

PHOTOVOLTAIC ROOF MOUNT SYSTEM

12 MODULES-ROOF MOUNTED - 4.620 KW DC, 3.927 KW AC

340 SW CALLAWAY DR, LAKE CITY, FL 32024



SUNERGY SOLAR LLC
7625 LITTLE RD, SUITE 200A,
NEW PORT RICHEY, FL 34654

PROJECT DATA

PROJECT ADDRESS
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

OWNER: WILLIAM KUNZLER

DESIGNER: ESR

SCOPED FOR: 4.620 KW DC ROOF MOUNT

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

12 MODULES SOLAR PANELS 385W

GENERAL NOTES

- ALL COMPONENTS ARE UL LISTED AND NEC CERTIFIED, WHERE WARRANTED.
- THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2020.
- THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.
- ALL CONDUCTORS OF A CIRCUIT, INCLUDING THE EGC, MUST BE INSTALLED IN THE SAME RACEWAY, OR CABLE, OR OTHERWISE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS WHEN THEY LEAVE THE VICINITY OF THE PV ARRAY.
- WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10 FT.
- HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.
- A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 2020 690.47 AND 250.50 THROUGH 60 AND 250-168 SHALL BE PROVIDED. PER NEC GROUNDING ELECTRODE SYSTEM OF EXISTING BUILDING MAY BE USED AND BONDED TO THE SERVICE ENTRANCE. IF EXISTING SYSTEM IS INACCESSIBLE OR INADEQUATE A SUPPLEMENTAL GROUNDING ELECTRODE WILL BE USED AT THE INVERTER LOCATION CONSISTING OF A UL LISTED 8 FT. GROUND ROD WITH ACORN CLAMP. GROUNDING ELECTRODE CONDUCTORS SHALL BE NO LESS THAN #6 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
- PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE.
- PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING, MECHANICAL, OR BUILDING ROOF VENTS.
- ALL WIRING MUST BE PROPERLY SUPPORTED BY DEVICES OR MECHANICAL MEANS DESIGNED AND LISTED FOR SUCH USE. WIRING MUST BE PERMANENTLY AND COMPLETELY HELD OFF THE ROOF SURFACE.
- ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
- INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE UL 1741 LISTED.
- THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)]
- ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND SWITCHES.
- ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
- SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41.
- PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12
- DISCONNECTING MEANS SHALL BE LOCATED IN A VISIBLE, READILY ACCESSIBLE LOCATION WITHIN THE PV SYSTEM EQUIPMENT OR A MAXIMUM OF 10 FEET AWAY FROM THE SYSTEM [NEC 690.13(A)]
- ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
- WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3).
- ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL 1703
- ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.
- IN ACCORDANCE WITH 2021 IFC 1205.5, 2018 IFC 1204.4, AND 2015 IFC 605.11.2 A CLEAR, BRUSH-FREE AREA OF 10 FEET (3048 MM) SHALL BE REQUIRED FOR GROUND-MOUNTED PHOTOVOLTAIC ARRAYS.
- PANEL LAYOUT ORIENTATION IS SUBJECT TO CHANGE ON DESIGNED MOUNTING PLANES.
- ALL PERMANENTLY INSTALLED LUMINAIRES, EXCLUDING THOSE IN KITCHEN APPLIANCES, SHALL HAVE AN EFFICIENCY OF AT LEAST 45 LUMENS-PER-WATT OR SHALL UTILIZE LAMPS WITH AN EFFICIENCY OF NOT LESS THAN 65 LUMENS-PER-WATT.
- MOUNTING SYSTEMS SHALL BE LISTED AND LABELLED IN ACCORDANCE WITH UL 2703 TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS AND THEIR LISTINGS.

VICINITY MAP



HOUSE PHOTO



CODE REFERENCES

PROJECT TO COMPLY WITH THE FOLLOWING:
FLORIDA RESIDENTIAL CODE, 8TH EDITION 2023 (FRC)
FLORIDA PLUMBING CODE, 8TH EDITION 2023 (FPC)
FLORIDA BUILDING CODE, 8TH EDITION 2023 (FBC)
FLORIDA MECHANICAL CODE, 8TH EDITION 2023 (FMC)
2020 NATIONAL ELECTRICAL CODE
FLORIDA FIRE PREVENTION CODE, 8TH EDITION 2023 (FFPC)

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

COVER SHEET

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

G001

SHEET INDEX

- G001 COVER SHEET
- E001 SITE PLAN
- S001 ROOF PLAN AND MODULES
- E002 ELECTRICAL PLAN
- S002 STRUCTURAL DETAIL
- E003 ELECTRICAL LINE DIAGRAM
- E004 WIRING CALCULATIONS
- E005 LABELS
- E006 PLACARD
- PD001+ EQUIPMENT SPECIFICATIONS

SIGNATURE

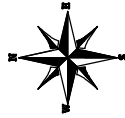
Blank area for signature.

This is a digital copy of the original document. The seal, printed and signed, is not considered signed and sealed and the original document must be verified on any electronic copies.

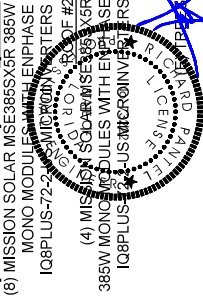
This is a digital copy of the original document. The seal, printed and signed, is not considered signed and sealed and the original document must be verified on any electronic copies.

PROJECT DESCRIPTION:

12 X MISSION SOLAR MSE385SX5R 385W MONO MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
DC SYSTEM SIZE: 12 x 385 = 4,620KW DC
AC SYSTEM SIZE: DC SYSTEM SIZE x 0.85 = 3,927KW AC
EQUIPMENT SUMMARY
12 MISSION SOLAR MSE385SX5R 385W MONO MODULES
12 ENPHASE IQ8PLUS-72-2-US MICROINVERTERS
ROOF ARRAY AREA #1 - 171.36 SQ. FT.
ROOF ARRAY AREA #2 - 85.68 SQ. FT.



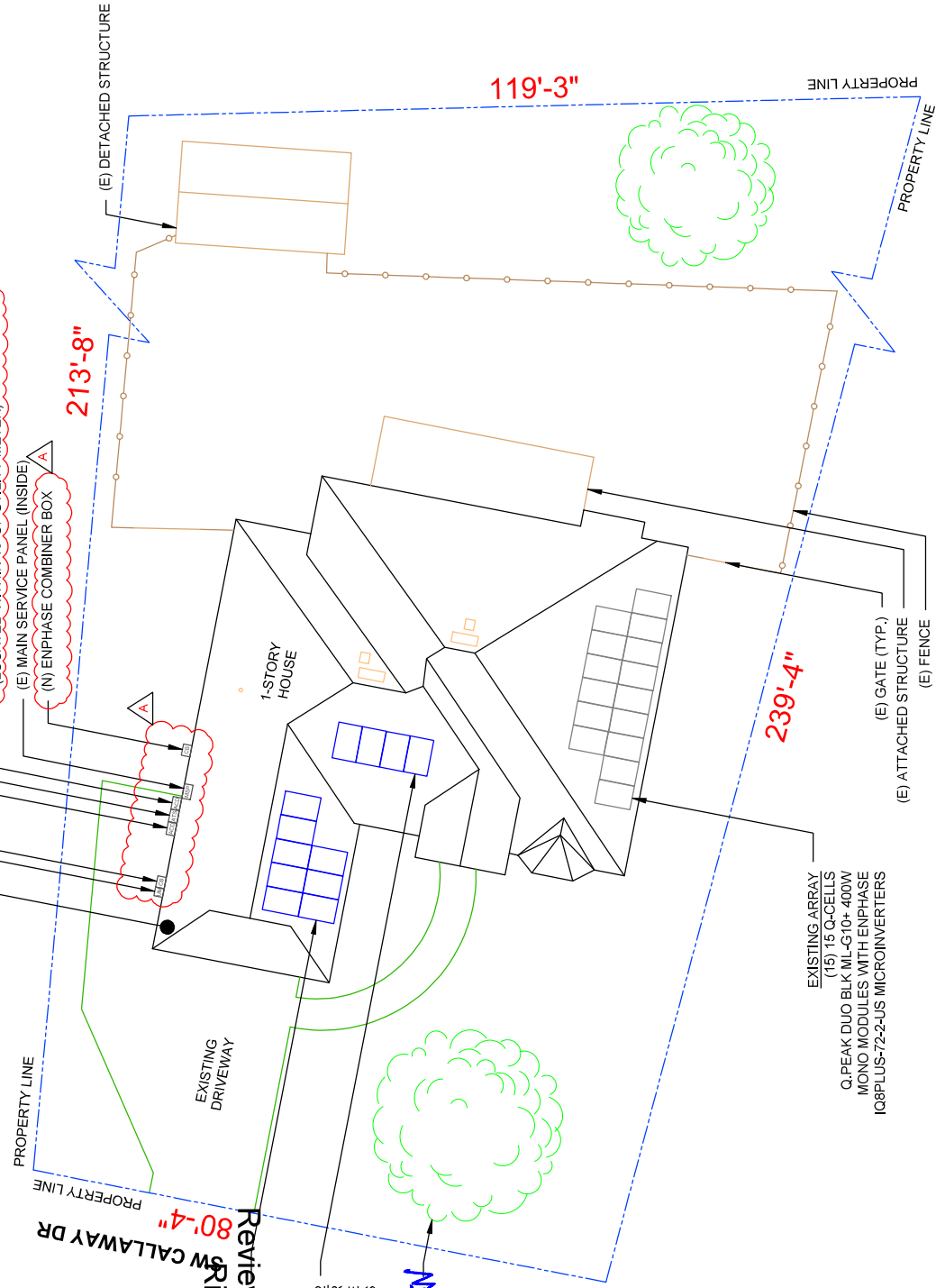
Reviewed and approved
Richard Pantel, P.E.
FL Lic. No. 73222
1/4/2024



EXISTING SYSTEM
DC SYSTEM SIZE: 15 x 400 = 6,000KW DC
AC SYSTEM SIZE: 15 x 290 = 4,350KW AC
(15) Q-CELLS Q-PEAK DUO BLK ML-G10+ 400W MONO MODULES
(15) ENPHASE IQ8PLUS-72-2-US MICROINVERTERS

NOTE: VISIBLE, LOCKABLE, LABELED AC DISCONNECT
LOCATED WITHIN 10' OF UTILITY METER

- ROOF ACCESS POINT
- (E) UTILITY METER
- (E) ENPHASE COMBINER BOX
- (E) VISIBLE, LOCKABLE, LABELED FUSED AC DISCONNECT (LOCATED WITHIN 10' OF UTILITY METER)
- (E) AUTOMATIC TRANSFER SWITCH
- (N) VISIBLE, LOCKABLE, LABELED FUSED AC DISCONNECT (LOCATED WITHIN 10' OF UTILITY METER)
- (E) MAIN SERVICE PANEL (INSIDE)
- (N) ENPHASE COMBINER BOX



SUNERGY SOLAR LLC
7625 LITTLE RD, SUITE 200A,
NEW PORT RICHEY, FL 34654

REVISIONS	DESCRIPTION	DATE	REV
INITIAL DESIGN	11/10/2023		A
REVISION	01/04/2024		A

PROJECT NAME & ADDRESS
KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

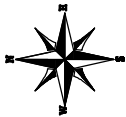
SHEET NUMBER
E001

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

This item has been digitally signed and sealed by Richard Pantel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

MODULE TYPE, DIMENSIONS & WEIGHT

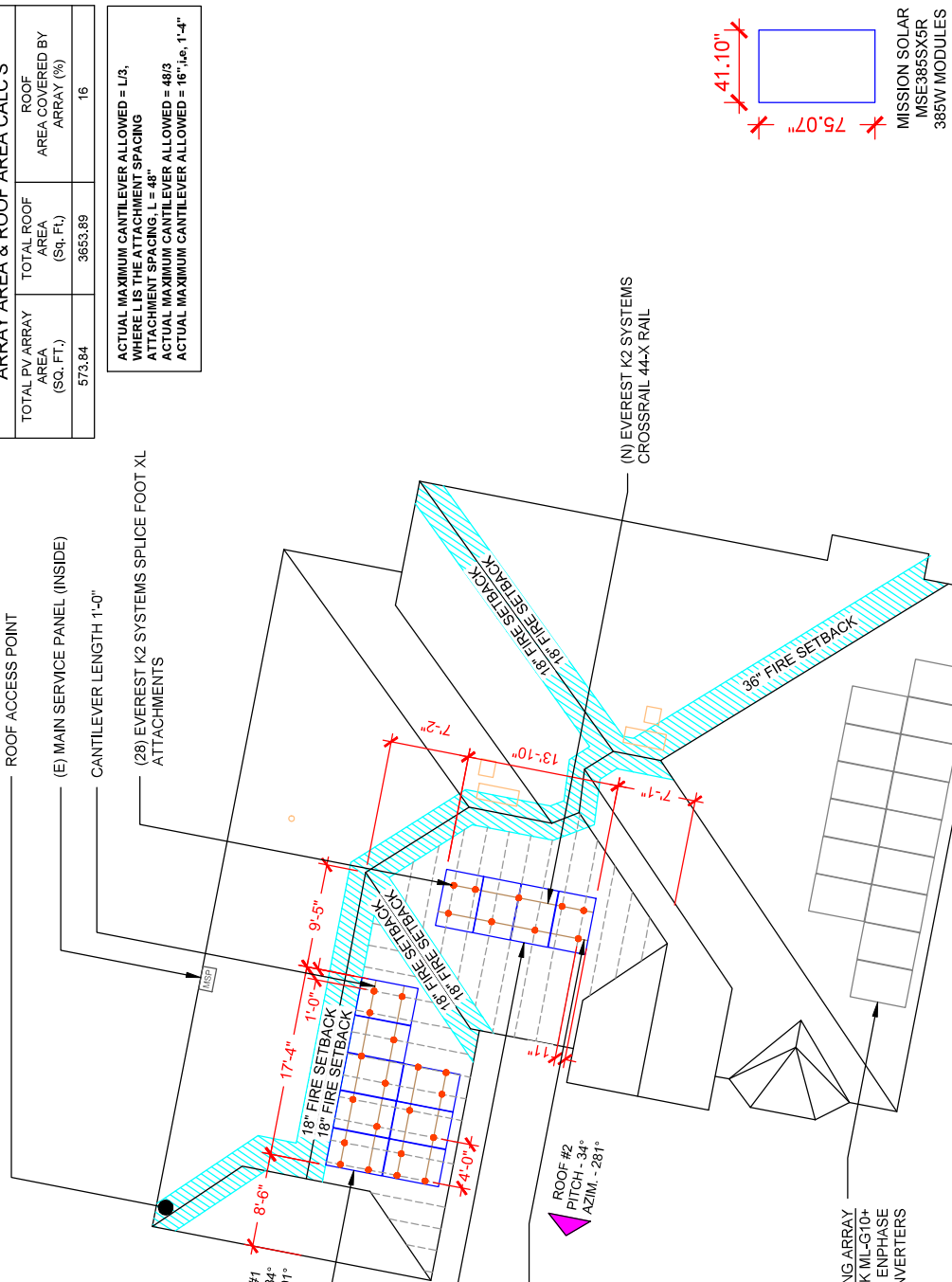
NUMBER OF MODULES = 12 MODULES
MODULE TYPE = MISSION SOLAR MSE385SX5R 385W MONO MODULES
MODULE WEIGHT = 49.0 LBS / 22.2KG.
MODULE DIMENSIONS = 75.07" x 41.10" = 21.42 SF



Reviewed and approved
Richard Pantel, P.E.
FL Lic. No. 73222
1/4/2024

ROOF #1
PITCH - 34°
AZIM. - 191°
CANTILEVER LENGTH 11'-0"

ROOF #2
PITCH - 34°
AZIM. - 281°
CANTILEVER LENGTH 11'-0"



LEGEND

	- MAIN SERVICE PANEL
	- VENT ATTIC FAN (ROOF OBSTRUCTION)
	- ROOF ATTACHMENT
	- TRUSS

This item has been digitally signed and sealed by Richard Pantel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ROOF DESCRIPTION

ROOF TYPE	# OF MODULES	ROOF PITCH	ROOF AZIMUTH	TRUSS SIZE	ASPHALT SHINGLE
ROOF #1	8	34°	191°	2"x4"	24"
ROOF #2	4	34°	281°	2"x4"	24"

ARRAY AREA & ROOF AREA CALC'S

TOTAL PV ARRAY AREA (SQ. FT.)	573.84	TOTAL ROOF AREA (SQ. FT.)	3653.89	ROOF AREA COVERED BY ARRAY (%)	16
-------------------------------	--------	---------------------------	---------	--------------------------------	----

ACTUAL MAXIMUM CANTILEVER ALLOWED = L/3, WHERE L IS THE ATTACHMENT SPACING
ATTACHMENT SPACING, L = 48"
ACTUAL MAXIMUM CANTILEVER ALLOWED = 48/3
ACTUAL MAXIMUM CANTILEVER ALLOWED = 16", L=6, 1'-4"

sunergy

SUNERGY SOLAR LLC
7625 LITTLE RD, SUITE 200A,
NEW PORT RICHEY, FL 34654

REVISIONS

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/10/2023	A
REVISION	01/04/2024	A

PROJECT NAME & ADDRESS

KUNZLER RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

ROOF PLAN AND MODULES

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

S001



SUNERGY SOLAR LLC
7625 LITTLE RD, SUITE 200A,
NEW PORT RICHEY, FL 34654

DESCRIPTION	DATE	REV
INITIAL DESIGN	11/10/2023	A
REVISION	01/04/2024	A

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
ELECTRICAL PLAN

SHEET SIZE
**ANSI B
11" X 17"**

SHEET NUMBER
E002

EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	12	MISSION SOLAR MSE385SXSR 385W MODULE
MICRO INVERTERS	12	ENPHASE IQ8PLUS-72-2-US MICROINVERTERS
SOLADECKS	2	SOLADECKS
RAIL	8	EVEREST K2 SYSTEMS CROSSRAIL 44-X RAIL
SPLICES	4	SPLICES
MID MODULE CLAMPS	18	MID MODULE CLAMPS
END CLAMPS	12	END CLAMPS / STOPPER SLEEVE
ATTACHMENTS	28	EVEREST K2 SYSTEMS SPLICE FOOT XL ATTACHMENTS

EXISTING SYSTEM
DC SYSTEM SIZE: 15 x 400 = 6,000KW DC
AC SYSTEM SIZE: 15 x 290 = 4,350KW AC
(15) Q-CELLS Q-PEAK DUO BLK ML-G10+ 400W MONO MODULES
(15) ENPHASE IQ8PLUS-72-2-US MICROINVERTERS

LEGEND

CB

ACD

UM

MSP

- COMBINER BOX

- AC DISCONNECT

- UTILITY METER

- MAIN SERVICE PANEL

ATS

SD

- AUTOMATIC TRANSFER SWITCH

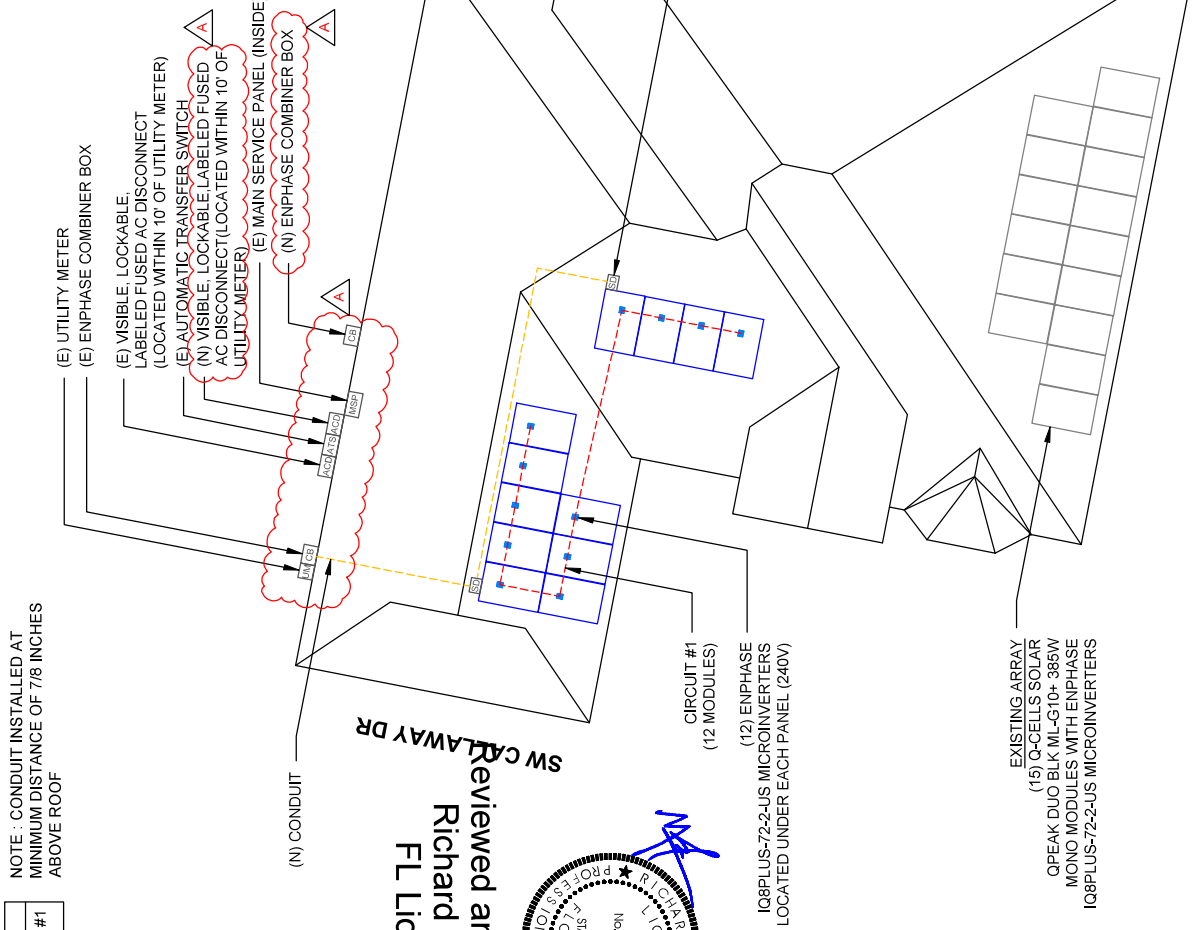
- SOLADECK

- VENT, ATTIC FAN (ROOF OBSTRUCTION)

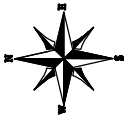
- ROOF ATTACHMENT

- TRUSS

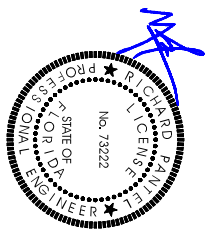
- CONDUIT



CIRCUIT LEGENDS
CIRCUIT #1



Reviewed and approved
Richard Pantel, P.E.
FL Lic. No. 73222
1/4/2024



This item has been digitally signed and sealed by Richard Pantel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	11/10/2023	
REVISION	01/04/2023	A

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

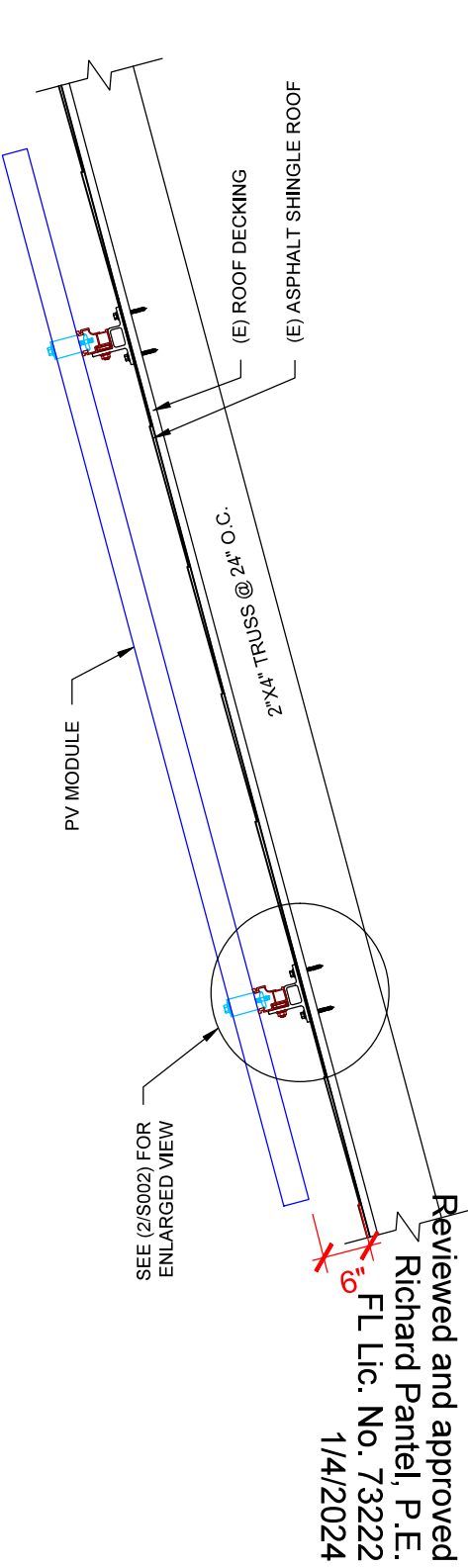
STRUCTURAL DETAIL

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

S002

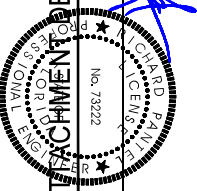


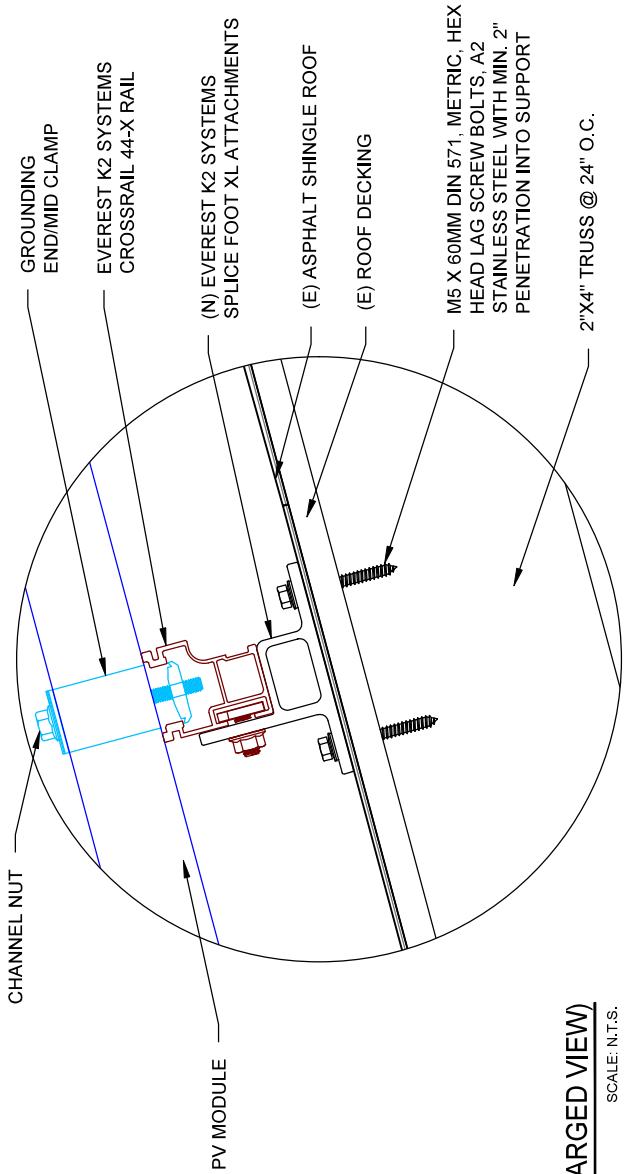
ATTACHMENT DETAIL (SIDE VIEW)

SCALE: N.T.S.

1

S002





2

ATTACHMENT DETAIL (ENLARGED VIEW)

SCALE: N.T.S.

S002

REVISIONS	
DESCRIPTION	DATE
INITIAL DESIGN	11/10/2023
REVISION	01/04/2024
	A

PROJECT NAME & ADDRESS
KUNZLER RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY ESR
SHEET NAME ELECTRICAL LINE DIAGRAM
SHEET SIZE ANSI B 11" X 17"
SHEET NUMBER E003

- GROUNDING & GENERAL NOTES:**
- GROUNDING ELECTRODES AND GROUNDING ELECTRODE CONDUCTORS, ADDITIONAL GROUNDING ELECTRODES SHALL BE PERMITTED TO BE INSTALLED IN ACCORDANCE WITH 250.52 AND 250.54 GROUNDING ELECTRODES SHALL BE PERMITTED TO BE CONNECTED DIRECTLY TO THE PV MODULE FRAME(S) OR SUPPORT STRUCTURE PER NEC 690.47(B).
 - PV INVERTER IS UNGROUND, TRANSFORMER-LESS TYPE.
 - DC GEC AND AC GEC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE.
 - ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
 - SOLADECKS QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - SOLADECKS DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
 - AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF ROOF TOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS.
 - ALL NEW SERVICE INSTALLATIONS AND REPLACEMENTS REQUIRE A SURGE-PROTECTIVE DEVICE (SPD) IN ACCORDANCE WITH [NEC 230.67]. THE SPD SHALL BE TYPE 1 OR TYPE 2 AND IS REQUIRED TO BE AN INTEGRAL PART OF THE SERVICE EQUIPMENT OR LOCATED IMMEDIATELY ADJACENT THERETO.

- INTERCONNECTION NOTES:**
- INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.59], [NEC 230.36], [NEC 230.38], [NEC 230.39], [NEC 230.40], [NEC 230.41], [NEC 230.42], [NEC 230.43], [NEC 230.44], [NEC 230.45], [NEC 230.46], [NEC 230.47], [NEC 230.48], [NEC 230.49], [NEC 230.50], [NEC 230.51], [NEC 230.52], [NEC 230.53], [NEC 230.54], [NEC 230.55], [NEC 230.56], [NEC 230.57], [NEC 230.58], [NEC 230.59], [NEC 230.60], [NEC 230.61], [NEC 230.62], [NEC 230.63], [NEC 230.64], [NEC 230.65], [NEC 230.66], [NEC 230.67], [NEC 230.68], [NEC 230.69], [NEC 230.70], [NEC 230.71], [NEC 230.72], [NEC 230.73], [NEC 230.74], [NEC 230.75], [NEC 230.76], [NEC 230.77], [NEC 230.78], [NEC 230.79], [NEC 230.80], [NEC 230.81], [NEC 230.82], [NEC 230.83], [NEC 230.84], [NEC 230.85], [NEC 230.86], [NEC 230.87], [NEC 230.88], [NEC 230.89], [NEC 230.90], [NEC 230.91], [NEC 230.92], [NEC 230.93], [NEC 230.94], [NEC 230.95], [NEC 230.96], [NEC 230.97], [NEC 230.98], [NEC 230.99], [NEC 230.100], [NEC 230.101], [NEC 230.102], [NEC 230.103], [NEC 230.104], [NEC 230.105], [NEC 230.106], [NEC 230.107], [NEC 230.108], [NEC 230.109], [NEC 230.110], [NEC 230.111], [NEC 230.112], [NEC 230.113], [NEC 230.114], [NEC 230.115], [NEC 230.116], [NEC 230.117], [NEC 230.118], [NEC 230.119], [NEC 230.120], [NEC 230.121], [NEC 230.122], [NEC 230.123], [NEC 230.124], [NEC 230.125], [NEC 230.126], [NEC 230.127], [NEC 230.128], [NEC 230.129], [NEC 230.130], [NEC 230.131], [NEC 230.132], [NEC 230.133], [NEC 230.134], [NEC 230.135], [NEC 230.136], [NEC 230.137], [NEC 230.138], [NEC 230.139], [NEC 230.140], [NEC 230.141], [NEC 230.142], [NEC 230.143], [NEC 230.144], [NEC 230.145], [NEC 230.146], [NEC 230.147], [NEC 230.148], [NEC 230.149], [NEC 230.150], [NEC 230.151], [NEC 230.152], [NEC 230.153], [NEC 230.154], [NEC 230.155], [NEC 230.156], [NEC 230.157], [NEC 230.158], [NEC 230.159], [NEC 230.160], [NEC 230.161], [NEC 230.162], [NEC 230.163], [NEC 230.164], [NEC 230.165], [NEC 230.166], [NEC 230.167], [NEC 230.168], [NEC 230.169], [NEC 230.170], [NEC 230.171], [NEC 230.172], [NEC 230.173], [NEC 230.174], [NEC 230.175], [NEC 230.176], [NEC 230.177], [NEC 230.178], [NEC 230.179], [NEC 230.180], [NEC 230.181], [NEC 230.182], [NEC 230.183], [NEC 230.184], [NEC 230.185], [NEC 230.186], [NEC 230.187], [NEC 230.188], [NEC 230.189], [NEC 230.190], [NEC 230.191], [NEC 230.192], [NEC 230.193], [NEC 230.194], [NEC 230.195], [NEC 230.196], [NEC 230.197], [NEC 230.198], [NEC 230.199], [NEC 230.200], [NEC 230.201], [NEC 230.202], [NEC 230.203], [NEC 230.204], [NEC 230.205], [NEC 230.206], [NEC 230.207], [NEC 230.208], [NEC 230.209], [NEC 230.210], [NEC 230.211], [NEC 230.212], [NEC 230.213], [NEC 230.214], [NEC 230.215], [NEC 230.216], [NEC 230.217], [NEC 230.218], [NEC 230.219], [NEC 230.220], [NEC 230.221], [NEC 230.222], [NEC 230.223], [NEC 230.224], [NEC 230.225], [NEC 230.226], [NEC 230.227], [NEC 230.228], [NEC 230.229], [NEC 230.230], [NEC 230.231], [NEC 230.232], [NEC 230.233], [NEC 230.234], [NEC 230.235], [NEC 230.236], [NEC 230.237], [NEC 230.238], [NEC 230.239], [NEC 230.240], [NEC 230.241], [NEC 230.242], [NEC 230.243], [NEC 230.244], [NEC 230.245], [NEC 230.246], [NEC 230.247], [NEC 230.248], [NEC 230.249], [NEC 230.250], [NEC 230.251], [NEC 230.252], [NEC 230.253], [NEC 230.254], [NEC 230.255], [NEC 230.256], [NEC 230.257], [NEC 230.258], [NEC 230.259], [NEC 230.260], [NEC 230.261], [NEC 230.262], [NEC 230.263], [NEC 230.264], [NEC 230.265], [NEC 230.266], [NEC 230.267], [NEC 230.268], [NEC 230.269], [NEC 230.270], [NEC 230.271], [NEC 230.272], [NEC 230.273], [NEC 230.274], [NEC 230.275], [NEC 230.276], [NEC 230.277], [NEC 230.278], [NEC 230.279], [NEC 230.280], [NEC 230.281], [NEC 230.282], [NEC 230.283], [NEC 230.284], [NEC 230.285], [NEC 230.286], [NEC 230.287], [NEC 230.288], [NEC 230.289], [NEC 230.290], [NEC 230.291], [NEC 230.292], [NEC 230.293], [NEC 230.294], [NEC 230.295], [NEC 230.296], [NEC 230.297], [NEC 230.298], [NEC 230.299], [NEC 230.300], [NEC 230.301], [NEC 230.302], [NEC 230.303], [NEC 230.304], [NEC 230.305], [NEC 230.306], [NEC 230.307], [NEC 230.308], [NEC 230.309], [NEC 230.310], [NEC 230.311], [NEC 230.312], [NEC 230.313], [NEC 230.314], [NEC 230.315], [NEC 230.316], [NEC 230.317], [NEC 230.318], [NEC 230.319], [NEC 230.320], [NEC 230.321], [NEC 230.322], [NEC 230.323], [NEC 230.324], [NEC 230.325], [NEC 230.326], [NEC 230.327], [NEC 230.328], [NEC 230.329], [NEC 230.330], [NEC 230.331], [NEC 230.332], [NEC 230.333], [NEC 230.334], [NEC 230.335], [NEC 230.336], [NEC 230.337], [NEC 230.338], [NEC 230.339], [NEC 230.340], [NEC 230.341], [NEC 230.342], [NEC 230.343], [NEC 230.344], [NEC 230.345], [NEC 230.346], [NEC 230.347], [NEC 230.348], [NEC 230.349], [NEC 230.350], [NEC 230.351], [NEC 230.352], [NEC 230.353], [NEC 230.354], [NEC 230.355], [NEC 230.356], [NEC 230.357], [NEC 230.358], [NEC 230.359], [NEC 230.360], [NEC 230.361], [NEC 230.362], [NEC 230.363], [NEC 230.364], [NEC 230.365], [NEC 230.366], [NEC 230.367], [NEC 230.368], [NEC 230.369], [NEC 230.370], [NEC 230.371], [NEC 230.372], [NEC 230.373], [NEC 230.374], [NEC 230.375], [NEC 230.376], [NEC 230.377], [NEC 230.378], [NEC 230.379], [NEC 230.380], [NEC 230.381], [NEC 230.382], [NEC 230.383], [NEC 230.384], [NEC 230.385], [NEC 230.386], [NEC 230.387], [NEC 230.388], [NEC 230.389], [NEC 230.390], [NEC 230.391], [NEC 230.392], [NEC 230.393], [NEC 230.394], [NEC 230.395], [NEC 230.396], [NEC 230.397], [NEC 230.398], [NEC 230.399], [NEC 230.400], [NEC 230.401], [NEC 230.402], [NEC 230.403], [NEC 230.404], [NEC 230.405], [NEC 230.406], [NEC 230.407], [NEC 230.408], [NEC 230.409], [NEC 230.410], [NEC 230.411], [NEC 230.412], [NEC 230.413], [NEC 230.414], [NEC 230.415], [NEC 230.416], [NEC 230.417], [NEC 230.418], [NEC 230.419], [NEC 230.420], [NEC 230.421], [NEC 230.422], [NEC 230.423], [NEC 230.424], [NEC 230.425], [NEC 230.426], [NEC 230.427], [NEC 230.428], [NEC 230.429], [NEC 230.430], [NEC 230.431], [NEC 230.432], [NEC 230.433], [NEC 230.434], [NEC 230.435], [NEC 230.436], [NEC 230.437], [NEC 230.438], [NEC 230.439], [NEC 230.440], [NEC 230.441], [NEC 230.442], [NEC 230.443], [NEC 230.444], [NEC 230.445], [NEC 230.446], [NEC 230.447], [NEC 230.448], [NEC 230.449], [NEC 230.450], [NEC 230.451], [NEC 230.452], [NEC 230.453], [NEC 230.454], [NEC 230.455], [NEC 230.456], [NEC 230.457], [NEC 230.458], [NEC 230.459], [NEC 230.460], [NEC 230.461], [NEC 230.462], [NEC 230.463], [NEC 230.464], [NEC 230.465], [NEC 230.466], [NEC 230.467], [NEC 230.468], [NEC 230.469], [NEC 230.470], [NEC 230.471], [NEC 230.472], [NEC 230.473], [NEC 230.474], [NEC 230.475], [NEC 230.476], [NEC 230.477], [NEC 230.478], [NEC 230.479], [NEC 230.480], [NEC 230.481], [NEC 230.482], [NEC 230.483], [NEC 230.484], [NEC 230.485], [NEC 230.486], [NEC 230.487], [NEC 230.488], [NEC 230.489], [NEC 230.490], [NEC 230.491], [NEC 230.492], [NEC 230.493], [NEC 230.494], [NEC 230.495], [NEC 230.496], [NEC 230.497], [NEC 230.498], [NEC 230.499], [NEC 230.500], [NEC 230.501], [NEC 230.502], [NEC 230.503], [NEC 230.504], [NEC 230.505], [NEC 230.506], [NEC 230.507], [NEC 230.508], [NEC 230.509], [NEC 230.510], [NEC 230.511], [NEC 230.512], [NEC 230.513], [NEC 230.514], [NEC 230.515], [NEC 230.516], [NEC 230.517], [NEC 230.518], [NEC 230.519], [NEC 230.520], [NEC 230.521], [NEC 230.522], [NEC 230.523], [NEC 230.524], [NEC 230.525], [NEC 230.526], [NEC 230.527], [NEC 230.528], [NEC 230.529], [NEC 230.530], [NEC 230.531], [NEC 230.532], [NEC 230.533], [NEC 230.534], [NEC 230.535], [NEC 230.536], [NEC 230.537], [NEC 230.538], [NEC 230.539], [NEC 230.540], [NEC 230.541], [NEC 230.542], [NEC 230.543], [NEC 230.544], [NEC 230.545], [NEC 230.546], [NEC 230.547], [NEC 230.548], [NEC 230.549], [NEC 230.550], [NEC 230.551], [NEC 230.552], [NEC 230.553], [NEC 230.554], [NEC 230.555], [NEC 230.556], [NEC 230.557], [NEC 230.558], [NEC 230.559], [NEC 230.560], [NEC 230.561], [NEC 230.562], [NEC 230.563], [NEC 230.564], [NEC 230.565], [NEC 230.566], [NEC 230.567], [NEC 230.568], [NEC 230.569], [NEC 230.570], [NEC 230.571], [NEC 230.572], [NEC 230.573], [NEC 230.574], [NEC 230.575], [NEC 230.576], [NEC 230.577], [NEC 230.578], [NEC 230.579], [NEC 230.580], [NEC 230.581], [NEC 230.582], [NEC 230.583], [NEC 230.584], [NEC 230.585], [NEC 230.586], [NEC 230.587], [NEC 230.588], [NEC 230.589], [NEC 230.590], [NEC 230.591], [NEC 230.592], [NEC 230.593], [NEC 230.594], [NEC 230.595], [NEC 230.596], [NEC 230.597], [NEC 230.598], [NEC 230.599], [NEC 230.600], [NEC 230.601], [NEC 230.602], [NEC 230.603], [NEC 230.604], [NEC 230.605], [NEC 230.606], [NEC 230.607], [NEC 230.608], [NEC 230.609], [NEC 230.610], [NEC 230.611], [NEC 230.612], [NEC 230.613], [NEC 230.614], [NEC 230.615], [NEC 230.616], [NEC 230.617], [NEC 230.618], [NEC 230.619], [NEC 230.620], [NEC 230.621], [NEC 230.622], [NEC 230.623], [NEC 230.624], [NEC 230.625], [NEC 230.626], [NEC 230.627], [NEC 230.628], [NEC 230.629], [NEC 230.630], [NEC 230.631], [NEC 230.632], [NEC 230.633], [NEC 230.634], [NEC 230.635], [NEC 230.636], [NEC 230.637], [NEC 230.638], [NEC 230.639], [NEC 230.640], [NEC 230.641], [NEC 230.642], [NEC 230.643], [NEC 230.644], [NEC 230.645], [NEC 230.646], [NEC 230.647], [NEC 230.648], [NEC 230.649], [NEC 230.650], [NEC 230.651], [NEC 230.652], [NEC 230.653], [NEC 230.654], [NEC 230.655], [NEC 230.656], [NEC 230.657], [NEC 230.658], [NEC 230.659], [NEC 230.660], [NEC 230.661], [NEC 230.662], [NEC 230.663], [NEC 230.664], [NEC 230.665], [NEC 230.666], [NEC 230.667], [NEC 230.668], [NEC 230.669], [NEC 230.670], [NEC 230.671], [NEC 230.672], [NEC 230.673], [NEC 230.674], [NEC 230.675], [NEC 230.676], [NEC 230.677], [NEC 230.678], [NEC 230.679], [NEC 230.680], [NEC 230.681], [NEC 230.682], [NEC 230.683], [NEC 230.684], [NEC 230.685], [NEC 230.686], [NEC 230.687], [NEC 230.688], [NEC 230.689], [NEC 230.690], [NEC 230.691], [NEC 230.692], [NEC 230.693], [NEC 230.694], [NEC 230.695], [NEC 230.696], [NEC 230.697], [NEC 230.698], [NEC 230.699], [NEC 230.700], [NEC 230.701], [NEC 230.702], [NEC 230.703], [NEC 230.704], [NEC 230.705], [NEC 230.706], [NEC 230.707], [NEC 230.708], [NEC 230.709], [NEC 230.710], [NEC 230.711], [NEC 230.712], [NEC 230.713], [NEC 230.714], [NEC 230.715], [NEC 230.716], [NEC 230.717], [NEC 230.718], [NEC 230.719], [NEC 230.720], [NEC 230.721], [NEC 230.722], [NEC 230.723], [NEC 230.724], [NEC 230.725], [NEC 230.726], [NEC 230.727], [NEC 230.728], [NEC 230.729], [NEC 230.730], [NEC 230.731], [NEC 230.732], [NEC 230.733], [NEC 230.734], [NEC 230.735], [NEC 230.736], [NEC 230.737], [NEC 230.738], [NEC 230.739], [NEC 230.740], [NEC 230.741], [NEC 230.742], [NEC 230.743], [NEC 230.744], [NEC 230.745], [NEC 230.746], [NEC 230.747], [NEC 230.748], [NEC 230.749], [NEC 230.750], [NEC 230.751], [NEC 230.752], [NEC 230.753], [NEC 230.754], [NEC 230.755], [NEC 230.756], [NEC 230.757], [NEC 230.758], [NEC 230.759], [NEC 230.760], [NEC 230.761], [NEC 230.762], [NEC 230.763], [NEC 230.764], [NEC 230.765], [NEC 230.766], [NEC 230.767], [NEC 230.768], [NEC 230.769], [NEC 230.770], [NEC 230.771], [NEC 230.772], [NEC 230.773], [NEC 230.774], [NEC 230.775], [NEC 230.776], [NEC 230.777], [NEC 230.778], [NEC 230.779], [NEC 230.780], [NEC 230.781], [NEC 230.782], [NEC 230.783], [NEC 230.784], [NEC 230.785], [NEC 230.786], [NEC 230.787], [NEC 230.788], [NEC 230.789], [NEC 230.790], [NEC 230.791], [NEC 230.792], [NEC 230.793], [NEC 230.794], [NEC 230.795], [NEC 230.796], [NEC 230.797], [NEC 230.798], [NEC 230.799], [NEC 230.800], [NEC 230.801], [NEC 230.802], [NEC 230.803], [NEC 230.804], [NEC 230.805], [NEC 230.806], [NEC 230.807], [NEC 230.808], [NEC 230.809], [NEC 230.810], [NEC 230.811], [NEC 230.812], [NEC 230.813], [NEC 230.814], [NEC 230.815], [NEC 230.816], [NEC 230.817], [NEC 230.818], [NEC 230.819], [NEC 230.820], [NEC 230.821], [NEC 230.822], [NEC 230.823], [NEC 230.824], [NEC 230.825], [NEC 230.826], [NEC 230.827], [NEC 230.828], [NEC 230.829], [NEC 230.830], [NEC 230.831], [NEC 230.832], [NEC 230.833], [NEC 230.834], [NEC 230.835], [NEC 230.836], [NEC 230.837], [NEC 230.838], [NEC 230.839], [NEC 230.840], [NEC 230.841], [NEC 230.842], [NEC 230.843], [NEC 230.844], [NEC 230.845], [NEC 230.846], [NEC 230.847], [NEC 230.848], [NEC 230.849], [NEC 230.850], [NEC 230.851], [NEC 230.852], [NEC 230.853], [NEC 230.854], [NEC 230.855], [NEC 230.856], [NEC 230.857], [NEC 230.858], [NEC 230.859], [NEC 230.860], [NEC 230.861], [NEC 230.862], [NEC 230.863], [NEC 230.864], [NEC 230.865], [NEC 230.866], [NEC 230.867], [NEC 230.868], [NEC 230.869], [NEC 230.870], [NEC 230.871], [NEC 230.872], [NEC 230.873], [NEC 230.874], [NEC 230.875], [NEC 230.876], [NEC 230.877], [NEC 230.878], [NEC 230.879], [NEC 230.880], [NEC 230.881], [NEC 230.882], [NEC 230.883], [NEC 230.884], [NEC 230.885], [NEC 230.886], [NEC 230.887], [NEC 230.888], [NEC 230.889], [NEC 230.890], [NEC 230.891], [NEC 230.892], [NEC 230.893], [NEC 230.894], [NEC 230.895], [NEC 230.896], [NEC 230.897], [NEC 230.898], [NEC 230.899], [NEC 230.900], [NEC 230.901], [NEC 230.902], [NEC 230.903], [NEC 230.904], [NEC 230.905], [NEC 230.906], [NEC 230.907], [NEC 230.908], [NEC 230.909], [NEC 230.910], [NEC 230.911], [NEC 230.912], [NEC 230.913], [NEC 230.914], [NEC 230.915], [NEC 230.916], [NEC 230.917], [NEC 230.918], [NEC 230.919], [NEC 230.920], [NEC 230.921], [NEC 230.922], [NEC 230.923], [NEC 230.924], [NEC 230.925], [NEC 230.926], [NEC 230.927], [NEC 230.928], [NEC 230.929], [NEC 230.930], [NEC 230.931], [NEC 230.932], [NEC 230.933], [NEC 230.934], [NEC 230.935], [NEC 230.936], [NEC 230.937], [NEC 230.938], [NEC 230.939], [NEC 230.940], [NEC 230.941], [NEC 230.942], [NEC 230.943], [NEC 230.944], [NEC 230.945], [NEC 230.946], [NEC 230.947], [NEC 230.948], [NEC 230.949], [NEC 230.950], [NEC 230.951], [NEC 230.952], [NEC 230.953], [NEC 230.954], [NEC 230.955], [NEC 230.956], [NEC 230.957], [NEC 230.958], [NEC 230.959], [NEC 230.960], [NEC 230.961], [NEC 230.962], [NEC 230.963], [NEC 230.964], [NEC 230.965], [NEC 230.966], [NEC 230.967], [NEC 230.968], [NEC 230.969], [NEC 230.970], [NEC 230.971], [NEC 230.972], [NEC 230.973], [NEC 230.974], [NEC 230.975], [NEC 230.976], [NEC 230.977], [NEC 230.978], [NEC 230.979], [NEC 230.980], [NEC 230.981], [NEC 230.982], [NEC 230.983], [NEC 230.984], [NEC 230.985], [NEC 230.986], [NEC 230.987], [NEC 230.988], [NEC 230.989], [NEC 230.990], [NEC 230.991], [NEC 230.992], [NEC 230.993], [NEC 23



SUNERGY SOLAR LLC
7625 LITTLE RD. SUITE 200A,
NEW PORT RICHEY, FL 34654

REVISIONS		
DESCRIPTION	DATE	REV
INITIAL DESIGN	11/10/2023	A
REVISION	01/04/2023	A

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME

WIRING CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E004

AMBIENT TEMPERATURE SPECS		
RECORD LOW TEMP	-5°	
AMBIENT TEMP (HIGH TEMP 2%)	37°	
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.26%/°C	
PERCENT OF		
VALUES	CARRYING CONDUCTORS IN EMIT	
.80	46	
.70	749	
.50	1020	

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	MISSION SOLAR MSE385SXSR 385W/MODULE
VMP	36.93V
IMP	10.42A
VOC	45.03V
ISC	10.97A
TEMP. COEFF. VOC	-0.26%/°C
MODULE DIMENSION	75.07"L x 41.10"W x 1.57"D (In Inch)

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	ENPHASE IQ8PLUS-72-US MICROINVERTERS
MIN/MAX DC VOLT RATING	30V/ MIN/ 58V/ MAX
MAX INPUT POWER	235W/440W
NOMINAL AC VOLTAGE RATING	240V/ 211-284V
MAX AC CURRENT	1.21A
MAX MODULES PER CIRCUIT	13 (SINGLE PHASE)
MAX OUTPUT POWER	280 VA

NEW SYSTEM

AC CALCULATIONS

CIRCUIT ORIGIN	CIRCUIT DESTINATION	VOLTAGE (V)	FULLLOAD AMPT "FLA" (A)	FLA*125 (A)	OC-PD SIZE (A)	NEUTRAL SIZE (A)	GROUND SIZE (A)	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPS/INCH CHECK #1	AMPS/INCH CHECK #2	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(2)(a)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(B)(3)(a)	90°C AMPACITY DERATED (A)	AMPS/INCH CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT 1% (V)	CONDUIT SIZE	CONDUIT FILL (%)
CIRCUIT 1	SOLAR CK	240	1452	1815	30	N/A	BARE COPPER R6 AWG	CU #12 AWG	25	PASS	PASS	37	2	30	0.91	1	27.3	PASS	20	1.24	1.65	N/A	N/A
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 2	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 3	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 4	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 5	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 6	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 7	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 8	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 9	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 10	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 11	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 12	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
CIRCUIT 13	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4" EMT	11.97517
	CONTRIBUTOR BOX	240	1452	1815	30	N/A	CU #10 AWG	CU #10 AWG	35	PASS	PASS	37	2	40	0.91	1	36.4	PASS	5	1.24	1.65	3/4"	

CAUTION:
AUTHORIZED SOLAR
PERSONNEL ONLY!

LABEL-1:
LABEL LOCATION:
AC DISCONNECT

WARNING
ELECTRICAL SHOCK HAZARD
REMAIN ON THE LINE AND LOAD SIDES MAY
BE ENERGIZED IN THE OPEN POSITION
1/4/2024

Reviewed and approved
Richard Panel, P.E.

LABEL-2:
LABEL LOCATION:
MAIN SERVICE DISCONNECT

CODE REF: NEC 690.54

WARNING
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM
LABEL-3: CAUTION
UTILITY METER
SUBPANEL
CODE REF: NEC 705.12(C) & NEC 690.59

WARNING
TURN OFF PHOTOVOLTAIC AC
DISCONNECT PRIOR TO
WORKING INSIDE PANEL

LABEL-4:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
MAIN SERVICE DISCONNECT
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

CAUTION
PHOTOVOLTAIC SYSTEM CIRCUIT IS
BACKFEED
LABEL-5:
LABEL LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 705.12(B)(3-4) & NEC 690.59

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

LABEL-6:
LABEL LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 705.12(B)(3)(2)

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

LABEL-7:
LABEL LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 705.12(B)(3)(2)

SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN
"OFF" POSITION TO
SHUT DOWN PV SYSTEM
AND REDUCE
SHOCK HAZARD
IN THE ARRAY

LABEL-8:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NFPA 11, 12.1.1.1 & NEC 690.56(C)

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

LABEL-9:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC
AC DISCONNECT

LABEL-10:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC
AC DISCONNECT
NOMINAL OPERATING AC VOLTAGE 240 V
RATED AC OUTPUT CURRENT 14.52 A

LABEL-11:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
AC DISCONNECT
CODE REF: NEC 690.54

MAIN PHOTOVOLTAIC
SYSTEM DISCONNECT

LABEL-12:
LABEL LOCATION:
MAIN SERVICE DISCONNECT (ONLY IF MAIN SERVICE DISCONNECT IS PRESENT)
CODE REF: NEC 690.13(B)

EMERGENCY RESPONDER:
THIS SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN
TURN RAPID SHUTDOWN
SWITCH TO THE "OFF"
POSITION TO SHUTDOWN
ENTIRE PV SYSTEM

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

LABEL-13:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NFPA 1 (11.12.2.1.1, 1.1)
1. THE RAPID SHUTDOWN LABEL SHALL BE LOCATED ON OR NO MORE
THAN 18 IN. (457 MM) FROM THE TOP OF THE LABEL (SEE FIG. 1)
2. HEIGHT OF LABEL IS 3/8 IN. (9.5 MM) IN WHITE ON A RED BACKGROUND

SUNERGY SOLAR LLC
EMERGENCY CONTACT
(727) 375-9375

LABEL-14
LABEL LOCATION:
MAIN SERVICE DISCONNECT
CODE REF: NFPA 1 (11.12.2.1.5)



SUNERGY SOLAR LLC
7625 LITTLE RD. SUITE 200A,
NEW PORT RICHEY, FL 34654

REVISIONS			
DESCRIPTION	DATE	REV	
INITIAL DESIGN	11/10/2023		
REVISION	01/04/2023	A	

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
LABELS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
E005

This item has been digitally signed and sealed by Richard Panel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

REVISIONS			
DESCRIPTION	DATE	REV	
INITIAL DESIGN	11/10/2023		
REVISION	01/04/2024	A	

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

PLACARD

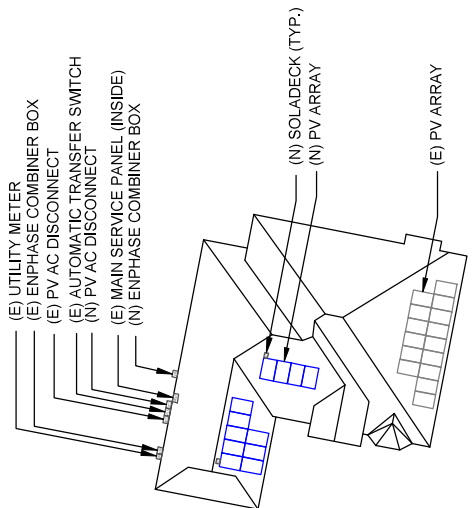
SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

E006

CAUTION:
MULTIPLE SOURCES OF POWER



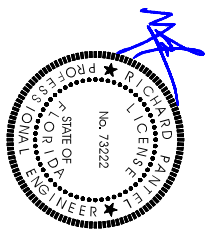
340 SW CALLAWAY DR, LAKE CITY, FL 32024

DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN:
NEC 690.56(B)&(C), [NEC 705.10]
PER FFPC 11.12.2.1.4

Reviewed and approved
Richard Pantel, P.E.
FL Lic. No. 73222
1/4/2024

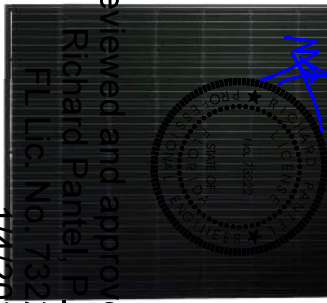


- LABELING NOTES:
1. LABEL CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
 2. LABELING REQUIREMENTS BASED ON THE 2020 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, ANSI Z355.
 3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
 4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21]
 5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND, REFLECTIVE, AND PERMANENTLY AFFIXED FFPC 11.12.2.1.2

MSE PERC 66

Class leading power output
-0 to +3%

Reviewed and approved
Richard Pantel, P.E.
FL Lic. No. 73222
1/4/2024



- Certified Reliability**
 - Tested to UL 61730 & IEC Standards
 - PID resistant
 - Resistance to salt mist corrosion
- Advanced Technology**
 - 6 Busbar
 - Passivated Emitter Rear Contact
 - Ideal for all applications
- Extreme Weather Resilience**
 - Up to 5,000 Pa front load & 3,600 Pa back load
 - Resistant to UL 61730
 - 40 mm frame
- BAA Compliant for Government Projects**
 - Buy American Act
 - American Recovery & Reinvestment Act



If you have questions or concerns about our products in your area, Mission Solar Energy.

UL 61730 / IEC 61215 / IEC 61730 / IEC 61701

C-S23-MKTG-0027 REV 2 05/05/2021

MISSION SOLAR ENERGY

True American Quality
True American Brand

Mission Solar Energy is headquartered in San Antonio, Texas where we manufacture our modules. We produce American high-quality solar modules ensuring the highest-in-class power output and best-in-class reliability. Our product line is tailored for residential, commercial and utility applications. Every Mission Solar Energy solar module is certified and surpasses industry standard regulations, proving excellent performance over the long term.

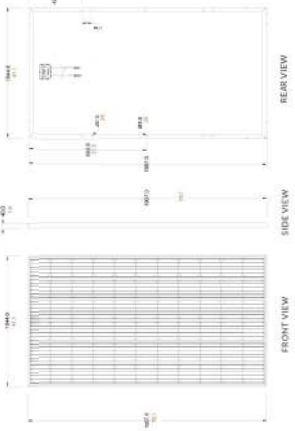
Demand the best. Demand Mission Solar Energy.

www.missionsolar.com | info@missionsolar.com

Class Leading
375-385W

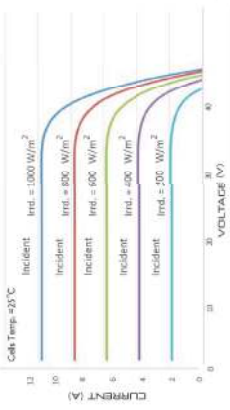
MSE PERC 66

BASIC DIMENSIONS
[UNITS: MM/IN]



CURRENT-VOLTAGE CURVE
MSE385XDR: 385WZ 66 CELL SOLAR MODULE

Current-voltage characteristics with dependence on irradiance and module temperature



CERTIFICATIONS AND TESTS

IEC	61215, 61730, 61701
UL	61730



Mission Solar Energy
8303 S. New Braunfels Ave., San Antonio, Texas 78235
www.missionsolar.com | info@missionsolar.com

Mission Solar Energy reserves the right to make specification changes without notice.
C-S23-MKTG-0027 REV 2 05/05/2021



SUNERGY SOLAR LLC
7625 LITTLE RD. SUITE 200A,
NEW PORT RICHEY, FL 34654

REVISIONS	
DESCRIPTION	DATE
INITIAL DESIGN	11/10/2023
REVISION	01/04/2023
A	

ELECTRICAL SPECIFICATION	
PRODUCT TYPE	MSE385XDR (385WZ)
Power Output	P_{max} 375 385 385
Module Efficiency	% 18.8 19.1 19.3
Tolerance	% 0+3 0+3 0+3
Short Circuit Current	I_{sc} V 10.85 10.91 10.97
Open Circuit Voltage	V_{oc} V 44.44 44.84 45.03
Rated Current	I_{mp} V 10.26 10.34 10.42
Rated Voltage	V_{mp} V 36.56 36.75 36.93
Fire Rating	A 20 20 20
System Voltage	V 1,000 1,000 1,000

TEMPERATURE COEFFICIENTS	
Normal Operating Cell Temperature (NOCT)	44.43°C (103.7°F)
Temperature Coefficient of P_{max}	-0.361%/°C
Temperature Coefficient of V_{oc}	-0.362%/°C
Temperature Coefficient of I_{sc}	0.039%/°C

OPERATING CONDITIONS	
Maximum System Voltage	1,000VDC
Operating Temperature Range	-40°C (-10°F) to +85°C (185°F)
Maximum Series Fuse Rating	20A
Fire Safety Classification	Type 1
Front & Back Load (UL Standard)	Up to 5,000 Pa front and 3,600 Pa back load, tested to UL 61730
Hail Safety Impact Velocity	25mm at 23 m/s

MECHANICAL DATA	
Solar Cells	P-type mono-crystalline silicon
Cell Orientation	66 cells (6x11)
Module Dimension	1,907mm x 1,044mm x 46mm
Weight	22 kg (49 lbs.)
Front Glass	3.2mm, tempered, low-iron, anti-reflective
Frame	Anodized
Encapsulant	Ethylene vinyl acetate (EVA)
Junction Box	Protection class IP67 with 3 bypass-diodes
Cable	1.0m, Wire diam: 2.2AWG
Connector	Standard PV-KIT 4 (4x) and PV-KIT 4 (6x) UR, MC4, Rehe 05-8

SHIPPING INFORMATION	
Container Feet	Ship To Pallet Pallets
53'	Most Sizes 30 780 296.40 MW
Double Stack	CA 26 676 256.83 MW
PALLET (26 PANELS)	
Weight	Height Width Length
1,274 lbs. (577 kg)	47.56 in (1208 mm) 45 in (1143 mm) 77 in (1955 mm)

www.missionsolar.com | info@missionsolar.com

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
MODULE
DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PD001

This item has been digitally signed and sealed by Richard Pantel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

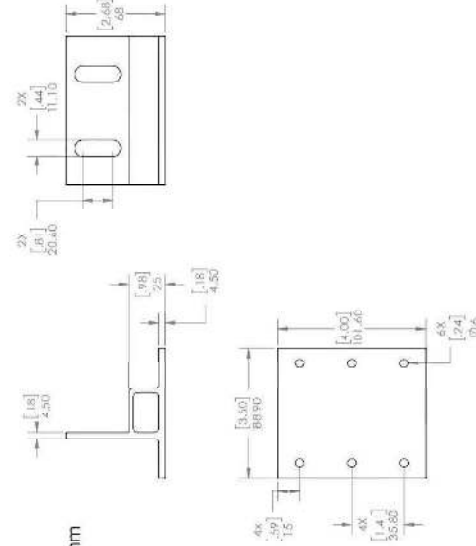
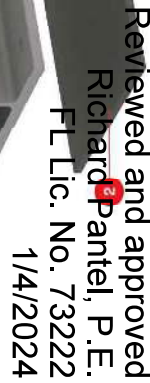


REVISIONS			
DESCRIPTION	DATE	REV	
INITIAL DESIGN	11/10/2023		
REVISION	01/04/2023	A	

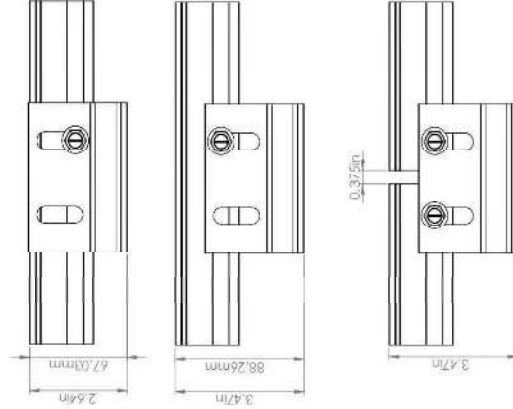
KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

SHEET NAME
ATTACHMENT
DATASHEET

SHEET NUMBER PD004



Units: [in] mm



Item Number	Description	Part Number
1	Splice Foot XL	48000352 Splice Foot XL, Mill
2	K2 EverSeal	
3	M5 x 50 lag screws	
4	T-Bolt B Hex Nut Set	
Technical Data		
Roof Type		Splice Foot XL
Material		Composition shingle Aluminum with stainless steel hardware
Finish		Mill
Roof Connection		M5 x 60 lag screws
Code Compliance		UL 2703
Compliance		CraneSafe 400-X, 400-X, 400-XL, 800

k2-systems.com

k2-systems.com

This item has been digitally signed and sealed by Richard Pantel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

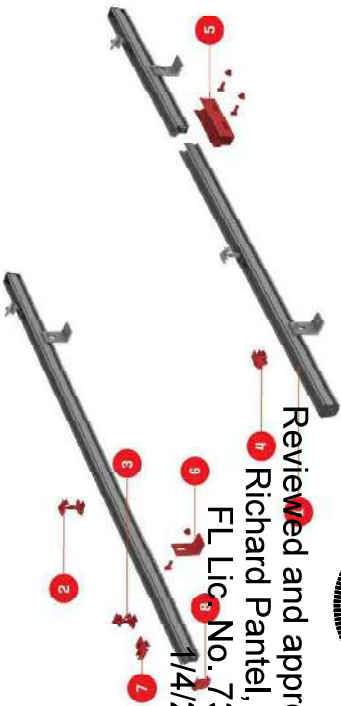
We support PV systems
Formerly Everest Solar Systems



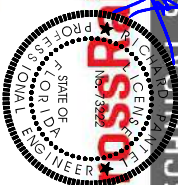
We support PV systems
Formerly Everest Solar Systems



SUNERGY SOLAR LLC
7625 LITTLE RD. SUITE 200A,
NEW PORT RICHEY, FL 34654



Reviewed and approved
Richard Pantel, P.E.
FL Lic No. 73222
1/4/2024



CrossRail System

TECHNICAL SHEET

Item Number	Description	Part Number
1	CrossRail 44-X (shown) all CR profiles applicable (180" mil), 4000020 (166" dark), 4000021 (180" mil), 4000022 (180" dark)	
2	CrossRail Mid Clamp	4000401-H (mil), 4000402-H (dark)
3	CrossRail (Standard) End Clamp	4000429 (mil), 4000440 (dark)
4	Yzt Hidden End Clamp for CR	4000050-H
5	CrossRail 44-X Rail Connector (shown) CR 4E-X, 4E-XL Rail Connector available	4000051 (mil), 4000052 (dark)
6	L-Foot Slanted Set	4000030 (mil), 4000031 (dark)
7	Everest Ground Lug	4000006-H
8	CrossRail 44-X End Cap (shown) CrossRail 48-X, 48-XL and 60 available	4000067



CROSSRAIL 44-X

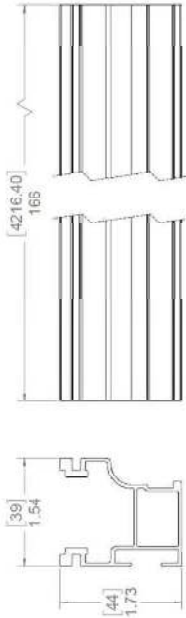
Mechanical Properties

Material	CrossRail 44-X 6000 Series Aluminum
Ultimate Tensile Strength	37.7 ksi (260 MPa)
Yield Strength	34.8 ksi (240 MPa)
Weight	0.47 lbs/ft (0.689 kg/m)
Finish	Mil or Dark Anodized

Sectional Properties

Sx	CrossRail 44-X 0.1490 in ³ (0.3765 cm ³)
Sy	0.1450 in ³ (0.3669 cm ³)
A (X-Section)	0.4030 in ² (1.0267 cm ²)

Units: [mm] in



Notes:

- Structural values and span charts determined in accordance with Aluminum Design Manual and ASCE 7-16
- UL2703 Listed System for Fire and Donding

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

PROJECT NAME & ADDRESS

DRAWN BY
ESR

SHEET NAME
RACKING
DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PD005

k2-systems.com

k2-systems.com

SolaDeck

FLASHED PV ROOF-MOUNT COMBINER/ENCLOSURE

Basic Features

- Stamped Seamless Construction
- 18 Gauge Galvanized Steel
- Powder Coated Surfaces
- Flashes into the roof deck
- 3 Roof deck knockouts .5" , .75" , 1"
- 5 Centering dimples for entry/exit fittings or conduit
- 2 Position Ground lug installed
- Mounting Hardware Included



SolaDeck Model SD 0783

SolaDeck UL50 Type 3R Enclosures

Available Models:

- Model SD 0783 - (3" fixed Din Rail)
- Model SD 0786 - (6" slotted Din Rail)



SolaDeck UL 1741 Combiner/Enclosures

Models SD 0783-41 and SD 0786-41 are labeled and ETL listed UL STD 1741 according to the UL STD 1741 for photovoltaic combiner enclosures.

Max Rated - 800VDC, 120AMPS

Model SD 0783-41 3" Fixed Din Rail fastened using Nrblock System

**Typical System Configuration

- 4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
- 1- Power Distribution Block 600VDC 175AMP
- 1- Bus Bar with UL lug

Model SD 0786-41 6" Slotted Din Rail fastened using steel studs

**Typical System Configuration

- 4- Din Rail Mounted Fuse Holders 600VDC 30 AMP
- 4- Din Rail Mounted Terminal Blocks
- Bus Bars with UL lug

**Fuse holders and terminal blocks added in the field must be UL listed or recognized and meet 600 VDC 30 AMP 110C for fuse holders, 600V 50 AMP 90C for rail mounted terminal blocks and 175 AMP 90C for Power Distribution Blocks. Use Copper Wire Conductors.



Cover is trimmed to allow conduit or fittings base to center dimpled for fitting locations.



Model SD 0783-41, wired with Din Rail mounted fuse holders, bus bar and power distribution block.



Model SD 0786-41, wired with Din Rail mounted fuse holders, terminal blocks and bus bars.

RSTC Enterprises, Inc. • 2219 Heimstead Road • Eau Claire, WI 54703
For product information call 1(866) 367-7782



SUNERGY SOLAR LLC
7625 LITTLE RD. SUITE 200A,
NEW PORT RICHEY, FL 34654

REVISIONS			
DESCRIPTION	DATE	REV	
INITIAL DESIGN	11/10/2023		
REVISION	01/04/2023	A	

PROJECT NAME & ADDRESS

KUNZLER
RESIDENCE
340 SW CALLAWAY DR,
LAKE CITY, FL 32024

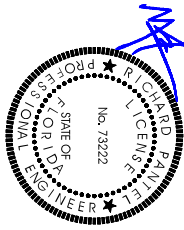
DRAWN BY
ESR

SHEET NAME
SOLADECK
DATASHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PD006

Reviewed and approved
Richard Pantel, P.E.
FL Lic. No. 73222
1/4/2024



This item has been digitally signed and sealed by Richard Pantel, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.