

SYSTEM INFORMATION	
MODULE	HANWHA Q.PEAK DUO BLK-G10+ 365
INVERTER	ENPHASE IQ8PLUS-72-2-US
RACKING	SUNMODO EZ GRIP W/ UNIRAC NXT HORIZON 2-RAIL
SYSTEM SIZE (DC)	8.03 KW
LOCATION	30.1828436,-82.6004307

REV

DESCRIPTION

BY

DATE

A

INITIAL RELEASE

LWF

10/16/2018

B

ADD B15019-001

LWF

10/24/2018

IN 1/2" PLYWOOD

LOAD DIRECTION

FOS=2

FOS=3

UPLIFT

345

230

LATERAL.PERP. TO SLOT

140

95

LATERAL.PARALLEL TO SLOT

265

175

IN 7/16" OSB

LOAD DIRECTION

FOS=2

FOS=3

UPLIFT

190

125

LATERAL.PERP. TO SLOT

125

85

LATERAL.PARALLEL TO SLOT

135

90

4

3

5

7

2

8

1

6

NOTES

* Factor of Safety as shown

* Torque at 3/8" T-Bolt = 15ft.lbs (20 N.m)

* All loads in pounds force

* Values valid only for conditons equal or better than test conditions

* Values valid only when product is used in accordance with SunModo installation instruction and other technical documentation

* The kit as shown in the BOM. For alternative configurations, contact SunModo

4 1/4" Deck Screws in Min 7/16" OSB

B

8

B15019-001

SEALING WASHER .26 ID X .50 X .125

4

7

B15018-001

HEX CAP SCREW 3/8-16 X 3/4

1

6

C50001-001

GASKET, EPDM, WITH ADHESIVE

2

5

B15003-001

FLANGE NUT 3/8-16

2

4

B20007-002

T-BOLT 3/8-16X1.0", 304 SS

1

3

A20062-001

L FOOT

1

2

B15039-001

HEX WASHER HEAD LAG BOLT 1/4X3

4

1

A50224-001

METAL ROOF DECK MOUNT

1

ITEM

PART NUMBER

DESCRIPTION

QTY

MATERIAL

SEE NOTES

Third Angle Projection:

GENERAL SPECIFICATIONS

All Dimensions in inches [millimeters]

Tolerances

X.XXX ±0.01 [0.25mm]

X.XX ±0.02 [0.50mm]

X.X ±0.039 [1.0mm]

Unless otherwise spec'd

Break all sharp edges .010-.020 unless otherwise specified.

DRAWN BY

LWF

DATE

10/16/2018

CHECKED BY

APPROVALS

SunModo Corp.

14800 NE 65TH STREET, VANCOUVER WA 98682

TITLE

METAL ROOF DECK MOUNT KIT

B

DRAWING NUMBER

K50532-001 STRUCTURE

SCALE:

NONE

SHEET

1

of

1

SUNMODO

Make your next metal roof attachment without the daunting task of locating the truss.

SunModo's EZ Grip Metal Deck Mount installs into 26 gauge sheet metal, 1/2 plywood or 7/16 OSB roof decking material.

SunModo's EZ Grip Metal Deck Mount installs in just minutes into sheet metal, plywood or OSB roof decking. The four included 1/4 x 3" Hex Washer Head Self-tapping Screws have the length to penetrate though 1-1/2 inches of insulation while still piercing completely through the roof decking. And since the four screws are guided by the aluminum extruded base to penetrate at a 30-degree angle, the Metal Roof Deck Mount Kit offers superior attachment performance. 1/4-20 Self-drilling screws can be used for attachments into 26 gauge minimum thickness metal roofs.

The EZ Grip Metal Deck Mount is designed to fit on the most popular R-Panel and U-Panel trapezoidal types of metal roofs. The aluminum extruded base easily clears roof profiles 7/16" tall by 1-1/2" wide. The EPDM gaskets on the washers and on the aluminum extruded base combine to provide a water tight seal at the roof penetration site.

Features and Benefits

Attaches into 1/2 plywood or 7/16 OSB roof decking material using four 1/4 x 3" Hex Washer Head Self-tapping Screws

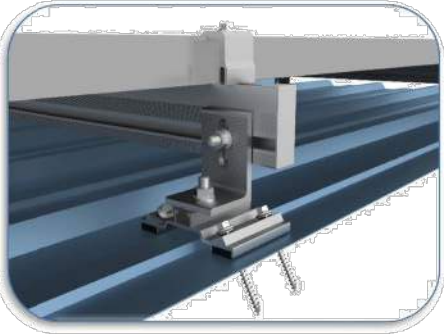
Attaches into 26 gauge minimum thickness sheet metal using four 1/4 x 2" Hex Washer Head Self-drilling Screws

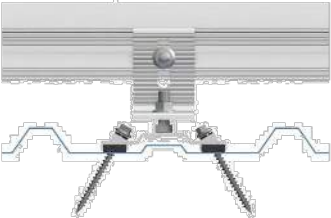
Angled penetrations provide superior attachment performance

A wide variety of L-feet and attachment options are available

Passed the High-Velocity Hurricane Zone (HVHZ) –TAS 100(a) Wind-Driven Rain Test

EZ GRIP METAL DECK MOUNT





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ATTACHMENT DETAIL FOR METAL STANDING SEAM ROOF

momentum

SOLAR

PRO CUSTOM SOLAR LLC D.B.A. MOMENTUM SOLAR

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(732) 902-6224

MOMENTUMSOLAR.COM

PROFESSIONAL ENGINEERING

MINA A. MAKAR

LICENSE

No PE86753

STATE OF FLORIDA

PROFESSIONAL ENGINEER

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SOLAR CONTRACTOR

CAMERON CHRISTENSEN

CERTIFIED SOLAR CONTRACTOR LICENSE NUMBER: CVC57036

MOMENTUM SOLAR

5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

CUSTOMER INFORMATION

DANNY WALSH - MS120838

117 SE GRACE GLEN

LAKE CITY, FL 32025

5176125549

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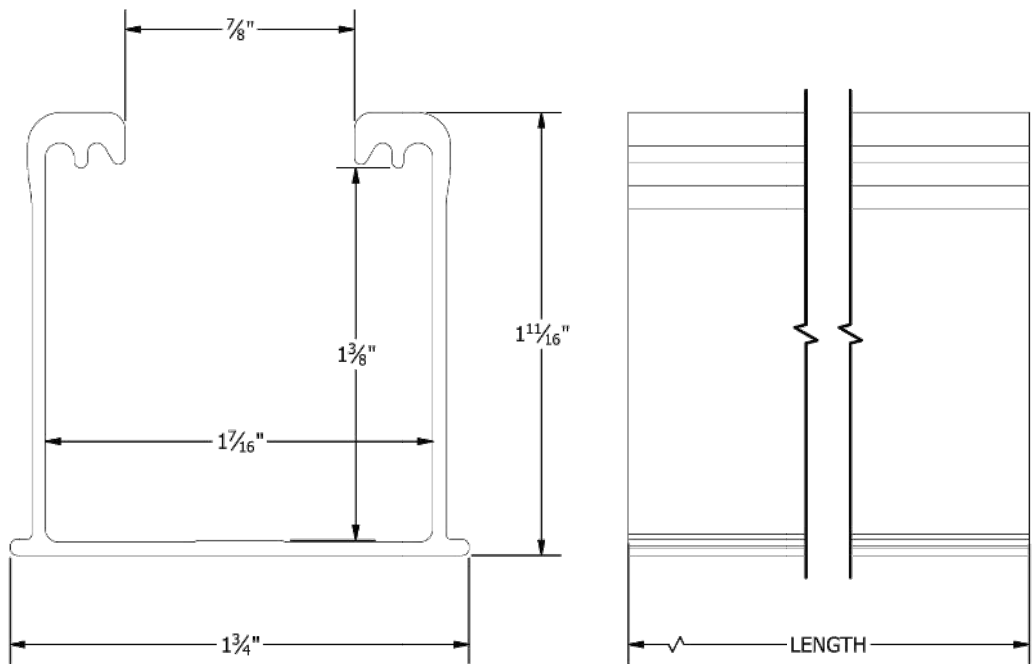
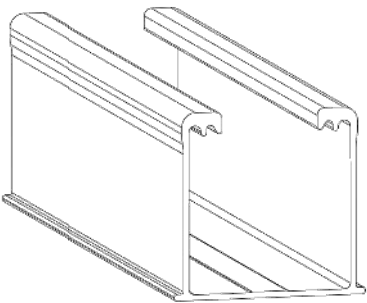
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ATTACHMENT DETAIL

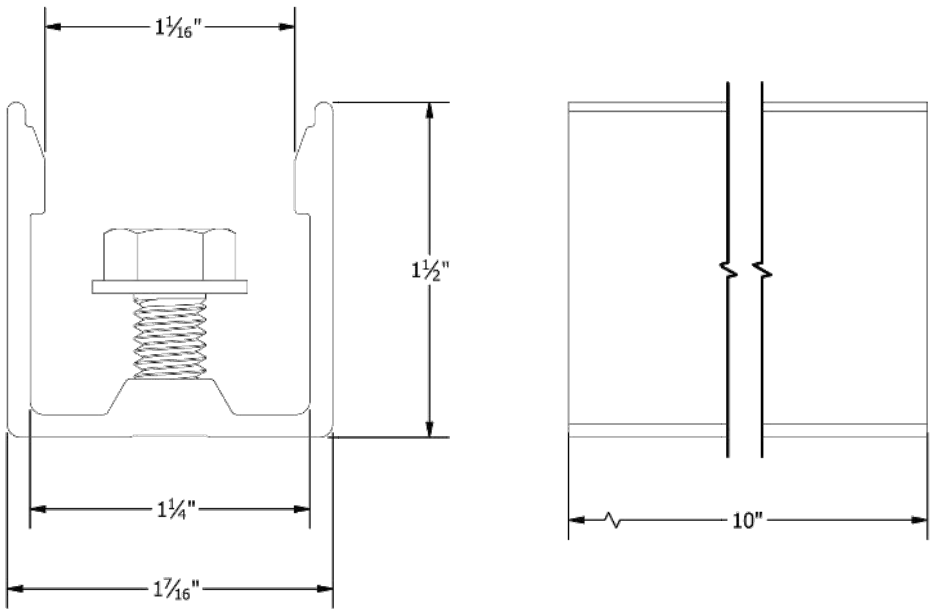
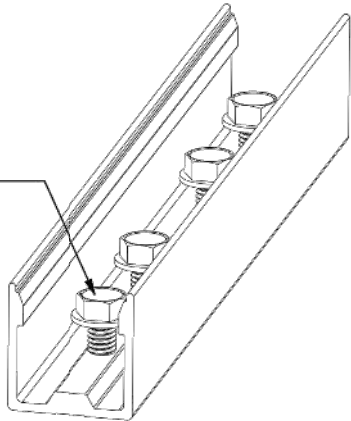
PV-1.1

PART # TABLE		
P/N	DESCRIPTION	LENGTH
084RLM1	NXT HORIZON RAIL 84" MILL	84"
084RLD1	NXT HORIZON RAIL 84" DARK	84"
168RLM1	NXT HORIZON RAIL 168" MILL	168"
168RLD1	NXT HORIZON RAIL 168" DARK	168"
208RLM1	NXT HORIZON RAIL 208" MILL	208"
208RLD1	NXT HORIZON RAIL 208" DARK	208"
246RLM1	NXT HORIZON RAIL 246" MILL	246"
246RLD1	NXT HORIZON RAIL 246" DARK	246"



PART # TABLE		
P/N	DESCRIPTION	LENGTH
RLSPLCM1	NXT HORIZON RAIL SPLICE	10"

4X - 5/16"-18 x 5/8"
HEX FLANGE SCREW - TYPE F



1411 BROADWAY BLVD. NE
ALBUQUERQUE, NM 87102 USA
PHONE: 505.242.6411
WWW.UNIRAC.COM

PRODUCT LINE:	NXT HORIZON
DRAWING TYPE:	PART DETAIL
DESCRIPTION:	RAIL
REVISION DATE:	9/13/2021

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE
NOMINAL

PRODUCT PROTECTED BY
ONE OR MORE US PATENTS
LEGAL NOTICE

NH-P01

SHEET



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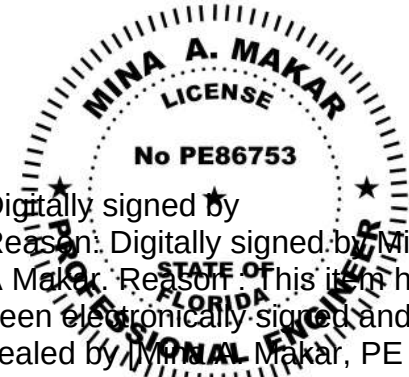
NH-P02

SHEET



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5728 MAJOR BLVD. SUITE 307, ORLANDO FL. 32819

CUSTOMER INFORMATION

DANNY WALSH - MS120838
117 SE GRACE GLEN
LAKE CITY, FL 32025
5176125549

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BLK-G10+ 365
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IQ8PLUS-72-2-US

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ATTACHMENT DETAIL

PV-1.1 (2)

					LANDSCAPE MAX SPAN (ROOF AREA 1/2/3)	PORTRAIT MAX SPAN (ROOF AREA 1/2/3)	LANDSCAPE MAX CANTILEVER	PORTRAIT MAX CANTILEVER
ROOF	PANEL COUNT	TILT	AZIMUTH	SHADING				
R1	14	22°	95°	100%	48 /32 /32	48 /32 /32	16 /10 /10	16 /10 /10
R2	8	22°	95°	99%	48 /32 /32	48 /32 /32	16 /10 /10	16 /10 /10



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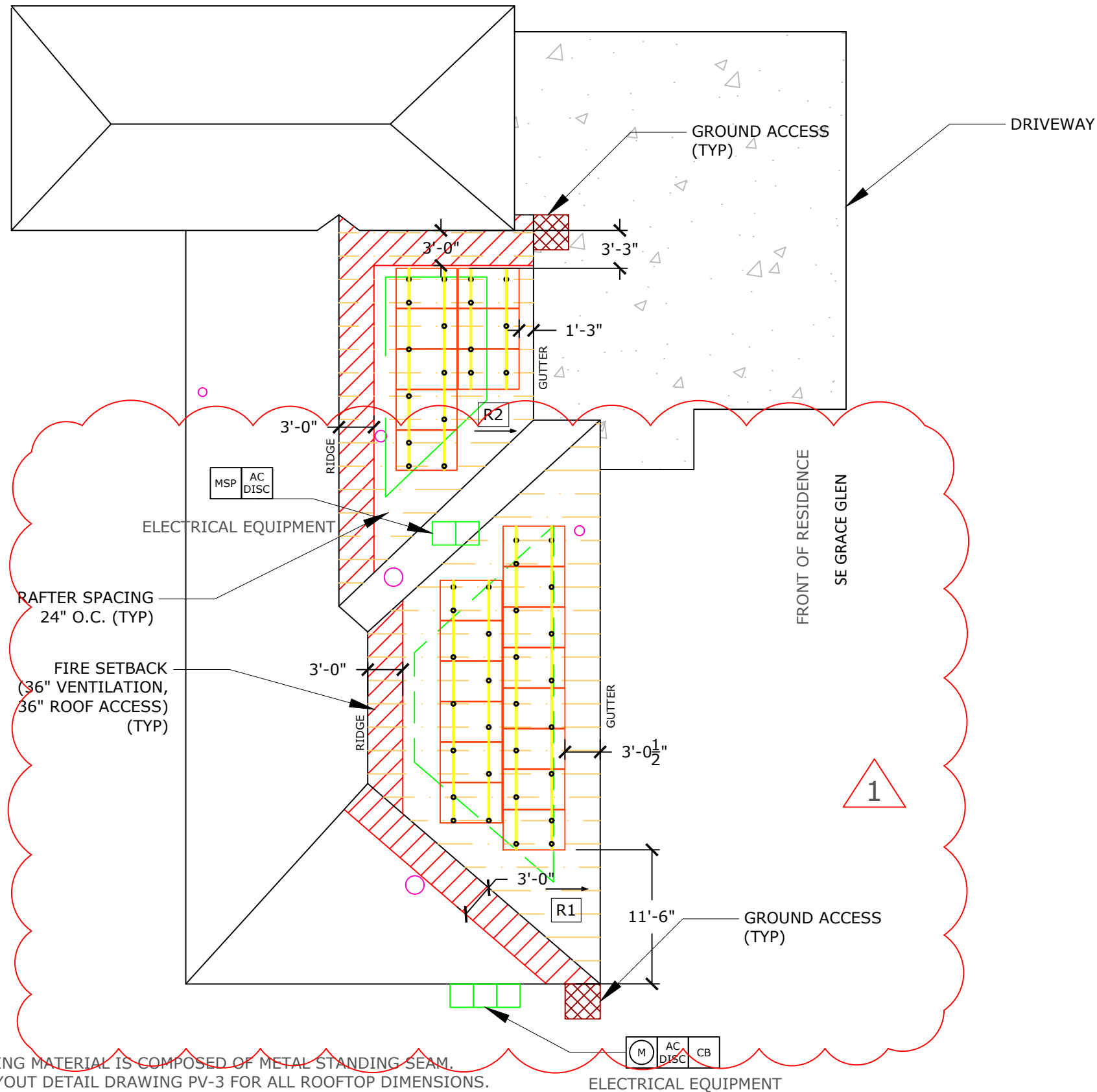
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ROOF LAYOUT

PV-2



CLAMPING MAX SPACING IN ZONE 1 72" O.C
AND IN ZONE 2 AND ZONE 3 48" O.C

TOTAL SQUARE FOOTAGE OF ROOF: 3030 SQFT

SQUARE FOOTAGE OF SOLAR ARRAY:424.48 SQFT

PERCENTAGE OF SOLAR ROOF COVERAGE: 14.01%

18" RIDGE SETBACK SHALL BE REQUIRED

SYMBOL LEGEND			
	MAIN SERVICE PANEL		CHIMNEY
	SUB-PANEL		SKYLIGHT
	UTILITY METER		VENT
	AC DISCONNECT		PIPE VENT
	UTILITY DISCONNECT		FAN
	LOAD CENTER		SATELLITE DISH
	NEMA 3R BOX W/ ENVOY-S		FIRE SETBACKS
	COMBINER BOX		MIN 3'x3' GROUND ACCESS POINT
	MODULE		PITCH DIRECTION
		WIND PRESSURE ZONE LINES. REFER TO PV-2.2 FOR ADDITIONAL INFO	

NOTE:

1. ROOF COVERING MATERIAL IS COMPOSED OF METAL STANDING SEAM.
2. REFER TO LAYOUT DETAIL DRAWING PV-3 FOR ALL ROOFTOP DIMENSIONS.

ELECTRICAL NOTES:

1. ALL CALCULATIONS FOR VOC, VMAX, IMP AND ISC HAVE BEEN CALCULATED USING THE MANUFACTURED STRING CALCULATOR BASED ON ASHRAE 2% HIGH AND EXTREME MINIMUM TEMPERATURE COEFFICIENTS.
2. THE ENTIRE ARRAY IS BONDED ACCORDING TO (NEC 690.46 - 250.120 PARAGRAPH C). THE GROUND IS CARRIED AWAY FROM THE GROUNDING LUG USING #6 BARE COPPER WIRE OR #8 THWN-2 COPPER WIRE.
3. THIS SYSTEM COMPLIES WITH NEC 2017
4. BRANCH CIRCUIT CALCULATION FOR WIRE TAG 1 DISPLAYS THE LARGEST BRANCH CIRCUIT IN SYSTEM. OTHER BRANCH CIRCUITS SHALL HAVE LOWER DESIGN CURRENT THAN THE ONE SHOWN. IN ADDITION, VOLTAGE DROP CALCULATIONS FROM PANELS TO THE COMBINER BOX SHALL BE SHOWN IN A SIMILAR FASHION
5. ALL CONDUCTORS ARE SIZED BASED ON NEC 2017 ARTICLE 310
6. ALL EQUIPMENT INSTALLED IS RATED AT 75°C
7. INVERTER NOC (NOMINAL OPEN CURRENT) OBTAINED FROM EQUIPMENT DATASHEET
8. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL LOCAL AND NATIONAL CODE REQUIREMENTS.
9. EACH MODULE MUST BE GROUNDED ACCORDING TO USER INSTRUCTIONS
10. ALL EQUIPMENT SHALL BE LISTED PER NEC 690.4(B)
11. PER NEC 690.13, 690.15, PROVIDE A WARNING SIGN AT ALL LOCATIONS WHERE TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION> SIGN SHALL READ *WARNING - ELECTRIC SHOCK HAZARD - DO NOT TOUCH TERMINALS - OR EQUIVALENT.
12. PER NEC 705.10, PROVIDE A PERMANENT PLAQUE OR DIRECTORY SHOWING ALL ELECTRIC POWER SOURCES ON THE PREMISES AT SERVICE ENTRANCE.
13. INTERCONNECTION METHOD SHALL COMPLY WITH NEC 705.12
14. AND OPTION FOR A SINGLE CIRCUIT BRANCH TO BE SPLIT INTO TWO SUB-CIRCUIT BRANCHES IS ACCEPTABLE.
15. ALL CONDUCTORS MUST BE COPPER.
16. NEUTRAL AND EQUIPMENT GROUNDING CONDUCTOR BONDED AS PER NEC 250.24(C).
17. EQUIPMENT GROUNDING CONDUCTOR IS CONNECTED TO A GROUNDING ELECTRODE SYSTEM PER 250.54(D).
18. FUSES FOR PV DISCONNECT HAVE AIC RATINGS OF 200KA AC AND 20KA DC.
19. SUPPLY SIDE CONNECTION SHALL BE MADE USING ILSKO INSULATION PIERCING CONNECTORS (IPC). MAKE, MODEL, AND RATING OF INTERCONNECTION CAN BE SEEN ON TABLE 1 BELOW.
20. METHOD OF INTERCONNECTION CAN BE SEEN IN FIGURE 1.
21. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.

22. WORKING CLEARANCES AROUND THE EXISTING AND NEW ELECTRICAL EQUIPMENT WILL BE MAINTAINED IN ACCORDANCE WITH NEC ARTICLE 110.26.
23. CONDUCTORS EXPOSED TO SUNLIGHT SHALL BE LISTED AS SUNLIGHT RESISTANT PER NEC ARTICLE 300.6 (C)(1) AND ARTICLE 310.8 (D).
24. CONDUCTORS EXPOSED TO WET LOCATIONS SHALL BE SUITABLE FOR USE IN WET LOCATIONS PER NEC ARTICLE 310.10 (C).
25. TOTAL AREA OF ALL CONDUCTORS, SPLICES, AND TAPS INSTALLED AT ANY CROSS SECTION OF THE WIRING DOES NOT EXCEED 75% OF THE CROSS SECTIONAL AREA OF THE SPACE. NEC 312.8(A)(2).
26. SYSTEM IS CONSIDERED AN AC MODULE SYSTEM. NO DC CONDUCTORS ARE PRESENT IN CONDUIT, COMBINER, JUNCTION BOX, DISCONNECT. AND COMPLIES WITH 690.6 - NO DC DISCONNECT AND ASSOCIATED DC LABELING ARE REQUIRED.
27. SYSTEM COMPLIES WITH 690.12 RAPID SHUTDOWN AND ASSOCIATED LABELING AS PER 690.56(C). AC VOLTAGE AND SYSTEM OPERATING CURRENT SHALL BE PROVIDED 690.52.
28. CONDUCTORS IN CONDUIT ARE AC CONDUCTORS BRANCH CIRCUITS AND NOT PV SOURCE CIRCUITS. 690.6.
29. ALL GROUNDING SHALL COMPLY WITH 690.47(A) IN THAT THE AC MODULES WILL COMPLY WITH 250.64.
30. NO TERMINALS SHALL BE ENERGIZED IN THE OPEN POSITION IN THIS AC MODULE SYSTEM 690.13, 690.15, 690.6.
31. WHERE APPLICABLE: INTERCONNECTION SHALL COMPLY WITH 705.12(A) OR 705.12(B)
32. ALL WARNING SIGN(S) OR LABEL(S) SHALL COMPLY WITH 2017 NEC ARTICLE 110.21(B). LABEL WARNINGS SHALL ADEQUATELY WARN OF THE HAZARD. LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT, AND LABELS REQUIRED SHALL BE SUITABLE FOR THE ENVIRONMENT.
33. PV POWER CIRCUIT LABELS SHALL APPEAR ON EVERY SECTION OF THE WIRING SYSTEM THAT IS SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.

TABLE 1:

MAKE	MODEL	VOLTAGE RATING	CONDUCTOR RANGE MAIN	CONDUCTOR RANGE TAP
ILSCO	IPC 4006	600 V	4/0-4 AWG	6-14 AWG
ILSCO	IPC 4020	600 V	4/0-2 AWG	2/0-6 AWG

INSTRUCTIONS FOR LINE TAPS

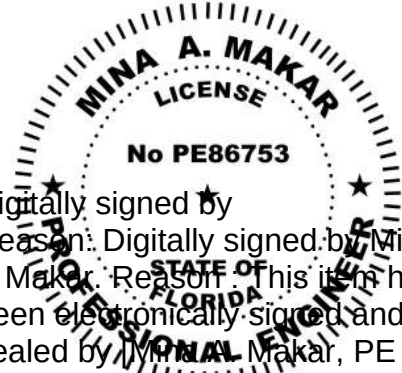
FIGURE 1:

1. ADJUST THE CONNECTOR NUT TO SUITABLE LOCATION
2. PUT THE BRANCH WIRE INTO THE CAP SHEATH FULLY
3. INSERT THE MAIN WIRE, IF THERE ARE TWO LAYS OF INSULATED LAY IN THE MAIN CABLE, SHOULD STRIP A CERTAIN LENGTH OF THE FIRST INSULATED LAY FROM INSERTED END
4. TURN THE NUT BY HAND, AND FIX THE CONNECTOR IN SUITABLE LOCATION.
5. SCREW THE NUT WITH THE SLEEVE SPANNER.
6. SCREW THE NUT CONTINUALLY UNTIL THE TOP PART IS CRACKED AND DROPPED DOWN



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ELECTRICAL CONT.

PV-3.1

