*.

UL2703 APPROVED **MODULE AND RACK GROUNDING** SHALL BE USED AND INSTALLED PER MANUFACTURER'S INSTALLATION MANUAL. IF *UL2703* APPROVED GROUNDING IS NOT USED, MODULE GROUNDING LUGS MUST BE INSTALLED AT THE SPECIFIED GROUNDING LUG HOLES PER THE MANUFACTURER'S INSTALLATION REQUIREMENTS.

THE GROUNDING CONNECTION TO A MODULE SHALL BE ARRANGED SUCH THAT THE REMOVAL OF A MODULE DOES NOT INTERRUPT A GROUNDING CONDUCTOR TO ANOTHER MODULE.

THE GROUNDING ELECTRODE SYSTEM COMPLIES WITH *NEC 690.47* AND *NEC 250.50* THROUGH *NEC 250.106*. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE, A GROUNDING ELECTRODE SYSTEM WILL BE PROVIDED IN COMPLIANCE WITH *NEC 250, NEC 690.47* AND *AHJ*.

PV SYSTEMS SHALL BE PROVIDED WITH **DC GROUND-FAULT PROTECTION** *2017 NEC 690.41(B)*

INTERCONNECTION / POC NOTES:*

ALL LOAD-SIDE INTERCONNECTIONS ARE IN COMPLIANCE WITH *2017 NEC 705.12(B)*

THE TOTAL RATING OF ALL OCPD IN SOLAR LOAD CENTERS SHALL NOT EXCEED THE RATED AMPACITY OF THE BUSBAR EXCLUDING THE OCPD PROTECTING THE BUSBAR IN COMPLIANCE WITH *NEC 705.12(B)(2)(3)(c)*

ALL FEEDER TAP (LOAD SIDE) INTERCONNECTIONS ARE IN COMPLIANCE WITH *2017 NEC 705.12(B)(2)(1)*

THE PV SYSTEM BACK-FEED BREAKER SHALL BE INSTALLED ON THE OPPOSITE END OF THE BUS BAR AND IT SHALL ALSO BE SIZED APPROPRIATELY AS PER *2017 NEC 705.12(B)(2)(3)(b)*

SUPPLY SIDE TAP INTERCONNECTIONS ARE IN COMPLIANCE WITH *NEC 705.12(A)* WITH SERVICE ENTRANCE CONDUCTORS IN COMPLIANCE WITH *NEC 230.42*

BACKFEEDING BREAKER FOR INVERTER OUTPUT IS EXEMPT FROM ADDITIONAL FASTENING *2017 NEC 705.12(B)(5)*

MICROINVERTER BRANCH CIRCUITS SHALL BE CONNECTED TO A SINGLE OCPD IN ACCORDANCE WITH THEIR INSTALLATION INSTRUCTIONS AND *NEC 690.9*

DISCONNECTS AND OCPD NOTES:*

ALL DISCONNECTING SWITCHES WILL BE CONFIGURED SO THAT ALL ENERGIZED CONDUCTORS WHEN DISCONNECT IS OPEN SHALL BE ON THE TERMINALS MARKED, "LINE SIDE" (TYPICALLY THE UPPER TERMINALS)

ALL AC DISCONNECTS SHALL BE LABELED, LOCKABLE, OF VISIBLE BREAK TYPE SWITCH WITH EXTERNAL HANDLE AND ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL.

AC DISCONNECTS SHALL BE A "KNIFE BLADE" TYPE DISCONNECT. IF EXTERIOR, RATED TO NEMA 3R OR BETTER PER *NEC 110.28*

ADDITIONAL AC DISCONNECTS SHALL BE PROVIDED WHERE THE INVERTER IS NOT ADJACENT TO THE UTILITY AC DISCONNECT, OR NOT WIHTIN SIGHT OF THE UTILITY AC DISCONNECT. *2017 NEC 690.15(A)*

BOTH POSITIVE AND NEGATIVE PV CONDUCTORS REMAIN UNGROUNDED. THEREFORE, BOTH SHALL REMAIN OPEN WHERE A DISCONNECT IS REQUIRED IN COMPLIANCE WITH *2017 NEC 690.15(D)*

ALL OCPD RATINGS AND TYPES SPECIFIED SHALL BE IN COMPLIANCE WITH *NEC 690.8, 690.9, 705.12* AND *240*.

BOTH POSITIVE AND NEGATIVE DC PV CONDUCTORS ARE UNGROUNDED; BOTH REQUIRE OVERCURRENT PROTECTION IN COMPLIANCE WITH *NEC 690.9*

ARC FAULT (AFCI) DC CIRCUIT PROTECTION IS REQUIRED FOR ALL PV SYSTEMS ON OR PENETRATING A BUILDING WITH A MAXIMUM SYSTEM VOLTAGE OF 80 VOLTS OR GREATER. ALL DC PV CIRCUITS INSTALLED IN OR ON BUILDINGS WILL BE ARC-FAULT CIRCUIT PROTECTED IN COMPLIANCE WITH *NEC 690.11, UL1699B* AND SHALL BE LISTED AND LABELED IN ACCORDANCE WITH *UL 1699 (B)*.

WIRING & CONDUIT NOTES:*

ALL CONDUIT AND CONDUCTORS SHALL BE APPROVED FOR THEIR INTENDED PURPOSE INCLUDING WET LOCATIONS AND EXPOSED TO SUNLIGHT. CONDUIT AND CONDUCTOR SIZE SPECIFICATIONS ARE BASED ON THE MINIMUM CODE REQUIREMENTS AND ARE NOT LIMITED TO UP SIZING.

ALL CONDUCTORS SHALL BE SIZED IN COMPLIANCE WITH *NEC 690.8, NEC 690.7*.

ALL CONDUCTORS SHALL BE DERATED AS APPLICABLE TO THEIR RESPECTIVE ENVIRONMENT INCLUDING DIRECT SUNLIGHT IN ACCORDANCE WITH *2017 NEC 310.15(B)(3)(4)(c)*

EXPOSED UNGROUNDED DC PV SOURCE AND OUTPUT CIRCUITS SHALL USE CONDUCTORS LISTED AND IDENTIFIED AS PHOTOVOLTAIC (PV) WIRE IN COMPLIANCE *2017 NEC 690.31(C)(1)*. PV MODULES WIRE LEADS SHALL BE LISTED FOR USE WITH UNGROUNDED SYSTEMS IN COMPLIANCE WITH *2017 NEC 690.4(B)*

PV WIRE BLACK WIRE MAY BE FIELD-MARKED WHITE IN COMPLIANCE WITH *NEC 200.6 (A)(6)*.

PV MODULE CONDUCTORS LOCATED UNDER ARRAYS WILL BE SECURED IN A WORKMANLIKE MANNER IN COMPLIANCE WITH *NEC 110.12*.

WATERPROOFING:*

ALL NEW **ROOFTOP PENETRATIONS** SHALL BE SEALED AND MADE WEATHER TIGHT WITH APPROVED CHEMICAL SEALANT AND FLASHINGS WHERE REQUIRED PER CODE AND GENERAL BUILDING AND ROOFING WORKMANSHIP STANDARDS BY A LICENSED CONTRACTOR.

ALL **EXTERIOR ELECTRICAL EQUIPMENT, SHALL BE NEMA 3R** OR BETTER RATED. ALL EXTERIOR CONDUIT AND CONNECTORS SHALL BE RATED FOR WET LOCATIONS.

*ALL NOTES ARE AS APPLICABLE TO THIS PROJECT. DISREGARD ANY NOTES THAT DO NOT APPLY TO THIS PROJECT.

SCOTT E WYSSLING LICENSE No. 81558 STATE OF FLORIDA PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # RY34912

Signed 11-17-21

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

GENERAL NOTES

N-001

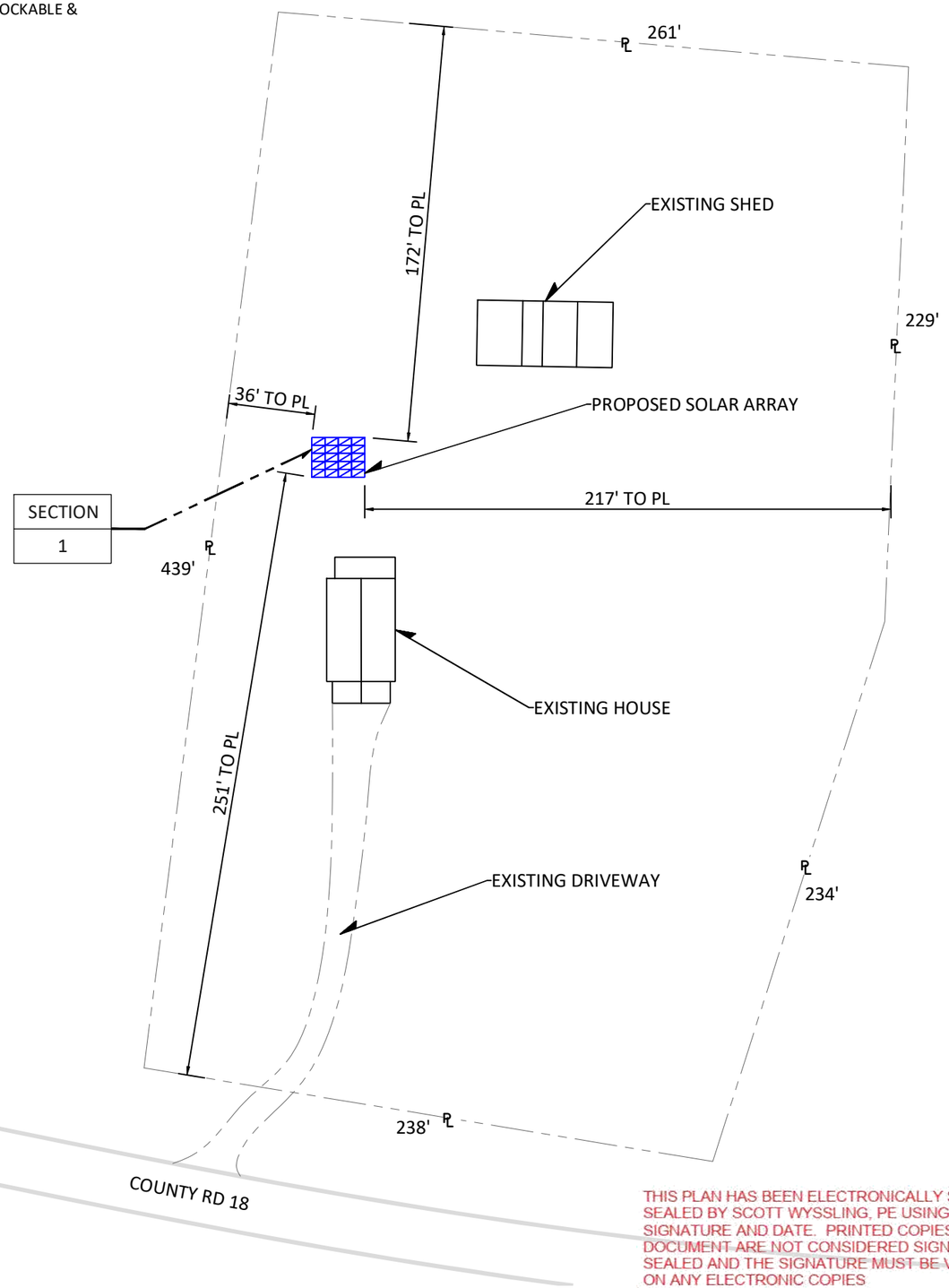
6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

PV AC DISCONNECT LOCATED ON ACCESSIBLE EXTERIOR WALL WITH EXTERNAL HANDLE VISIBLE, LOCKABLE & LABELED WITHIN 10 FEET OF THE METER

NOTE: ALL ELECTRICAL LAYOUT DETAILS ON SHEET E-100



QTY 20 PEIMAR SM325M (FB) MODULES QTY 1 SolarEdge SE5000H-US (240V) INVERTER

GROUND MOUNT SETBACKS & AHJ NOTES

ALL GROUND MOUNTED STRUCTURES SHALL COMPLY WITH STATE AND LOCAL AHJ REQUIRED SETBACKS TO SEPTIC OR WASTEWATER SYSTEM COMPONENTS, LEACH FIELDS, PROPERTY LINES, ROADS, HIGHWAYS, RIGHT OF WAYS, SIDEWALKS, DRIVEWAYS, OTHER STRUCTURES, WATER WAYS, EASEMENTS, UTILITIES, TREES, FENCES AND FLOOD ZONES.

PV SITE LAYOUT LEGEND

SECTION	PV ARRAY TAG SECTION # MODULE GROUP
1	

SA SITE ACCESS
GA GATE ACCESS

AZIMUTH AND TILT TABLE

SECTION #	AZIMUTH	ARRAY PITCH / TILT
SECTION-1	181	20°

SCOTT E WYSSLING LICENSE No. 81558 STATE OF FLORIDA PROFESSIONAL ENGINEER

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NORTH

*EXISTING DIMENSIONS ARE APPROX. CONFIRM ALL DIMENSIONS SHOWN

SCALE: 1/56” = 1’0” @ SHEET SIZE A3

REV	DATE	RELEASE
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PV-100G

PV ARRAY LAYOUT

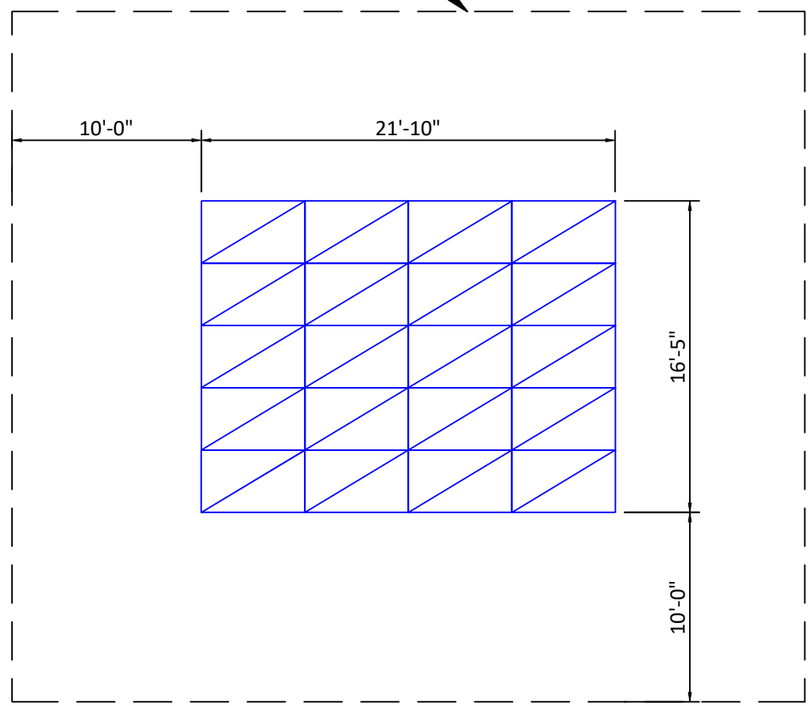
6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

NOTE: ALL ELECTRICAL LAYOUT DETAILS ON SHEET E-100

A CLEAR, BRUSH-FREE AREA OF 10 FEET (3048 MM) SHALL BE REQUIRED FOR GROUND MOUNTED PHOTOVOLTAIC ARRAYS PER IFC 1204.4



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NORTH

QTY 20 PEIMAR SM325M (FB) MODULES QTY 1 SolarEdge SE5000H-US (240V) INVERTER

SCALE: 1/8” = 1’0” @ SHEET SIZE A3

REV	DATE	
	11/16/2021	RELEASE SUBMIT FOR PERMIT

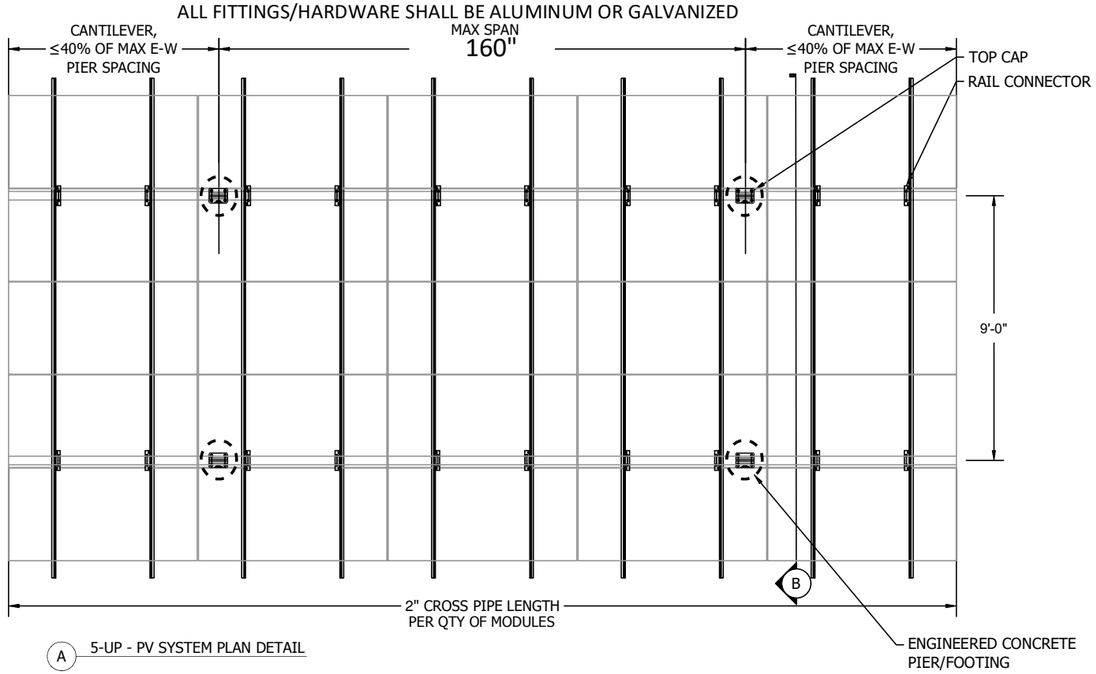
PV-101G DETAILED LAYOUT

6.500 kW PHOTOVOLTAIC PLANS

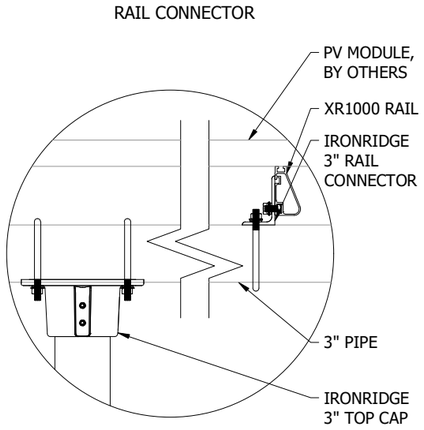
NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

ALL PIPE SHALL BE GALVANIZED NOMINAL SCHEDULE 40 ASTM A53 GR B., STEEL PIPE
ALL FITTINGS SHALL BE TORQUED TO MANUFACTURER SPEC'S
ALL FITTINGS/HARDWARE SHALL BE ALUMINUM OR GALVANIZED



A 5-UP - PV SYSTEM PLAN DETAIL

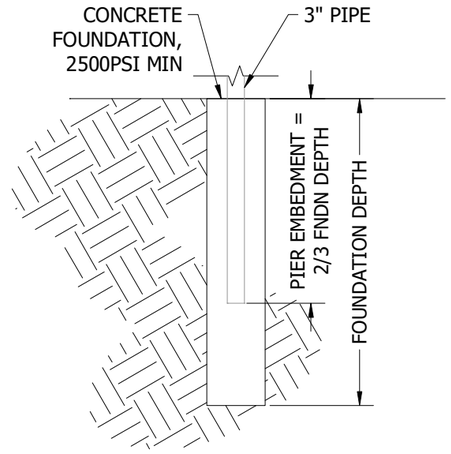


C PIPE FITTINGS DETAIL

PV RACKING LEGEND

- RACKING RAIL
- 3" PIPE BEAM
- FOOTING W/ 3" PIPE
- SECTION / 1 — PV ARRAY TAG SECTION # MODULE GROUP
- * DETAILS IN TOP VIEW

SEE PIER SCHEDULE IN REFERENCE SHEETS



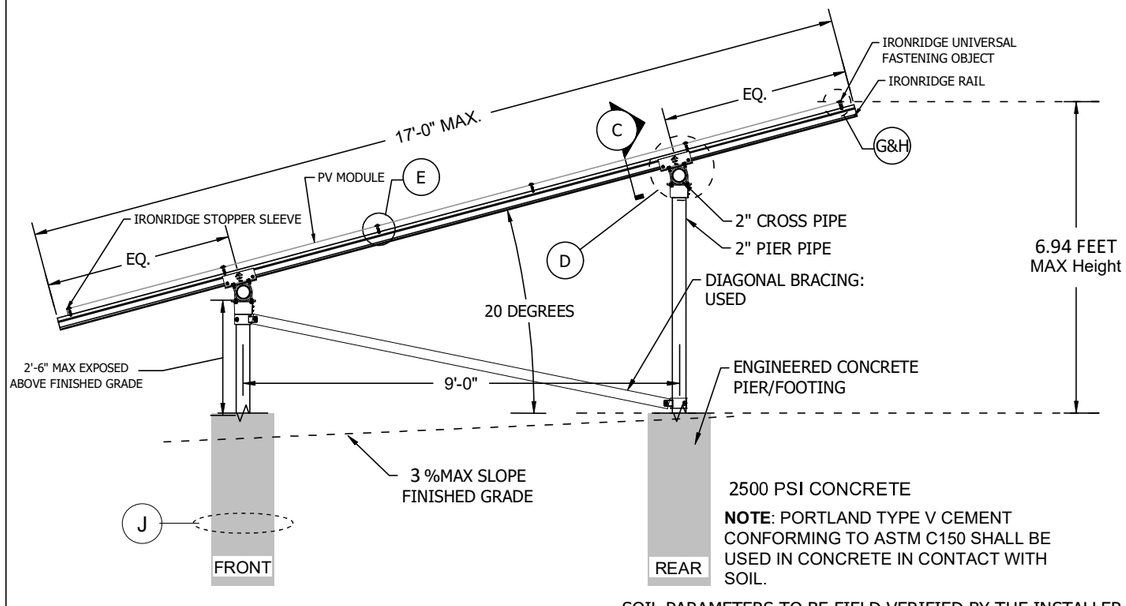
J DRILL/POUR FOUNDATION

CYLINDRICAL CONCRETE PIER SCHEDULE

FRONT		REAR	
DIAMETER	DEPTH	DIAMETER	DEPTH
18''	60''	18''	60''

NOTE: ALL FOOTING DEPTHS REPRESENT REQUIRED EMBEDDED DEPTH INTO FIRM, NATIVE SOIL

ARRAY AZIMUTH: 181 DEGREES
ARRAY TILT: 20 DEGREES



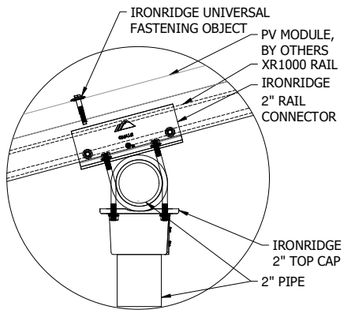
2500 PSI CONCRETE

NOTE: PORTLAND TYPE V CEMENT CONFORMING TO ASTM C150 SHALL BE USED IN CONCRETE IN CONTACT WITH SOIL.

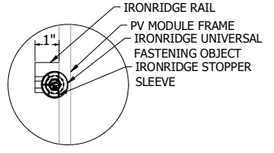
B 5-UP PV SYSTEM SIDE SECTION

SOIL PARAMETERS TO BE FIELD VERIFIED BY THE INSTALLER
SEE ENGINEERING TABLES AND DETAILS IN REFERENCE SHEETS

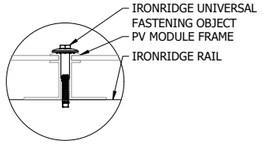
QTY 20 PEIMAR SM325M (FB) MODULES QTY 1 SolarEdge SE5000H-US (240V) INVERTER



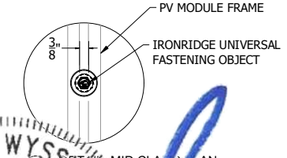
D PIPE FITTINGS DETAIL



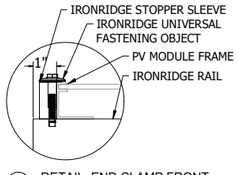
G DETAIL, END CLAMP PLAN



F DETAIL, MID CLAMP FRONT



DETAIL, MID CLAMP PLAN



H DETAIL, END CLAMP FRONT

ENGINEER'S STAMPS WHEN REQUIRED

SCOTT E WYSSLING LICENSE No. 81558 STATE OF FLORIDA PROFESSIONAL ENGINEER

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Alpine UT 84004 COA # RY34912
Signed 11-17-21

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REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

RACKING LAYOUT

S-300

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

PV MODULE #1 SPECIFICATIONS

MANUFACTURER	PEIMAR	
MODEL NUMBER	SM325M (FB)	
WEIGHT	41.01	lbs
DIMENSIONS	65.55 x 39.45 x 1.57	L" x W" x D"/THICK
PEAK POWER @ STC (Pmax)	325	WATTS
Voc (OPEN-CIRCUIT VOLTAGE)	41.67	VOLTS DC
Vmp (MAX-POWER VOLTAGE)	34.15	VOLTS DC
isc (SHORT-CIRCUIT CURRENT)	10.08	AMPS
imp (OPERATING CURRENT)	9.52	AMPS
MFR. Voc TEMP COEFFICIENT	0.28	%/K
MAX SERIES FUSE RATING	20.0	AMPS
TEMP. CORRECTED Voc	37.92	VOLTS DC

DC/DC OPTIMIZER (IF APPL.)

MANUFACTURER	SolarEdge Technologies	
MODEL NUMBER	P370 Single (240V)	
WEIGHT	1.5	lbs
RATED OUTPUT isc	15	AMPS
MAX OUTPUT VOLTAGE	60	VOLTS
MAX INPUT VOLTAGE Voc	60	VOLTS

Wyssling Consulting, PLLC
76 N Meadowbrook Drive
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DC COMBINER / DISCONNECT #1

MANUFACTURER		
MODEL NUMBER		
OCPD (DISCONNECT TYPE)		
WEIGHT		lbs
NEMA RATING		
LOCATION OF COMPONENT		
DC INPUT		
SERIES FUSE RATING FOR PV MODULES		AMPS (OCPD)
QUANTITY OF PV SOURCE CIRCUITS		QTY
MAX PV MODULE Voc		VOLTS DC
MAX # OF MODULES IN CIRCUIT		QTY
MAX ALLOWED INPUT VOLTAGE		VOLTS DC
MAX INPUT FUSE/BREAKER RATING		AMPS
DC OUTPUT		
MAX CIRCUIT OUTPUT CURRENT		AMPS
MAX CONT. OUTPUT CURRENT		AMPS

DC COMBINER / DISCONNECT #2 (IF APPL.)

MANUFACTURER		
MODEL NUMBER		
OCPD (DISCONNECT TYPE)		
WEIGHT		lbs
NEMA RATING		
LOCATION OF COMPONENT		
DC INPUT		
SERIES FUSE RATING FOR PV MODULES		AMPS (OCPD)
QUANTITY OF PV SOURCE CIRCUITS		QTY
MAX PV MODULE Voc		VOLTS DC
MAX # OF MODULES IN CIRCUIT		QTY
MAX ALLOWED INPUT VOLTAGE		VOLTS DC
MAX INPUT FUSE/BREAKER RATING		AMPS
DC OUTPUT		
MAX CIRCUIT OUTPUT CURRENT		AMPS
MAX CONT. OUTPUT CURRENT		AMPS

DC COMBINER / DISCONNECT #3 (IF APPL.)

MANUFACTURER		
MODEL NUMBER		
OCPD (DISCONNECT TYPE)		
WEIGHT		lbs
NEMA RATING		
LOCATION OF COMPONENT		
DC INPUT		
SERIES FUSE RATING FOR PV MODULES		AMPS (OCPD)
QUANTITY OF PV SOURCE CIRCUITS		QTY
MAX PV MODULE Voc		VOLTS DC
MAX # OF MODULES IN CIRCUIT		QTY
MAX ALLOWED INPUT VOLTAGE		VOLTS DC
MAX INPUT FUSE/BREAKER RATING		AMPS
DC OUTPUT		
MAX CIRCUIT OUTPUT CURRENT		AMPS
MAX CONT. OUTPUT CURRENT		AMPS

PV SYSTEM MAXIMUM VOLTAGE (MODULE Voc_{MAX})

DATA SOURCE	SOLARABCS.ORG/ABOUT/PUBLICATIONS/REPORTS/ EXPEDITED-PERMIT/MAP/											
EXTREME MIN. TEMP. [°C]		STC TEMPERATURE [°C]		CORRECTED TEMPERATURE		MFR. P_{MAX} TEMP COEFFICIENT [-0.#%/C] * 100	FORMULA			CORRECTED TEMP. COEFFICIENT	MODULE Voc [VDC]	TEMPERATURE CORRECTED OPEN CIRCUIT VOLTAGE
-6	-	25	=	-31	*	0.28%	= -0.09	+	1	0.91	* 41.67	= 37.92

STRING INVERTER #1 SPECIFICATIONS

MANUFACTURER	SolarEdge	
MODEL NUMBER	SE5000H-US (240V)	
QUANTITY	1	INVERTER(S)
NOMINAL POWER RATING	5000	WATT AC
WEIGHT	25.1	lbs.
DC INPUT		
Max INPUT DC VOLTAGE	480	VOLTS DC
Min. MPPT VOLTAGE RANGE	380	VOLTS DC
Max. MPPT VOLTAGE RANGE	480	VOLTS DC
Max INPUT CURRENT	13.5	AMPS
MPPT QTY	N/A	
INTEGRATED DC DISCONNECT	Yes	COMPLY W/NEC 690.17
INTEGRATED AC DISCONNECT	NO	
AC OUTPUT		
NOMINAL VOLTAGE OUTPUT	240	VOLTS AC
MAX. AC APPARENT POWER	5000	WATTS
MAX OVERCURRENT PROTECTION (OCPD)	30	AMPS
MAX. OUTPUT CURRENT	21	AMPS - MAX

STRING INVERTER #2 SPECIFICATIONS (IF APPL.)

MANUFACTURER		
MODEL NUMBER		
QUANTITY		INVERTER(S)
NOMINAL POWER RATING		WATT AC
WEIGHT		lbs.
DC INPUT		
Max INPUT DC VOLTAGE		VOLTS DC
Min. MPPT VOLTAGE RANGE		VOLTS DC
Max. MPPT VOLTAGE RANGE		VOLTS DC
Max INPUT CURRENT		AMPS
MPPT QTY		
INTEGRATED DC DISCONNECT		COMPLY W/NEC 690.17
INTEGRATED AC DISCONNECT		
AC OUTPUT		
NOMINAL VOLTAGE OUTPUT		VOLTS AC
MAX. AC APPARENT POWER		WATTS
MAX OVERCURRENT PROTECTION (OCPD)		AMPS
MAX. OUTPUT CURRENT		AMPS - MAX

AC COMBINER #1 (SOLAR LOAD CENTER)

MANUFACTURER		
MODEL NUMBER		
RATED OPERATIONAL VOLTAGE		VOLTS
RATED CURRENT		AMPS
NUMBER OF POLES		P
NEMA RATING		
MAIN BREAKER SIZE		AMPS
TOTAL INPUT CURRENT		AMPS
NUMBER OF BRANCH CIRCUITS		CIRCUITS

AC COMBINER #2 (SOLAR LOAD CENTER)

MANUFACTURER		
MODEL NUMBER		
RATED OPERATIONAL VOLTAGE		VOLTS
RATED CURRENT		AMPS
NUMBER OF POLES		P
NEMA RATING		
MAIN BREAKER SIZE		AMPS
TOTAL INPUT CURRENT		AMPS
NUMBER OF BRANCH CIRCUITS		CIRCUITS

AC DISCONNECT #1 (IF APPL.)

MANUFACTURER	Eaton	
MODEL NUMBER	DG222NRB	
QUANTITY	1	AC DISCO.(S)
DISCONNECT DEVICE TYPE	Fusible	
RATED OPERATIONAL VOLTAGE	240	VOLTS
RATED CURRENT	60	AMPS
NUMBER OF POLES	2	P
NEMA RATING	3R	
FUSE RATING	30	AMPS
TOTAL INPUT CURRENT	21	AMPS

AC DISCONNECT #2 (IF APPL.)

MANUFACTURER		
MODEL NUMBER		
QUANTITY		AC DISCO.(S)
DISCONNECT DEVICE TYPE		
RATED OPERATIONAL VOLTAGE		VOLTS
RATED CURRENT		AMPS
NUMBER OF POLES		P
NEMA RATING		
FUSE RATING		AMPS
TOTAL INPUT CURRENT		AMPS

AC SUB-PANEL #1 (IF APPL.)

NEW OR EXISTING		
MAKE / MODEL		
TYPE OF PANEL		
NUMBER OF POLES		P
NEMA RATING		
BUSS BAR RATING		AMPS
SUB-PANEL MAIN BREAKER		AMPS
MAIN SERVICE PANEL P.O.C. BREAKER		AMPS
SUM OF EXISTING CIRCUIT BREAKERS		AMPS
MAX ALLOWABLE SOLAR CURRENT		AMPS
PV BACKFEED BREAKER #1		AMPS (Imax)
PV BACKFEED BREAKER #2		AMPS (Imax)
PV BACKFEED BREAKER #3		AMPS (Imax)
PV BACKFEED BREAKER #4		AMPS (Imax)

MAIN SERVICE PANEL (IF APPL.)

NEW OR EXISTING	EXISTING	
ELECTRICAL SERVICE	120/240V Single Phase	
BUSS BAR RATED CURRENT	200	AMPS
MAIN BREAKER RATED CURRENT	200	AMPS
SUM OF EXISTING CIRCUIT BREAKERS		AMPS
MAX ALLOWABLE SOLAR CURRENT 100%	0	AMPS
MAX ALLOWABLE SOLAR CURRENT 120%	40	AMPS (Imax)
PV BACKFEED BREAKER #1		AMPS (Imax)
PV BACKFEED BREAKER #2		AMPS (Imax)
PV BACKFEED BREAKER #3		AMPS (Imax)
PV BACKFEED BREAKER #4		AMPS (Imax)
ALT. ENERGY BACKFEED BREAKER (IF APPL.)		AMPS (Imax)

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E-001 EQUIP. CALCULATIONS

6.500 kW PHOTOVOLTAIC PLANS

NAME Dodsworth, Janet
ADDRESS 3035 County Rd 18
ADDRESS Lake City, FL 32025
APN

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

WIRE AND CONDUCTOR NOTES

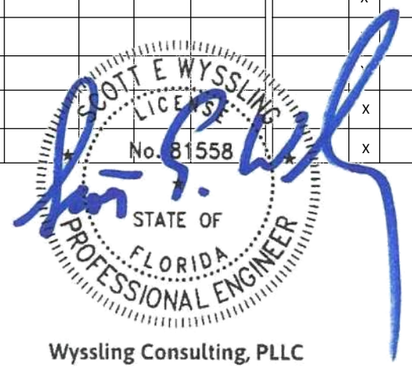
1. ANY CONDUCTOR LENGTH UNDER 50' DOESN'T REQUIRE VOLTAGE DROP CALCULATIONS
2. BECAUSE WE ARE UNABLE TO DETERMINE THE EXACT PATH THE INSTALLER WILL RUN CONDUCTORS; WORST CASE SCENARIOS, ROUNDING UP SIZES OF CONDUCTORS THAT ARE DEEMED QUESTIONABLE TO PREVENT ISSUES RELATED TO USING CONDUCTORS THAT ARE IMPROPERLY SIZED.
3. WIRING METHODS IN THESE CALCULATIONS DON'T EXCEED 1000 VOLTS
4. CEC/NEC 310.15(A)(2) (AS APPLICABLE) WHERE TWO DIFFERENT AMPACITIES APPLY TO ADJACENT PORTIONS OF A CIRCUIT, THE HIGHER AMPACITY SHALL BE PERMITTED TO BE USED BEYOND THE POINT OF TRANSITION, A DISTANCE EQUAL TO 10'-0" (3 METERS) OR 10% OF THE CIRCUIT LENGTH FIGURED AT THE HIGHER AMPACITY, WHICHEVER IS LESS. WHEN LESS THAN 10'-0" OR 10% OF THE CIRCUIT LENGTH; THE LESSER AMPACITY MAY BE USED.

WIRE COLOR CODING (2017) NEC SECTIONS 250.119 & 200.6

PV DC WIRING		AC WIRING	
EQUIPMENT GROUND	GREEN OR BARE, OR GREEN/YELLOW	EQUIPMENT GROUND	GREEN OR BARE, OR GREEN/YELLOW
GROUNDED CONDUCTOR. TYPICALLY NEGATIVE	WHITE OR GRAY	GROUNDED CONDUCTOR (NEUTRAL)	WHITE OR GRAY
UNGROUNDED CONDUCTOR(S). TYPICALLY POSITIVE	ANY COLOR OTHER THAN GREEN OR WHITE/GRAY	UNGROUNDED CONDUCTOR(S) HOT: L1 AND L2	ANY COLOR OTHER THAN GREEN OR WHITE/GRAY ALLOWED.
	CONVENTION IS RED FOR GROUNDED SYSTEMS		CONVENTION IS L1 BLACK
	RED (+) AND BLACK (-) FOR UNGROUNDED SYSTEMS		CONVENTION IS L2 RED

DC WIRE AND CONDUIT SIZING CHART [SEE SHEET E-003 FOR THREE LINE DIAGRAM]

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS				REQUIRED CONDUCTOR AMPACITY								CONDUCTOR TEMPERATURE DERATING						CONDUIT FILL DERATING		CORRECTED AMPACITY CALCULATION							AMPACITY CHECK		
			QTY IN PARALLEL & MATERIAL	TEMP RATING (°C)	TRADE SIZE	AMPACITY @ 30°C PER 310.16	Isc (AMPS) OR COMPONENT (AMPS)	X	#OF COMBINED PARALLEL STRINGS	X	MAX CURRENT 690.8 (A)(1)	X	CONT. OPERATION 690.8 (B)(1)	=	REQUIRED AMPACITY	CIRCUIT ENVIRONMENT	AMBIENT TEMP. (°C)	HGT. ABOVE ROOF (in)	TEMP. ADDER PER 310.15 (B)(2)(c)	OPERAT. TEMP. (°C)	AMPACITY CORRECTION 310.15 (B)(2)(a)	# OF UNGRND. COND.	AMPACITY CORRECTION 310.15 (B)(3)(a)	COND. AMPACITY	X	TEMP. DERATING	X	CONDUIT FILL DERATING	=	CORRECTED AMPACITY	REQUIRED AMPACITY	≤	CORRECTED AMPACITY
DC1	PV MODULE	DC/DC CONVERTER	(1) CU	90	#12 AWG	30	10.08	X	1	X	1.25	X	1.25	=	15.75	OPEN AIR	35	N/A	0	35	0.96	2	N/A	30	X	0.96	X	1.0	=	28.8	15.75	≤	28.8
DC2	DC/DC CONVERTER	INVERTER	(1) CU	90	#10 AWG	40	15	X	1	X	1	X	1.25	=	18.75	OPEN AIR	35	N/A	0	35	0.96	4	N/A	40	X	0.96	X	1.0	=	38.4	18.75	≤	38.4
DC3								X		X		X		=											X		X		=			≤	
DC4								X		X		X		=											X		X		=			≤	
DC5										X		X		=											X		X		=			≤	
DC6										X		X		=											X		X		=			≤	
DC7								X		X		X		=											X		X		=			≤	
DC8								X		X		X		=											X		X		=			≤	



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VOLTAGE DROP CALCULATIONS

%VD = (0.2 x DISTANCE x Imp x DC or AC RESISTANCE) / Vmp

CONDUCTOR RUN	WORST CASE V-DROP	AC/DC
INVERTER TO AC DISCONNECT	1.47%	AC
TOTAL	1.47%	AC

AC WIRE AND CONDUIT FILL DERATE CHART [SEE SHEET E-003 FOR THREE LINE DIAGRAM]

TAG	CIRCUIT ORIGIN	CIRCUIT DESTINATION	CONDUCTOR SPECIFICATIONS				REQUIRED CONDUCTOR AMPACITY					CONDUCTOR TEMPERATURE DERATING						CONDUIT FILL DERATING		CORRECTED AMPACITY CALCULATION							AMPACITY CHECK		
			QTY IN PARALLEL & MATERIAL	TEMP RATING (°C)	TRADE SIZE	AMPACITY @ 30°C PER 310.16	CONT. OPERATION 690.8 (B)(1)	X	MAX INV. OUTPUT CURRENT (AMPS) OR COMPONENT (AMPS)	=	REQUIRED AMPACITY	CIRCUIT ENVIRONMENT	AMBIENT TEMP. (°C)	HGT. ABOVE ROOF (in)	TEMP. ADDER PER 310.15 (B)(2)(c)	OPERAT. TEMP. (°C)	AMPACITY CORRECTION 310.15 (B)(2)(a)	# OF UNGRND. COND.	AMPACITY CORRECTION 310.15 (B)(3)(a)	COND. AMPACITY	X	TEMP. DERATING	X	CONDUIT FILL DERATING	=	CORRECTED AMPACITY	REQUIRED AMPACITY	≤	CORRECTED AMPACITY
AC1	INVERTER	AC DISCONNECT	(1) CU	75	#10 AWG	35	1.25	X	21.0	=	26.2	UNDERGROUND	35	N/A	0	30	1.00	3	1.0	35	X	1.00	X	1.0	=	35.0	26.2	≤	35.0
AC2	AC DISCONNECT	EXISTING SERVICE PANEL	(1) CU	75	#6 AWG	65	1.25	X	21.0	=	26.2	EXT WALL	35	N/A	0	30	1.00	3	1.0	65	X	0.94	X	1.0	=	61.1	26.2	≤	61.1
AC3								X		=											X		X		=			≤	
AC4								X		=											X		X		=			≤	
AC5								X		=											X		X		=			≤	
AC6								X		=											X		X		=			≤	
AC7								X		=											X		X		=			≤	
AC8								X		=											X		X		=			≤	
AC9								X		=											X		X		=			≤	
AC10								X		=											X		X		=			≤	

REV	DATE	RELEASE
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E-002 WIRE AND COND. CALCS.

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

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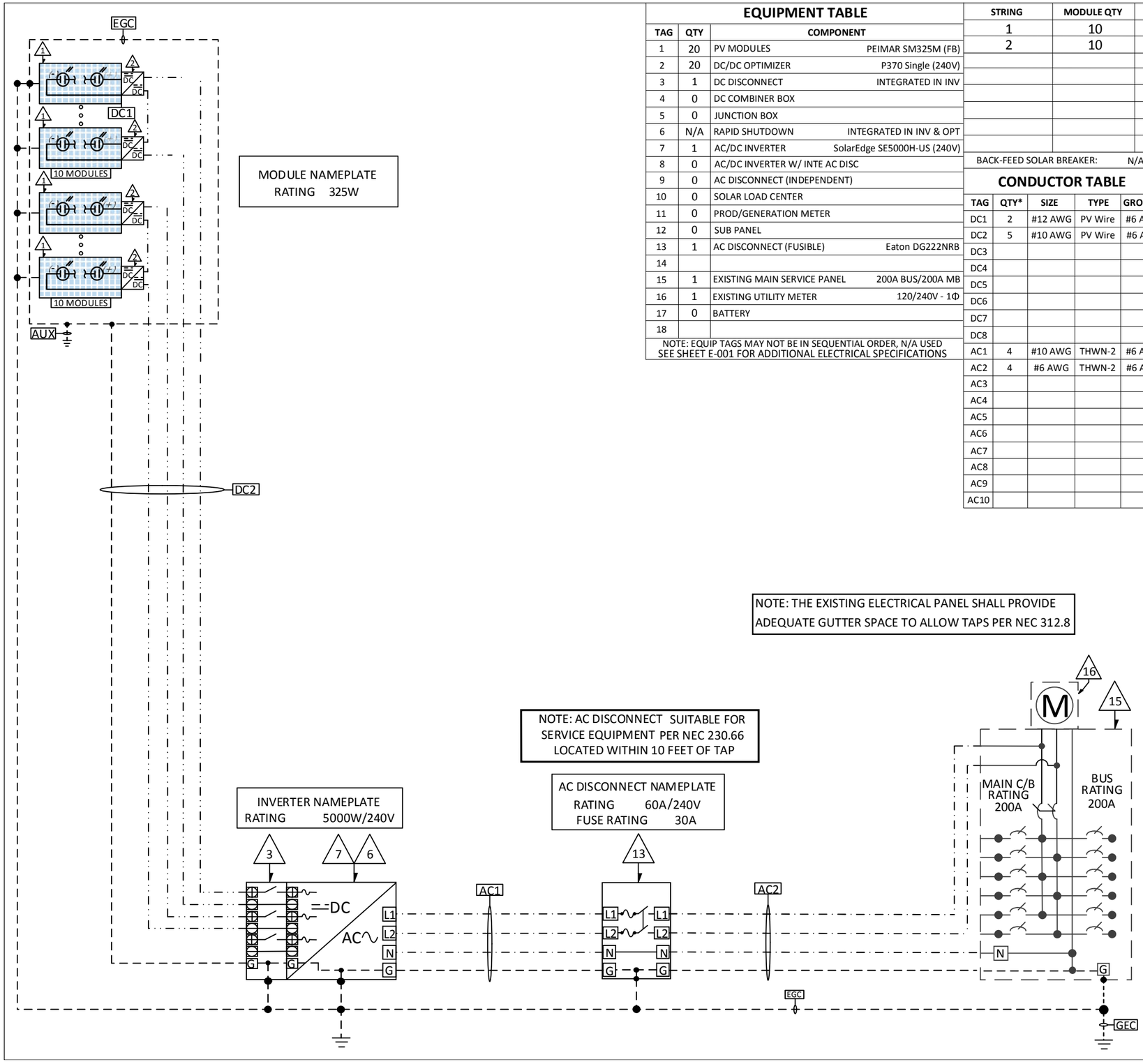

EQUIPMENT TABLE

TAG	QTY	COMPONENT	
1	20	PV MODULES	PEIMAR SM325M (FB)
2	20	DC/DC OPTIMIZER	P370 Single (240V)
3	1	DC DISCONNECT	INTEGRATED IN INV
4	0	DC COMBINER BOX	
5	0	JUNCTION BOX	
6	N/A	RAPID SHUTDOWN	INTEGRATED IN INV & OPT
7	1	AC/DC INVERTER	SolarEdge SE5000H-US (240V)
8	0	AC/DC INVERTER W/ INTE AC DISC	
9	0	AC DISCONNECT (INDEPENDENT)	
10	0	SOLAR LOAD CENTER	
11	0	PROD/GENERATION METER	
12	0	SUB PANEL	
13	1	AC DISCONNECT (FUSIBLE)	Eaton DG222NRB
14			
15	1	EXISTING MAIN SERVICE PANEL	200A BUS/200A MB
16	1	EXISTING UTILITY METER	120/240V - 1Φ
17	0	BATTERY	
18			

NOTE: EQUIP TAGS MAY NOT BE IN SEQUENTIAL ORDER, N/A USED
SEE SHEET E-001 FOR ADDITIONAL ELECTRICAL SPECIFICATIONS

STRING	MODULE QTY	INVERTER #
1	10	INV 1
2	10	INV 1

BACK-FEED SOLAR BREAKER: N/A

CONDUCTOR TABLE

CONDUIT TABLE

TAG	QTY*	SIZE	TYPE	GROUND	SIZE	TYPE
DC1	2	#12 AWG	PV Wire	#6 AWG	N/A	Open Air
DC2	5	#10 AWG	PV Wire	#6 AWG	N/A	Open Air
DC3						
DC4						
DC5						
DC6						
DC7						
DC8						
AC1	4	#10 AWG	THWN-2	#6 AWG	1/2 inch	PVC
AC2	4	#6 AWG	THWN-2	#6 AWG	3/4 inch	EMT
AC3						
AC4						
AC5						
AC6						
AC7						
AC8						
AC9						
AC10						

* INCLUDES GROUND & CURRENT CARRYING CONDUCTORS

LEGEND

DC# DC CONDUCTOR TAG — 1 EQUIPMENT TAG

AC# AC CONDUCTOR TAG — GND GROUND CONDUCTOR TAG

ELECTRICAL NOTES

UNGROUNDED PV SYSTEMS:

- INVERTERS, MODULES, AND DC COMPONENTS MUST BE LISTED FOR USE IN UNGROUNDED SYSTEMS, TYPICALLY TRANSFORMER-LESS (TL)
- OCPD'S WHERE NECESSARY MUST HAVE DISCONNECTING MEANS.
- PV SOURCE CIRCUITS MUST BE EITHER PV WIRE AND LISTED FOR WET LOCATIONS OR JACKETED MULTI-CONDUCTOR CABLES INSTALLED IN RACEWAY.
- THE AC SIDE IS STILL GROUNDED ON THE NEUTRAL CONDUCTOR.
- REQUIRE EQUIPMENT GROUNDING BUT DOES NOT HAVE SYSTEM GROUNDING; NO DC CURRENT-CARRYING CONDUCTOR IS CONNECTED TO GROUND. THESE CONDUCTORS ARE COLOR CODED DIFFERENTLY THAN GROUNDED PV SYSTEMS.

AC/DC ELECTRICAL NOTES:

- ALL OVERCURRENT PROTECTION DEVICES (OCPDs) MUST BE RATED FOR 600 VOLTS ON THE DC / PV POWER SIDE OF THE INVERTER.
- EXTERIOR ENCLOSURES TO BE NEMA TYPE 3R OR BETTER.
- ALL CONDUIT AND CONDUIT CONNECTIONS SHALL BE RATED FOR WET AND DAMP LOCATIONS WHEN APPLICABLE.

INTERCONNECTION NOTES:

- 705.12(B)(4) CIRCUIT BREAKERS MUST BE SUITABLE FOR BACKFEEDING. NEC INFORMATIONAL NOTE: FUSED DISCONNECTS, UNLESS OTHERWISE MARKED, ARE SUITABLE FOR BACKFEEDING.
- 690.13(F)(2) DEVICES MARKED WITH "LINE" AND "LOAD" SHALL NOT BE PERMITTED FOR BACKFEED OR REVERSE CURRENT
- 705.12(B)(5) CIRCUIT BREAKERS BACK FEED FROM UTILITY INTERACTIVE INVERTERS (ANTI-ISLANDING, UL 1741 CERTIFIED)

• NO CENTER-FED MAIN BREAKER. PANEL CONFIGURED PER NEC 705.12(A) OR (B)

SCOTT E WYSSLING LICENSE No. 81558 STATE OF FLORIDA PROFESSIONAL ENGINEER

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Alpine UT 84004 COA # RY34912

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E-003

THREE LINE DIAGRAM

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

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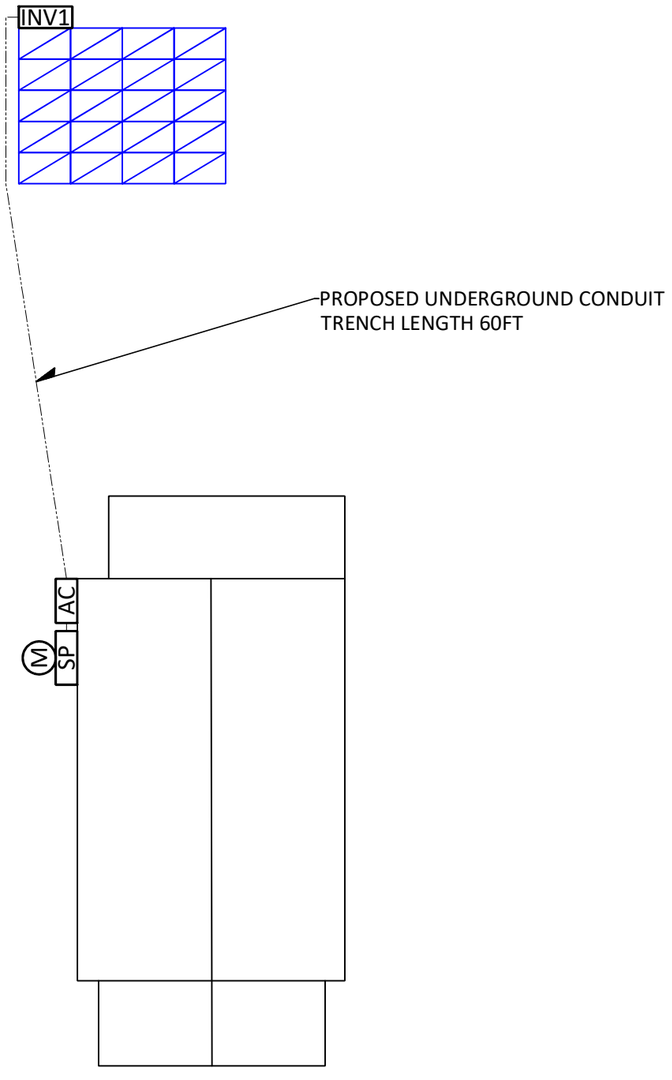

EQUIPMENT GROUNDING

1. METAL PV MODULE FRAMES MUST BE CONNECTED TO THE EGC (EQUIPMENT GROUNDING CONDUCTOR).
   - 1.1. WEEBS MAY BE USED IN LIEU OF MODULE GROUND CLAMPS OR LUGS, WITH APPROVAL OF AHJ AND RACKING MFG. WEEBS ARE ONE TIME USE ONLY. SEE "we-llc.com" FOR RACKING SPECIFIC WEEB, INSTALL INSTRUCTIONS, AND UL 2703 CERT.
   - 1.2. FOR "LAY-IN" LUG MODULE GROUNDING; CORRECT HARDWARE OF PROPER METAL MATERIAL TO AVOID CORROSION MUST BE USED. TYPICALLY DIRECT BURIAL RATED, TINNED, OR STAINLESS STEEL. GROUNDING LUGS MUST BE ATTACHED AT MARKED LOCATION ON EACH MODULE.
2. THE EGC (EQUIPMENT GROUNDING CONDUCTOR) IS USED TO BOND ALL NON-CURRENT CARRYING CONDUCTORS AND EXPOSED METAL PARTS THAT MIGHT COME INTO CONTACT WITH CURRENT-CARRYING CONDUCTORS, INCLUDING THE FOLLOWING:
   - 2.1. PV MODULES FRAMES, ARRAY MOUNTING RACKING; THE METAL CHASSIS OF EQUIPMENT SUCH AS INVERTERS, DISCONNECTS, METERS, JUNCTION BOXES AND COMBINER BOXES; AND METAL CONDUIT HOLDING CIRCUITS > 250 VOLTS TO GROUND PER NEC 250.97
3. THE GEC (GROUNDING ELECTRODE CONDUCTOR) IS THE CONDUCTOR USED TO CONNECT THE GE OR GE SYSTEM TO THE SYSTEM GC, TO THE EGC, OR TO BOTH.
4. THE GE (GROUNDING ELECTRODE) IS A CONDUCTING OBJECT, OFTEN A ROD, RING, OR PLATE ESTABLISHING A DIRECT CONNECTION TO EARTH. THE AC SYSTEM GROUND IS EXISTING, USUALLY AT THE EXISTING MAIN PANEL AND/OR UTILITY METER. THE GROUND CAN ONLY OCCUR IN ONE PLACE AND MUST NOT BE DUPLICATED IN SUB-PANELS OR ANYWHERE ELSE ON AC SIDE.

ELECTRICAL SYMBOL LEGEND

CB	DC COMBINER BOX	ATF	AUTO TRANSFORMER
DCB	DC DISCONNECTING COMBINER BOX	SLC	SOLAR LOAD CENTER
		ACC	AC COMBINER
DC	DC DISCONNECT	BATT	BATTERY
INV#	DC/AC STRING INVERTER	AC	AC DISCONNECT
CLP	CRITICAL LOADS PANEL	SP	SERVICE PANEL
RSD	RAPID SHUTDOWN	(P)	PERFORMANCE METER
SUB	SUB-PANEL	(M)	UTILITY METER
SECTION / 1	PV ARRAY TAG SECTION # MODULE GROUP	XFMR	TRANSFORMER
		JB	JUNCTION BOX
		ATS	AUTO TRANSFER SWITCH

PV AC DISCONNECT LOCATED ON ACCESSIBLE EXTERIOR WALL WITH EXTERNAL HANDLE VISIBLE, LOCKABLE & LABELED WITHIN 10 FEET OF THE METER.

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Alpine UT 84004 COA # RY34912
Signed 11-17-21

THIS PLAN HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY SCOTT WYSSLING, PE USING A DIGITAL SIGNATURE AND DATE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

NORTH

QTY 20 PEIMAR SM325M (FB) MODULES QTY 1 SolarEdge SE5000H-US (240V) INVERTER

SCALE: 1/16”= 1’0” @ SHEET SIZE A3

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

E-100 ELECTRICAL LAYOUT

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

1 CONDUIT, RACEWAY, J-BOX, AND PULL BOXES

SCALE: 1/2" = 1'-0"

WARNING: PHOTOVOLTAIC POWER SOURCE

1. PLACE ON CONDUIT AND/OR RACE WAYS EVERY 10' (60"), 12" FROM BENDS, 12" ABOVE AND BELOW PENETRATIONS.
2. CODE REFERENCE: NEC 690.31(G)(3)
3. MINIMUM OF 1 1/8" x 5 3/4"
4. FONT: 3/8" AND .8 WIDTH FACTOR.
5. REFLECTIVE WHITE LETTERS ON A RED BACKGROUND.

2 DC DISCONNECTS

SCALE: 1/4" = 1'-0"

⚠WARNING

ELECTRICAL SHOCK HAZARD

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

1. PLACED ON DC DISCONNECT(S) AND ON ANY EQUIPMENT THAT STAYS ENERGIZED IN THE OFF POSITION FROM THE PV SUPPLY.
2. CODE REFERENCE: NEC 690.13(B)
3. MINIMUM OF 3 1/2" x 10"
4. FONT: 3/8"
5. WARNING LABEL IS WHITE AND ORANGE

3 INVERTER(S)

SCALE: 1/4" = 1'-0"

⚠WARNING

THE DISCONNECTION OF THE GROUNDED CONDUCTOR(S) MAY RESULT IN OVERVOLTAGE ON THE EQUIPMENT

1. MINIMUM OF 3 1/2" x 10 1/2"
2. FONT: 3/8"
3. WARNING LABEL IS WHITE AND ORANGE

SHEET NOTES

CODE ABBREVIATIONS:
NATIONAL ELECTRICAL CODE (NEC)
INTERNATIONAL BUILDING CODE (IBC)
INTERNATIONAL RESIDENTIAL CODE (IRC)
INTERNATIONAL FIRE CODE (IFC)
UNDERWRITERS LABORATORY (UL)

1. COMBINATION PLACARDS MAY BE USED IN PLACE OF MULTIPLE PLACARDS FOR THE SAME DEVICE. ALL INFORMATION FROM THE MULTIPLE PLACARDS MUST BE PRESENT.
2. BLACK LETTERS WITH YELLOW BACKGROUND MAY BE USED IN PLACE OF THE STANDARD WHITE LETTERS WITH RED BACKGROUND WITH AHJ APPROVAL.
3. ALL INTERIOR AND EXTERIOR DC CONDUIT, ENCLOSURES, RACEWAYS, CABLE ASSEMBLIES, JUNCTION BOXES, COMBINER BOXES AND DISCONNECTS ARE MARKED. (NEC 690.31[G], NEC 690.13 & 690.53)
4. THE MARKINGS ON THE CONDUITS, RACEWAYS AND CABLE ASSEMBLIES ARE EVERY 10 FEET, WITHIN ONE FOOT OF ALL TURNS OR BENDS AND WITHIN ONE FOOT ABOVE AND BELOW ALL PENETRATIONS OF ROOF/CEILING ASSEMBLIES, WALLS AND BARRIERS. (IFC 605.11.1.4, NEC 690.31[G][3])
5. WHERE PV CIRCUITS ARE EMBEDDED IN BUILT-UP, LAMINATE OR MEMBRANE ROOFING MATERIALS IN ROOF AREAS NOT COVERED BY PV MODULES AND ASSOCIATED EQUIPMENT, THE LOCATION OF CIRCUITS SHALL BE CLEARLY MARKED.
6. REQUIRED LABELS SHALL BE PERMANENT AND SUITABLE FOR THE ENVIRONMENT. MATERIALS USED FOR MARKING MUST BE WEATHER RESISTANT. UL STANDARD IS RECOMMENDED TO DETERMINE WEATHER RATING. UL LISTING OF MARKINGS IS NOT REQUIRED. SEE UL LABELING SYSTEM 969 (UL 969)
7. MARKING CONTENT AND FORMAT:
   - 7.1. ARIAL OR SIMILAR FONT, NON-BOLD.
   - 7.2. MINIMUM 3/8" LETTER HEIGHT FOR HEADERS.
   - 7.3. MINIMUM 1/16" LETTER HEIGHT FOR DATA
   - 7.4. CONTRASTING BACKGROUND AND LETTERING.
   - 7.5. ALL CAPITAL LETTERS.
   - 7.6. CONTRASTING SPACE BETWEEN ROWS OF TEXT
   - 7.7. DIMENSIONS OF PLACARDS ARE APPROXIMATE. MAY BE REDUCED AND / OR INCREASED TO UL APPROVED MANUFACTURED PRODUCT

4 NON-LOAD BREAK DC COMBINER / J-BOX

SCALE: 1/2" = 1'-0"

DO NOT OPEN UNDER LOAD

1. CODE REFERENCE: NEC 690.13(C)
2. USE ON NON-LOAD BREAK RATED DISCONNECTION.
3. MINIMUM OF 1" x 6"
4. FONT: 3/8" AND .8 WIDTH FACTOR
5. WHITE LETTERS ON A RED BACKGROUND.

DO NOT DISCONNECT UNDER LOAD

5 DC COMBINER BOX

SCALE: 1/2" = 1'-0"

DC COMBINER BOX

COMBINER # 1

1. USE PLACARD "COMBINER # 1" WHEN MORE THAN 1 DC COMBINER IS USED. NUMBER ACCORDING TO THREE LINE DIAGRAM AND CALCULATIONS.
2. MINIMUM OF 1" x 4"
3. FONT: 3/8" AND .75 TO .8 WIDTH FACTOR
4. WHITE LETTERS ON A RED BACKGROUND.

6 SWITCHBOARDS

SCALE: 1/2" = 1'-0"

⚠WARNING

ARC FLASH HAZARD
APPROPRIATE PPE REQUIRED
FAILURE TO COMPLY CAN RESULT IN DEATH OR INJURY
REFER TO NFPA 70E

1. VERIFY WHICH PLACARD IS REQUIRED WITH AHJ.
2. MINIMUM OF 1" x 4"
3. FONT: 3/8" AND .8 WIDTH FACTOR
4. WARNING LABEL IS WHITE AND ORANGE
5. DATA COLLECTED FROM AS-BUILT INFO, PRIOR TO PTO, BY OTHERS.

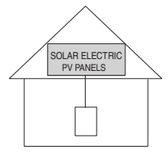
7 MAIN SERVICE PANEL

SCALE: 1/4" = 1'-0"

1. LOCATE NO MORE THAN 1 m FROM THE SERVICE DISCONNT MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.

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.



2. CODE REFERENCE: NEC 690.56(C)(1)(a)
3. TITLE: MIN. 3/8" BLACK CHARACTERS ON YELLOW BACKGROUND, REMAINING CHARACTERS MIN. 3/16" IN BLACK ON WHITE BACKGROUND.

8 AC AND DC DISCONNECTS

SCALE: 1/4" = 1'-0"

AC DISCONNECT # 1

DC DISCONNECT # 1

USE PLACARD "[AC][DC] DISCONNECT # 1" WHEN MORE THAN ONE DISCONNECT IS USED. NUMBER ACCORDING TO THREE LINE DIAGRAM AND CALCULATIONS.

PHOTOVOLTAIC	PHOTOVOLTAIC
DC DISCONNECT	AC DISCONNECT

1. PLACE ON ALL AC AND DC DISCONNECTS
2. CODE REFERENCE: NEC 690.13(B)
3. MINIMUM OF 1" x 10 1/2"
4. FONT: 3/8"
5. WHITE LETTERS ON A RED BACKGROUND.

9 J-BOX, DC COMBINER, AND DC DISCONNECT

SCALE: 1/4" = 1'-0"

⚠WARNING

ELECTRICAL SHOCK HAZARD

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

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

1. ONLY FOR UNGROUNDED SYSTEMS.
2. PLACED ON ALL ENCLOSURES WITH UNGROUNDED CIRCUITS OR DEVICES WHICH ARE ENERGIZED AND MAY BE EXPOSED DURING SERVICE.
3. MINIMUM OF 3" x 10 1/2"
4. FONT: 3/8"
5. WARNING LABEL IS WHITE AND ORANGE

10 INVERTER(S)

SCALE: 1/2" = 1'-0"

INVERTER # 1

1. USE PLACARD "INVERTER # 1" WHEN MORE THAN 1 INVERTER IS USED. NUMBER ACCORDING TO THREE LINE DIAGRAM AND CALCULATIONS.
2. MINIMUM OF 1" x 4"
3. FONT: 3/8"
4. WHITE LETTERS ON A RED BACKGROUND.

11 RAPID SHUTDOWN SWITCH

SCALE: 1/4" = 1'-0"

1. A RAPID SHUTDOWN SWITCH SHALL HAVE A LABEL LOCATED ON OR NO MORE THAN 1M (3 FT) FROM THE SWITCH THAT INCLUDES THE FOLLOWING:

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

2. THE LABEL SHALL BE REFLECTIVE WITH ALL LETTERS CAPITALIZED AND HAVING A MINIMUM HEIGHT OF 9.5 MM (3⁄8 IN.), IN WHITE ON RED BACKGROUND.

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ENGINEERING STAMP (if appl.)

SCOTT E WYSSLING LICENSE No. 81558 STATE OF FLORIDA PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # RY34912
Signed 11-17-21

QTY 20 PEIMAR SM325M (FB) MODULES QTY 1 SolarEdge SE5000H-US (240V) INVERTER

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

P-001 STANDARD PLACARDS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

1 DC DISCONNECTS & DISCO. COMBINER

SCALE: 1/4" = 1'-0"

PV SYSTEM DC DISCONNECT
MAXIMUM CIRCUIT CURRENT 30.0 ADC
MAXIMUM VOLTAGE 480 VDC
#1

PHOTOVOLTAIC SYSTEM
DC DISCONNECT
MAX. CIRCUIT CURRENT 30.0 ADC
MAXIMUM VOLTAGE 480 VDC

PV SYSTEM DC DISCONNECT
MAXIMUM CIRCUIT CURRENT ADC
MAXIMUM VOLTAGE VDC
#2

PHOTOVOLTAIC SYSTEM
DC DISCONNECT
MAX. CIRCUIT CURRENT ADC
MAXIMUM VOLTAGE VDC

PV SYSTEM DC DISCONNECT
MAXIMUM CIRCUIT CURRENT ADC
MAXIMUM VOLTAGE VDC
#3

PHOTOVOLTAIC SYSTEM
DC DISCONNECT
MAX. CIRCUIT CURRENT ADC
MAXIMUM VOLTAGE VDC

1. PLACARD PLACED ON EACH DISCONNECT, IF MORE THAN ONE PRESENT.
2. VALUES MUST MATCH EQUIPMENT CALCULATIONS.
   SEE SHEET "E-001 / DC DISCONNECT [#]"
3. CODE REFERENCE: NEC 690.53
4. MINIMUM OF 2 1/2" x 8" OR 5" x 2 1/2" RESPECTIVELY.
5. FONT: 3/8" HEADER, 3/16" DATA
6. WHITE LETTERS ON A RED BACKGROUND.
7. IN SOME CASES TWO LABELS MAY BE REQUIRED. AN INVERTER WITH INTEGRATED DC DISCONNECT UTILIZING TWO MPPT TRACKERS; IF CONFIGURATION USES DIFFERENT MODULES.

2 AC DISCONNECT, AC SUB-PANEL

SCALE: 1/4" = 1'-0"

AC DISCONNECT #1 - INDEPENDENT/ SEPARATE

PV SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT 21.0 AMPS
AC NORMAL OPERATING VOLTAGE 240 VOLTS

PHOTOVOLTAIC SYSTEM
AC DISCONNECT
RATED AC OUTPUT CURRENT 21.0 AMPS
AC NORMAL OPERATING VOLTAGE 240 VOLTS

STRING INVERTER #1 - INTEGRATED AC DISCONNECT

PV SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT 21.0 AMPS
AC NORMAL OPERATING VOLTAGE 240 VOLTS

PHOTOVOLTAIC SYSTEM
AC DISCONNECT
RATED AC OUTPUT CURRENT 21.0 AMPS
AC NORMAL OPERATING VOLTAGE 240 VOLTS

STRING INVERTER #2 - INTEGRATED AC DISCONNECT

PV SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT AMPS
AC NORMAL OPERATING VOLTAGE VOLTS

PHOTOVOLTAIC SYSTEM
AC DISCONNECT
RATED AC OUTPUT CURRENT AMPS
AC NORMAL OPERATING VOLTAGE VOLTS

AC SUB-PANEL #1

PV SYSTEM AC DISCONNECT
RATED AC OUTPUT CURRENT AMPS
AC NORMAL OPERATING VOLTAGE VOLTS

PHOTOVOLTAIC SYSTEM
AC DISCONNECT
RATED AC OUTPUT CURRENT AMPS
AC NORMAL OPERATING VOLTAGE VOLTS

1. PLACARD PLACED ON EACH SOLAR SYSTEM DISCONNECTING COMPONENT.
2. VALUES MUST MATCH EQUIPMENT CALCULATIONS.
   SEE SHEET "E-001 / AC DISCONNECT [#]"
3. CODE REFERENCE: NEC 690.54
4. MINIMUM OF 1 1/2" x 8 1/2" OR 1 3/4" x 6 1/2" RESPECTIVELY.
5. FONT: 3/8" HEADER, 3/16" DATA
6. WHITE LETTERS ON A RED BACKGROUND.

3 UTILITY METER, SERVICE PANEL, SUB-PANEL

SCALE: 1/4" = 1'-0"

WARNING
DUAL POWER SOURCES
RATED AC OUTPUT CURRENT 21.0 AMPS
AC NORMAL OPERATING VOLTAGE 240 VOLTS
#1

BUILDING CONTAINS TWO SOURCES OF POWER: UTILITY, SOLAR PV UTILITY SERVICE DISCONNECT LOCATED BELOW. SOLAR PV SYSTEM DISCONNECT LOCATED [N/E/S/W] WALL OF BUILDING
#2

BUILDING CONTAINS TWO SOURCES OF POWER: UTILITY, SOLAR PV UTILITY SERVICE DISCONNECT LOCATED BELOW. SOLAR PV SYSTEM DISCONNECT LOCATED [N/E/S/W] WALL OF BUILDING
#3

1. (#1) PLACARD PLACED AT MAIN UTILITY SERVICE DISCONNECT/BREAKER AND PV SYSTEM SUPPLY BREAKER AT POINT OF INTERCONNECTION. (#2 & #3) PLACARD(S) REQUIRED WITH #1 PLACARD WHEN UTILITY SERVICE AND PV SYSTEM DISCONNECT(S) ARE NOT LOCATED NEXT TO EACH OTHER. MAP PLACARD REQUIRED AS SPECIFIED.
2. VALUES MUST MATCH EQUIPMENT CALCULATIONS.
   2.1. VALUES WILL MATCH LOAD CENTER OR SUB-PANEL VALUES IF INSTALLED AFTER INVERTERS. IF AC CONNECTION TO SERVICE PANEL COMES FROM INVERTERS; SEE SHEET "E-001 / STRING INVERTER[#] SPECIFICATIONS".
      2.1.1. INVERTERS ARE PARALLEL CONNECTIONS.
      2.1.2. "RATED AC OUTPUT CURRENT" WILL BE THE SUM OF THE INVERTERS
      2.1.3. "AC NORMAL OPERATING VOLTAGE" WILL BE THE NAME PLATE RATING OF THE INVERTER
3. CODE REFERENCE: NEC 690.54, NEC 705.12(B)(3)
4. MINIMUM OF 2" x 6 1/2" (#1), VARIES (#2 & #3)
5. FONT: 3/8" HEADER, 3/16" DATA (#1), 1/4" (#2 & #3)
6. WHITE LETTERS ON A RED BACKGROUND.

SHEET NOTES

CODE ABBREVIATIONS:
NATIONAL ELECTRICAL CODE (NEC)
INTERNATIONAL BUILDING CODE (IBC)
INTERNATIONAL RESIDENTIAL CODE (IRC)
INTERNATIONAL FIRE CODE (IFC)
UNDERWRITERS LABORATORY (UL)

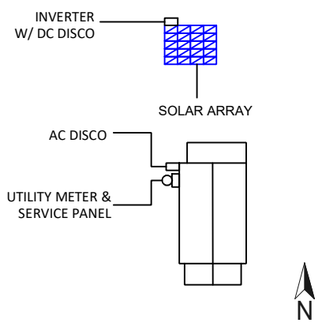
1. COMBINATION PLACARDS MAY BE USED IN PLACE OF MULTIPLE PLACARDS FOR THE SAME DEVICE. ALL INFORMATION FROM THE MULTIPLE PLACARDS MUST BE PRESENT.
2. BLACK LETTERS WITH YELLOW BACKGROUND MAY BE USED IN PLACE OF THE STANDARD WHITE LETTERS WITH RED BACKGROUND WITH AHJ APPROVAL.
3. ALL INTERIOR AND EXTERIOR DC CONDUIT, ENCLOSURES, RACEWAYS, CABLE ASSEMBLIES, JUNCTION BOXES, COMBINER BOXES AND DISCONNECTS ARE MARKED. (NEC 690.31[E][3], NEC 690.31[E][4] & 690.53)
4. REQUIRED LABELS SHALL BE PERMANENT AND SUITABLE FOR THE ENVIRONMENT. MATERIALS USED FOR MARKING MUST BE WEATHER RESISTANT. UL STANDARD IS RECOMMENDED TO DETERMINE WEATHER RATING. UL LISTING OF MARKINGS IS NOT REQUIRED. SEE UL LABELING SYSTEM 969 (UL 969)
5. MARKING CONTENT AND FORMAT:
   5.1. ARIAL OR SIMILAR FONT, NON-BOLD.
   5.2. MINIMUM 3/8" LETTER HEIGHT FOR HEADERS.
   5.3. MINIMUM 1/16" LETTER HEIGHT FOR DATA
   5.4. CONTRASTING BACKGROUND AND LETTERING.
   5.5. ALL CAPITAL LETTERS.
   5.6. CONTRASTING SPACE BETWEEN ROWS OF TEXT
   5.7. DIMENSIONS OF PLACARDS ARE APPROXIMATE. MAY BE REDUCED AND / OR INCREASED TO UL APPROVED MANUFACTURED PRODUCT
6. ANSI Z535.4 PRODUCT SAFETY SIGNS AND LABELS: THIS INFORMATIONAL NOTE AND ITS REQUIREMENTS FOR PLACARDS MAY BE USED WITH PRIOR APPROVAL OF THE AHJ. MOST NOTABLE DIFFERENCES IS COLOR OF PLACARDS AND USE OF HAND WRITTEN VALUES WITH INDUSTRIAL MARKERS ON STANDARD PLACARDS WHERE THE VALUE MAY CHANGE AT A FUTURE DATE. I.E. ADDING MODULES AT A FUTURE DATE, OR STANDARD PLACARD MANUFACTURER INSTALLED ON ELECTRICAL COMPONENT. AHJ APPROVAL REQUIRED. (SEE NOTE #1 FOR INDIVIDUAL PLACARDS)

4 MAP PLACARD: MAIN SERVICE PANEL AND PV INVERTER (IF NOT SAME LOCATION)

SCALE: 1/2" = 1'-0"

(WITH COMBINED WARNING PLACARD IF REQUIRED. EXAMPLE: LADWP)

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



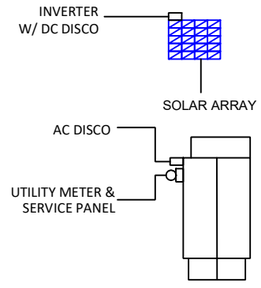
WARNING
ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS
TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

1. PLACARD PLACED AT ELECTRICAL SERVICE AND AT THE PV INVERTER AND PV DISCONNECTS IF NOT AT THE SAME LOCATION.
2. MAP PLACARD PROVIDES A DIRECTORY OF THE SERVICE DISCONNECTING MEANS AND PHOTOVOLTAIC SYSTEM DISCONNECTION MEANS.
3. CODE REFERENCE: NEC 690.56(A)(B), 705.10
4. WHITE LETTERS ON A RED BACKGROUND.
5. MINIMUM OF 7 3/4" x 5"
6. FONT: 3/4" "CAUTION", 1/4" "WARNING", 3/16" HEADER, 1/8" DATA AND NOTES
7. PLACARD WILL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT IN A LOCATION CLEARLY VISIBLE FROM WHERE THE DISCONNECT IS OPERATED. (IFC 605.11.1.3)

5 MAP PLACARD: MAIN SERVICE PANEL AND PV INVERTER (IF NOT SAME LOCATION)

SCALE: 1/2" = 1'-0"

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



1. PLACARD PLACED AT ELECTRICAL SERVICE AND AT THE PV INVERTER AND PV DISCONNECTS IF NOT AT THE SAME LOCATION.
2. MAP PLACARD PROVIDES A DIRECTORY OF THE SERVICE DISCONNECTING MEANS AND PHOTOVOLTAIC SYSTEM DISCONNECTION MEANS.
3. CODE REFERENCE: NEC 690.56(A)(B), 705.10
4. WHITE LETTERS ON A RED BACKGROUND.
5. MINIMUM OF 6 1/2" x 6 1/2"
6. FONT: 3/4" "CAUTION", 1/4" HEADER, 1/8" DATA AND NOTES
7. PLACARD WILL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT IN A LOCATION CLEARLY VISIBLE FROM WHERE THE DISCONNECT IS OPERATED. (IFC 605.11.1.3)

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SCOTT E WYSSLING LICENSE No. 81558 STATE OF FLORIDA PROFESSIONAL ENGINEER

Wyssling Consulting, PLLC
76 N Meadowbrook Drive
Alpine UT 84004 COA # RY34912

Signed 11-17-21

RESPONSIBILITY NOTES

1. PRIME CONTRACTOR / PERMIT APPLICANT SIGNER IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE PHOTOVOLTAIC SYSTEM INSTALLATION. PRIME CONTRACTOR / PERMIT APPLICANT SIGNER WILL BE RESPONSIBLE FOR COLLECTION OF EXISTING ONSITE INFORMATION REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE EXTERIOR MOUNTED PORTION OF THE PHOTOVOLTAIC SYSTEM DETAILED IN THIS DOCUMENT.
2. ADVANCED SOLAR SOLUTIONS, INC IS RESPONSIBLE FOR APPLYING SUPPLIED INFORMATION INTO A SET OF PERMIT DRAWINGS. ANY CHANGES TO DRAWINGS ARE SUBJECT TO CONTRACT CONDITIONS BETWEEN THE CLIENT AND ADVANCED SOLAR SOLUTIONS, INC. IN ACCORDANCE WITH THE REQUIREMENTS OF THE AHJ.

REV	DATE	
	11/16/2021	RELEASE SUBMIT FOR PERMIT

P-002

DYNAMIC PLACARDS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Daybreak Install LLC

PEIMAR
ITALIAN PHOTOVOLTAIC MODULES

60-CELL LINE

SM325M (FB)

60-CELL LINE

MADE IN ITALY MODULE

Peimar monocrystalline solar panels, produced using a combination of innovative production processes and advanced engineering techniques, provide customers with maximum output and super high performance.
This allows fewer panels to be used to generate more energy, ideal if space is restricted or environmental conditions are challenging. Modern design, using matching black cells and frames and a very long lifespan ensure this monocrystalline are a great option.

30 YEAR LINEAR POWER WARRANTY
20 YEAR PRODUCT WARRANTY

PERC TECHNOLOGY

MODULE FIRE PERFORMANCE: **CLASS 1**

ANTI-REFLECTIVE GLASS

QBE INSURANCE
Product Liability Insurance QBE

ELECTRICAL CHARACTERISTICS (STC) [1]

	SM325M (FB)
Nominal Output (Pmax) [2]	325 W
Sorting Tolerance	0/+5 W
Voltage at Pmax (Vmp)	34.15 V
Current at Pmax (Imp)	9.52 A
Open Circuit Voltage (Voc) [2]	41.67 V
Short Circuit Current (Isc) [2]	10.08 A
Maximum System Voltage	1500 V
Maximum Series Fuse Rating	15 A
Module Efficiency	19,48%
Protection class against electric shock	Class II

MECHANICAL CHARACTERISTICS

Solar Cells	60 (6x10) M3 monocrystalline ***PERC***
Solar Cells Size	158,75x158,75 mm / 6,25x6,25"
Front Cover	3.2 mm / 0.13" thick, low iron tempered glass
Back Cover	TPT (Tedlar-PET-Tedlar)
Encapsulant	EVA (Ethylene vinyl acetate)
Frame	Anodized aluminium alloy, double wall
Frame finishing	Black
Backsheet finishing	Black
Diodes	3 Bypass diodes serviceable
Junction Box	IP67 rated
Connector	MC4 or compatible connector
Cables Lenght	900 mm / 35,43"
Cables Section	4.0 mm² / 0,006 in²
Dimensions	1665x1002x40 mm / 65.55x39.45x1.57"
Weight	18.6 Kg / 41.01 lbs
Max Load (Test Load) - SF	5400 Pa - 1.5 [5]

TEMPERATURE CHARACTERISTICS

NMOT [3]	45±2 °C
Temperature Coefficient of Pmax	-0.37 %/°C
Temperature Coefficient of Voc	-0.28 %/°C
Temperature Coefficient of Isc	0,042 %/°C
Operating Temperature	-40 °C ~ +85°C

PACKAGING [4]

Pallet dimensions	1720x1200x1210 mm / 67.72x47.24x47.64"
Pieces per pallet	27
Weight	535 Kg / 1179 lbs

CERTIFICATIONS

Fire Resistance Rating	Class of reaction to fire: 1 (UNI 9177)
Fire Performance Rating	Type 1 (UL 61730:2017)
Product Certificate	UL 61730:2017

CELLS

60 CELLS
MONO 5BB / 9BB M3 | ***PERC***

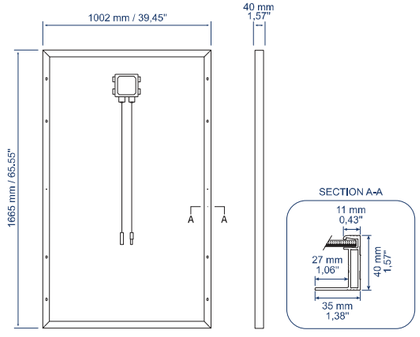
158.75x158.75mm / 6.25x6.25"

FRAME

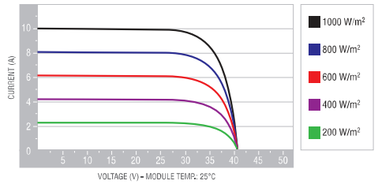
COMPACT AND STURDY | ***40mm***

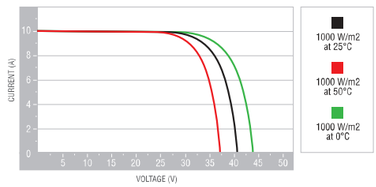
ANCHORABLE ALSO ON THE SHORT SIDE [5]

DIMENSIONS



CURRENT/VOLTAGE CHARACTERISTICS





1. STC: (Standard Test Condition) Irradiance 1000W/m²; Module Temperature 25°C; Air Mass 1.5
2. Pmax, Voc, Isc measurement tolerance: ±3%
3. NMOT: Nominal Module Operating Temperature: Irradiance 800W/m²; Air 20°C; Wind speed 1m/s
4. Pallets can be stacked up to two
5. Consult the installation manual for the relative mounting configurations

www.peimar.com

USA_2021_06_00

PEIMAR
ITALIAN PHOTOVOLTAIC MODULES

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-100

EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Certificate of Compliance

Certificate: 80042800 **Master Contract:** 274817

Project: 80042800 **Date Issued:** 2020-11-03

Issued To: **Peimar Inc**
309 Fellowship Road, Suite 115
East Gate Center
Mount Laurel, New Jersey, 08054
United States

Attention: Stefano Caruso

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: Michael Hoffnagle
Michael Hoffnagle

C US

PRODUCTS

CLASS 5311 10 - POWER SUPPLIES - Photovoltaic Modules and Panels
CLASS 5311 90 - POWER SUPPLIES - Photovoltaic Modules and Panels (Certified to U.S. Standards)

Certificate: 80042800
Project: 80042800

Master Contract: 274817
Date Issued: 2020-11-03

- Model SMXXXM Series, mono-crystalline silicon, 72 Cell, where xxx is the power output from 405 W to 340 W.

Model	Rated Max @ STC (Watts)	Voltage at Rated @ Max Power (V)	Current at Rated Max Power @ STC (A)	Open Circuit Voltage @ STC (A)	Short Circuit Current @ STC (A)
	(Pmax)	(Vmp)	(Imp)	(Voc)	(Isc)
SM405M	405	41.5	9.76	50.63	10.34
SM400M	400	41.3	9.69	50.39	10.26
SM395M	395	41.1	9.61	50.14	10.18
SM390M	390	40.9	9.54	49.9	10.1
SM385M	385	40.7	9.46	49.66	10.02
SM380M	380	40.5	9.39	49.41	9.94
SM375M	375	40.3	9.31	49.17	9.86
SM370M	370	40.1	9.24	48.92	9.78
SM365M	365	39.9	9.16	48.68	9.7
SM360M	360	39.7	9.09	48.44	9.62
SM355M	355	39.5	9.01	48.19	9.54
SM350M	350	39.3	8.94	47.95	9.46
SM345M	345	39.1	8.86	47.70	9.38
SM340M	340	38.9	8.79	47.46	9.3
Max Series Fuse Rating (A)	15				
Max System Voltage (V)	1500				
Fire Performance Rating	Type 1				

- Model SMXXXM Series, mono-crystalline silicon, 60 Cell, where xxx is the power output from 340 W to 290 W.

Model	Rated Max @ STC (Watts)	Voltage at Rated @ Max Power (V)	Current at Rated Max Power @ STC (A)	Open Circuit Voltage @ STC (A)	Short Circuit Current @ STC (A)
	(Pmax)	(Vmp)	(Imp)	(Voc)	(Isc)
SM340M	340	34.75	9.79	42.39	10.37
SM335M	335	34.55	9.7	42.16	10.27
SM330M	330	34.35	9.61	41.91	10.18
SM325M	325	34.15	9.52	41.67	10.08
SM320M	320	33.95	9.43	41.42	9.98

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EQUIP. CUT SHEETS

R-101

6.500 kW PHOTOVOLTAIC PLANS

NAME Dodsworth, Janet
ADDRESS 3035 County Rd 18
ADDRESS Lake City, FL 32025
APN

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Certificate: 80042800
Project: 80042800

Master Contract: 274817
Date Issued: 2020-11-03

SM315M	315	33.75	9.34	41.18	9.89
SM305M	305	33.55	9.25	40.94	9.79
SM300M	300	33.35	9.16	40.70	9.69
SM295M	295	33.15	9.07	40.45	9.59
SM290M	290	32.95	8.98	40.21	9.50
Max Series Fuse Rating (A)	15				
Max System Voltage (V)	1500				
Fire Performance Rating	Type 1				

Design Load: 3600 Pa
Test Load: 5400 Pa

Notes:
1. Rated electrical characteristics are within +/-10% of measured values at Standard Test Conditions of 100 mW/cm2 irradiance, AM 1.5 spectrum, and 25ºC.
2. 1500V maximum system voltage can only be used with 1500V rated components (Junction box, connector and cable)

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

MARKINGS

The manufacturer is required to apply the following markings:
- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

Certificate: 80042800
Project: 80042800

Master Contract: 274817
Date Issued: 2020-11-03

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

1. The following markings appear on the enclosure by silk-screening, permanent ink stamping, on adhesive labels that appear on the CSA List of Accepted Adhesive Nameplates, or by other permanent method:
   Each PV module shall include the following clear and indelible markings:
   a) Submitter's name and/or CSA Master Contract number "266494".
   b) Model designation.
   c) Complete electrical ratings at STC:
      - Open-circuit voltage (include tolerances)
      - Operating voltage
      - Maximum system voltage
      - Short-circuit current (include tolerances)
      - Current at rated operating voltage
      - Maximum power (include tolerances)
   d) date and place of manufacture; alternatively serial number assuring traceability of date and place of manufacture;
   e) PV module classification: Class II, as indicated
   f) PV module application class: Class A
   g) For Class II PV modules, the (IEC 60417-6042: Caution, risk of electric shock) symbol shall be applied, the caution mark:
   h) Maximum over-current protection rating.
   i) The CSA Monogram with the "C/US" indicators;

2. All electrical data shall be shown as relative to standard test conditions (STC) (1 000 W/m^2, (25 ± 2) °C, AM 1.5 according to IEC 60904-3).

3. Polarity of terminals or leads, PV connectors shall be clearly marked indicating the terminal polarity. A module or panel may be identified with one of the following marking statements:
   "+" and "-" or
   "POS" and "NEG" or
   "POSITIVE" and "NEGATIVE"

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R-102 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Certificate: 80042800
Project: 80042800

Master Contract: 274817
Date Issued: 2020-11-03

4. PV connectors or wiring shall be marked in accordance to IEC 62852 with “Do not disconnect under load”. Symbol or warning notice shall be imprinted or labelled close to connector.

The following symbols may be used to show that a PV connector shall not be disconnected under load. See Figures A.1 and A.2.

Figure A.1 – Symbol "DO NOT DISCONNECT UNDER LOAD"

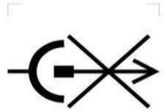

Figure A.2 – Symbol "DO NOT DISCONNECT UNDER LOAD" (IEC 60417-6070)

5. A wiring terminal or bonding location of a PV module intended to accommodate a field installed bonding conductor for equipotential bonding shall be identified with the appropriate symbol IEC 60417-5019 ⏚. Each grounding point is identified with ground symbol located adjacent to terminal.

6. PV modules provided with terminals for field wiring rated only for use with copper wire shall be marked, at or adjacent to the terminals, with the statement "Use copper wire only", "Cu only", or the equivalent.

7. PV modules provided with terminals for field wiring rated only for use with a different specific wiring material shall be marked with a similar statement referring to the rated material.

8. PV modules provided with terminals for field wiring rated for use with all types of wiring material do not need to be marked.

9. The recommended maximum series/ parallel module configurations shall be applied to either the module or placed into the instruction and installation manual.

10. A module employing a nonmetallic junction box having a threaded or unthreaded opening shall be marked “for use with nonmetallic conduit systems only” or the equivalent.

11. A module employing a nonmetallic junction box having threaded or unthreaded opening shall be marked “For use with nonmetallic conduit systems only” or the equivalent.

12. System Fire Class Rating: See Installation Instructions for Installation Requirements to Achieve a Specified System Fire Class Rating with this Product, this statement should be marked on the label.

13. Module Fire Performance: Class A (CSA 61730:2019) or Type 1 (UL 61730:2017).

Supplement to Certificate of Compliance

Certificate: 80042800

Master Contract: 274817

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
80042800	2020-11-03	New Certification Evaluation of Peimar PV modules to UL61730 and CAN/CSA 61730 Standards from IEC CB Scheme. Additional models and components were added to the project. - CB Certificates for IEC 61730-1 and -2 are provided along with supporting IEC test reports - Gap testing only for UL ND - Fire testing will be carried over from UL1703 certification report.

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

EQUIP. CUT SHEETS

R-103

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

12-25 YEAR WARRANTY

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

solaredge.com

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Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380				400			Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional[3]							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG					3/4" minimum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4	26.2 / 11.9		38.8 / 17.6		lb / kg
Noise	< 25				<50			dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -25 to +60[4] (-40°F / -40°C option)[5]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated
(3) Revenue grade inverter P/N: SExxxxH-US000NNC2
(4) For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
(5) -40 version P/N: SExxxxH-US000NNU4

RoHS

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

EQUIP. CUT SHEETS

R-104

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / 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

solaredge.com

solaredge

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P401 / P405 / P485 / P505

Optimizer model (typical module compatibility)	P320 (for 60-cell modules)	P340 (for high-power 60-cell modules)	P370 (for higher-power 60 and 72-cell modules)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72 cell modules)	P405 (for high-voltage modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT									
Rated Input DC Power(1)	320	340	370	400		405	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	48		60	80	60	125(2)		83(2)	Vdc
MPPT Operating Range	8 - 48		8 - 60	8 - 80	8-60	12.5 - 105		12.5 - 83	Vdc
Maximum Short Circuit Current (Isc)	11			10.1	11.75	11		14	Adc
Maximum DC Input Current	13.75			12.5	14.65	12.5		17.5	Adc
Maximum Efficiency	99.5								%
Weighted Efficiency	98.8							98.6	%
Overvoltage Category	II								
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)									
Maximum Output Current	15								Adc
Maximum Output Voltage	60					85			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 Part15 Class B, IEC61000-6-2, IEC61000-6-3								
Safety	IEC62109-1 (class II safety), UL1741								
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(3)						Single or dual MC4(3)(4)	MC4(3)	
Input Wire Length	0.16 / 0.52								m / ft
Output Wire Type / Connector	Double Insulated / MC4								
Output Wire Length	0.9 / 2.95		1.2 / 3.9						m / ft
Operating Temperature Range(5)	-40 - +85 / -40 - +185								°C / °F
Protection Rating	IP68 / NEMA6P								
Relative Humidity	0 - 100								%

(1) 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
(2) NEC 2017 requires max input voltage be not more than 80V
(3) For other connector types please contact SolarEdge
(4) For dual version for parallel connection of two modules use P485-4NMDMRM. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module. When connecting a single module seal the unused input connectors with the supplied pair of seals.
(5) 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.

PV System Design Using a SolarEdge Inverter(6)(7)		Single Phase HD-Wave	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P320, P340, P370, P400, P401	8		10	18	
	P405, P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50(8)	
Maximum Power per String		5700 (6000 with SE7600-US - SE11400-US)	5250	6000(9)	12750(10)	W
Parallel Strings of Different Lengths or Orientations		Yes				

(6) For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf
(7) It is not allowed to mix P405/P485/P505 with P320/P340/P370/P400/P401 in one string
(8) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement
(9) 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
(10) 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

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 | 11/16/2021 | SUBMIT FOR PERMIT

R-105 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME Dodsworth, Janet
ADDRESS 3035 County Rd 18
ADDRESS Lake City, FL 32025
APN

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CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

datasheet

IRONRIDGE

Ground Mount System

Mount on all terrains, in no time.

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

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

Rugged Construction
Engineered steel and aluminum components ensure durability.

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

UL 2703 Listed System
Meets newest effective UL 2703 standard.

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

Flexible Architecture
Multiple foundation and array configuration options.

20-Year Warranty
Twice the protection offered by competitors.

datasheet

360° Product Tour
Visit ironridge.com

Substructure

Top Caps

Connect vertical and cross pipes.

Bonded Rail Connectors

Attach and bond Rail Assembly to cross pipes.

Diagonal Braces

Optional Brace provides additional support.

Cross Pipe & Piers

Steel pipes or mechanical tubing for substructure.

Rail Assembly

XR1000 Rails

Curved rails increase spanning capabilities.

UFOs

Universal Fastening Objects bond modules to rails.

Stopper Sleeves

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

Accessories

Wire Clips and End Caps provide a finished look.

Resources

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

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

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-106

EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

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2100 N Main St Ste. 212
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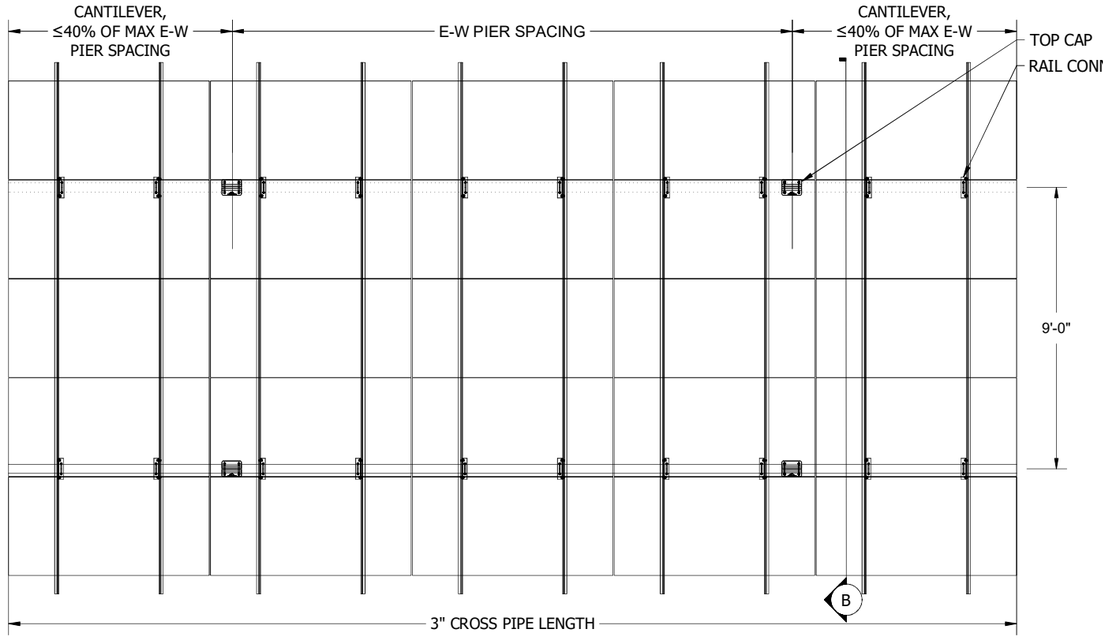
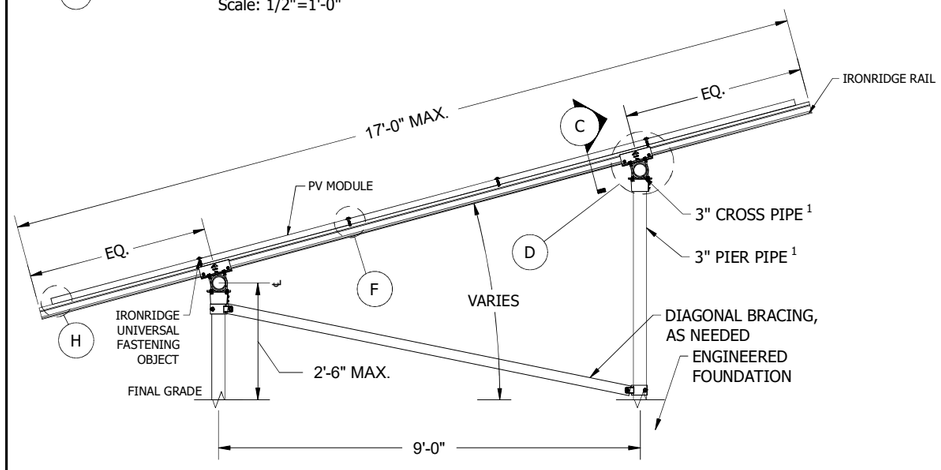
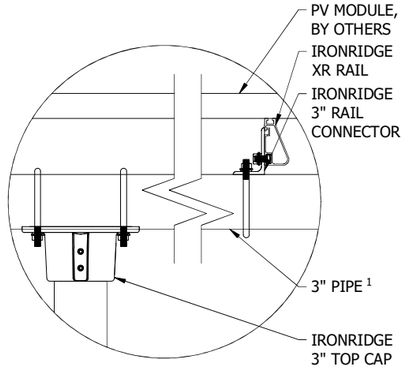
RACKING & RAIL CUT SHEET



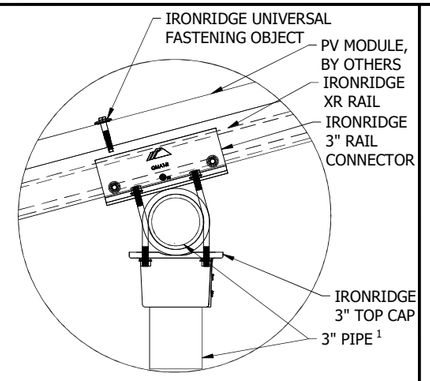
A 5-UP - PV SYSTEM PLAN DETAIL
Scale: 1/2"=1'-0"



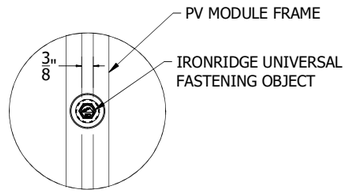
B 5-UP - PV SYSTEM SIDE SECTION
Scale: 3/4"=1'-0"



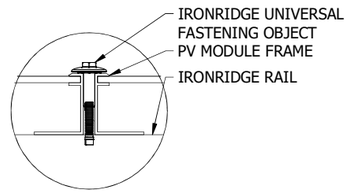
C PIPE FITTINGS DETAIL
3"=1'-0"



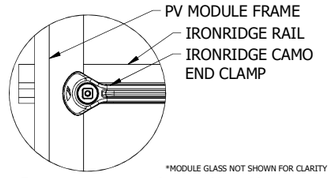
D PIPE FITTINGS DETAIL
3"=1'-0"



E DETAIL, MID CLAMP PLAN
6"=1'-0"

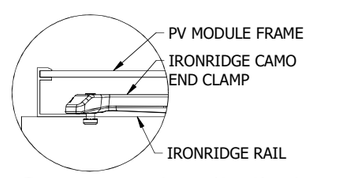


F DETAIL, MID CLAMP FRONT
6"=1'-0"

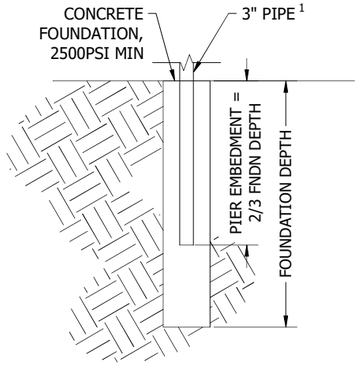


*MODULE GLASS NOT SHOWN FOR CLARITY

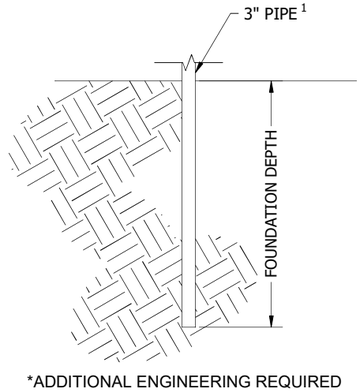
G DETAIL, END CLAMP (CAMO) PLAN
6"=1'-0"



H DETAIL, END CLAMP (CAMO) FRONT
6"=1'-0"

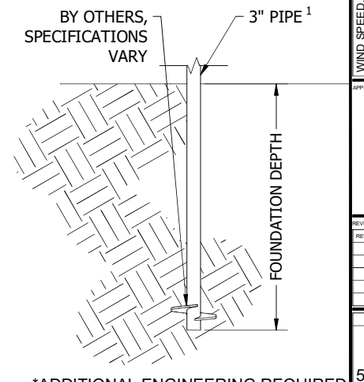


J DRILL/POUR FOUNDATION
Scale: 3/4"=1'-0"



*ADDITIONAL ENGINEERING REQUIRED

K DRIVEN PIER FOUNDATION
Scale: 3/4"=1'-0"



*ADDITIONAL ENGINEERING REQUIRED

L HELICAL PILE FOUNDATION
Scale: 3/4"=1'-0"

SHEET NOTES

1. SCHEDULE 40 PIPE OR ALLIED MECHANICAL TUBING (8GA WALL THICKNESS)

IRONRIDGE
1495 ZEPHYR AVE. HAYWARD, CA 94544
800.227.9523 IRONRIDGE.COM

IRONRIDGE — GROUND MOUNT SYSTEM

CLIENT NAME
PROJECT NAME
PROJECT ADDRESS
SYSTEM KW DC
WIND SPEED, MPH
SNOW LOAD, PSF
EXPOSURE CAT
RISK CAT
MODULE TYPE — 72-CELL, GENERIC
MODULE W DC
MODULE QTY
APPROVAL STATUS

REVISION HISTORY

REV	DESCRIPTION	DATE

SHEET NAME
PV SYSTEM DETAILS 5-UP 3" (CAMO)

JOB NO.	2.09 GM
ISSUE DATE	JUNE 2018
SHEET NO.	IR 6.1
SHEET SIZE	24X36

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-107 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Starling Madison Lofquist, Inc.
Consulting Structural and Forensic Engineers
5224 South 39th Street, Phoenix, Arizona 85040
tel: (602) 438-2500 fax: (602) 438-2505 ROC#291316 www.smleng.com

IronRidge
28357 Industrial Boulevard
Hayward, CA 94545

July 1, 2019
Page 1 of 52

Attn: Mr. Corey Geiger, VP New Markets, IronRidge Inc.

Subject: Ground Mounting System – Structural Analysis – 5 Module (XR1000)

Dear Sir:

We have analyzed the subject ground mounted structure and determined that it is in compliance with the applicable sections of the following Reference Documents:

Codes: ASCE/SEI 7-16 Min. Design Loads for Buildings & Other Structures
Florida Building Code, 2020 Edition
Other: AC428, Acceptance Criteria for Modular Framing Systems Used to Support PV Modules, dated Effective November 1, 2012 by ICC-ES
Aluminum Design Manual, 2015 Edition
IronRidge Exhibit EX-0002

The structure is a simple column (pier) and beam (cross pipe) system. The piers & cross pipes are ASTM A53 Grade B standard weight (schedule 40) steel pipes or Allied Mechanical Tubing. Please refer to Exhibit EX-0002 for approved pipe geometry and material properties. The tops of the piers are connected in the E-W direction by the cross pipes which cantilever over and extend past the end piers. The cross pipes are connected by proprietary IronRidge XR1000 Rails spanning up and down the slope which cantilever over and extend past the top and bottom cross pipes. There are typically two rails per column of modules. The modules are clamped to the rails by the IronRidge Module Mounting Clamps as shown in the attached Exhibit.

Gravity loads are transferred to the piers and foundations by the rails and cross pipes acting as simple beams. For lateral loads the system is either a cantilever structure or, when diagonal braces are provided, a braced frame. The effect of seismic loads (for all design categories A-F) have been determined to be less than the effect due to wind loads in all load conditions and combinations.

The pier spacing in the N-S direction is 9'-0". The pier spacing in the E-W direction is selected from load tables determined by the structural design for the specified slope, wind load, and snow load. The governing criteria for the pier spacing is either the spanning capacity of the cross pipes or the cantilever capacity of the pier. Simplified Load Tables 1A-F & 2A-F are included herein for reference.

More comprehensive information covering all load combinations is available at the IronRidge website, IronRidge.com.

Table 2D - MAXIMUM PIER SPACING (in)

3" Braced Pipe Frame	Snow	Slope (deg)									
Wind Speed & Exposure Category	psf	0	5	10	15	20	25	30	35	40	45
100 mph Exposure B	0	206	206	202	196	187	179	172	172	173	174
	10	182	182	180	178	176	175	172	172	173	174
	20	155	155	155	154	155	157	158	163	170	174
	30	145	146	145	144	146	149	152	158	165	172
	40	133	133	133	132	135	139	142	149	157	166
	50	121	121	122	123	126	130	135	142	150	160
	60	111	111	112	113	119	123	128	135	144	154
105 mph Exposure B	0	206	206	194	189	179	172	165	165	166	166
	10	182	182	176	174	172	170	165	165	166	166
	20	155	155	152	151	152	153	154	159	165	166
	30	145	146	143	142	144	146	148	153	160	166
	40	133	133	131	131	133	136	140	146	153	161
	50	121	121	122	122	125	128	132	139	147	156
	60	111	111	112	113	118	122	126	133	141	151
110 mph Exposure B	0	206	206	187	182	173	165	158	158	159	160
	10	182	182	172	170	167	165	158	158	159	160
	20	155	155	149	148	149	149	150	155	159	160
	30	145	146	141	140	141	143	145	150	156	160
	40	133	133	129	129	131	134	137	142	149	157
	50	121	121	120	120	123	126	130	136	144	152
120 mph Exposure B	0	198	203	174	169	160	153	147	146	147	148
	10	178	180	164	162	158	153	147	146	147	148
	20	153	154	144	143	143	143	143	146	147	148
	30	143	145	136	135	136	137	138	142	147	148
	40	131	132	126	125	127	129	131	136	142	148
	50	121	121	118	117	119	122	125	130	137	144
130 mph Exposure B	0	186	191	163	158	149	143	137	136	137	137
	10	171	174	157	154	149	143	137	136	137	137
	20	148	150	139	138	137	136	135	136	137	137
	30	140	141	132	131	131	131	131	135	137	137
	40	128	130	123	122	123	124	125	130	135	137
	50	119	120	115	114	116	118	120	125	131	137
140 mph Exposure B	0	175	180	153	148	140	133	128	127	128	128
	10	164	167	150	147	140	133	128	127	128	128
	20	144	146	134	133	131	130	128	127	128	128
	30	136	138	128	127	126	126	125	127	128	128
	40	125	127	119	118	119	119	120	124	128	128
	50	117	118	112	111	113	114	115	120	125	128
150 mph Exposure B	0	165	170	144	139	132	125	120	119	120	120
	10	158	161	143	139	132	125	120	119	120	120
	20	140	142	130	128	126	124	120	119	120	120
	30	132	134	124	122	121	120	120	119	120	120
	40	123	124	116	115	115	115	115	118	120	120
160 mph Exposure B	0	157	161	136	131	124	118	113	112	113	113
	10	152	155	136	131	124	118	113	112	113	113
	20	136	138	125	123	121	118	113	112	113	113
	30	129	131	120	118	117	116	113	112	113	113
	40	120	121	113	111	111	111	110	112	113	113

Notes: see page 14

REV | RELEASE
DATE | 11/16/2021 | SUBMIT FOR PERMIT

R-108 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME Dodsworth, Janet
ADDRESS 3035 County Rd 18
ADDRESS Lake City, FL 32025
APN

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

Notes for Tables 1 & 2:

1. Span = Indicated region denotes the requirement for (3) three XR1000 rails.

   Span = Indicated region denotes special requirements for XR1000 rails – contact IronRidge.

2. Cross pipe splices not permitted in outer 2/3 of end spans, or the middle 1/3 of interior spans based on the installed attachment spacing ($L_{install}$). See Figure A
3. End cantilever span of pipe rails (max) = 0.40 x maximum span (L_{max}) from above tables. See Figure A
4. When installations occur on a N-S grade, the design slope of the array shall be determined as the slope relative to level ground. Code required topographic effects have not been considered. Topographic (Wind) Factor = 1.0 (no topographic effects)
5. Dead Load (Weight) = 3 psf
6. Maximum PV Module Dimension = 80”

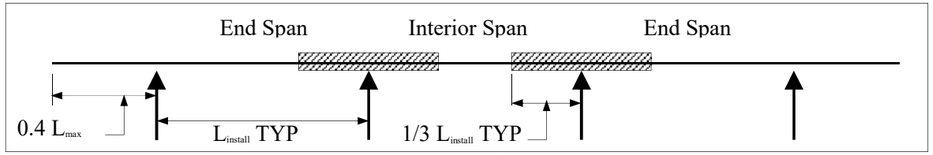


Figure A

L_{max} = Maximum pier spacing provided in the tables above for the project design criteria

$L_{install}$ = Actual installed pier spacing

= Indicates region of the pipe rail where splice may be installed

To avoid potential problems from the effects of thermal expansion, a maximum total continuous cross pipe length of 100 ft is recommended.

Notes for CAMO module clamp installation:

1. Single module installation (“orphan modules”) shall not be permitted with the ground mount system when CAMO clamp is used. Reference Figure 1 on following page for “Orphan Module” installation.

2. CAMO clamps will function within a module’s design load ratings. Be sure the specific module being used with the CAMO clamp meets the dimensional requirements shown in Figure 2 on the following page, is a module listed in IronRidge’s installation manual, and that the module selected is suitable for the environmental conditions of a particular project.

Soil Class 2

Table 4D - MINIMUM FOUNDATION DEPTHS (in)

3" Pipe Frame Braced	Pier Dia (in)	Slope (deg)									
Wind Speed & Exposure Category		0	5	10	15	20	25	30	35	40	45
100 mph Exposure B	12	36	36	36	36	42	48	48	54	60	60
	16	36	36	36	36	36	42	42	48	54	54
	20	36	36	36	36	36	36	42	42	48	48
	24	36	36	36	36	36	36	36	42	42	48
105 mph Exposure B	12	36	36	36	36	42	48	54	54	60	66
	16	36	36	36	36	36	42	48	48	54	54
	20	36	36	36	36	36	36	42	42	48	48
	24	36	36	36	36	36	36	36	42	42	48
110 mph Exposure B	12	36	36	36	42	42	48	54	54	60	66
	16	36	36	36	36	36	42	48	48	54	60
	20	36	36	36	36	36	36	42	48	48	54
	24	36	36	36	36	36	36	42	42	42	48
120 mph Exposure B	12	36	36	36	42	48	48	54	60	66	66
	16	36	36	36	36	36	42	48	54	54	60
	20	36	36	36	36	36	42	42	48	48	54
	24	36	36	36	36	36	36	42	42	48	48
130 mph Exposure B	12	36	36	36	48	48	54	60	60	66	72
	16	36	36	36	36	42	48	48	54	60	60
	20	36	36	36	36	36	42	48	48	54	54
	24	36	36	36	36	36	36	42	48	48	54
140 mph Exposure B	12	36	42	36	48	54	54	60	66	66	72
	16	36	36	36	42	42	48	54	54	60	66
	20	36	36	36	36	36	42	48	48	54	60
	24	36	36	36	36	36	42	42	48	48	54
150 mph Exposure B	12	36	42	48	54	60	60	60	66	72	78
	16	36	36	36	42	48	48	54	60	60	66
	20	36	36	36	36	42	42	48	54	54	60
	24	36	36	36	36	36	42	48	48	54	54
160 mph Exposure B	12	42	48	48	54	60	60	66	66	72	78
	16	36	36	36	42	48	48	54	60	66	72
	20	36	36	36	36	42	48	48	54	60	60
	24	36	36	36	36	36	42	48	48	54	60

Notes: see page 52

REV | DATE | RELEASE
11/16/2021 SUBMIT FOR PERMIT

R-109

EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME Dodsworth, Janet
ADDRESS 3035 County Rd 18
ADDRESS Lake City, FL 32025
APN

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

IronRidge
Mr. Corey Geiger
Ground Mounting System – Structural Analysis – 5 Module (XR1000)

July 1, 2019

Notes for Tables 3 & 4:

1. Concrete Weight = 145 pcf / f'c = 2500 psi
2. Provide Air Entraining Admixture for freeze and thaw cycles as required for colder climates.
3. Skin Friction per 2020 FBC 1810.3.3.1.4 & 5
4. Top 1'-0" of soil neglected for Skin Friction
5. Snow Load = 0 psf – tabulated values are conservative for Snow Loads > 0 psf
6. * indicates special foundation required. Contact IronRidge
7. Resistance to corrosion and/or sulfate attack, along with possible adverse effects due to expansive soils has not been considered in these foundation recommendations. SML Engineers assumes no liability with regard to these items.
8. Soil classification is to be determined and verified by the end user of this certification letter.

The analysis assumes that the array, including the connections and associated hardware, are installed in a workmanlike manner in accordance with the IronRidge Ground Mount Installation Manual and generally accepted standards of construction practice. Verification of PV Module capacity to support the loads associated with the given array shall be the responsibility of the Contractor or Owner and not IronRidge or Starling Madison Lofquist.

Please feel free to contact me at your convenience if you have any questions.

Respectfully yours,

Tres Warner, P.E.
Design Division Manager

Tres J Warner

Digitally signed by Tres J Warner
DN: c=US, o=Starling Madison Lofquist Inc, ou=A01410C00000174 6F7B4222000053B6, cn=Tres J Warner
Date: 2021.02.25 13:15:45 -07'00'

TRES J. WARNER LICENSE No 72547 STATE OF FLORIDA PROFESSIONAL ENGINEER

2.25.21 EXP 2.28.23

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-110 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

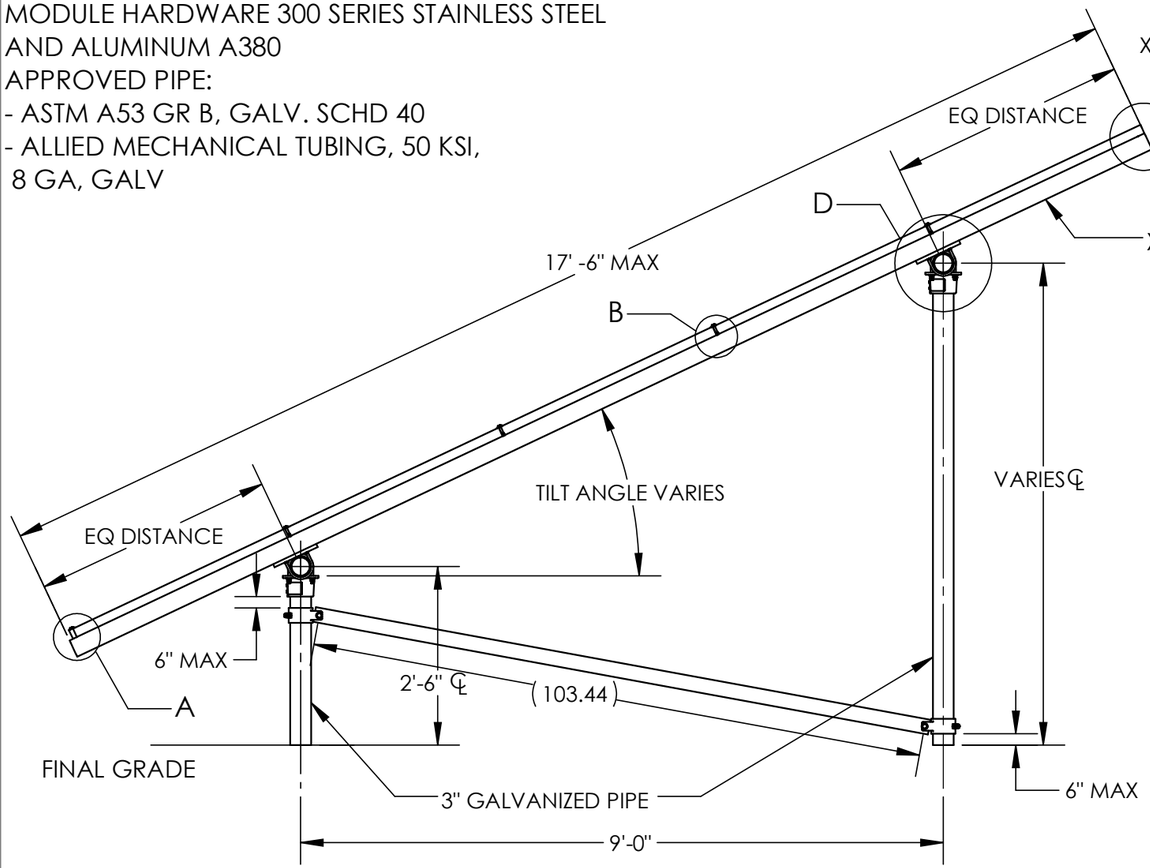
Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

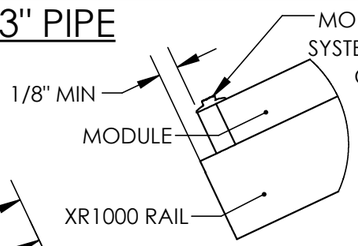
EXHIBIT: EX-0002

DESIGN CRITERIA & MATERIAL SPECIFICATIONS:
PER ASCE 7-10/WIND LOADING
MAXIMUM MODULE WEIGHT IS 3 psf
ALUMINUM XR1000 RAIL
MODULE HARDWARE 300 SERIES STAINLESS STEEL AND ALUMINUM A380
APPROVED PIPE:
- ASTM A53 GR B, GALV. SCHD 40
- ALLIED MECHANICAL TUBING, 50 KSI, 8 GA, GALV

5 MODULE ROWS, 3" PIPE

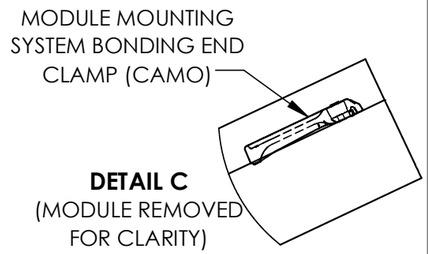
10/16/2018



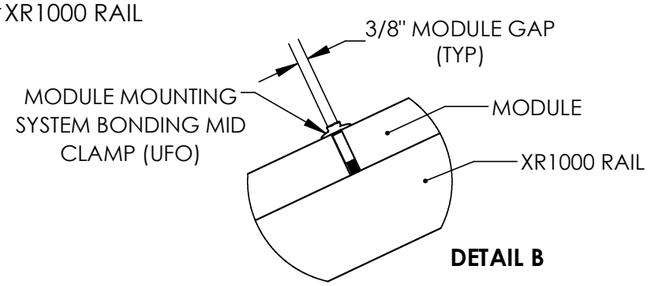


DETAIL A

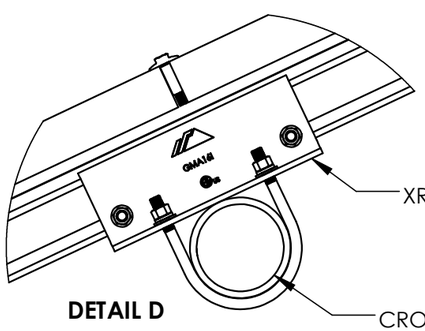
OR



DETAIL C
(MODULE REMOVED FOR CLARITY)



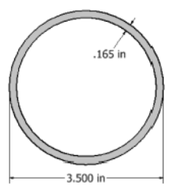
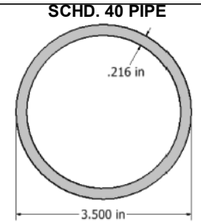
DETAIL B



XR1000 RAIL CONNECTION DETAIL TO HORIZONTAL CROSS PIPE (CONNECTOR, RAIL SGA 3")

CROSS PIPE

DETAIL D

APPROVED 3" PIPE	
- ALLIED MECHANICAL TUBING - 45 ksi YIELD STRENGTH - GALVANIZED (ALLIED FLOCOAT, GATORSHIELD, OR HOT DIPPED) TOP CAP SET SCREW INSTALL TORQUE: 16 ft*lbs	**ALLIED MECH. TUBING, 8 GA** 
- ASTM A53 GR B - 35 ksi YIELD STRENGTH - HOT DIPPED GALVANIZED TOP CAP SET SCREW INSTALL TORQUE: 20 ft*lbs	**SCHD. 40 PIPE** 

IRONRIDGE

GROUND MOUNT SYSTEM 3" PIER, 5 SOLAR MODULE ROWS

SIZE	DWG. NO.	REV.
A	EX-0002	B
SCALE:1:25	WEIGHT:	SHEET 2 OF 5

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-111

EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

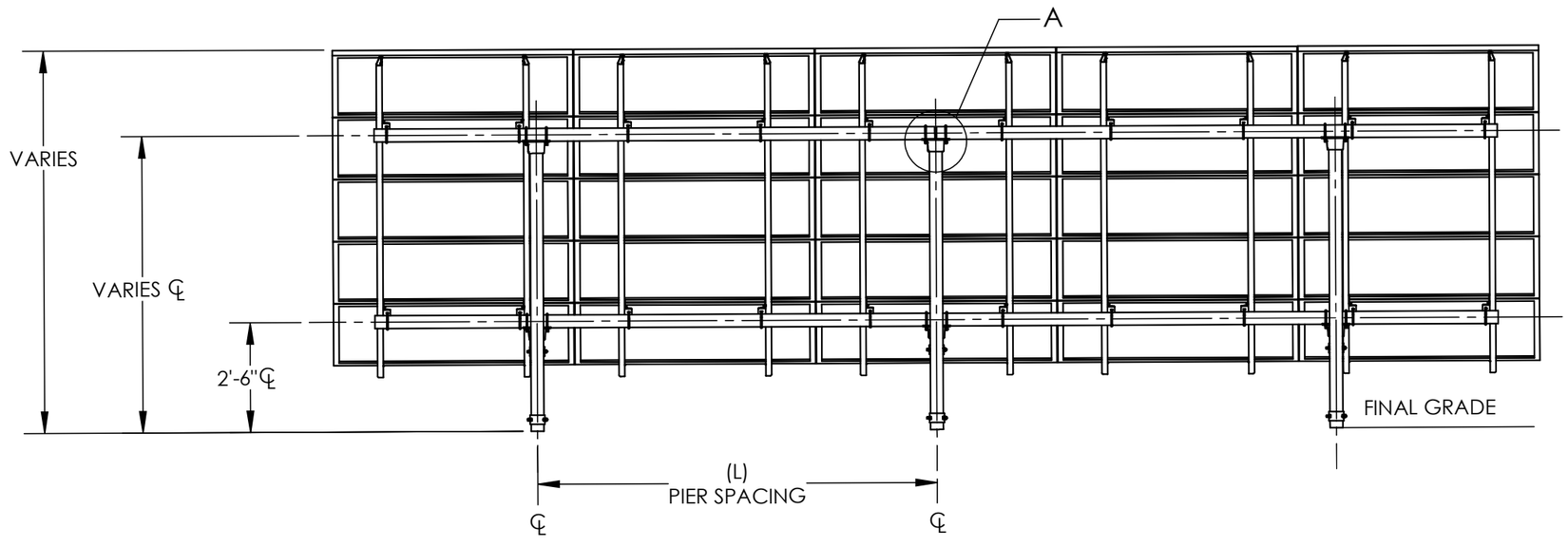
NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

EXHIBIT: EX-0002

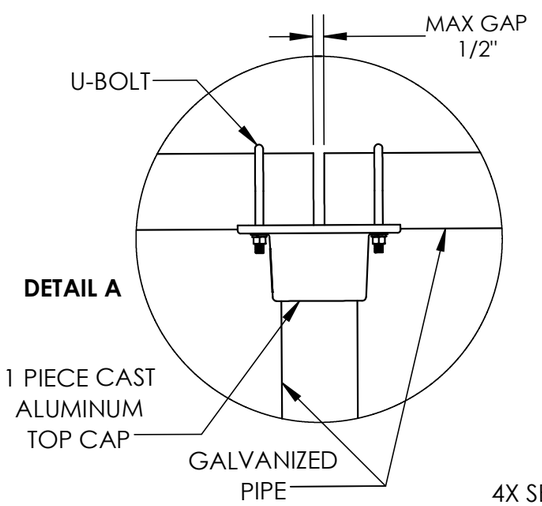
10/16/2018

NORTH VIEW



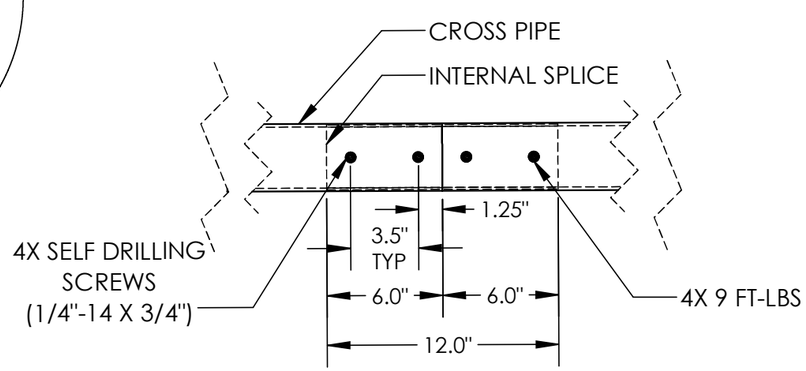
SPLICING CROSS PIPE

ALLIED MECHANICAL
TUBE OR SCH. 40 PIPE SPLICE

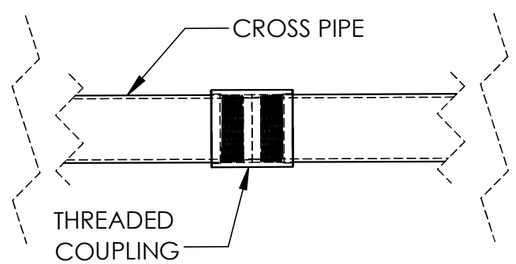


Mechanical Tube Size of the Structure	Splice Tube Size
2.375" OD, 12 Gauge	2.000" OD, 9 Gauge, Minimum 12" Long
3.500" OD, 8 Gauge	3.000" OD, 12 Gauge, Minimum 12" Long

ALLIED MECHANICAL TUBE SPLICE



SCH. 40 PIPE SPLICE



IRONRIDGE

GROUND MOUNT SYSTEM, 5
SOLAR MODULE ROWS

SIZE	DWG. NO.	REV.
A	EX-0002	B
SCALE:1:25	WEIGHT:	SHEET 4 OF 5

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-112 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

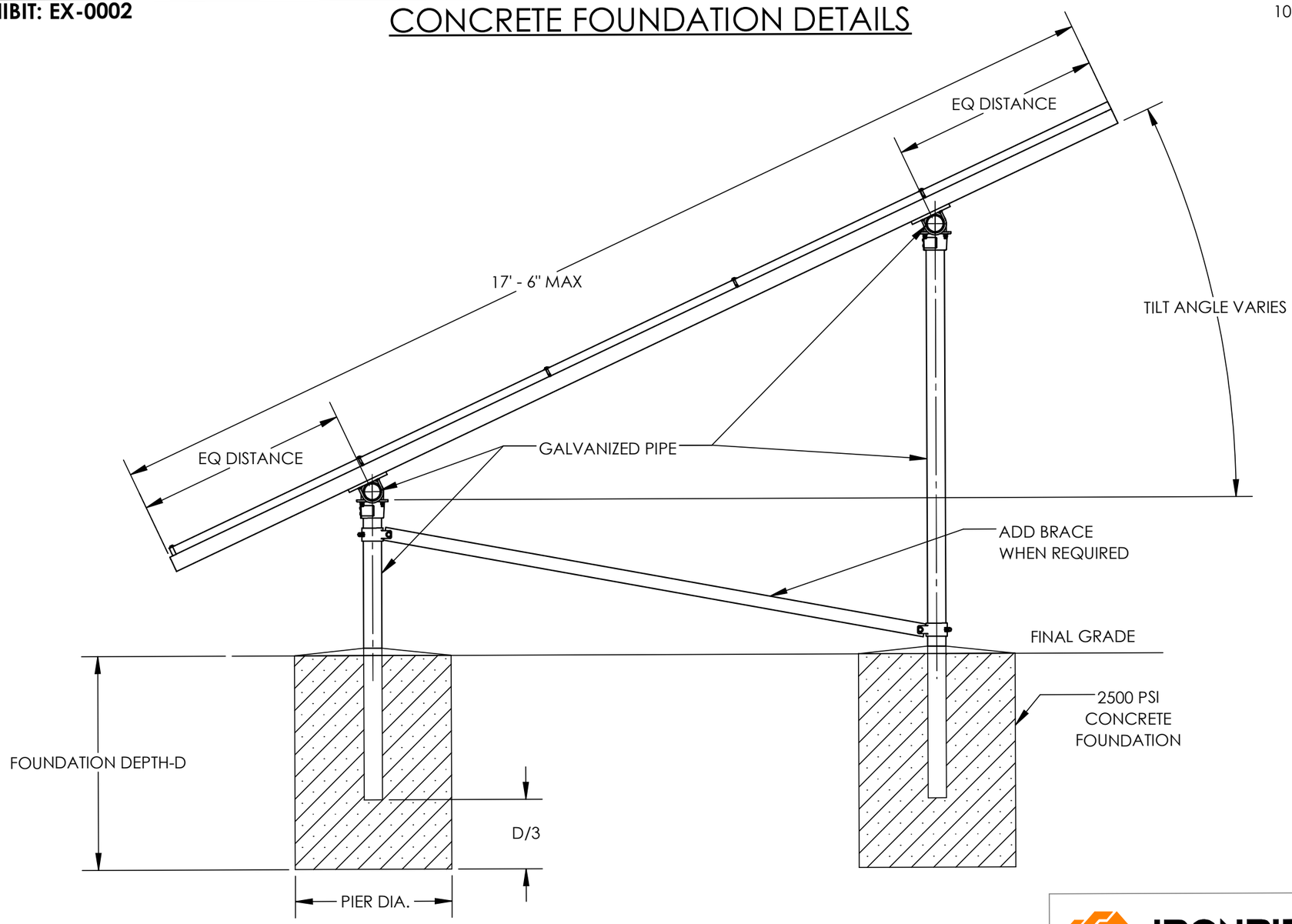
NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

EXHIBIT: EX-0002

CONCRETE FOUNDATION DETAILS

10/16/2018



NOTE:
THE ATTACHED SPAN TABLES ARE BASED ON USING DRILLED CAST-IN-PLACE CONCRETE PIER FOUNDATION SYSTEM. OTHER FOUNDATION SYSTEMS (EG. SCREW ANCHORS, DRIVEN PIERS) ARE PERMISSIBLE BUT MAY REQUIRE ADDITIONAL BRACING AND/OR REDUCED SPAN. PLEASE CONTACT IRONRIDGE FOR MORE INFORMATION.

IRONRIDGE

GROUND MOUNT SYSTEM, 5 SOLAR MODULE ROWS

SIZE	DWG. NO.	REV.
A	EX-0002	B
SCALE: 1:25	WEIGHT:	SHEET 5 OF 5

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-113

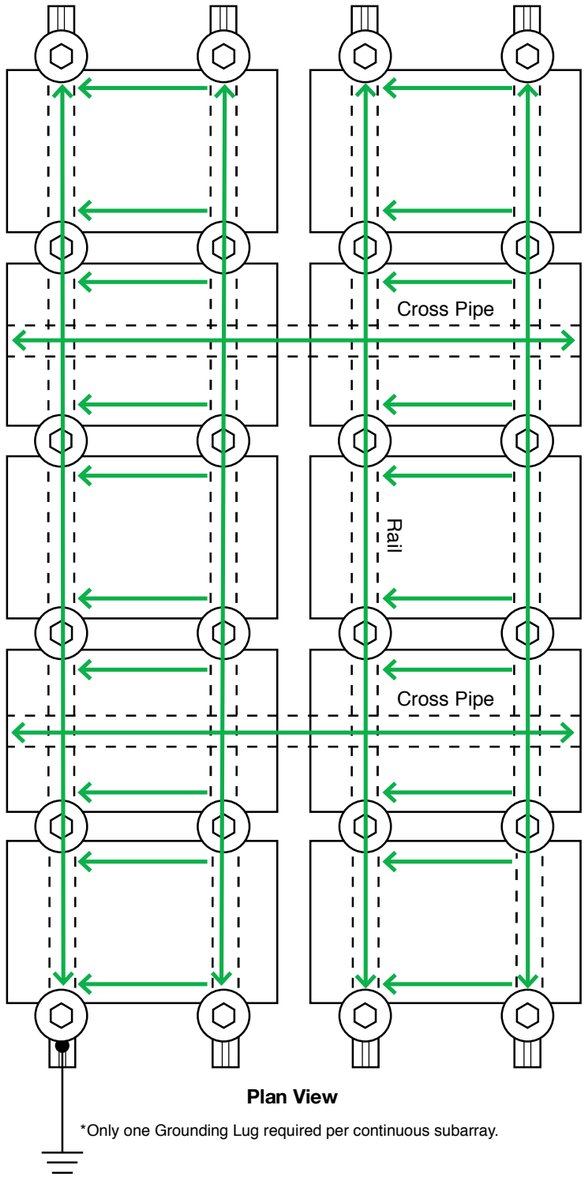
EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

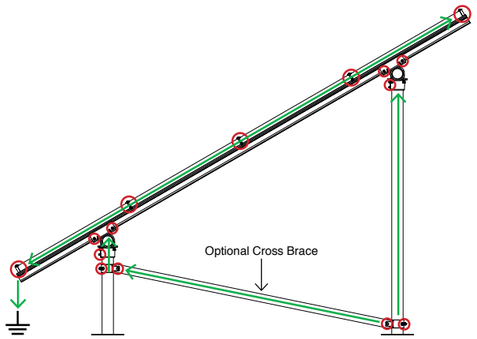
ELECTRICAL DIAGRAM



Plan View

*Only one Grounding Lug required per continuous subarray.

UFO Clamp
Grounding Lug*
Fault Current Ground Path
Min 10 AWG* Copper Wire



Bonding Points
Fault Current Ground Path

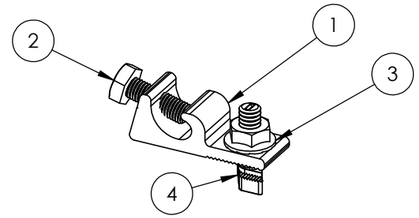
*Grounding Lugs and Wire are not required in systems using certain Enphase microinverters.

Section View

Cut Sheet

IRONRIDGE

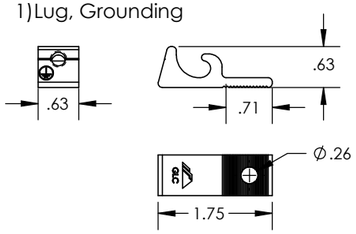
Grounding Lug



ITEM NO.	DESCRIPTION	QTY. IN KIT
1	LUG, GROUNDING, LAY-IN - LOW PROFILE	2
2	BOLT, 1/4-28 X .750" HEX CS SST	2
3	NUT, FLANGE HEX 1/4-20 SST	2
4	BOLT, T CSTM 1/4-20 X 1.188" LOCK SS	2

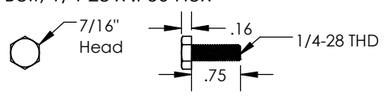
Part Number	Description	Wire Size Range (AWG)
GD-LUG-003	KIT, 2PCS, GROUNDING LUG, LOW PROFILE	4-10

1)Lug, Grounding



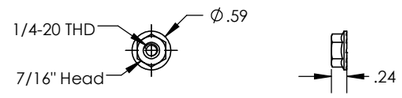
Property	Value
Material	Tin Plated Copper
Finish	Clear Matte

2) Bolt, 1/4-28 x .750 Hex



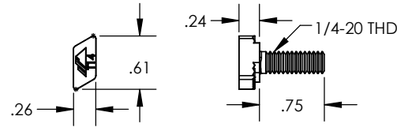
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

3) Nut, Flange Hex 1/4-20



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

4) Bolt, T CSTM 1/4-20 x .750



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.0

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-114

EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
(817) 501-4922

EATON
Powering Business Worldwide

General Duty Cartridge Fuse Safety Switch

DG222NRB

UPC:782113144221

Dimensions:

- **Height:** 7 IN
- **Length:** 6.41 IN
- **Width:** 8.4 IN

Weight:9 LB

Notes: Maximum hp ratings apply only when dual element fuses are used. 3-Phase hp rating shown is a grounded B phase rating, UL listed.

Warranties:

- Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.

Specifications:

- **Type:** General Duty/Cartridge Fuse
- **Amperage Rating:** 60A
- **Enclosure:** NEMA 3R
- **Enclosure Material:** Painted galvanized steel
- **Fuse Class Provision:** Class H fuses
- **Fuse Configuration:** Fusible with neutral
- **Number Of Poles:** Two-pole
- **Number Of Wires:** Three-wire
- **Product Category:** General Duty Safety Switch
- **Voltage Rating:** 240V

Supporting documents:

- Eatons Volume 2-Commercial Distribution
- Eaton Specification Sheet - DG222NRB

Certifications:

- UL Listed

pe.eaton.com

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Switching Devices

Safety Switches

All general-duty switches above 100A and all heavy-duty switches incorporate these K-Series switch design features.

- Two points of contact provide a positive open and close, easier operation, and also help prevent contact burning for longer contact life

Visible Double-Break Rotary Blade Mechanism

- Protects against accidental contact with energized parts. Probe holes enable the user to test if the line side is energized without removing the shield. Not provided on general-duty switches, but available as a field kit or factory installed

Clear Line Shield

Clearly Visible Handle

- The position (ON or OFF) can be clearly seen from a distance and the length provides for easy operation

Triple Padlocking Capability

- Personnel safety feature because the large hasp can accommodate up to three 3/8-inch (9.5 mm) shank locks

Additional Locking Capability

- Cabinet door can be further padlocked at the top and bottom as applicable

Interlocking Mechanism

- Door cannot be opened when the handle is in the ON position. Front and side operable defeater mechanism provides for user access when necessary on single-throw switches

Tangential Knockouts

- An ample number are provided on the top, bottom and sides of both NEMA Types 1 and 3R enclosures through 200A

Bolt-On Hub Kits

- For switches in a NEMA Type 3R, 30–200A. Use a Myers type hub for all others

Standards and Certifications

- UL listed File No. E5239
- Meets UL 98 for enclosed switches and NEMA Std. KS-1

UL Listed

Seismic Qualifications

- General-duty switches exceed the requirements of Uniform Building Code (UBC) and California Code Title 24 OSP-0011-10, OSP-0012-10

Product compliance: No Data

REV	DATE	RELEASE
	11/16/2021	SUBMIT FOR PERMIT

R-115 EQUIP. CUT SHEETS

6.500 kW PHOTOVOLTAIC PLANS

NAME	Dodsworth, Janet
ADDRESS	3035 County Rd 18
ADDRESS	Lake City, FL 32025
APN	

Daybreak Install LLC
CVC56966
2100 N Main St Ste. 212
Fort Worth, TX 76164
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