

FUNK RESIDENCE 200 SW SKYLINE LOOP FT WHITE, FL 32038

10.50 KW DC
ROOF MOUNTED FLUSH MOUNT PHOTOVOLTAIC SYSTEM
27.0 KWH BATTERY SYSTEM

PHOTOVOLTAIC SYSTEM DETAILS

- MODULES = HANWHA Q.PEAK DUO-G8 350 350 W (30 PCS)
- INVERTER = SOLAREDGE SE1400H-US (1 PCS)
- RACKING SYSTEM = IRONRIDGE XRD W/ SOLARFOOT
- DATA ACQUISITION = SOLAREDGE ZIGBEE GATEWAY

BATTERY SYSTEM DETAILS

- BATTERIES = TESLA POWERWALL 2, 13.5 KWH (2 PCS)

AUTHORITY HAVING JURISDICTION

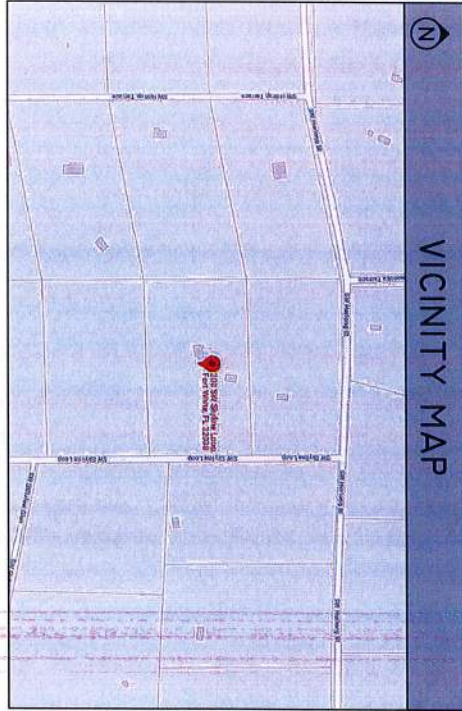
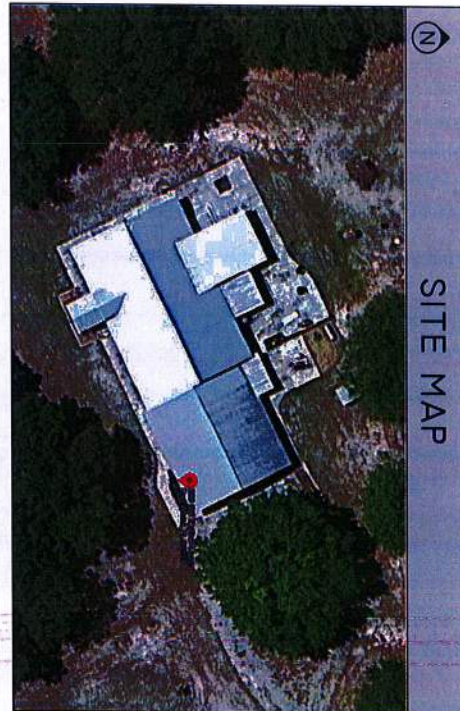
- BUILDING AUTHORITY = COLUMBIA COUNTY
- CODE REFERENCE = 2017 NEC & 2020 FBC
- ELECTRICAL UTILITY COMPANY = CLAY ELECTRIC COOPERATIVE

DESIGN CRITERIA

- DESIGN WIND LOAD = 130 MPH
- DESIGN ROOF SNOW LOAD = 0 PSF
- EXPOSURE CATEGORY = C
- HIGH TEMP (ASHRAE 2% HIGH) = 34°C
- LOW TEMP (ASHRAE EXTREME LOW) = -5°F
- ROOF TYPE = METAL CORRUGATED

SHEET INDEX

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COVER
PAGE
NOT TO SCALE
PV-G.0

FUNK RESIDENCE
200 SW SKYLINE LOOP, FT. WHITE, FL, 32038
SOLAR INDIVIDUAL PERMIT PACKAGE

- SYSTEM DETAILS: 10.50KW DC, 16.0KWH AC
- 30 HANWHA Q.PEAK DUO-G8 350, 350W MODULES
 - 1 SOLAREDGE SE1400H-US INVERTER
 - 2 TESLA POWERWALL 2, 13.5KWH BATTERIES
- CONTACT: BRIAN LEVERETTE
• BRIAN.LEVERETTE@SOLARIMPACT.COM
• 352.727.0022

DESIGNER: HANWHA Q.PEAK

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ROOF CONSTRUCTION

- ROOF TYPE = METAL CORRUGATED
- PV ARRAY = 576 SQUARE FEET
- TOTAL ROOF AREA = 5039 SQUARE FEET
- PERCENTAGE OF ROOF W/ PV = 11.4%
- MAX ATTACHMENT SPAN = 72"
- MAX CANTILEVER = 19.2"
- ATTACHMENTS SHALL BE STAGGERED SO THE LOAD IS DISTRIBUTED EVENLY TO RAFTERS UNDERNEATH THE ARRAY

FIRE SETBACKS

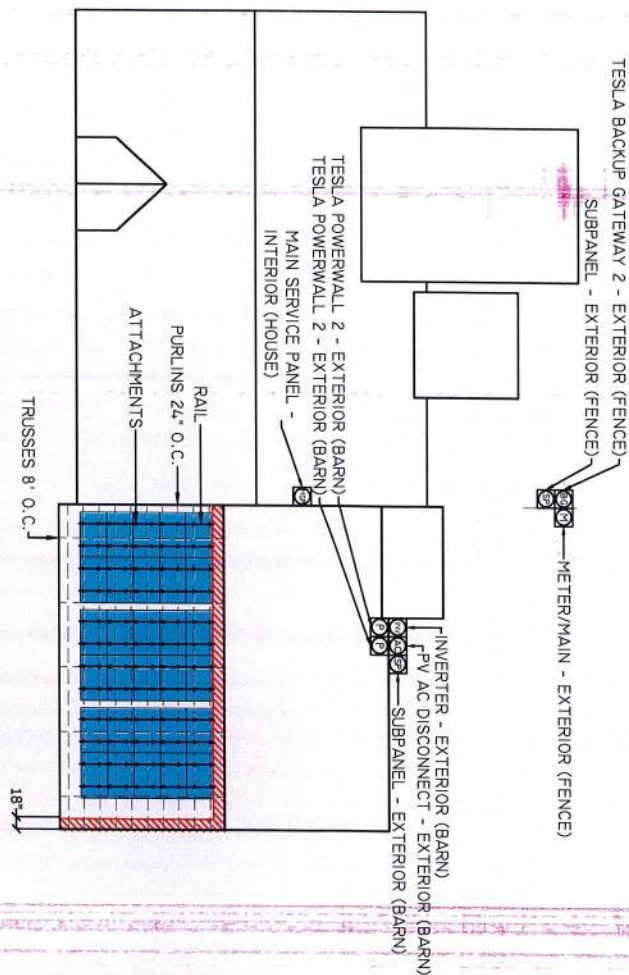
- 18" FROM RIDGE AND GABLE ENDS, 18" FROM HIPPS AND VALLEYS

STRUCTURAL NOTES

1. THIS DOCUMENT REPRESENTS THE FINISHED STRUCTURE. IT DOES NOT INDICATE THE METHOD OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION.
2. ALL DETAILS SHALL BE INCORPORATED INTO THE PROJECT AT ALL APPROPRIATE LOCATIONS, WHETHER SPECIFICALLY CALLED OUT OR NOT. TYPICAL DETAILS MAY NOT NECESSARILY BE CALLED OUT ON PLANS, BUT APPLY UNLESS NOTED OTHERWISE.

ARRAY INFORMATION

	ARRAY 1	ARRAY 2	ARRAY 3
MOD QTY	10	10	10
TILT	4°	4°	4°
AZIMUTH	150°	150°	150°



ARRAY
LAYOUT
NOT TO SCALE
PV-A.1

FUNK RESIDENCE
290 SW SKYLINE LOOP, FT. WHITE, FL 32058
SOLAR INDIVIDUAL PERMIT PACKAGE

SYSTEM DETAILS: 10.50KW DC, 14.0KWH AC
 • 30 HANWHA Q PEAK QXO-G8 350, 250W MODULES
 • 1 SOLAREDGE SHADINGS INVERTER
 • 2 TESLA POWERWALL 2, 15.5KWH BATTERIES
 CONTACT: BRIAN LEVERETTE
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 • 352.727.0022

DESIGNER: HARRISON GUY

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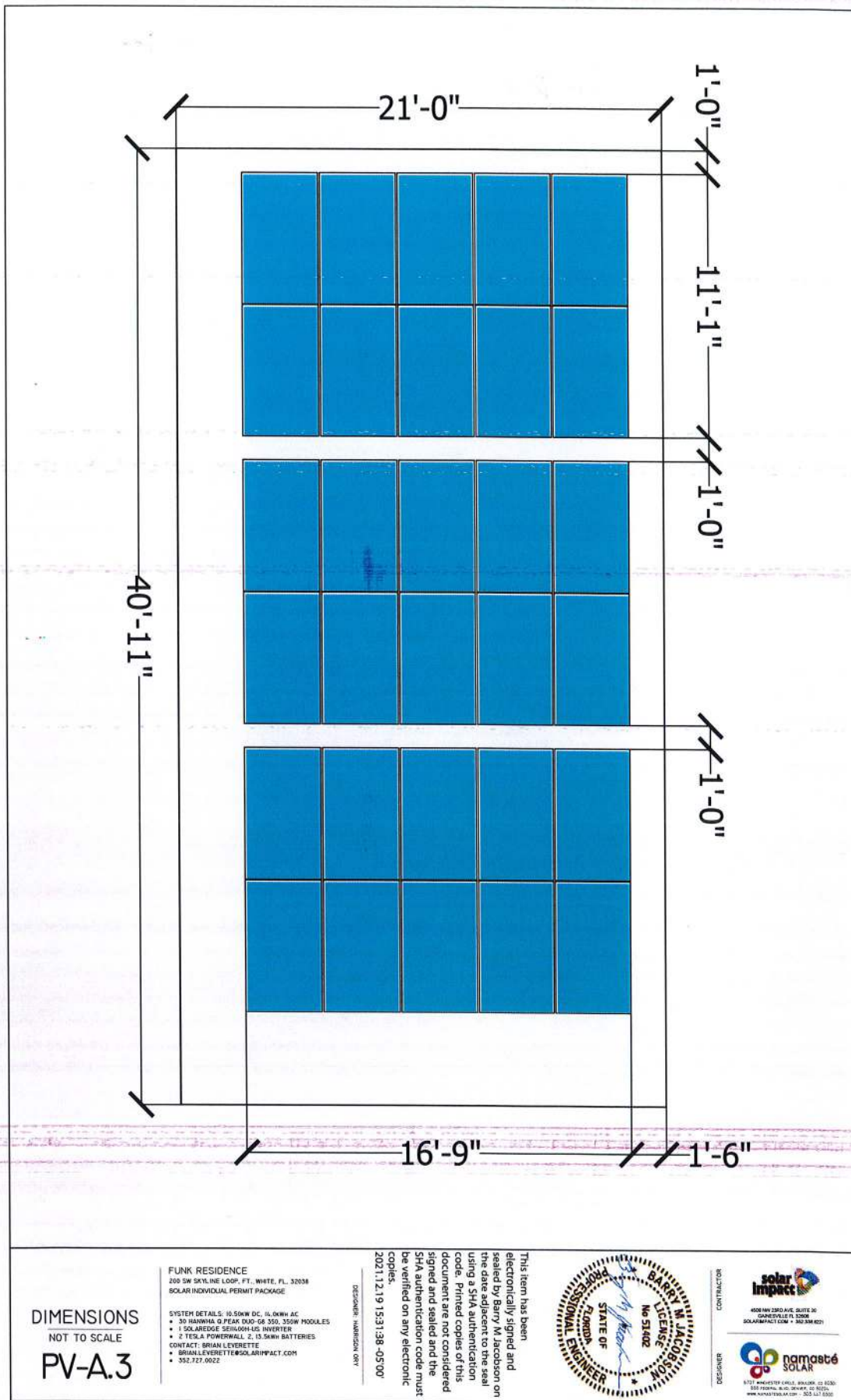
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COLLATERAL

DESIGNED



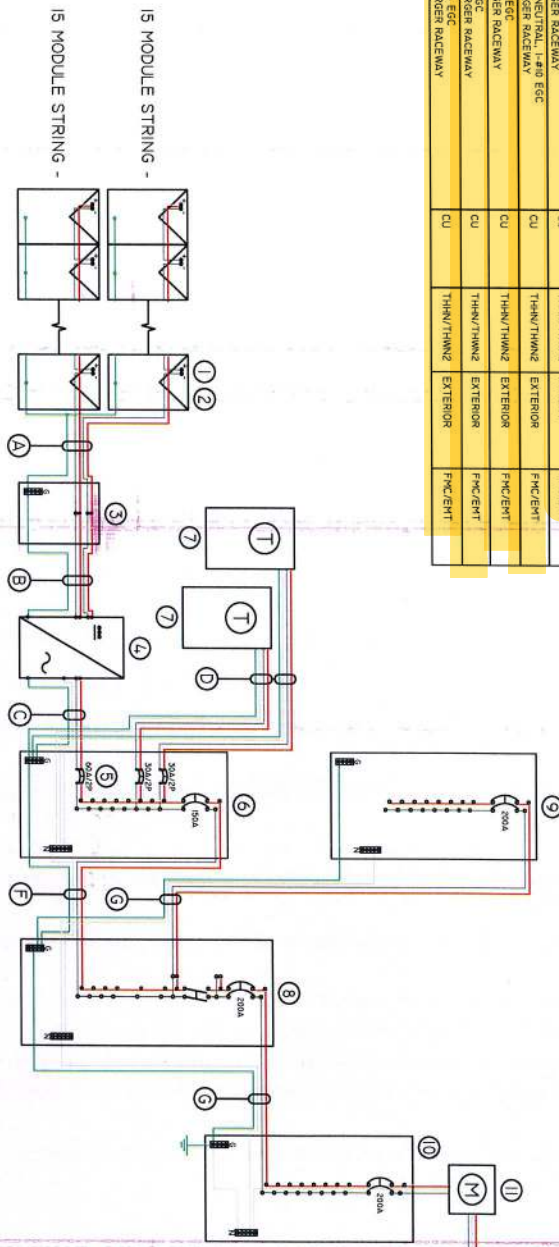


REF	QTY	MAKE	MODEL	LOCATION	NOTES
1	50	HANHWA	O-PEAK DUO-G8-350	FLUSH MOUNTED TO ROOF	PV MODULE
2	50	SOLAREDGE	PI-01	MOUNTED ON RACKING	POWER OPTIMIZER
3	1	SOLAREDGE	0799-SG	UNDERMOUNT ARRAY	PV ROOF JUNCTION BOX, NEMA 3R
4	1	SOLAREDGE	SE1400H-US	EXTERIOR (BARN)	DC DISCONNECT INTEGRATED INVERTER
5	1	TBD	TBD	SUBPANEL, OPPOSITE SIDE OF MAIN BREAKER	PV BREAKER, 100A/2P, 200A MAIN, 240V
6	1	TBD	TBD	INTERIOR (BARN)	SUBPANEL, 100A BUS, 100A MAIN, 240V
7	2	TESLA	POWERWALL 2	INTERIOR (BARN)	24KVA/2P BATTERY BREAKERS
8	1	TESLA	BACKUP GATEWAY 2	INTERIOR (FENCE)	TESLA BACKUP GATEWAY 2, 200A MAIN, 240V
9	1	TBD	TBD	INTERIOR (FENCE)	24KVA/2P BATTERY BREAKERS
10	1	TBD	TBD	MAIN SERVICE PANEL, 200A BUS, 200A MAIN, 240V	MAIN SERVICE PANEL, 200A BUS, 200A MAIN, 240V
11	1	TBD	TBD	UTILITY METER, 200A, 240V	UTILITY METER, 200A, 240V

GENERAL:
 1. PLACING AS REQUIRED PER 690.13, .15, .31, .51, .52, .53, .54, .56, 705.10, 705.12
 2. CONNECTED WITH INDICATING PHOTOVOLTAIC SYSTEM
 3. SERVICE DISCONNECTS SHALL BE GROUPED AND/OR MARKED WITH LOCATION DESCRIPTIONS
 4. GEC SHALL BE CONTINUOUS PER 250.44(C)

BATTERY INTERCONNECTION: BREAKER IN SUBPANEL, PV INTERCONNECTION: BREAKER IN SUBPANEL

REF	CONDUCTORS	CUL.	TYPE	LOCATION	REMARKS
A	4-#12, 1-#10 EGC	CU	PV WIRE	ARRAY	FREE AIR
B	4-#12, 1-#10 (OR LARGER) EGC	CU	THHN/THWN2	INT/EXT	F/C/EHT
C	2-#10, 1-#10 (OR LARGER) EGC	CU	THHN/THWN2	EXT/INT	F/C/EHT
D	2-#10, 1-#10 (OR LARGER) EGC	CU	THHN/THWN2	EXT/INT	F/C/EHT
E	2-#10, 1-#10 (OR LARGER) EGC	CU	THHN/THWN2	EXT/INT	F/C/EHT
F	2-#10, 1-#10 (OR LARGER) EGC	CU	THHN/THWN2	EXT/INT	F/C/EHT
G	2-#10, 1-#10 (OR LARGER) EGC	CU	THHN/THWN2	EXT/INT	F/C/EHT



LINE
DIAGRAM
NOT TO SCALE
PV-E.1

FUNK RESIDENCE
200 SW SKYLINE LOOP, FT. WHITE, FL, 32058
SOLAR INDIVIDUAL PERMIT PACKAGE

SYSTEM DETAILS: 10.5KW DC, 11.0KW AC
 • 50 HANHWA O-PEAK DUO-G8-350, 350W MODULES
 • 1 SOLAREDGE SE1400H-US INVERTER
 • 2 TESLA POWERWALL 2, 10.5KWH BATTERIES
 CONTACT: BRIAN LEVERETTE
 BRIAN.LEVERETTE@SOLARIMPACT.COM
 552.727.0022

DESIGNER: HARRISON DRY

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 SOLARIMPACT.COM • 800.588.8871



6717 INDIANTRAIL CIRCLE, BRANFORD, CT 06405
 860.768.8411 • 860.768.8411
 WWW.NAMASTE-SOLAR.COM • 860.768.8411

SOLAREGE PL1000W OPTIMIZER SPECIFICATIONS & CALCULATIONS			
ITEM	UNIT	SPECIFIED LIMIT	INSTALLED DATA
MAX INPUT POWER (WATTS MAX)	WATTS (DC)	400	350
MAX INPUT VOLTAGE (VDC MAX)	VOLTS (DC)	60	50
MAX INPUT CURRENT (AMPS MAX)	AMPS (DC)	6.67	6.67
MAX SHORT-CIRCUIT CURRENT (ISC)	AMPS (DC)	11.75	10.51
MAX OUTPUT CURRENT	AMPS (DC)	15	13.15
MAX OUTPUT VOLTAGE	VOLTS (DC)		50*

*OPTIMIZER OUTPUT VOLTAGE RANGE BETWEEN 60-65 VDC - STRING VOLTAGE IS REGULATED BY THE INVERTER (AND TO EXCEED 48VDC)

NOTE: CALCULATED VALUES ARE THE ABSOLUTE MAXIMUM OF ALL ARRAYS USING THIS POWER OPTIMIZER CONFIGURATION

-MAXIMUM STRING VOLTAGE IS 48VDC (INVERTER REGULATED)

RESLA POWERWALL BATTERY SPECIFICATIONS			
TYPE	WATT / KVAH	DEPTH	SERIAL
GRID INTEGRATION	BATTERY SPEC	VOL. 15 (42)	AR-COUL-ED
AC VOLTAGE (NOMINAL)	BATTERY SPEC	240	
TOTAL ENERGY	BATTERY SPEC	4000 (42)	1
USABLE ENERGY	BATTERY SPEC	4000 (42)	1.5
BATTERY CONTROLS	BATTERY SPEC	4000 (42)	2
RES. POWER PEAK (OFF-GRID/BACKUP)	BATTERY SPEC	4000 (42)	5.8
RES. POWER PEAK (OFF-GRID/BACKUP)	BATTERY SPEC	4000 (42)	7
MAX. SYSTEM POWER PEAK (OFF-GRID/BACKUP)	BATTERY SPEC	4000 (42)	7.2
MAX. SYSTEM POWER PEAK (OFF-GRID/BACKUP)	BATTERY SPEC	4000 (42)	10
MAX. OUTPUT FAULT CURRENT	BATTERY SPEC	4000 (42)	12
OVERCURRENT PROTECTION DEVICE	BATTERY SPEC	4000 (42)	30
INTERNAL BATTERY DC VOLTAGE	BATTERY SPEC	VOL. 15 (42)	50

CONDUCTOR SIZING CALCULATIONS									
KEY	SIZE	C/U/L	INSULATION	CALC. TYPE	APPLICABLE W/O ADJUSTERS	TEMP. DEGREE	FILL DEGREE	RESULT (A)	REQ'D (A)
A	#12	CU	PV WIRE	COU	50	0.95	0.80	23.0A	15.00
				TEHM	25		25	18.75	18.75
B	#12	CU	THHN/THWN2	COU	25	0.95	0.80	25.0A	16.25
				TEHM	25		25	18.75	18.75
C	#6	CU	THHN/THWN2	COU	75	0.95	1.00	72.00	47.50
				TEHM	65		65	59.34	60A
D	#10	CU	THHN/THWN2	COU	40	0.95	1.00	38.40	N/A 1
				TEHM	35		35	30.00	30A
E	#1	CU	THHN/THWN2	COU	145	0.95	1.00	139.20	150
				TEHM	150		150	125.00	150A
F	#1	CU	THHN/THWN2	COU	150		1.00	147.20	160
				TEHM	175		175	166.00	200A

INTERCONNECTION CALCULATIONS			
- BACKUP GATEWAY			
ITEM	UNIT	PANEL	
BUS RATING	AMPS	200	
MAIN DISCONNECT	AMPS	200	
ALLOADED PV PER NEC	AMPS	40	
PV DCD USED	AMPS	60*	

INTERCONNECTION CALCULATIONS		
SUB-ANEL	ITEM	PANEL
	BUS RATING	150
	MAIN DISCONNECT	150
	ALLOWED P.V.TYPER NEC	30
	P.V. OCPD USED	150
		60*

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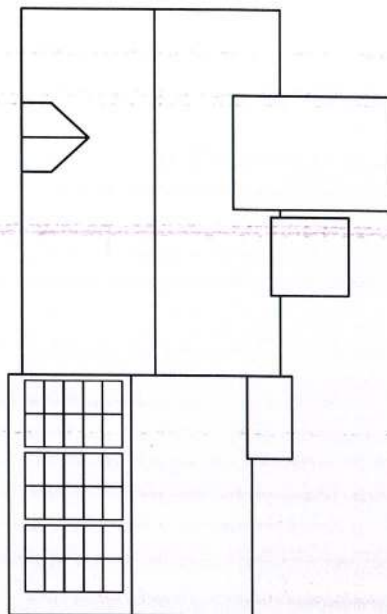


ELECTRICAL
CALCS
NOT TO SCALE
PV-E.2

FUNK RESIDENCE
200 SW SKYLINE LOOP, FT. WHITE, FL. 32038
SOLAR INDIVIDUAL PERMIT PACKAGE

SYSTEM DETAILS: 10.5KW DC, 14.0KWH AC
• 30 HANNAH Q PEAK DUO-G8 350, 350W MODULES
• 1 SOLAREDGE SE1000H-US INVERTER
• 2 TESLA POWERWALL 2, 13.5KWH BATTERIES

CONTACT: BRIAN LEVERETTE
• BRIAN.LEVERETTE@SOLARIMPACT.COM
• 352.727.0022



**SAFETY
PLAN**
NOT TO SCALE
PV-N.I

FUNK RESIDENCE
200 SW SKYLINE LOOP, FT. WHITE, FL. 32058
SOLAR INDIVIDUAL PERMIT PACKAGE

- SYSTEM DETAILS: 10.50KW DC, 11.0KW AC
- 36 HANWHA Q-PEAK QKD-G6 350, 350W MODULES
 - 1 SOLAREDGE ZEUROH-US INVERTER
 - 2 TESLA POWERWALL 2, 13.5KWH BATTERIES
- CONTACT: BRIAN LEVETTE
• BRIAN.LEVETTE@SOLARIMPACT.COM
• 352.727.0022

DESIGNER: HARRISON DRY

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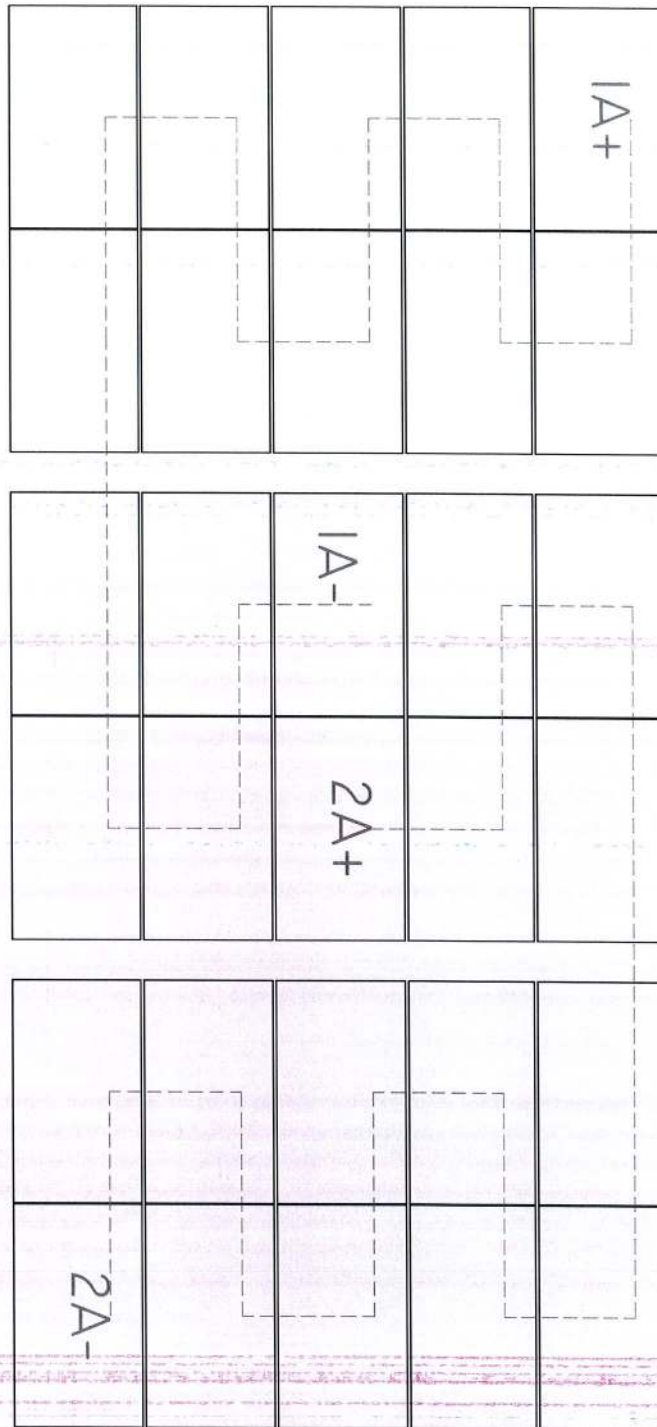


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DESIGNER

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SEASIDE, CA 94065
WWW.NAMASTESOLAR.COM • 415.447.2200



STRING DIAGRAM NOT TO SCALE PV-N.2

FUNK RESIDENCE
200 SW SKYLINE LOOP, FT. WHITE, FL, 32038
SOLAR INDIVIDUAL PERMIT PACKAGE

- SYSTEM DETAILS: 10.50KW DC, 14.00KW AC
- 30 HANWHA Q-PEAK DSD-G8 350, 350W MODULES
- 1 SOLAREDGE SEH100H-US INVERTER
- 2 TESLA POWERWALL 2 (13.5KWH) BATTERIES
- CONTACT: BRIAN LEVERETTE
- BRIAN.LEVERETTE@SOLARIMPACT.COM
- 352.727.0022

DESIGNER: JAMISON DRY

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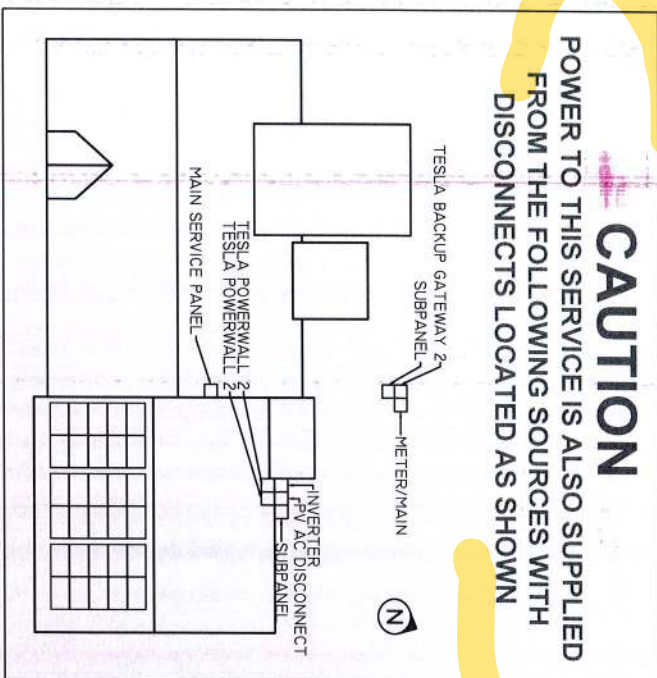


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CAUTION

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



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PANEL FED BY
PV AND UTILITY

1. PLACARD(S) LOCATED ON MAIN PANEL, AND ANY SUBPANEL.

PHOTOVOLTAIC
POWER SOURCE

1. LABELS LOCATED ON ALL PV SOURCE/ OUTPUT ENCLOSURES INSIDE BUILDING.

PHOTOVOLTAIC
DC DISCONNECT

1. PLACARD(S) LOCATED ON DC DISCONNECT.

PHOTOVOLTAIC
AC DISCONNECT

1. PLACARD(S) LOCATED AT AC DISCONNECT.

MAXIMUM SYSTEM VOLTAGE: 480V
MAXIMUM CIRCUIT CURRENT: 30A
MAX RATED OUTPUT CURRENT OF
THE CHARGE CONTROLLER IF INSTALLED

1. LABEL(S) LOCATED ON DC DISCONNECT.

PHOTOVOLTAIC AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 47.50A
NOMINAL OPERATING AC VOLTAGE: 240V

1. PLACARD(S) LOCATED ON AC DISCONNECT.

PHOTOVOLTAIC
SYSTEM CONNECTED

1. LABEL(S) LOCATED INSIDE MAIN BUILDING METERS.

RAPID SHUTDOWN SWITCH
FOR SOLAR PV SYSTEM

1. PLACARD LOCATED ON EXTERIOR AC DISCONNECT.

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

1. LABEL(S) LOCATED INSIDE DC DISCONNECT.

SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

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

1. PLACARD LOCATED AT RAPID SHUTDOWN SERVICE DISCONNECT.

WARNING
POWER SOURCE
OUTPUT CONNECTION
DO NOT RELOCATE

1. LABELS LOCATED AT PV BREAKER.

REC

1. UTILITY REQUIREMENT.
1. PLACARD LOCATED ON PV PRODUCTION METER.

BIDIRECTIONAL
PRODUCTION METER
BETWEEN INVERTER
AND MAIN PANEL

1. LABEL AT PRODUCTION METER 1.

SINGLE DIRECTION
PRODUCTION METER
BETWEEN INVERTER AND
BACKUP UP LOADS PANEL

1. LABEL AT PRODUCTION METER 2.

BACKED UP
LOADS PANEL

1. PLACARD LOCATED AT BACKED UP LOADS PANEL.

PANEL FED BY PV,
BATTERY, AND UTILITY

1. PLACARD(S) LOCATED ON MAIN PANEL, AND ANY SUBPANEL.

PLACARDS
NOT TO SCALE
PV-P.1

FUNK RESIDENCE
200 SW SKYLINE LOOP, FT. WHITE, FL. 32058
SOLAR INDIVIDUAL PERMIT PACKAGE
SYSTEM DETAILS: 10.5kW DC, 16.0kW AC
• 30 KANAWHA Q PEAK DUO GB 350, 350W MODULES
• 1 SOLAREDGE SE1600H-US INVERTER
• 2 TESLA POWERWALL 2, 10.5kWh BATTERIES
CONTACT: BRIAN LEVERETTE
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DESIGNER: NATHANSON DRY

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