PHOTOVOLTAIC ROOF MOUNT SYSTEM

38 MODULES-ROOF MOUNTED - 15.390 kW DC, 15.200 kW AC

269 S W THOMAS RD, LAKE CITY, FL 32024

PROJECT DATA

PROJECT ADDRESS	269 S W THOMAS RD, LAKE CITY, FL 32024
OWNER:	DELEON KELLY
CONTRACTOR:	LUNEX POWER INC. 4721 N GRADY AVE TAMPA FL 33614 PHONE: 813-540-8807
DESIGNER:	ESR
SCOPE:	15.390 KW DC ROOF MOUNT SOLAR PV SYSTEM WITH 38 JA SOLAR: JAM54S31-405/MR (1000V) 405W PV MODULES WITH 14 TESLA: MCI-2 RAPID SHUTDOWN DEVICE WITH 02 TESLA: SOLAR INVERTER 7.6KW INVERTERS **DERATE MAIN BREAKER FROM 200A RATED TO 175A**

AUTHORITIES HAVING JURISDICTION:
BUILDING: COLUMBIA COUNTY
ZONING: COLUMBIA COUNTY
UTILITY: FPL

SHEET INDEX

PROFESSIONAL ENGINEER SEAL

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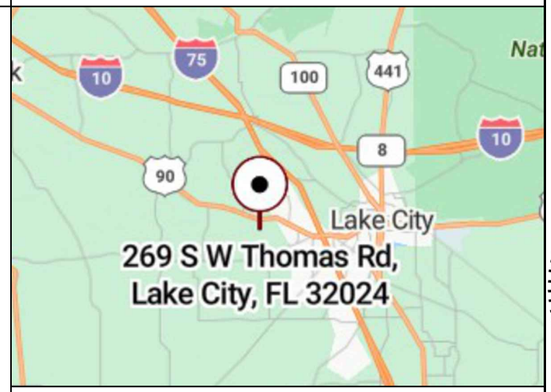
GENERAL NOTES

1. ALL COMPONENTS ARE UL LISTED AND CEC CERTIFIED, WHERE WARRANTED.
2. THE SOLAR PV SYSTEM WILL BE INSTALLED IN ACCORDANCE WITH ARTICLE 690 OF THE NEC 2020.
3. THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION.
4. 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.
5. WHERE METALLIC CONDUIT CONTAINING DC CONDUCTORS IS USED INSIDE THE BUILDING, IT SHALL BE IDENTIFIED AS "CAUTION: SOLAR CIRCUIT" EVERY 10FT.
6. HEIGHT OF THE AC DISCONNECT SHALL NOT EXCEED 6'-7" PER NEC CODE 240.24.
7. A GROUNDING ELECTRODE SYSTEM IN ACCORDANCE WITH NEC 2020 690.47 AND 250.50 THROUGH 60 AND 250-166 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 #8 AWG AND NO LARGER THAN #6 AWG COPPER AND BONDED TO THE EXISTING GROUNDING ELECTRODE TO PROVIDE FOR A COMPLETE SYSTEM.
8. PHOTOVOLTAIC MODULES ARE TO BE CONSIDERED NON-COMBUSTIBLE.
9. PHOTOVOLTAIC INSTALLATION WILL NOT OBSTRUCT ANY PLUMBING. MECHANICAL, OR BUILDING ROOF VENTS.
10. 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.
11. ALL SINAGE TO BE PLACED IN ACCORDANCE WITH THE LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SINAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.
12. INVERTER(S) USED IN UNGROUNDED SYSTEM SHALL BE UL 1741 LISTED.
13. THE INSTALLATION OF EQUIPMENT AND ALL ASSOCIATED WIRING AND INTERCONNECTION SHALL BE PERFORMED ONLY BY QUALIFIED PERSONS [NEC 690.4(C)]
14. ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R RATED (OR BETTER), INCLUDING ALL ROOF MOUNTED TRANSITION BOXES AND SWITCHES.
15. ALL EQUIPMENT SHALL BE PROPERLY GROUNDED AND BONDED IN ACCORDANCE WITH NEC ARTICLE 250.
16. SYSTEM GROUNDING SHALL BE IN ACCORDANCE WITH NEC 690.41.
17. PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION IN ACCORDANCE WITH NEC 690.12
18. 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)]
19. ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC 690.31
20. WORK CLEARANCES AROUND ELECTRICAL EQUIPMENT WILL BE MAINTAINED PER NEC 110.26(A)(1), 110.26(A)(2) AND 110.26(A)(3).
21. ROOFTOP MOUNTED PHOTOVOLTAIC PANELS AND MODULES SHALL BE TESTED, LISTED & IDENTIFIED IN ACCORDANCE WITH UL1703
22. ELECTRICAL CONTRACTOR TO PROVIDE CONDUIT EXPANSION JOINTS AND ANCHOR CONDUIT RUNS AS REQUIRED PER NEC.

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)

Andrew D. Leone

Digitally signed by Andrew D. Leone
Date: 2025.08.01 15:22:55 -04'00'

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

ANDREW D. LEONE LICENSE No. 60669 STATE OF FLORIDA PROFESSIONAL ENGINEER

08/01/2025
DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE
269 S W THOMAS RD, LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
COVER SHEET

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-1

PROJECT DESCRIPTION:

38 X JA SOLAR: JAM54S31-405/MR (1000V) 405W PV MODULES
ROOF MOUNTED SOLAR PHOTOVOLTAIC MODULES
DC SYSTEM SIZE: 38 x 405 = 15.390 kW DC
AC SYSTEM SIZE: 02 x 7600 = 15.200 kW AC

EQUIPMENT SUMMARY
38 JA SOLAR: JAM54S31-405/MR (1000V) 405W MONO MODULES WITH
14 TESLA: MCI-2 RAPID SHUTDOWN DEVICE WITH
02 TESLA: SOLAR INVERTER 7.6KW, INVERTERS
ROOF ARRAY AREA #1:- 273.13 SQ FT.
ROOF ARRAY AREA #2:- 168.08 SQ FT.
ROOF ARRAY AREA #3:- 231.11 SQ FT.
ROOF ARRAY AREA #4:- 63.03 SQ FT.
ROOF ARRAY AREA #5:- 63.03 SQ FT.

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

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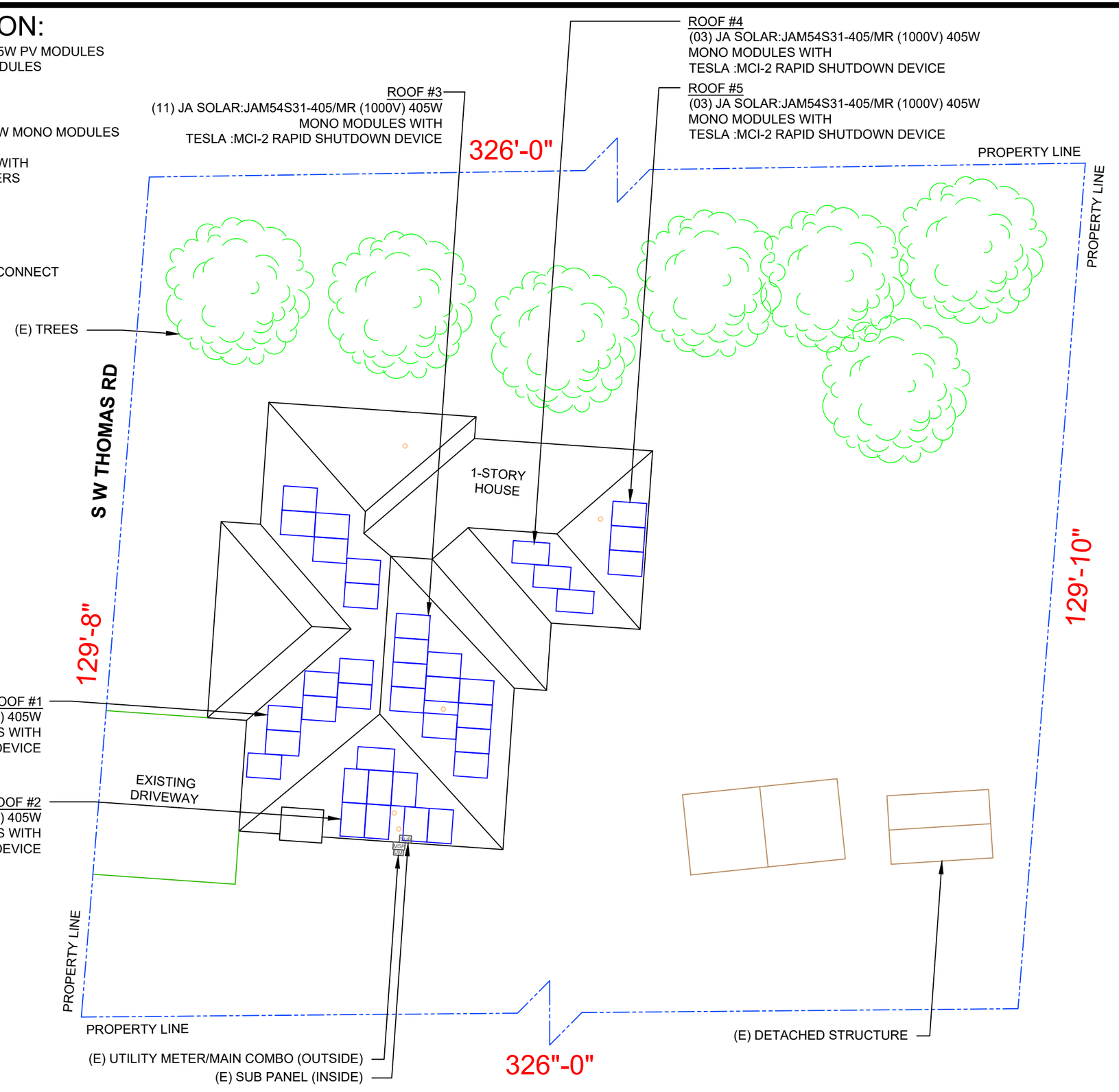

1 SITE PLAN
PV-2 SCALE: 1/16" = 1'-0"

LUNEX POWER
THE PURE SOURCE
LUNEX POWER INC.
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TAMPA FL 33614
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DELEON KELLY RESIDENCE
269 S W THOMAS RD,
LAKE CITY, FL 32024

DRAWN BY
ESR

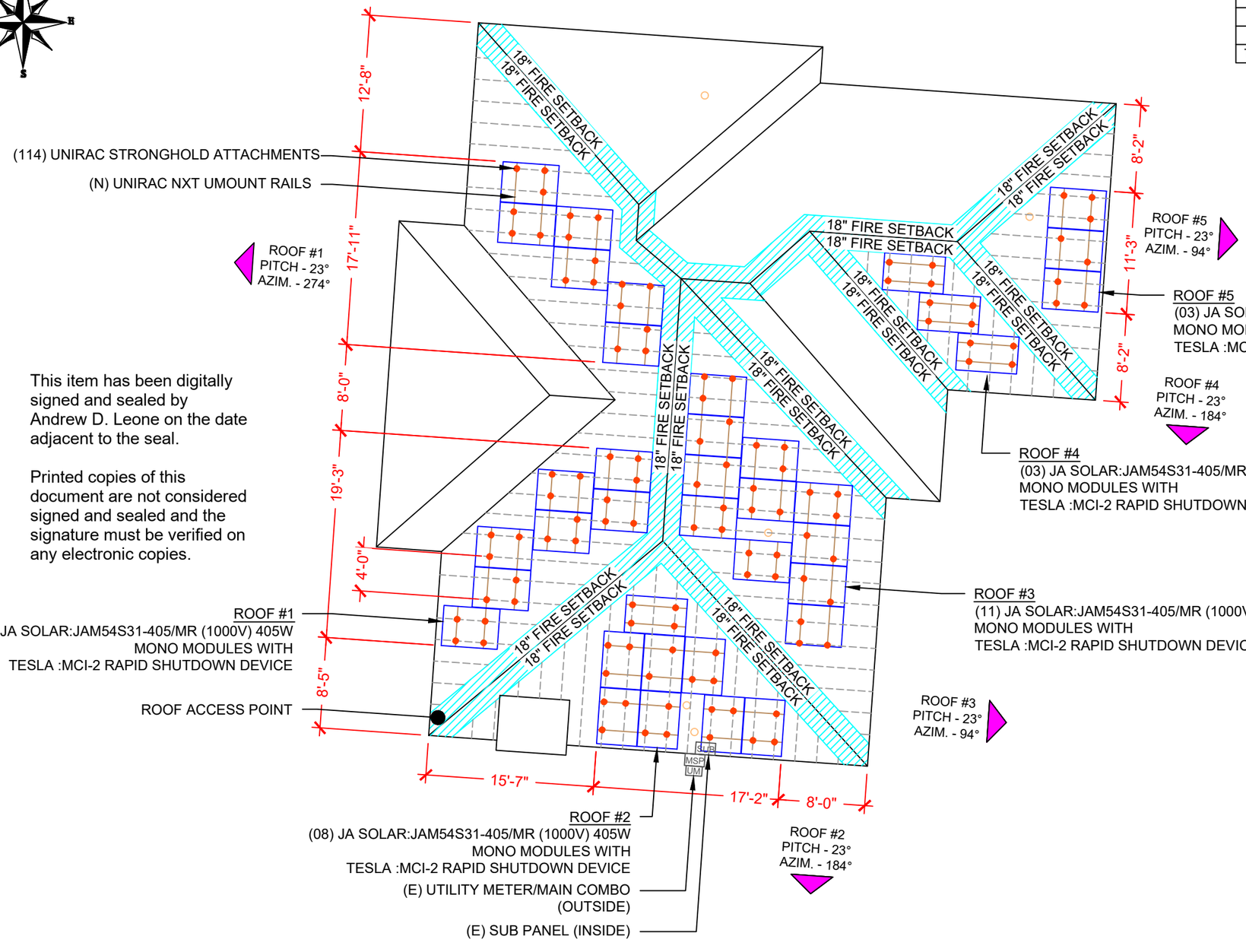
SHEET NAME
SITE PLAN

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-2

MODULE TYPE, DIMENSIONS & WEIGHT

NUMBER OF MODULES = 38 MODULES
MODULE TYPE = JA SOLAR: JAM54S31-405/MR (1000V) 405W MONO MODULES
MODULE WEIGHT = 47.39 LBS / 21.5 KG.
MODULE DIMENSIONS = 67.79" x 44.64" = 21.01 SF



ROOF #5
(03) JA SOLAR:JAM54S31-405/MR (1000V) 405W MONO MODULES WITH TESLA :MCI-2 RAPID SHUTDOWN DEVICE

ROOF #4
(03) JA SOLAR:JAM54S31-405/MR (1000V) 405W MONO MODULES WITH TESLA :MCI-2 RAPID SHUTDOWN DEVICE

ROOF #3
(11) JA SOLAR:JAM54S31-405/MR (1000V) 405W MONO MODULES WITH TESLA :MCI-2 RAPID SHUTDOWN DEVICE

ROOF #1
(13) JA SOLAR:JAM54S31-405/MR (1000V) 405W MONO MODULES WITH TESLA :MCI-2 RAPID SHUTDOWN DEVICE

ROOF ACCESS POINT

ROOF #2
(08) JA SOLAR:JAM54S31-405/MR (1000V) 405W MONO MODULES WITH TESLA :MCI-2 RAPID SHUTDOWN DEVICE

(E) UTILITY METER/MAIN COMBO (OUTSIDE)

(E) SUB PANEL (INSIDE)

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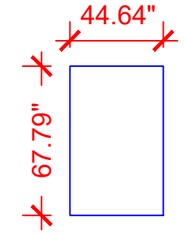
ARRAY AREA & ROOF AREA CALC'S

ROOF	# OF MODULES	ARRAY AREA (Sq. Ft.)	ROOF AREA (Sq. Ft.)	ROOF AREA COVERED BY ARRAY (%)
#1	13	273.13	704.32	39
#2	08	168.08	396.61	42
#3	11	231.11	501.28	46
#4	03	63.03	188.66	33
#5	03	63.03	189.75	33
TOTAL	38	798.38	3413.03	23

ROOF DESCRIPTION

ROOF TYPE			COMP. SHINGLE	
ROOF	ROOF PITCH	AZIMUTH	TRUSS SIZE	TRUSS SPACING
#1	23°	274°	2"X4"	24"
#2	23°	184°	2"X4"	24"
#3	23°	94°	2"X4"	24"
#4	23°	184°	2"X4"	24"
#5	23°	94°	2"X4"	24"



JA SOLAR:
JAM54S31-405/MR (1000V)
405W MODULES

LEGEND

- SUB - SUB PANEL
- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- VENT, ATTIC FAN (ROOF OBSTRUCTION)
- ROOF ATTACHMENT
- TRUSS

1 ROOF PLAN & MODULES

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

LUNEX POWER
THE PURE SOURCE

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS

DESCRIPTION	DATE	REV

ANDREW D. LEONE
LICENSE
No. 60669
STATE OF FLORIDA
PROFESSIONAL ENGINEER

08/01/2025
DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE
269 S W THOMAS RD,
LAKE CITY, FL 32024

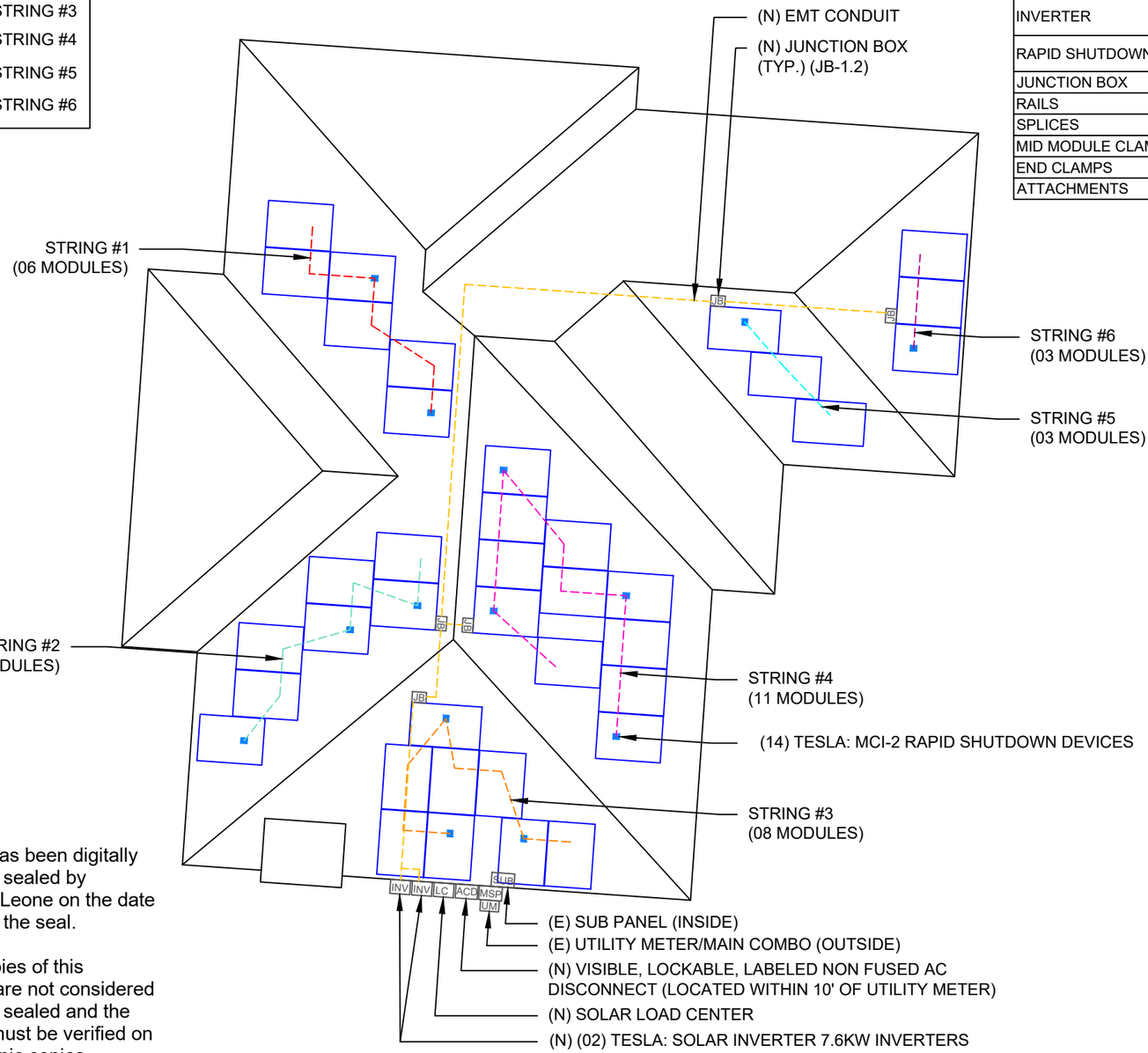
DRAWN BY
ESR

SHEET NAME
ROOF PLAN & MODULES

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-3

STRING LEGENDS
STRING #1
STRING #2
STRING #3
STRING #4
STRING #5
STRING #6



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BILL OF MATERIALS		
EQUIPMENT	QTY	DESCRIPTION
SOLAR PV MODULES	38	JA SOLAR: JAM54S31-405/MR (1000V) 405W MODULE
INVERTER	02	TESLA: SOLAR INVERTER 7.6KW
RAPID SHUTDOWN DEVICE	14	TESLA:MCI-2 RAPID SHUTDOWN DEVICE
JUNCTION BOX	5	JUNCTION BOXES (JB-1.2)
RAILS	22	UNIRAC NXT UMOUNT RAIL
SPLICES	4	SPLICE KIT
MID MODULE CLAMPS	38	MID MODULE CLAMPS
END CLAMPS	76	END CLAMPS / STOPPER SLEEVE
ATTACHMENTS	114	UNIRAC STRONGHOLD ATTACHMENTS

LEGEND

- LC - SOLAR LOAD CENTER
- SUB - SUB PANEL
- JB - JUNCTION BOX
- INV - INVERTER
- ACD - AC DISCONNECT
- UM - UTILITY METER
- MSP - MAIN SERVICE PANEL
- CONDUIT

1 ELECTRICAL PLAN

PV-4 SCALE: 3/32" = 1'-0"

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THE PURE SOURCE

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08/01/2025
DATE: 07/16/2025

PROJECT NAME & ADDRESS

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LAKE CITY, FL 32024

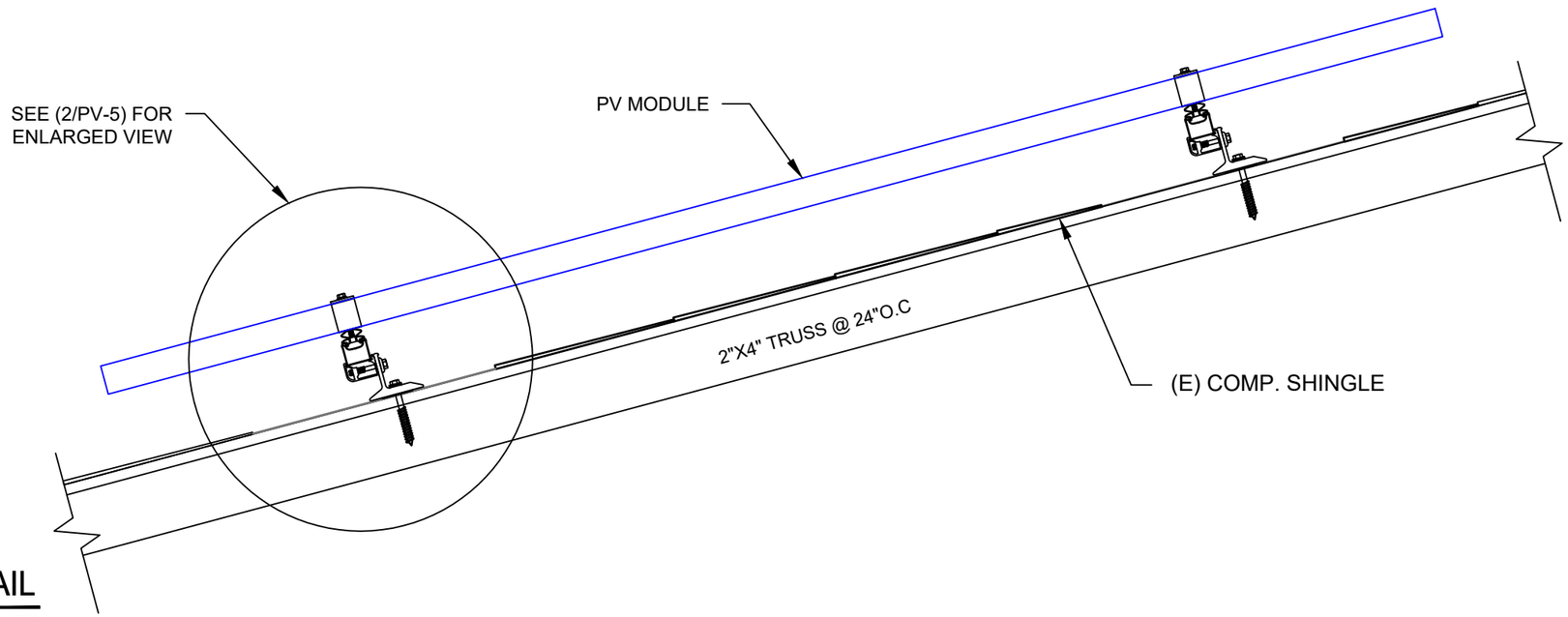
DRAWN BY
ESR

SHEET NAME
ELECTRICAL PLAN

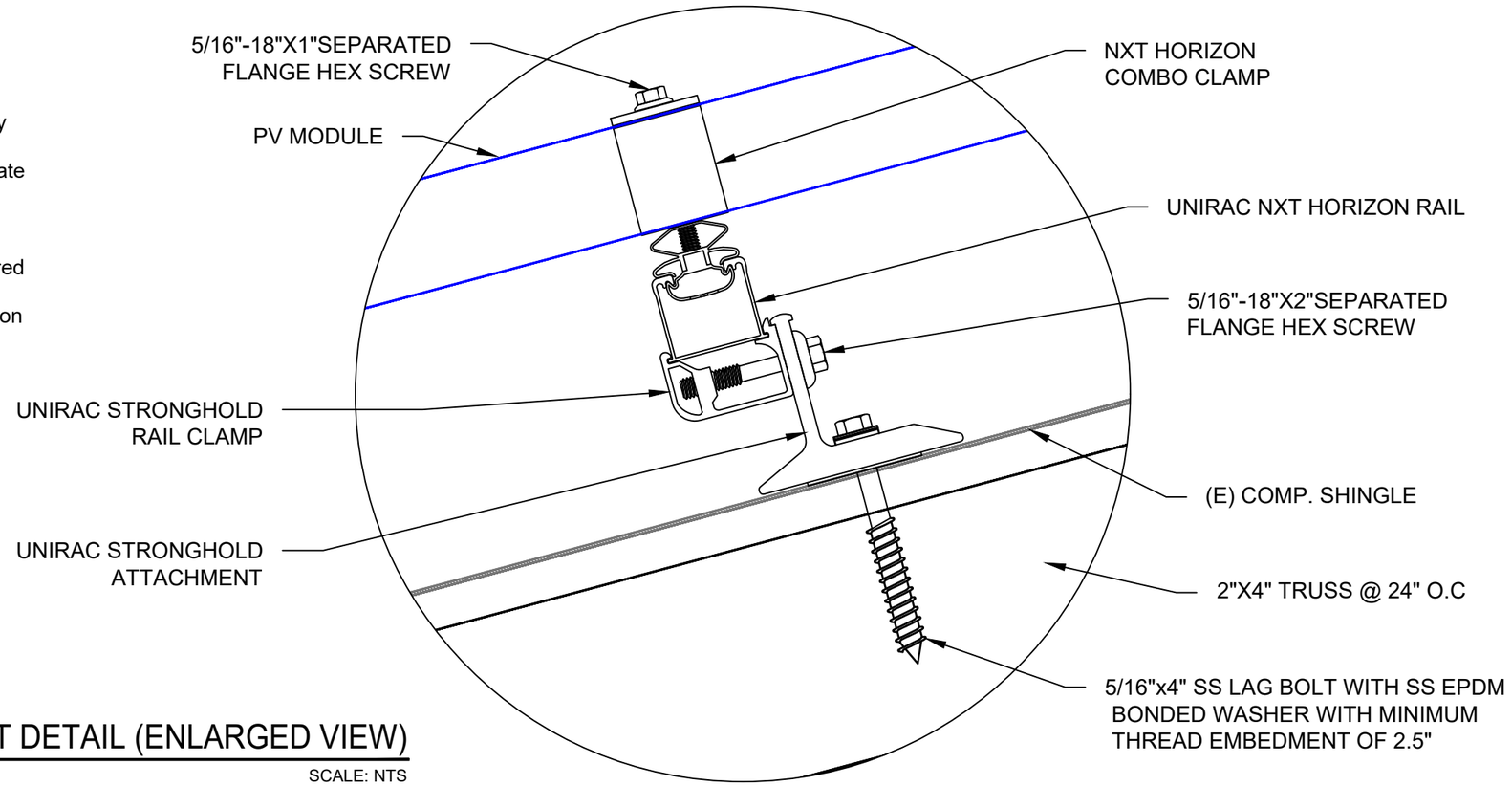
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-4

DESCRIPTION: CANTILEVER
CANTILEVER CONSIDER 1/3RD OF ROOF ATTACHMENT SPACING.
ATTACHMENT SPACING= 48" O/C
CANTILEVER = 16"



1 ATTACHMENT DETAIL
PV-5 SCALE: NTS



2 ATTACHMENT DETAIL (ENLARGED VIEW)
PV-5 SCALE: NTS

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LUNEX POWER
THE PURE SOURCE

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DRAWN BY
ESR

SHEET NAME
STRUCTURAL DETAIL

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-5

DC SYSTEM SIZE: 38 x 405 = 15.390KW DC
AC SYSTEM SIZE: 02 x 7600 = 15.200KW AC

38 JA SOLAR: JAM54S31-405/MR (1000V) 405W MONO MODULES WITH
14 TESLA: MCI-2 RAPID SHUTDOWN DEVICE WITH
02 TESLA: SOLAR INVERTER 7.6KW INVERTERS

(01) STRING OF 06 MODULES AND
(01) STRING OF 07 MODULES AND
(01) STRING OF 08 MODULES AND
(01) STRING OF 11 MODULES AND
(02) STRINGS OF 03 MODULES ARE CONNECTED IN SERIES

120% RULE
BUS BAR RATING X 120%) - MAIN BREAKER RATING =MAX. PV OCPD
(225x 120%) - 175=95A

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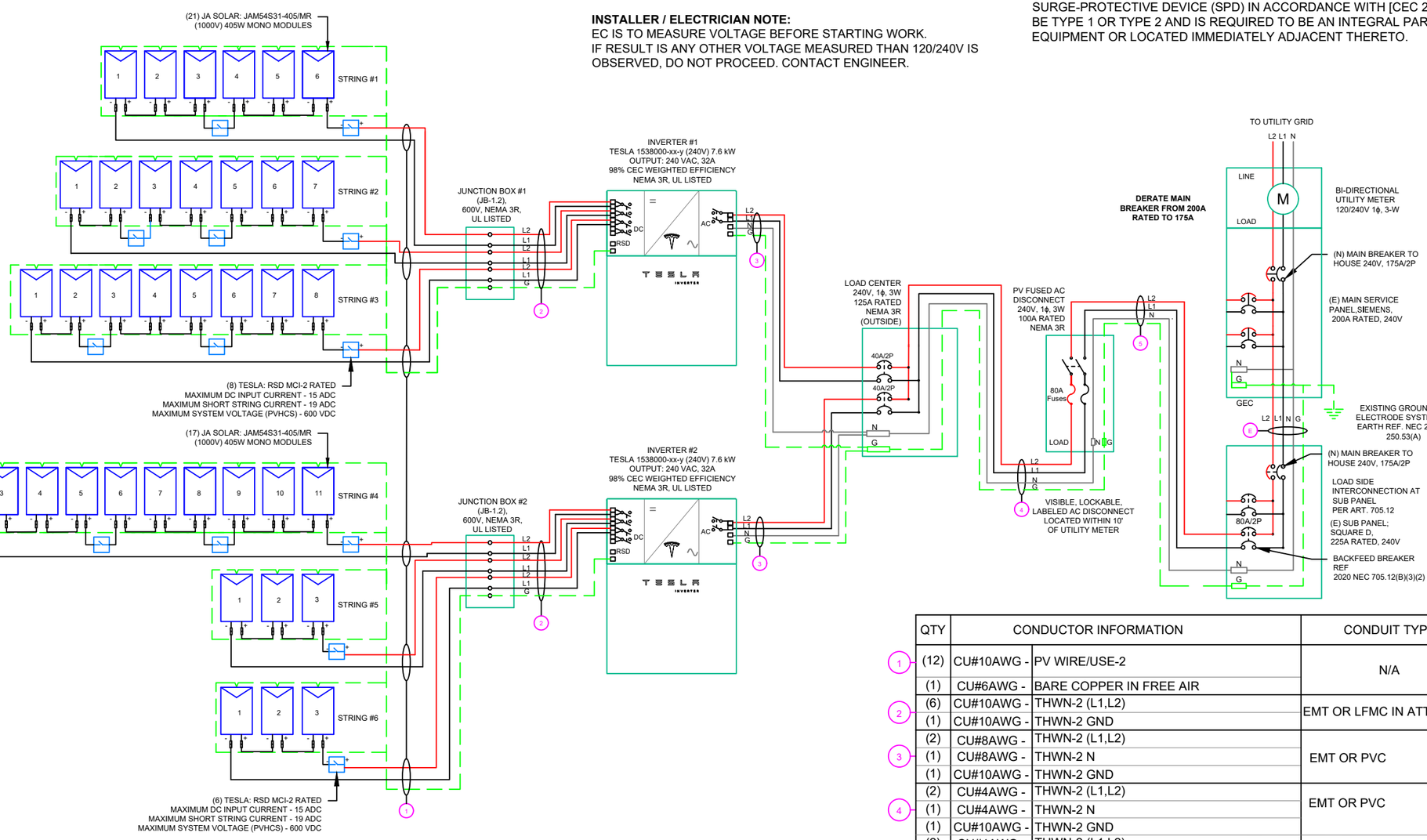
INTERCONNECTION NOTES:
1. INTERCONNECTION SIZING, LIMITATIONS AND COMPLIANCE DETERMINED IN ACCORDANCE WITH [NEC 705.12], AND [NEC 690.59].
2. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9], [NEC 230.95].
3. ALL EQUIPMENT TO BE RATED FOR BACKFEEDING.
4. PV BREAKER TO BE POSITIONED AT THE OPPOSITE END OF THE BUSBAR RELATIVE TO THE MAIN BREAKER.

DISCONNECT NOTES:
1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED “LINE SIDE” (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH
3. DISCONNECT MEANS AND THEIR LOCATION SHALL BE IN ACCORDANCE WITH [NEC 225.31] AND [NEC 225.32].

RACKING NOTE:
1. BOND EVERY OTHER RAIL WITH #6 BARE COPPER

INSTALLER / ELECTRICIAN NOTE:
EC IS TO MEASURE VOLTAGE BEFORE STARTING WORK.
IF RESULT IS ANY OTHER VOLTAGE MEASURED THAN 120/240V IS OBSERVED, DO NOT PROCEED. CONTACT ENGINEER.

GROUNDING & GENERAL NOTES:
1. **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)]
2. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
3. DC GEC AND AC EGC TO REMAIN UNSPLICED, OR SPLICED TO EXISTING ELECTRODE
4. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
5. JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOX DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
6. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.
7. RACEWAYS AND CABLES EXPOSED TO SUNLIGHT ON ROOFTOPS SHOULD BE INSTALLED MORE THAN 7/8" ABOVE THE ROOF USING CONDUIT SUPPORTS.
8. ALL NEW SERVICE INSTALLATIONS AND REPLACEMENTS REQUIRE A SURGE-PROTECTIVE DEVICE (SPD) IN ACCORDANCE WITH [CEC 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.



QTY	CONDUCTOR INFORMATION		CONDUIT TYPE	CONDUIT SIZE
1 (12)	CU#10AWG -	PV WIRE/USE-2	N/A	N/A
(1)	CU#6AWG -	BARE COPPER IN FREE AIR		
2 (6)	CU#10AWG -	THWN-2 (L1,L2)	EMT OR LFMC IN ATTIC	3/4"
(1)	CU#10AWG -	THWN-2 GND		
3 (2)	CU#8AWG -	THWN-2 (L1,L2)	EMT OR PVC	3/4"
(1)	CU#8AWG -	THWN-2 N		
(1)	CU#10AWG -	THWN-2 GND		
4 (2)	CU#4AWG -	THWN-2 (L1,L2)	EMT OR PVC	1"
(1)	CU#4AWG -	THWN-2 N		
(1)	CU#10AWG -	THWN-2 GND		
5 (2)	CU#4AWG -	THWN-2 (L1,L2)	EMT OR PVC	1"
(1)	CU#4AWG -	THWN-2 N		
(1)	CU#10AWG -	THWN-2 GND		
E (2)	CU#2/0AWG -	THWN-2 (L1,L2)	N/A	N/A
(1)	CU#2/0AWG -	THWN-2 N		
(1)	CU#6AWG -	THWN-2 GND		

1 ELECTRICAL LINE DIAGRAM
PV-6 SCALE: NTS

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS		
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ANDREW D. LEONE LICENSE No. 60669 STATE OF FLORIDA PROFESSIONAL ENGINEER

08/01/2025
DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE
269 S W THOMAS RD, LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
ELECTRICAL LINE DIAGRAM

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-6

INVERTER SPECIFICATIONS	
MANUFACTURER / MODEL #	TESLA: SOLAR INVERTER 7.6KW
NOMINAL AC POWER	7.600KW
NOMINAL GRID VOLTAGE	120/240 VAC
NOMINAL OUTPUT CURRENT	32A
PV MAXIMUM INPUT VOLTAGE	600 VDC

SOLAR MODULE SPECIFICATIONS	
MANUFACTURER / MODEL #	JA SOLAR: JAM54S31-405/MR (1000V) 405W MODULE
VMP	31.21V
IMP	12.98A
VOC	37.23V
ISC	13.87A
TEMP. COEFF. VOC	-0.275%/°C
MODULE DIMENSION	67.79"L x 44.64"W x 1.18"D (In Inch)

AMBIENT TEMPERATURE SPECS	
RECORD LOW TEMP	-5°
AMBIENT TEMP (HIGH TEMP 2%)	37°
MODULE TEMPERATURE COEFFICIENT OF Voc	-0.275%/°C

PERCENT OF VALUES	NUMBER OF CURRENT CARRYING CONDUCTORS IN EMT
.80	4-6
.70	7-9
.50	10-20

DC FEEDER CALCULATIONS

CIRCUIT ORIGIN	CIRCIUT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(1)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(C)(1)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
STRING 1	JUNCTION BOX #1	600	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	23	1.24	0.143	N/A	#N/A
STRING 2	JUNCTION BOX #1	600	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	27	1.24	0.167	N/A	#N/A
STRING 3	JUNCTION BOX #1	600	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	32	1.24	0.198	N/A	#N/A
STRING 4	JUNCTION BOX #2	600	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	46	1.24	0.285	N/A	#N/A
STRING 5	JUNCTION BOX #2	600	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	11	1.24	0.068	N/A	#N/A
STRING 6	JUNCTION BOX #2	600	15.00	18.75	20	BARE COPPER #6 AWG	CU #10 AWG	35	PASS	37	2	40	0.91	1	36.4	PASS	8	1.24	0.050	N/A	#N/A
JUNCTION BOX #1	INVERTER #1	600	15.00	18.75	20	CU #10 AWG	CU #10 AWG	35	PASS	37	6	40	0.91	0.8	29.12	PASS	27	1.24	0.167	3/4" EMT	27.71107
JUNCTION BOX #2	INVERTER #2	600	15.00	18.75	20	CU #10 AWG	CU #10 AWG	35	PASS	37	6	40	0.91	0.8	29.12	PASS	27	1.24	0.167	3/4" EMT	27.71107

String 1 Voltage Drop	0.310
String 2 Voltage Drop	0.335
String 3 Voltage Drop	0.366
String 4 Voltage Drop	0.453
String 5 Voltage Drop	0.236
String 6 Voltage Drop	0.217

AC FEEDER CALCULATIONS

CIRCUIT ORIGIN	CIRCIUT DESTINATION	VOLTAGE (V)	FULL LOAD AMPS "FLA" (A)	FLA*1.25 (A)	OCPD SIZE (A)	NEUTRAL SIZE	GROUND SIZE	CONDUCTOR SIZE	75°C AMPACITY (A)	AMPACITY CHECK #1	AMBIENT TEMP. (°C)	TOTAL CC CONDUCTORS IN RACEWAY	90°C AMPACITY (A)	DERATION FACTOR FOR AMBIENT TEMPERATURE NEC 310.15(B)(1)	DERATION FACTOR FOR CONDUCTORS PER RACEWAY NEC 310.15(C)(1)	90°C AMPACITY DERATED (A)	AMPACITY CHECK #2	FEEDER LENGTH (FEET)	CONDUCTOR RESISTANCE (OHM/KFT)	VOLTAGE DROP AT FLA (%)	CONDUIT SIZE	CONDUIT FILL (%)
INVERTER #1	LOAD CENTER	240	32	40	40	CU #8 AWG	CU #10 AWG	CU #8 AWG	50	PASS	37	2	55	0.91	1	50.05	PASS	5	0.778	0.104	3/4" EMT	24.5591
INVERTER #2	LOAD CENTER	240	32	40	40	CU #8 AWG	CU #10 AWG	CU #8 AWG	50	PASS	37	2	55	0.91	1	50.05	PASS	5	0.778	0.104	3/4" EMT	24.5591
LOAD CENTER	AC DISCONNECT	240	64	80	80	CU #4 AWG	CU #10 AWG	CU #4 AWG	85	PASS	37	2	95	0.91	1	86.45	PASS	5	0.308	0.082	1" EMT	31.0532
AC DISCONNECT	POI	240	64	80	80	CU #4 AWG	CU #10 AWG	CU #4 AWG	85	PASS	37	2	95	0.91	1	86.45	PASS	5	0.308	0.082	1" EMT	31.0532
																		CUMULATIVE VOLTAGE DROP INV		0.268		
																		CUMULATIVE VOLTAGE DROP INV		0.268		

ELECTRICAL NOTES

1. ALL EQUIPMENT TO BE LISTED BY UL OR OTHER NRTL, AND LABELED FOR ITS APPLICATION.
2. ALL CONDUCTORS SHALL BE RATED UPTO 600V FOR RESIDENTIAL AND 1000V FOR COMMERCIAL AND 90 DEGREE C WET ENVIRONMENT.
3. WIRING, CONDUIT, AND RACEWAYS MOUNTED ON ROOFTOPS SHALL BE ROUTED DIRECTLY TO, AND LOCATED AS CLOSE AS POSSIBLE TO THE NEAREST RIDGE, HIP, OR VALLEY.
4. WORKING CLEARANCES AROUND ALL NEW AND EXISTING ELECTRICAL EQUIPMENT SHALL COMPLY WITH NEC 110.26.
5. DRAWINGS INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS. CONTRACTOR SHALL FURNISH ALL NECESSARY OUTLETS, SUPPORTS, FITTINGS AND ACCESSORIES TO FULFILL APPLICABLE CODES AND STANDARDS.
6. WHERE SIZES OF JUNCTION BOX, RACEWAYS, AND CONDUITS ARE NOT SPECIFIED, THE CONTRACTOR SHALL SIZE THEM ACCORDINGLY.
7. ALL WIRE TERMINATIONS SHALL BE APPROPRIATELY LABELED AND READILY VISIBLE.
8. MODULE GROUNDING CLIPS TO BE INSTALLED BETWEEN MODULE FRAME AND MODULE SUPPORT RAIL, PER THE GROUNDING CLIP MANUFACTURER'S INSTRUCTION.
9. MODULE SUPPORT RAIL TO BE BONDED TO CONTINUOUS COPPER G.E.C. VIA WEEB LUG OR ILSCO GBL-4DBT LAY-IN LUG.
10. TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.

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LUNEX POWER
THE PURE SOURCE

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS

DESCRIPTION	DATE	REV

ANDREW D. LEONE LICENSE No. 60669 STATE OF FLORIDA PROFESSIONAL ENGINEER

08/01/2025
DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE
269 S W THOMAS RD,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
WIRING CALCULATIONS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-7

Residential Optional Calculation

by: John Sokolik — Version 2014

25/09/1997

Deleon Kelly

Lunex Power
4721 N GRADY AVE
TAMPA FL 33614
Telephone & Fax

16/07/2025 16:36

STEP 1 Article 220.82 (B) (1),(2)

sq. ft	2586	General Lighting load	7,758 VA
	3	Small Appliance	4,500 VA
	1	Laundry circuit	1,500 VA
	Gen.Lgt, Sm App.& Laun. Load		13,758 VA

STEP 2 Article 220.82 (C) ☑

A/C Condenser & Fixed Electric Space Heating

					QTY
5 ton	7,130 VA	AHU 1	Select	VA	1
A/C #2	VA	AHU 2	Select	VA	Qty
A/C #3	VA	AHU 3	Select	VA	Qty
A/C #4	VA	AHU 4	Select	VA	Qty
A/C #5	VA	AHU 5	Select	VA	Qty

STEP 3 Article 220.82 (B) (3)

5,760 VA	1	Water Heater	5,760 VA	
1,400 VA		Refrigerator	VA	
1,440 VA		FRIDGE	VA	
1,920 VA	2	Dishwasher	3,840 VA	
1,127 VA		Disposal	VA	
9,600 VA		CHARGER	VA	
1,920 VA		Microwave	VA	
☐ 11,520 VA	1	FURACE	11,520 VA	
9,600 VA	1	STOVE	9,600 VA	
☐ 5,760 VA	1	GENERATOR	5,760 VA	
☐ 1,440 VA		Tankless heater	VA	
1,920 VA		KITCHEN	VA	
☐ select		Jacuzzi Tub	VA	
☐ select		Sprinkler	VA	
☐ select		Well Pump	VA	
select		Fountain Pump	VA	
select		Elevator	VA	
		Pool Equip. Panel	VA	Apply Demand
☐ 3840		OTHER	3,840 VA	Apply Demand
☐ 11520		OTHER	11,520 VA	Apply Demand

STEP 4 Article 220.82 (B) (3)
Electric Clothes Dryers **5,760 VA**

STEP 5 Article 220.82 (B) (3)
Electric Ranges Col C demand **0**
or Number of appliances

☑ Check Box for Gas Range

Cooktop Col B demand
Cooktop Col B demand
Oven(s) Col B demand
Oven(s) Col B demand
Number of appliances **0** Dem. Factor
Cooktop & Oven Demand Load

General lighting, Sm. Appl. & Laundry	**13,758 VA**
Total 1 65% Demand Factor	
Heating Load VA	
CU Load 7,130 VA	
Electric Space Heat @ 65% <4, 40% >3, vs. A/C @ 100%	**7,130 VA**
Appliance Demand Load	**51,840 VA**
Dryer Demand Load	**5,760 VA**
Range Demand Load	**VA**
Service Demand	**41,673 VA**
Demand Load ☐ **@ 240V, 1ph**	**174 A**
Neutral Demand	**87 A**
Min.Service Req.	**175 A**

Total Appliance Load **51,840 VA**

Use this area for your own notes

jmp1ids@comcast.net

>>>

CAUTION:
AUTHORIZED SOLAR
PERSONNEL ONLY!

LABEL-1:
LABEL LOCATION:
AC DISCONNECT

⚠ WARNING

ELECTRICAL SHOCK HAZARD

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

LABEL- 2:
LABEL LOCATION:
AC DISCONNECT
COMBINER
MAIN SERVICE PANEL
SUBPANEL
MAIN SERVICE DISCONNECT
CODE REF: NEC 690.13(B)

⚠WARNING **DUAL POWER SOURCE**
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

LABEL- 3:
LABEL LOCATION:
PRODUCTION METER
UTILITY METER
MAIN SERVICE PANEL
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
COMBINER
CODE REF: NEC 110.27(C) & OSHA 1910.145 (f) (7)

PRODUCTION
METER

LABEL- 5:
LABEL LOCATION:
PRODUCTION METER (ONLY IF PRODUCTION METER IS USED)

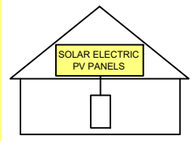
⚠ WARNING

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)

SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

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



LABEL- 7:
LABEL LOCATION:
AC DISCONNECT
CODE REF: IFC 605.11.3.1(1) & NEC 690.56(C)

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

LABEL- 8:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.56(C)(2)

PHOTOVOLTAIC

AC DISCONNECT

LABEL- 9:
LABEL LOCATION:
AC DISCONNECT
CODE REF: NEC 690.13(B)

PHOTOVOLTAIC AC DISCONNECT

NOMINAL OPERATING AC VOLATGE	240 V
RATED AC OUTPUT CURRENT	64 A

LABEL- 10:
LABEL LOCATION:
MAIN SERVICE PANEL
SUBPANEL
AC DISCONNECT
CODE REF: NEC 690.54

⚠ CAUTION

PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFEED

LABEL- 11:
LABEL LOCATION:
MAIN SERVICE PANEL (ONLY IF SOLAR IS BACK-FED)
SUBPANEL (ONLY IF SOLAR IS BACK-FED)
CODE REF: NEC 705.12(D) & NEC 690.59

MAXIMU VOLTAGE:	**600 V**
MAXIMUM CIRCUIT CURRENT:	**15.0 A**
MAXIMUM RATED OUTPUT CURRENT OF THE CHARGE CONTROLLER OR DC-TO-DC CONVERTER (IF INSTALLED):	

LABEL- 12:
LABEL LOCATION:
INVERTER
CODE REF: NEC 690.53

CAUTION: PHOTOVOLTAIC SYSTEM
FOR SERVICE : LUNEX POWER
813-540-8807

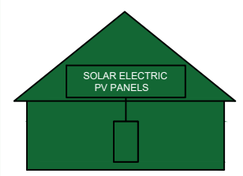
LABEL-13:

WARNING: PHOTOVOLTAIC
POWER SOURCE

LABEL-14:
LABEL LOCATION:
EMT/CONDUIT RACEWAY
SOLADECK/JUNCTION BOX
CODE REF : NEC 690.31 (D) (14)

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- 15:
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 3 FT (1 M) FROM THE SERVICE DISCONNECTING MEANS
2. (HEIGHT OF LABEL IS 3/8 IN. (9.5 MM), IN WHITE ON A RED BACKGROUND)

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LUNEX POWER
THE PURE SOURCE

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS

DESCRIPTION	DATE	REV

ANDREW D. LEONE
LICENSE
No. 60669
STATE OF FLORIDA
PROFESSIONAL ENGINEER

08/01/2025
DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY
RESIDENCE

269 S W THOMAS RD,
LAKE CITY, FL 32024

DRAWN BY
ESR

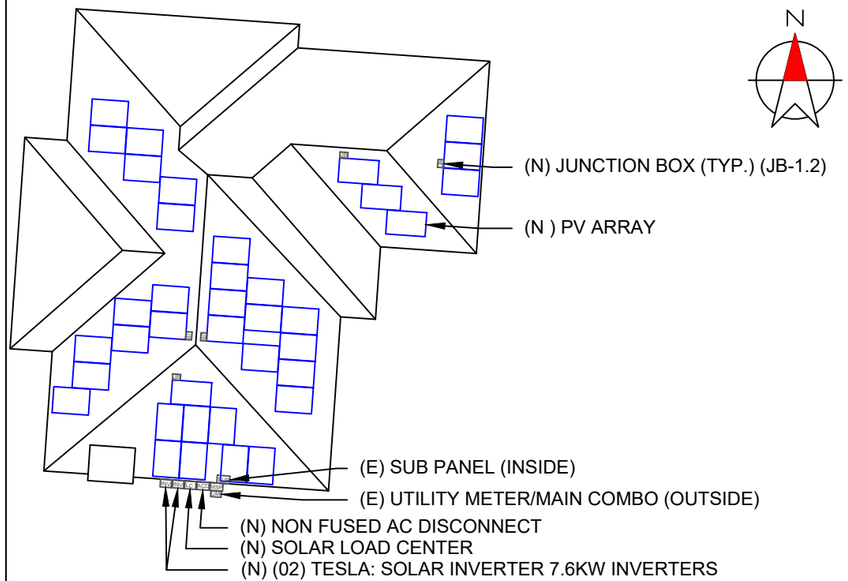
SHEET NAME
LABELS

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-8

CAUTION

MULTIPLE SOURCES OF POWER



269 S W THOMAS RD, 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])

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LABELING NOTES:

1. LABELS 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 Z535.
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 [IFC 605.11.1.1]

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS

DESCRIPTION	DATE	REV

ANDREW D. LEONE LICENSE No. 60669 STATE OF FLORIDA PROFESSIONAL ENGINEER

08/01/2025

DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE

269 S W THOMAS RD, LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

PLACARD

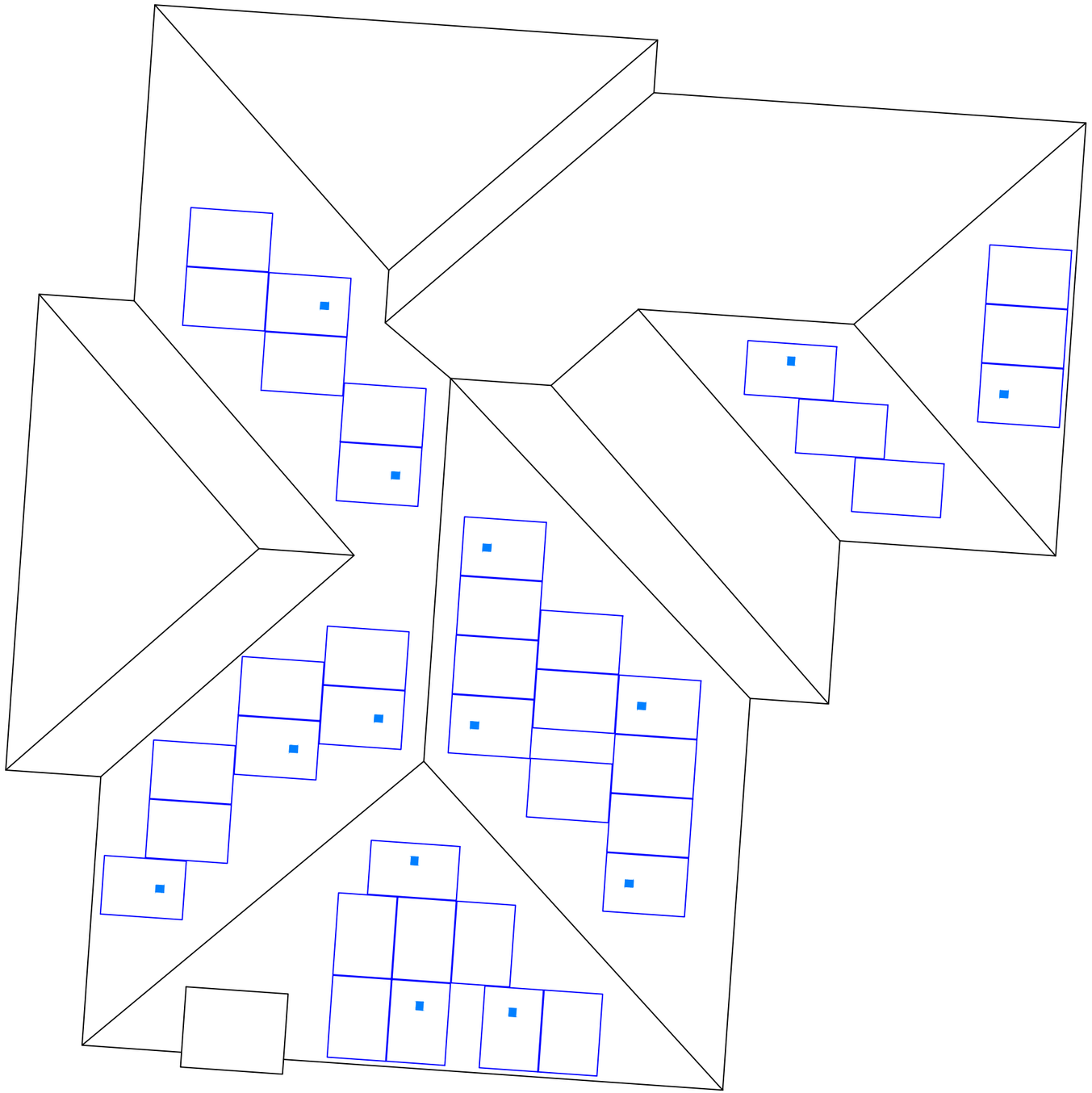
SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

PV-9

RAPID SHUTDOWN CHART



LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS		
DESCRIPTION	DATE	REV

DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE

269 S W THOMAS RD,
LAKE CITY, FL 32024

DRAWN BY

ESR

SHEET NAME

RAPID SHUTDOWN CHART

SHEET SIZE

ANSI B
11" X 17"

SHEET NUMBER

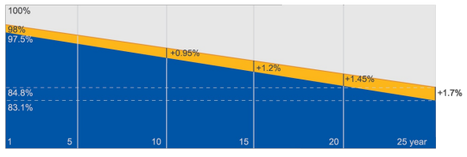
PV-10

- Higher output power
- Lower LCOE
- Less shading and lower resistive loss
- Better mechanical loading tolerance

Superior Warranty

- 12-year product warranty
- 25-year linear power output warranty

0.55% Annual Degradation Over 25 years



Comprehensive Certificates

- IEC 61215, IEC 61730,UL 61215, UL 61730
- ISO 9001: 2015 Quality management systems
- ISO 14001: 2015 Environmental management systems
- ISO 45001: 2018 Occupational health and safety management systems
- IEC TS 62941: 2016 Terrestrial photovoltaic (PV) modules – Guidelines for increased confidence in PV module design qualification and type approval

JA SOLAR

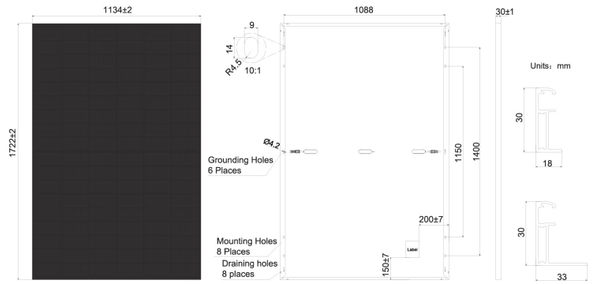
www.jasolar.com

Specifications subject to technical changes and tests.
JA Solar reserves the right of final interpretation.

JA SOLAR

JAM54S31 380-405/MR Series

MECHANICAL DIAGRAMS



Remark: customized frame color and cable length available upon request

SPECIFICATIONS

Cell	Mono
Weight	21.5kg±3%
Dimensions	1722±2mm×1134±2mm×30±1mm
Cable Cross Section Size	4mm²（IEC），12 AWG(UL)
No. of cells	108(6x18)
Junction Box	IP68, 3 diodes
Connector	MC4(1000V) MC4-EVO2(1500V)
Cable Length (Including Connector)	Portrait: 300mm(+)/400mm(-); Landscape: 1200mm(+)/1200mm(-)
Packaging Configuration	36pcs/Pallet, 936pcs/40ft Container

ELECTRICAL PARAMETERS AT STC

TYPE	JAM54S31 -380/MR	JAM54S31 -385/MR	JAM54S31 -390/MR	JAM54S31 -395/MR	JAM54S31 -400/MR	JAM54S31 -405/MR
Rated Maximum Power(Pmax) [W]	380	385	390	395	400	405
Open Circuit Voltage(Voc) [V]	36.58	36.71	36.85	36.98	37.07	37.23
Maximum Power Voltage(Vmp) [V]	30.28	30.46	30.64	30.84	31.01	31.21
Short Circuit Current(Isc) [A]	13.44	13.52	13.61	13.70	13.79	13.87
Maximum Power Current(Imp) [A]	12.55	12.64	12.73	12.81	12.90	12.98
Module Efficiency [%]	19.5	19.7	20.0	20.2	20.5	20.7
Power Tolerance	0~+5W					
Temperature Coefficient of Isc(α_Isc)	+0.045%℃					
Temperature Coefficient of Voc(β_Voc)	-0.275%/℃					
Temperature Coefficient of Pmax(γ_Pmp)	-0.350%/℃					
STC	Irradiance 1000W/m², cell temperature 25℃, AM1.5G					

Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer.They only serve for comparison among different module types.

ELECTRICAL PARAMETERS AT NOCT

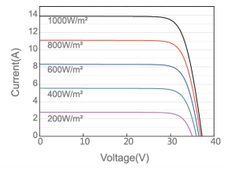
TYPE	JAM54S31 -380/MR	JAM54S31 -385/MR	JAM54S31 -390/MR	JAM54S31 -395/MR	JAM54S31 -400/MR	JAM54S31 -405/MR
Rated Max Power(Pmax) [W]	286	290	294	298	302	306
Open Circuit Voltage(Voc) [V]	34.36	34.49	34.62	34.75	34.88	35.12
Max Power Voltage(Vmp) [V]	28.51	28.68	28.87	29.08	29.26	29.47
Short Circuit Current(Isc) [A]	10.75	10.82	10.89	10.96	11.03	11.10
Max Power Current(Imp) [A]	10.03	10.11	10.18	10.25	10.32	10.38
NOCT	Irradiance 800W/m², ambient temperature 20℃,wind speed 1m/s, AM1.5G					

OPERATING CONDITIONS

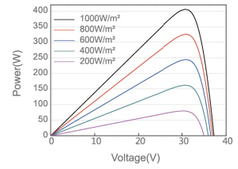
Maximum System Voltage	1000V/1500V DC
Operating Temperature	-40℃~+85℃
Maximum Series Fuse Rating	25A
Maximum Static Load,Front* Maximum Static Load,Back*	5400Pa(112lb/ft²) 2400Pa(50lb/ft²)
NOCT	45±2℃
Safety Class	Class Ⅱ
Fire Performance	UL Type 1

CHARACTERISTICS

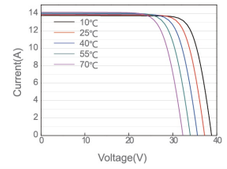
Current-Voltage Curve JAM54S31-405/MR



Power-Voltage Curve JAM54S31-405/MR



Current-Voltage Curve JAM54S31-405/MR



Premium Cells, Premium Modules

Version No. : Global_EN_20210119

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE
269 S W THOMAS RD,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-11

Tesla Solar Inverter
with Site Controller

—

Tesla Solar Inverter completes the Tesla home solar system, converting DC power from solar to AC power for home consumption. Tesla's renowned expertise in power electronics has been combined with robust safety features and a simple installation process to produce an outstanding solar inverter that is compatible with both Solar Roof and traditional solar panels. Once installed, homeowners use the Tesla mobile app to manage their solar system and monitor energy consumption, resulting in a truly unique ecosystem experience.

KEY FEATURES

- Built on Powerwall technology for exceptional efficiency and reliability
- Wi-Fi, Ethernet, and cellular connectivity with easy over-the-air updates
- Designed to integrate with Tesla Powerwall and Tesla App
- 0.5% revenue-grade metering for Solar Renewable Energy Credit (SREC) programs included

March 17, 2024

Tesla Solar Inverter Technical Specifications

Electrical Specifications: Output (AC)

Model Number	1538000-xx-y			
Output (AC)[1]	3.8 kW	5 kW	5.7 kW	7.6 kW
Nominal Power	3,800 W	5,000 W	5,700 W	7,600 W
Maximum Apparent Power	3,840 VA	5,040 VA	6,000 VA	7,680 VA
Maximum Continuous Current	16 A	21 A	24 A	32 A
Breaker (Overcurrent Protection)	20 A	30 A	30 A	40 A
Nominal Power Factor	1 - 0.9 (leading / lagging			
THD (at Nominal Power)	<5%			

Electrical Specifications: Input (DC)

MPPT	4
Input Connectors per MPPT	1-2-1-2
Maximum Input Voltage	600 VDC
DC Input Voltage Range	60 - 550 VDC
DC MPPT Voltage Range	60 - 480 VDC[1]
Maximum Current per MPPT (I_{mp})	13 A[2]
Maximum Short Circuit Current per MPPT (I_{sc})	17 A[2]

[1]Maximum current.
[2]Where the DC input current exceeds an MPPT rating, jumpers can be used to allow a single MPPT to intake additional DC current up to 26 A I_{mp} / 34 A I_{sc}.

Performance Specifications

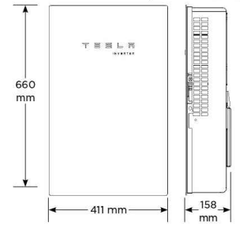
Peak Efficiency	98.6% at 240 V
CEC Efficiency	98.0% at 240 V
Allowable DC/AC Ratio	1.7
Customer Interface	Tesla Mobile App
Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G)[3]
Revenue Grade Meter	Revenue Accurate (+/- 0.5%)
AC Remote Metering Support	Wi-Fi (2.4 GHz, 802.11 b/g/n)
Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown
Supported Grid Types	60 Hz, 240 V Split Phase
Warranty	12.5 years

[3]Cellular connectivity subject to network operator service coverage and signal strength.

Tesla Solar Inverter Technical Specifications

Mechanical Specifications

Dimensions	660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)
Weight	52 lb[4]
Mounting Options	Wall mount (bracket)



[4]Door and bracket can be removed for a mounting weight of 37 lb.

Environmental Specifications

Operating Temperature	-30°C to 45°C (-22°F to 113°F)[5]
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Rating	Type 3R
Ingress Rating	IP55 (Wiring compartment)
Pollution Rating	PD2 for power electronics and terminal wiring compartment, PD3 for all other components
Operating Noise @ 1 m	< 40 db(A) nominal, < 50 db(A) maximum

[5]Performance may be de-rated to 6.2 kW at 240 V when operating at temperatures greater than 45°C.

Compliance Information

Grid Certifications	UL 1741, UL 1741 SA, UL 1741 SB, UL 1741 PCS, IEEE 1547-2018, IEEE 1547.1
Safety Certifications	UL 1741 PVRSS, UL 1699B, UL 1998 (US), UL 3741
Emissions	EN 61000-6-3 (Residential), FCC 47CFR15.109 (a)

LUNEX POWER INC.
4721 N GRADY AVE
TAMPA FL 33614
LIC #: CVC57085
PHONE: 813-540-8807

REVISIONS

DESCRIPTION	DATE	REV

DATE: 07/16/2025

PROJECT NAME & ADDRESS

DELEON KELLY RESIDENCE
269 S W THOMAS RD,
LAKE CITY, FL 32024

DRAWN BY
ESR

SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-12

Solar Shutdown Device Technical Specifications

—

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is integral to the rapid shutdown (RSD) function required for rooftop PV systems in accordance with Article 690 of the NEC. When paired with Powerwall 3, solar array shutdown is initiated by an External System Shutdown Switch or the On/Off Enable switch located on Powerwall 3. Systems not subject to rapid shutdown requirements must still install one or more MCIs for functional purposes; see the Powerwall 3 installation manual for details.

Electrical Specifications

Model	MCI-1	MCI-2	MCI-2 High Current
Nominal Input DC Current Rating (I_{MP})	13 A	13 A	15 A
Maximum Input Short Circuit Current (I_{SC})	19 A	17 A	19 A
Maximum System Voltage	600 V DC	1000 V DC[14]	1000 V DC[14]
Maximum Disconnect Voltage[15]	600 V DC	165 V DC	165 V DC

[14] Maximum System Voltage is limited by Powerwall to 600 V DC.

[15] Maximum Disconnect Voltage is the maximum voltage allowed across each MCI in the open position (Rapid Shutdown Initiated). An individual MCI-2 has a voltage rating of 165V but in combination (connected in the same string) their voltage ratings are additive.

RSD Module Performance

Maximum Number of Devices per String	5
Control	Power Line Excitation
Passive State	Normally Open
Maximum Power Consumption	7 W
Warranty	25 years

Environmental Specifications

Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
Storage Temperature	–30°C to 70°C (–22°F to 158°F)	–30°C to 70°C (–22°F to 158°F)
Enclosure Rating	NEMA 4X / IP65	

Mechanical Specifications

Electrical Connections	MC4 Connector	
Housing	Plastic	
Dimensions	125 x 150 x 22 mm (5 x 6 x 1 in)	173 x 45 x 22 mm (6.8 x 1.8 x 1 in)
Weight	350 g (0.77 lb)	120 g (0.26 lb)
Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip

Compliance Information

Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)
RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch

UL 3741 PV Hazard Control (and PVRSA) Compatibility

See UL 3741 Application Addendum

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LAKE CITY, FL 32024

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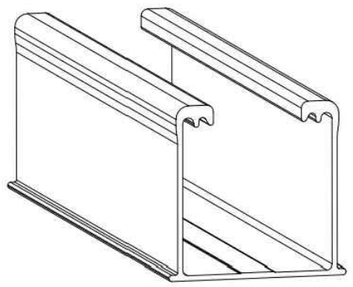
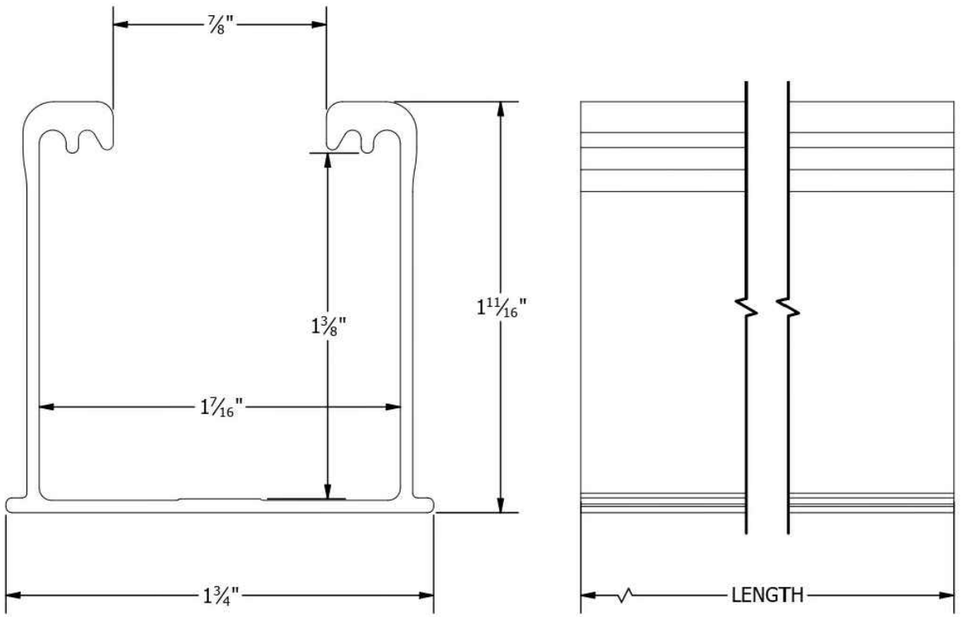
SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-13

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"





UNIRAC
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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DATE: 07/16/2025

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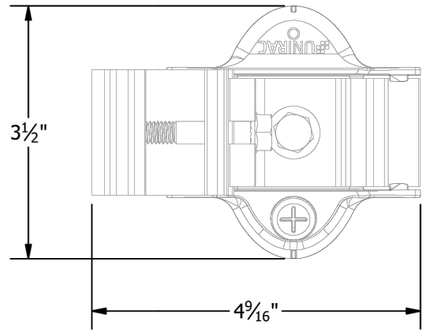
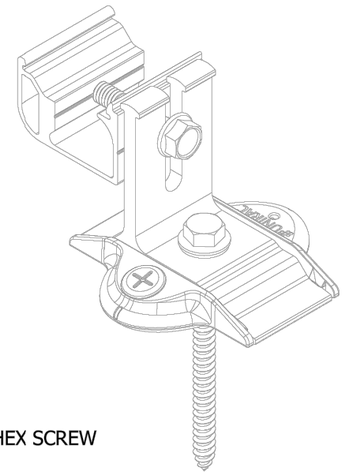
EQUIPMENT SPECIFICATION

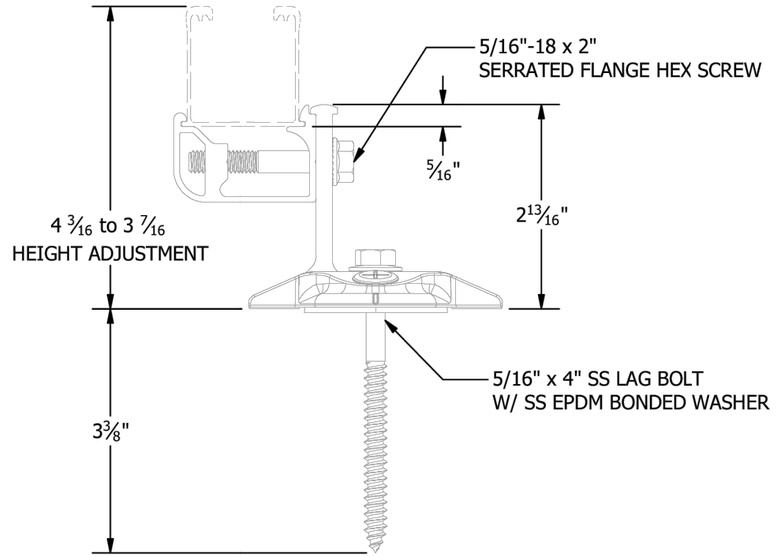
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-14

PART # TABLE	
P/N	DESCRIPTION
SHCPKTM1	STRONGHOLD ATT KIT COMP MILL
SHCPKTD1	STRONGHOLD ATT KIT COMP DRK
SHCPKTM1-NS	STRONGHOLD ATT COMP MILL (NS)
SHCPKTD1-NS	STRONGHOLD ATT COMP DRK (NS)







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

PRODUCT LINE:	NXT UMOUNT
DRAWING TYPE:	PARTS ASSEMBLY
DESCRIPTION:	STRONGHOLD ATTACHMENT
REVISION DATE:	11/17/2022

DRAWING NOT TO SCALE
ALL DIMENSIONS ARE NOMINAL

PRODUCT PROTECTED BY ONE OR MORE US PATENTS
LEGAL NOTICE

NU-A04
SHEET

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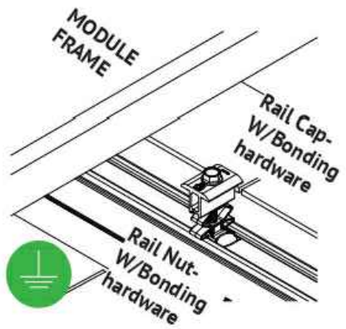
SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-15

NXT UMOUNT® BONDING CONNECTIONS & GROUNDING PATHS

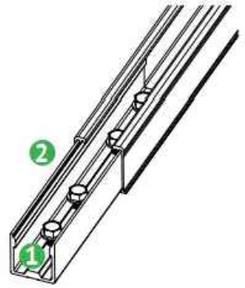
INSTALLATION GUIDE | PAGE 21



BONDING COMBO MID-END CLAMP ASSEMBLY

1. Aluminum combo mid-end clamp cap with stainless steel bonding pins that pierce module frame anodization to bond module to module through clamp
2. Stainless steel bolt bonds aluminum clamp to stainless steel Hex bolt
3. Aluminum combo mid-end clamp rail nut with stainless steel bonding pins that pierce rail anodization to bond module to module through clamp

NOTE: See Page 19 for installation details.

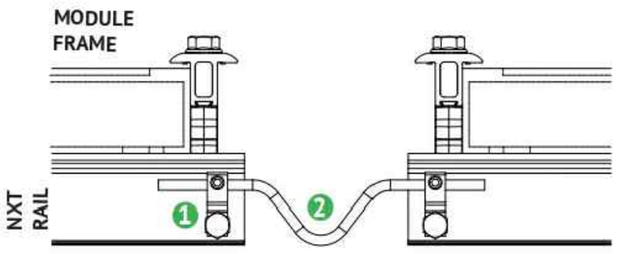


BONDING RAIL SPLICE

1. Bonding Hardware creates bond between Splice bar and each rail section.
2. Aluminum splice bar spans across rail gap to create rail to rail bond. Rail on at least one side of splice will be grounded.

NOTE:

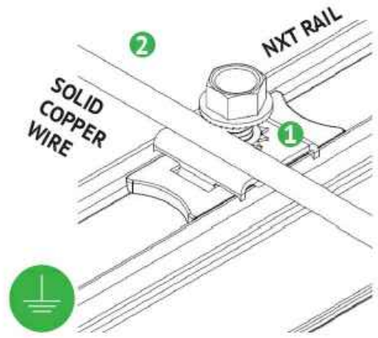
- **See Page 15 for installation details**
- **Splice certified for single-use only**



BONDING BETWEEN THERMAL BREAKS

1. Lug is connected at the end of each thermal break to the rail.
2. Solid copper wire is connected across the gap to bond the two ends.

NOTE: See Page 5 for installation details.



RACK SYSTEM GROUNDING

1. Tabs on the stainless-steel washer pierce anodization on the rail to bond rail to ground wire.
2. Solid copper wire connected to lug is routed to provide final system ground connection.

NOTE: See Page 16 for installation details and alternate racking system grounding methods.

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DELEON KELLY RESIDENCE
269 S W THOMAS RD,
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ESR

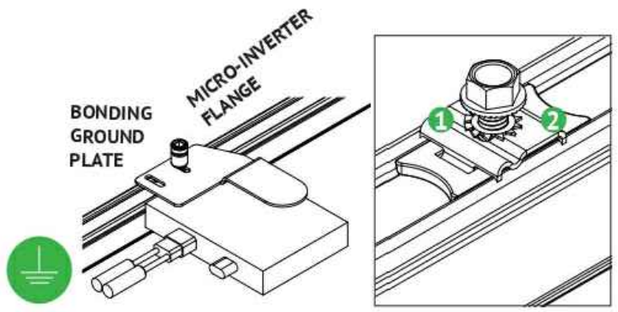
SHEET NAME
EQUIPMENT SPECIFICATION

SHEET SIZE
ANSI B
11" X 17"

SHEET NUMBER
PV-16

NXT UMOUNT™ BONDING CONNECTIONS & GROUNDING PATHS

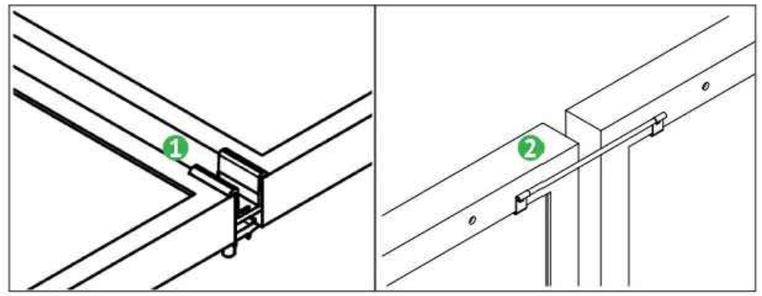
INSTALLATION GUIDE | 22 PAGE



BONDING MICROINVERTER MOUNT

1. Stainless steel Tooth lock washer beneath the MLPE flange remove anodization on the MLPE and bonds.
2. Tabs on the stainless steel washer remove anodization on the rail and bonds.

NOTE: See Page 17 for installation details



ALTERNATE ROW-TO-ROW BONDING PATHS

1. Row-to-row module bonding is accomplished with bonding clamp with 2 integral bonding pins.
2. Alternate method by connecting clips on either module to complete the bonding path.

NOTE:

- See Page 16 for installation details
- Row-to-row module bonding certified for single-use only

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ANSI B
11" X 17"

SHEET NUMBER
PV-17

EZ SOLAR
making solar simple.

JB-1.2, JB-1.XL

Specification Sheet

PV Junction Box for Composition/Asphalt Shingle Roofs

A. System Specifications and Ratings

- Maximum Voltage: 1,000 Volts
- Maximum Current: **JB-1.2:** 80 Amps; **JB-1.XL:** 120 Amps
- Allowable Wire: 14 AWG – 6 AWG
- Spacing: Please maintain a spacing of at least ½" between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.
- Enclosure Rating: Type 3R
- Roof Slope Range: 2.5 – 12:12
- Max Side Wall Fitting Size: 1"
- Max Floor Pass-Through Fitting Size: 1"
- Ambient Operating Conditions: (-35°C) - (+75°C)
- Compliance:
  - **JB-1.2:** UL1741, CSA C22.2 No. 290; **JB-1.XL:** UL1741, CSA C22.2 No. 290
  - Approved wire connectors: must conform to UL1741, CSA C22.2 No. 290
- System Marking: **Intertek Symbol and File #5019942**
- Periodic Re-inspections: If re-inspections yield loose components, loose fasteners, or any corrosion between components, components that are found to be affected are to be replaced immediately.

Intertek
5019942

Table 1: Typical Wire Size, Torque Loads and Ratings

	1 Conductor	2 Conductor	Torque				
			Type	NM	Inch Lbs	Voltage	Current
ABB ZS6 terminal block	10-24 awg	16-24 awg	Sol/Str	0.5-0.7	6.2-8.85	600V	30 amp
ABB ZS10 terminal block	6-24 awg	12-20 awg	Sol/Str	1.0-1.6	8.85-14.16	600V	40 amp
ABB ZS16 terminal block	4-24 awg	10-20 awg	Sol/Str	1.6-2.4	14.6-21.24	600V	60 amp
ABB M6/8 terminal block	8-22 awg		Sol/Str	.08-1	8.85	600V	50 amp
Ideal 452 Red WING-NUT Wire Connector	8-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal 451 Yellow WING-NUT Wire Connector	10-18 awg		Sol/Str	Self-Torque	Self-Torque	600V	
Ideal, In-Sure Push-In Connector Part #39	10-14 awg		Sol/Str	Self-Torque	Self-Torque	600V	
WAGO, 2204-1201	10-20 awg	16-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
WAGO, 221-612	10-20 awg	10-24 awg	Sol/Str	Self-Torque	Self-Torque	600V	30 amp
Dottie DRC75	6-12 awg		Sol/Str	Snap-In	Snap-In		
ESP NG-53	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
ESP NG-717	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		
Brumall 4-5,3	4-6 awg		Sol/Str		45	2000V	
	10-14 awg		Sol/Str		35		

Table 2: Minimum wire-bending space for conductors through a wall opposite terminals in mm (inches)

Wire size, AWG or kcmil (mm2)	Wires per terminal (pole)							
	1		2		3		4 or More	
	mm	(inch)	mm	(inch)	mm	(inch)	mm	(inch)
14-10 (2.1-5.3)	Not Specified		-		-		-	
8 (8.4)	38.1	(1-1/2)	-		-		-	
6 (13.3)	50.8	(2)	-		-		-	

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