


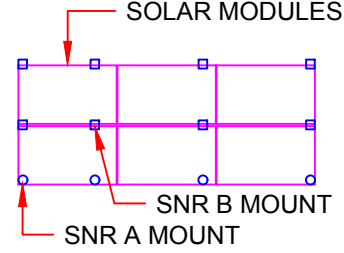




















SCOPE OF WORK

- **SYSTEM SIZE:** 10560W DC, 10000W AC
- **MODULES:** (32) LG ELECTRONICS: LG330N1C-A5
- **INVERTER(S):**
(1) SOLAREEDGE TECHNOLOGIES: SE10000H-US WITH REVENUE GRADE METERING
- **RACKING:** SNAPNRACK SERIES RL; FLASHTRACK COMP. SEE DETAIL SD-00708

GENERAL NOTES

- ALL WORK SHALL COMPLY WITH NEC 2014, 2015 IBC, MUNICIPAL CODE, AND ALL MANUFACTURERS' LISTINGS AND INSTALLATION INSTRUCTIONS.
- PHOTOVOLTAIC SYSTEM WILL COMPLY WITH NEC 2014.
- ELECTRICAL SYSTEM GROUNDING WILL COMPLY WITH NEC 2014.
- PHOTOVOLTAIC SYSTEM IS UNGROUNDED. NO CONDUCTORS ARE SOLIDLY GROUNDED IN THE INVERTER. SYSTEM COMPLIES WITH 690.35.
- MODULES CONFORM TO AND ARE LISTED UNDER UL 1703.
- INVERTER CONFORMS TO AND IS LISTED UNDER UL 1741.
- RACKING CONFORMS TO AND IS LISTED UNDER UL 2703.
- SNAPNRACK RACKING SYSTEMS, IN COMBINATION WITH TYPE I, OR TYPE II MODULES, ARE CLASS A FIRE RATED.
- RAPID SHUTDOWN REQUIREMENTS MET WHEN INVERTERS AND ALL CONDUCTORS ARE WITHIN ARRAY BOUNDARIES PER NEC 690.12(1).
- CONSTRUCTION FOREMAN TO PLACE CONDUIT RUN PER 690.31(G).
- ARRAY DC CONDUCTORS ARE SIZED FOR DERATED CURRENT.
- 10.45 AMPS MODULE SHORT CIRCUIT CURRENT.
- 16.32 AMPS DERATED SHORT CIRCUIT CURRENT [690.8 (a) & 690.8 (b)].

LEGEND AND ABBREVIATIONS

	SERVICE ENTRANCE			CHIMNEY
	MAIN PANEL			ATTIC VENT
	SUB-PANEL			FLUSH ATTIC VENT
	PV LOAD CENTER			PVC PIPE VENT
	SUNRUN METER		METAL PIPE VENT	
	DEDICATED PV METER		T-VENT	
	INVERTER(S) WITH INTEGRATED DC DISCONNECT AND AFCI		SATELLITE DISH	
	AC DISCONNECT(S)		FIRE SETBACKS	
	DC DISCONNECT(S)		HARDSCAPE	
	COMBINER BOX		PROPERTY LINE	
	INTERIOR EQUIPMENT SHOWN AS DASHED			

SCALE: NTS

A	AMPERE
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AZIM	AZIMUTH
COMP	COMPOSITION
DC	DIRECT CURRENT
(E)	EXISTING
EXT	EXTERIOR
FRM	FRAMING
INT	INTERIOR
LBW	LOAD BEARING WALL
MAG	MAGNETIC
MSP	MAIN SERVICE PANEL
(N)	NEW
NTS	NOT TO SCALE
OC	ON CENTER
PRE-FAB	PRE-FABRICATED
PSF	POUNDS PER SQUARE FOOT
PV	PHOTOVOLTAIC
TL	TRANSFORMERLESS
TYP	TYPICAL
V	VOLTS
W	WATTS

REV	NAME	DATE	COMMENTS

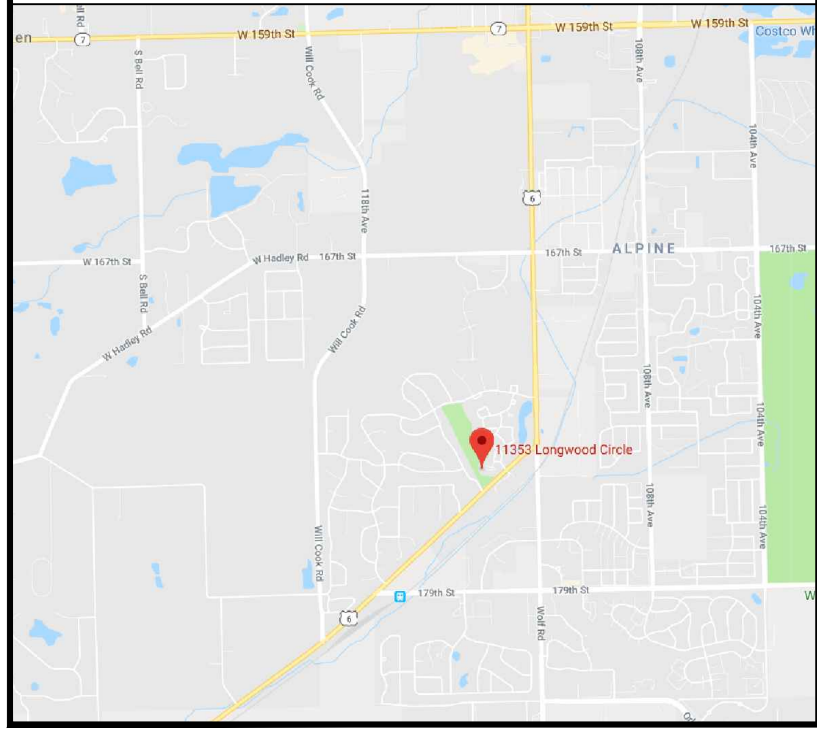
TABLE OF CONTENTS

PAGE #	DESCRIPTION
PV-1.0	COVER SHEET
PV-2.0	SITE PLAN
PV-3.0	LAYOUT
PV-4.0	ELECTRICAL
PV-5.0	SIGNAGE

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VICINITY MAP



BRANCH LICENSE#:

2309 MOUNT PROSPECT RD, DES PLAINES, IL 60018
PHONE 0
FAX 0

CUSTOMER RESIDENCE:
BARBARA HALPER
11353 LONGWOOD CIR ORLAND PARK IL USA 60467

TEL. (708) 945-1777
APN #: 2730418010000

PROJECT NUMBER:
711R-353HALP

DESIGNER: (303) 524-8580
WALTER BECKWITH

SHEET
COVER SHEET

REV: A 7/13/2018

PAGE PV-1.0



	ARRAY PITCH	TRUE AZIM	MAG AZIM	PV AREA (SQFT)
AR-01	28°	130°	133°	110.6
AR-02	28°	220°	223°	258.1
AR-03	28°	130°	133°	36.9
AR-04	27°	310°	313°	184.4

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11353 LONGWOOD CIR ORLAND
PARK IL USA 60467

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WALTER BECKWITH

SHEET
SITE PLAN

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PAGE
PV-2.0

	ROOF TYPE	MOUNTING DETAIL	ROOF HEIGHT	ROOF EXPOSURE	FRAME MATERIAL	FRAME TYPE	FRAME SIZE	MAX FRAME SPAN	OC SPACING	ROOF EDGE ZONE	MAX PEN SPACING	MAX MOD. OVERHANG
AR-01	COMP SHINGLE	FLASHTRACK COMP. SEE DETAIL SD-00708	2 STORY	ATTIC	WOOD	RAFTER	2 X 8	17'-0"	16"	5'	4'-0"	1'-4"
AR-02	COMP SHINGLE	FLASHTRACK COMP. SEE DETAIL SD-00708	2 STORY	VAULTED	WOOD	RAFTER	2 X 8	18'-0"	16"	5'	2'-8"	1'-4"
AR-03	COMP SHINGLE	FLASHTRACK COMP. SEE DETAIL SD-00708	2 STORY	ATTIC	WOOD	RAFTER	2 X 8	18'-0"	16"	5'	2'-8"	1'-4"
AR-04	COMP SHINGLE	FLASHTRACK COMP. SEE DETAIL SD-00708	2 STORY	ATTIC	WOOD	RAFTER	2 X 8	18'-0"	16"	5'	2'-8"	1'-4"

DESIGN CRITERIA

MODULES:
LG ELECTRONICS: LG330N1C-A5

MODULE DIMS:
66.38" x 40" x 1.57" (40mm)

MODULE CLAMPS:
Portrait: 5.9" - 15.7"
Landscape: 0" - 4.7"

MAX DISTRIBUTED LOAD: 3 PSF

SNOW LOAD: 30 PSF

WIND SPEED:
115 MPH 3-SEC GUST.

LAG SCREWS:
5/16"x3.5": 2.5" MIN EMBEDMENT

NOTE:
INSTALLERS TO VERIFY RAFTER SIZE, SPACING AND SLOPED SPANS, AND NOTIFY E.O.R. OF ANY DISCREPANCIES BEFORE PROCEEDING.

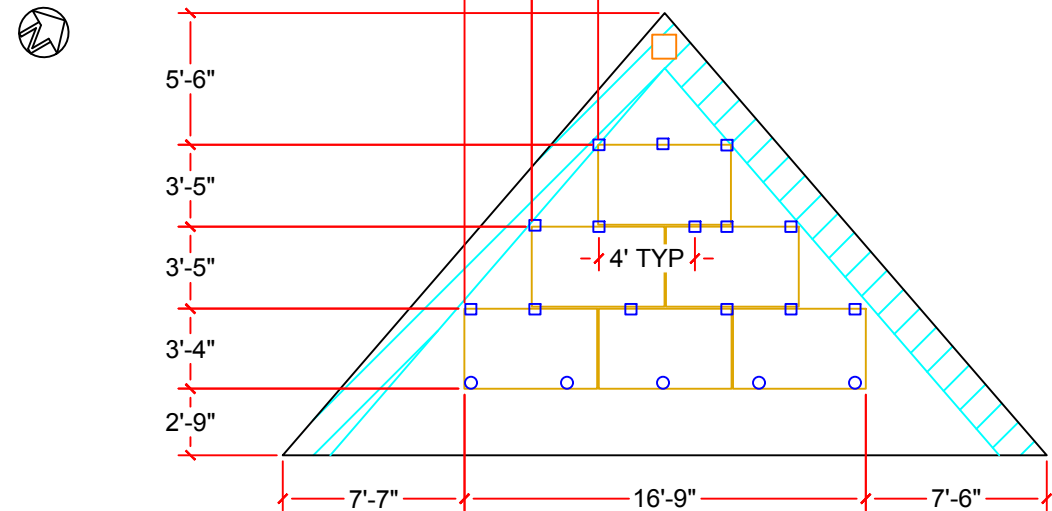
PENETRATION SPACING:
FULLY STAGGERED

ROW SPACING:
1.00" BETWEEN ROWS

COLUMN SPACING:
0.75" BETWEEN COLUMNS

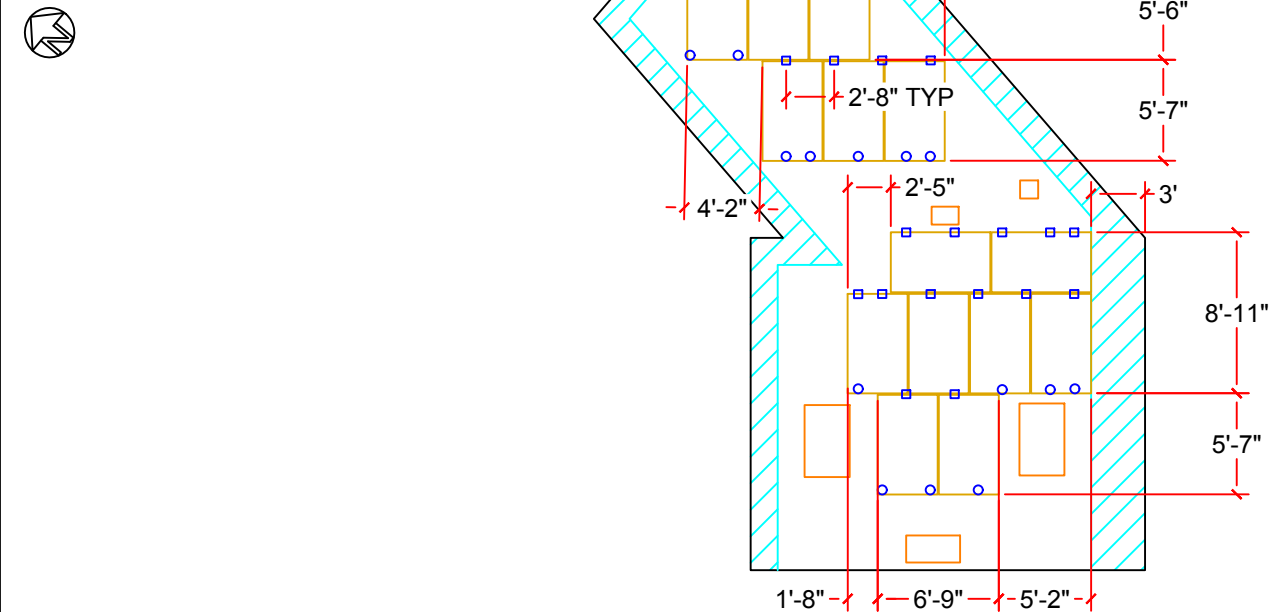
D1 - AR-01 - SCALE: 1/8" = 1'-0"

PITCH: 28°
AZIM: 130°



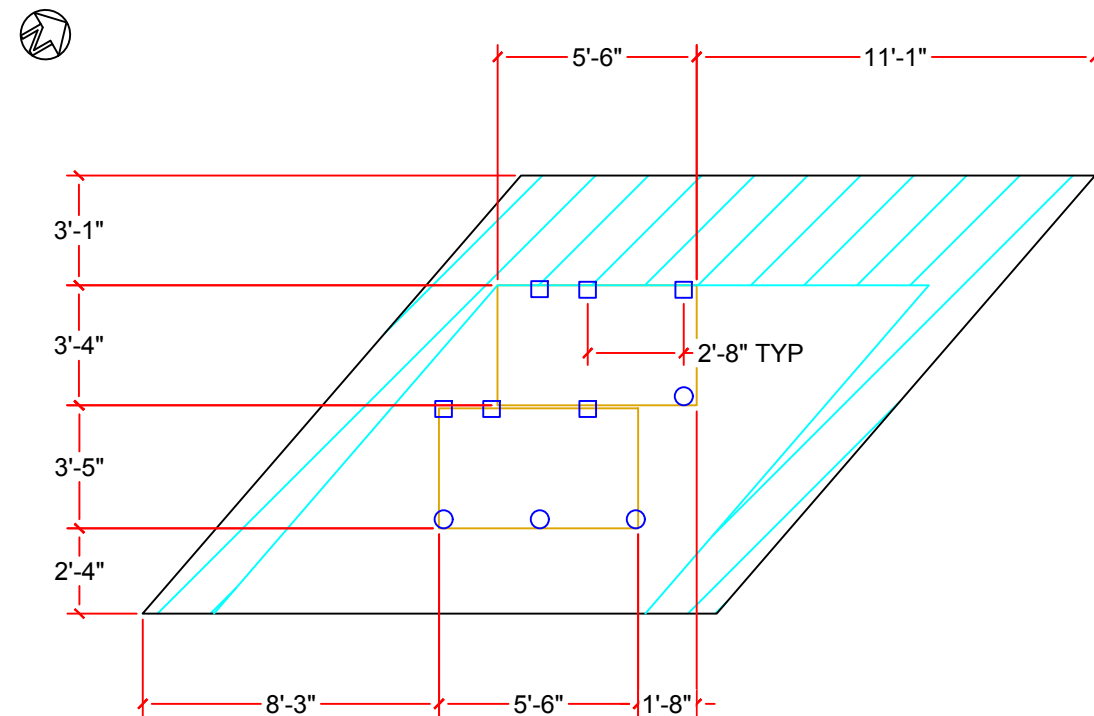
D2 - AR-02 - SCALE: 3/32" = 1'-0"

PITCH: 28°
AZIM: 220°



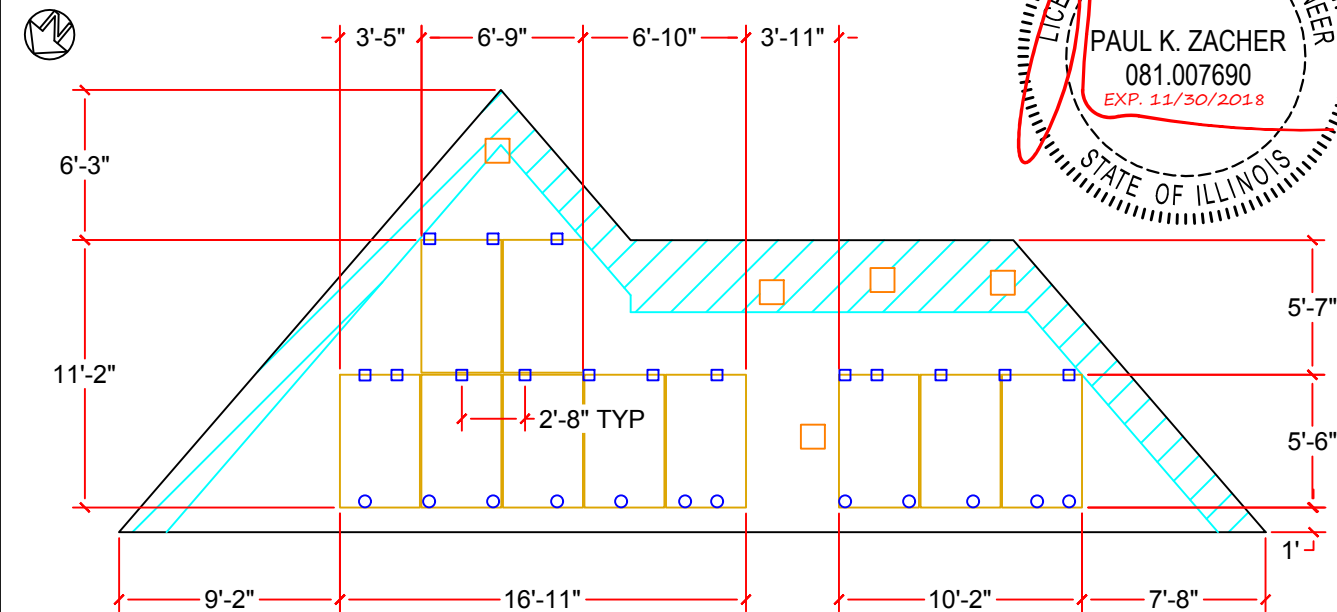
D3 - AR-03 - SCALE: 3/16" = 1'-0"

PITCH: 28°
AZIM: 130°



D4 - AR-04 - SCALE: 1/8" = 1'-0"

PITCH: 27°
AZIM: 310°



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PHONE 0
FAX 0

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11353 LONGWOOD CIR ORLAND
PARK IL USA 60467

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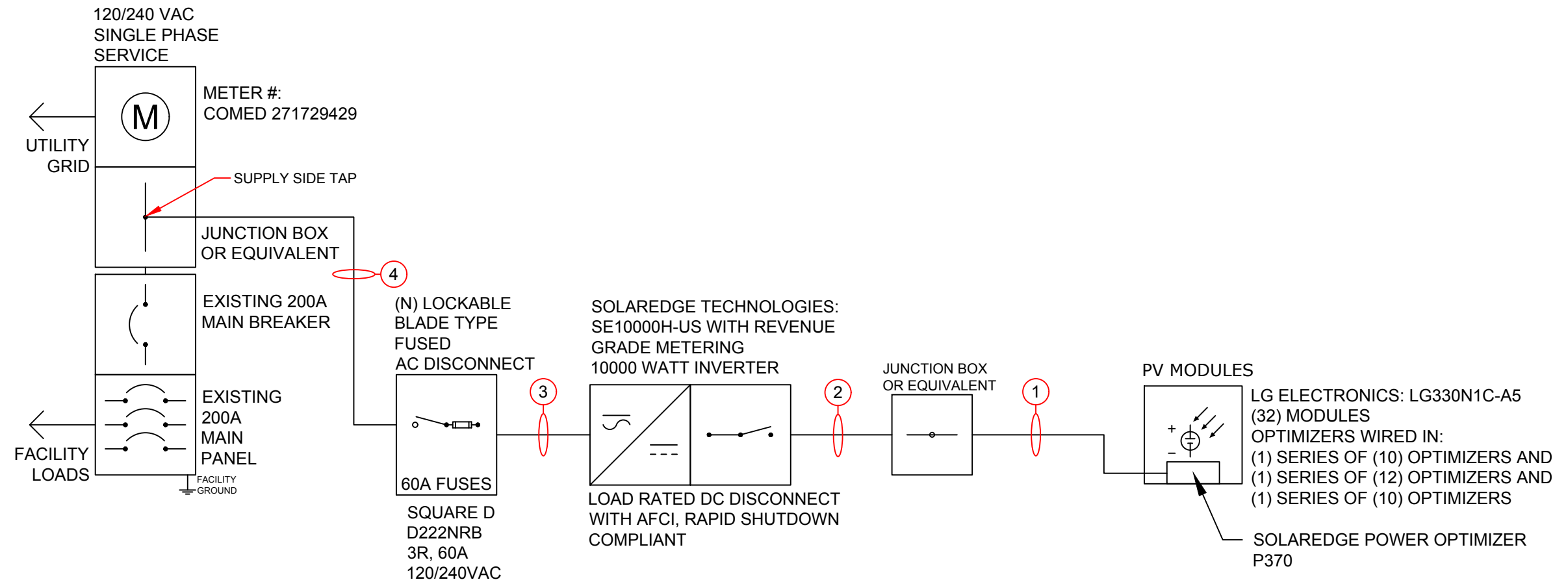
PROJECT NUMBER:
711R-353HALP

DESIGNER: (303) 524-8580
WALTER BECKWITH

SHEET
LAYOUT

REV: A 7/13/2018

PAGE
PV-3.0



NOTES TO INSTALLER:

1. 12 VDC EXPECTED OPEN CIRCUIT STRING VOLTAGE.
2. INSTALLERS TO PASS EXISTING FEEDER CONDUCTORS THROUGH NEW JUNCTION BOX PV SYSTEM CONNECTION TO BE MADE INSIDE NEW JUNCTION BOX VIA POLARIS CONNECTORS. CONDUCTORS ARE FIELD INSTALLED.

CONDUIT SCHEDULE

#	CONDUIT	CONDUCTOR	NEUTRAL	GROUND
1	NONE	(6) 10 AWG PV WIRE	NONE	(1) 10 AWG BARE COPPER
2	3/4" EMT OR EQUIV.	(6) 10 AWG THHN/THWN-2	NONE	(1) 10 AWG THHN/THWN-2
3	3/4" EMT OR EQUIV.	(2) 6 AWG THHN/THWN-2	(1) 10 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2
4	3/4" EMT OR EQUIV.	(2) 6 AWG THHN/THWN-2	(1) 6 AWG THHN/THWN-2	(1) 8 AWG THHN/THWN-2

MODULE CHARACTERISTICS

LG ELECTRONICS: LG330N1C-A5: 330 W
 OPEN CIRCUIT VOLTAGE: 40.9 V
 MAX POWER VOLTAGE: 33.7 V
 SHORT CIRCUIT CURRENT: 10.45 A

P370 OPTIMIZER CHARACTERISTICS:

MIN INPUT VOLTAGE: 8 VDC
 MAX INPUT VOLTAGE: 60 VDC
 MAX INPUT ISC: 11 ADC
 MAX OUTPUT CURRENT: 15 ADC

SYSTEM CHARACTERISTICS - INVERTER 1

SYSTEM SIZE: 10560 W
 SYSTEM OPEN CIRCUIT VOLTAGE: 12 V
 SYSTEM OPERATING VOLTAGE: 350 V
 MAX ALLOWABLE DC VOLTAGE: 500 V
 SYSTEM OPERATING CURRENT: 30.17 A
 SYSTEM SHORT CIRCUIT CURRENT: 45 A

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 PHONE 0
 FAX 0

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 11353 LONGWOOD CIR ORLAND
 PARK IL USA 60467

TEL. (708) 945-1777
 APN #: 27304180100000

PROJECT NUMBER:
 711R-353HALP

DESIGNER: (303) 524-8580
 WALTER BECKWITH

SHEET
ELECTRICAL

REV: A 7/13/2018

PAGE
 PV-4.0

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

LABEL LOCATION:
 INVERTER(S), AC DISCONNECT(S), AC COMBINER PANEL (IF APPLICABLE).
 PER CODE(S): CEC 2016: 690.17(E), NEC 2014: 690.17(E), NEC 2011: 690.17(4)

! WARNING
ELECTRICAL SHOCK HAZARD
 IF GROUND FAULT IS INDICATED ALL NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

LABEL LOCATION:
 INVERTER(S), ENPHASE ENVOY ENCLOSURE (IF APPLICABLE).
 PER CODE(S): CEC 2016: 690.5(C), NEC 2014: 690.5(C), NEC 2011: 690.5(C)

PHOTOVOLTAIC DC DISCONNECT

RATED MAXIMUM POWER-POINT CURRENT:	30.17	ADC
RATED MAXIMUM POWER-POINT VOLTAGE:	350	VDC
MAXIMUM SYSTEM VOLTAGE:	500	VDC
MAXIMUM SHORT CIRCUIT CURRENT:	45	ADC

LABEL LOCATION:
 INVERTER(S), DC DISCONNECT(S).
 PER CODE(S): CEC 2016: 690.53, NEC 2017: 690.53, NEC 2014: 690.53, NEC 2011: 690.53

**PHOTOVOLTAIC SYSTEM
 EQUIPPED WITH
 RAPID SHUTDOWN**

LABEL LOCATION:
 UTILITY SERVICE ENTRANCE/METER, INVERTER/DC DISCONNECT IF REQUIRED BY LOCAL AHJ, OR OTHER LOCATIONS AS REQUIRED BY LOCAL AHJ.
 PER CODE(S): CEC 2016: 690.12, NEC 2014: 690.12, NEC 690.56, IFC 2012: 605.11.1

! WARNING
ELECTRICAL SHOCK HAZARD
 THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED

LABEL LOCATION:
 INVERTER(S), DC DISCONNECTS.
 PER CODE(S): CEC 2016: 690.35(F), NEC 2014: 690.35(F), NEC 2011: 690.35(F)

! WARNING
DUAL POWER SUPPLY
 SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

LABEL LOCATION:
 UTILITY SERVICE METER AND MAIN SERVICE PANEL.
 PER CODE(S): CEC 2016: 705.12(D)(3), NEC 2014: 705.12(D)(3), NEC 2011: 705.12(D)(4)

! WARNING
INVERTER OUTPUT CONNECTION
 DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL LOCATION:
 ADJACENT TO PV BREAKER (IF APPLICABLE).
 PER CODE(S): CEC 2016: 705.12(D)(2)(3)(b), NEC 2014: 705.12(D)(2)(3)(b), NEC 2011: 705.12(D)(7)

! WARNING
PHOTOVOLTAIC SYSTEM COMBINER PANEL
 DO NOT ADD LOADS

LABEL LOCATION:
 PHOTOVOLTAIC AC COMBINER (IF APPLICABLE).
 PER CODE(S): CEC 2016: 705.12(D)(2)(3)(c), NEC 2014: 705.12(D)(2)(3)(c), NEC 2011: 705.12(D)(4)

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL LOCATION:
 INTERIOR AND EXTERIOR DC CONDUIT EVERY 10 FT, AT EACH TURN, ABOVE AND BELOW PENETRATIONS, ON EVERY JB/PULL BOX CONTAINING DC CIRCUITS.
 PER CODE(S): CEC 2016: 690.31(G)(3), 690.31(G)(4), NEC 2014: 690.31(G)(3), 690.31(G)(4), NEC 2011: 690.31(E)(3), 690.31(E)(4), IFC 2012: 605.11.1.4

PHOTOVOLTAIC AC DISCONNECT
 MAXIMUM AC OPERATING CURRENT: 41.67 AMPS
 NOMINAL OPERATING AC VOLTAGE: 240 VAC

LABEL LOCATION:
 AC DISCONNECT(S), PHOTOVOLTAIC SYSTEM POINT OF INTERCONNECTION.
 PER CODE(S): CEC 2016: 690.54, NEC 2014: 690.54, NEC 2011: 690.54

- NOTES AND SPECIFICATIONS:
- SIGNS AND LABELS SHALL MEET THE REQUIREMENTS OF THE NEC 2014 ARTICLE 110.21(B), UNLESS SPECIFIC INSTRUCTIONS ARE REQUIRED BY SECTION 690, OR IF REQUESTED BY THE LOCAL AHJ.
 - SIGNS AND LABELS SHALL ADEQUATELY WARN OF HAZARDS USING EFFECTIVE WORDS, COLORS AND SYMBOLS.
 - LABELS SHALL BE PERMANENTLY AFFIXED TO THE EQUIPMENT OR WIRING METHOD AND SHALL NOT BE HAND WRITTEN.
 - LABEL SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED.
 - SIGNS AND LABELS SHALL COMPLY WITH ANSI Z535.4-2011, PRODUCT SAFETY SIGNS AND LABELS, UNLESS OTHERWISE SPECIFIED.
 - DO NOT COVER EXISTING MANUFACTURER LABELS.

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 PHONE 0
 FAX 0

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 11353 LONGWOOD CIR ORLAND PARK IL USA 60467

TEL. (708) 945-1777
 APN #: 27304180100000

PROJECT NUMBER:
 711R-353HALP

DESIGNER: (303) 524-8580
 WALTER BECKWITH

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PAGE
 PV-5.0