Project Narrative

4/26/17

From: Sun Valley Solar Solutions

To: Hillside Building Committee Plan Review Directions

This project will install 182 Solar Modules on the existing foam roof of the Shultz, DFX residence located at 4134 E Keim Dr, Paradise Valley, AZ 85253. All of the panels are located at a minimum of a 5ft setback from the parapet walls. All panels will be flat to the roof and will be hidden from view from the same or lower elevation.

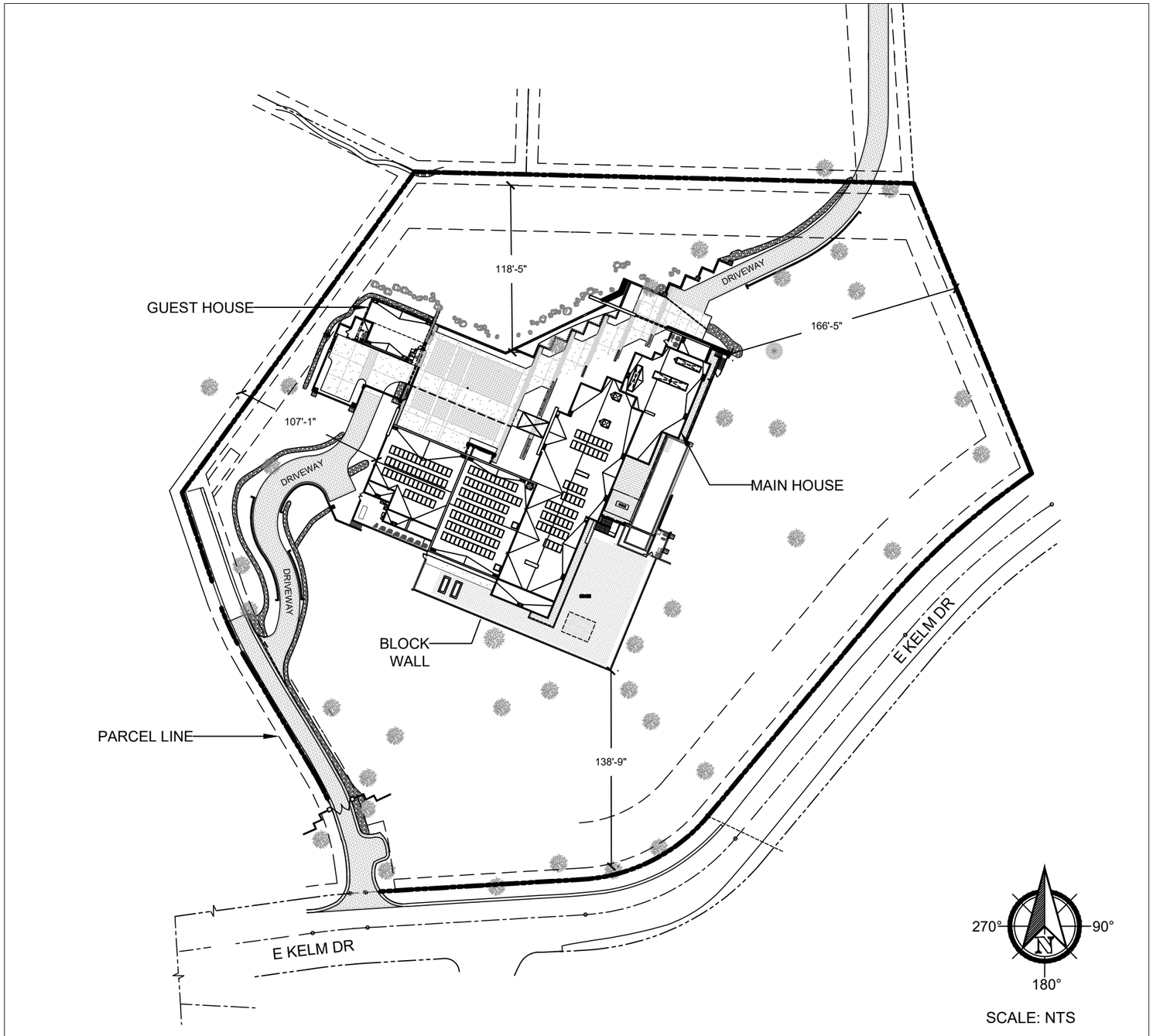
This project will also be installed with 4 inverters located in an electrical room, out of sight. Utility Meter & Disconnect will be located at the Service Entrance, which is in an enclosed gated area, and equipment will be out of sight from street view.

Panels: Canadian Solar CS6K-265P – Black Frame, – LRV = 5%
Rail/Racking System: Black – LRV = 8%

Regards,

Cole Eaton

Cole Eaton
Project Specialist
Sun Valley Solar Solutions



SCALE: NTS

PLOT PLAN

NOTE:

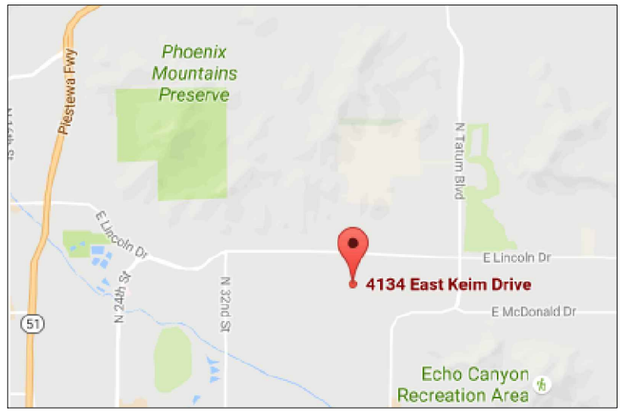
1. UTILITY HAS 24-HR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT THE SERVICE ENTRANCE.
2. WORKSPACE IN FRONT OF THE AC ELECTRICAL SYSTEM COMPONENTS SHALL BE IN ACCORDANCE WITH SRP & NEC REQUIREMENTS.
3. REFERENCE SRP REQUIREMENTS FOR ELECTRIC METER SEPARATION BETWEEN WATER & GAS.

SCOPE OF WORK

TO INSTALL A PHOTOVOLTAIC (PV) SYSTEM AT THE
Schultz Residence
LOCATED AT
4134 E Keim Dr
Paradise Valley , AZ 85253

THE POWER GENERATED BY THE PV SYSTEM WILL BE INTERCONNECTED WITH THE UTILITY GRID THROUGH THE EXISTING ELECTRICAL SERVICE EQUIPMENT.

SHEET INDEX



SITE LOCATION

AERIAL VIEW

SHEET: PV1

DATE: 2/16/2017

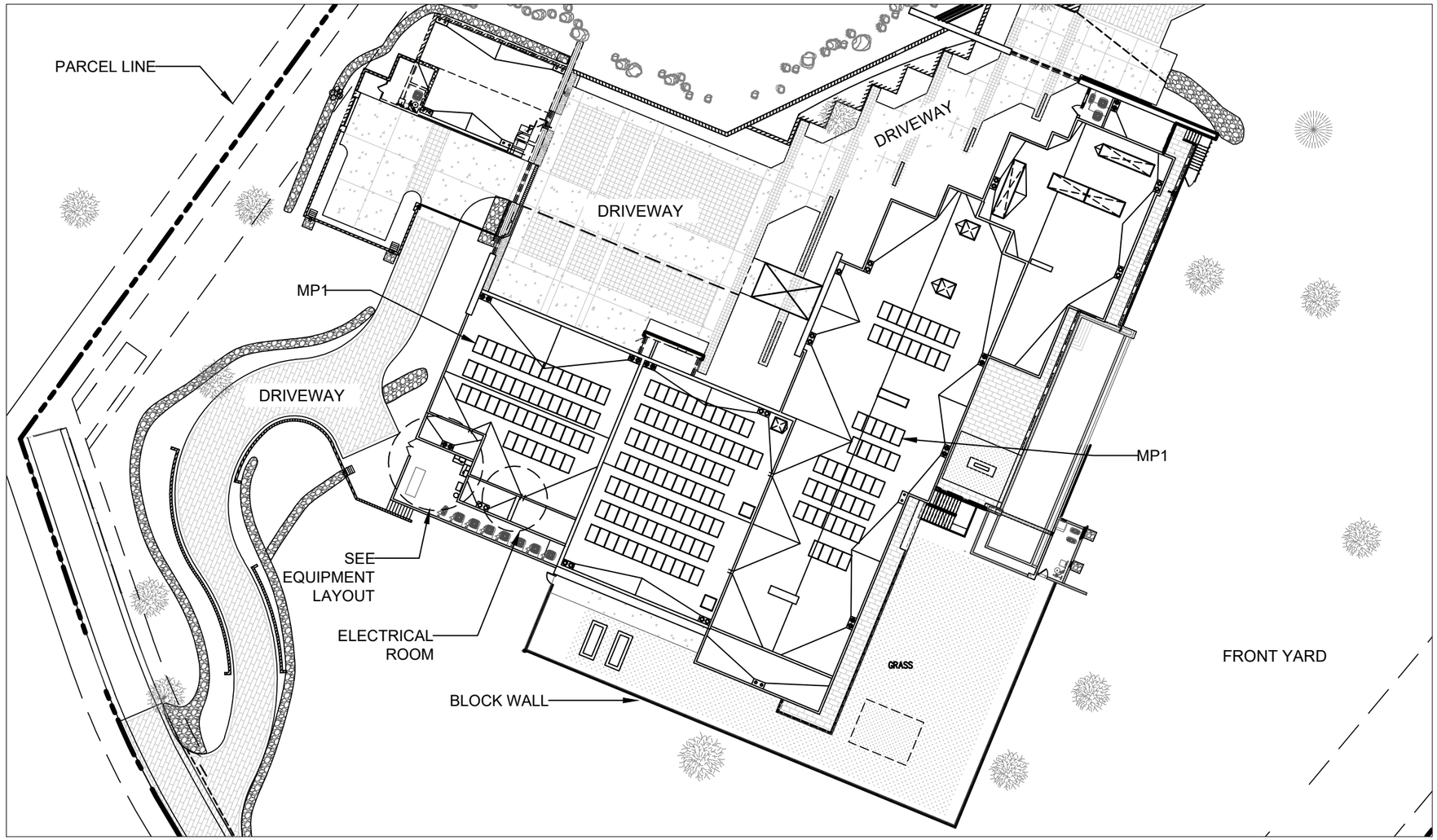
Revision: 1

Designer: Jefferson Daniel

51.150 kW-AC
48.230 kW-DC

TITLE: PLOT PLAN
Schultz Residence
4134 E Keim Dr, Paradise Valley , AZ 85253

Sun Valley Solar Solutions LLC
3225 N Colorado St. Chandler, AZ 85225
T: (480) 689-5000 / F: (480) 659-3429
www.svssolutions.com



SITE PLAN

GOVERNING CODES

LOCAL JURISDICTION - Paradise Valley

UTILITY - SRP

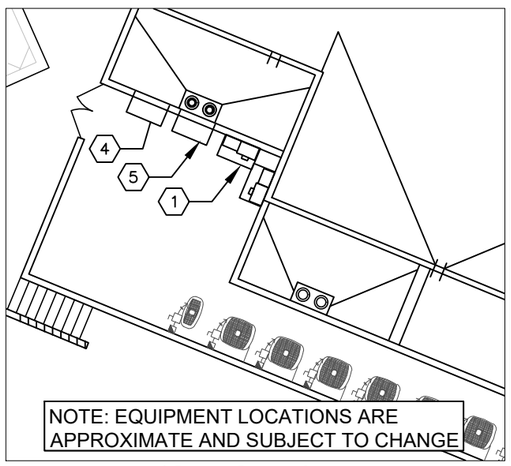
2014 NATIONAL ELECTRICAL CODE
2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL RESIDENTIAL CODE
CITY AMMENDMENTS

SITE PLAN NOTES

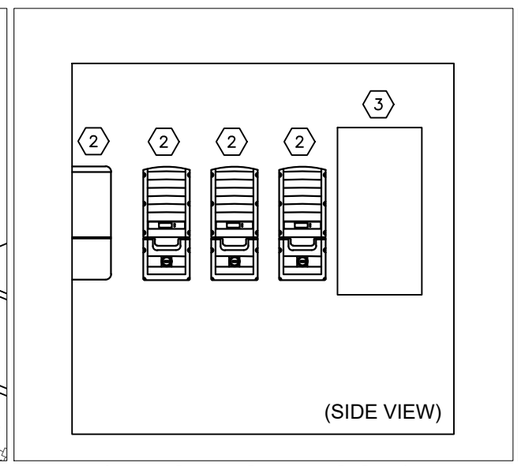
1. (EXISTING) ELECTRICAL 600A SERVICE ENTRANCE 200A MAIN BREAKER and UTILITY REVENUE METER
2. (NEW) INVERTER WITH INTEGRATED DC DISCONNECT & RAPID SHUTDOWN COMPLIENT TO NEC 2014 690.12
3. (NEW) 200A SOLAR COMBINER PANEL
4. (NEW) DEDICATED PV SYSTEM KWH METER and UTILITY DISCONNECT SWITCH
5. (NEW) 200A FUSED DISCONNECT

EQUIPMENT SUMMARY

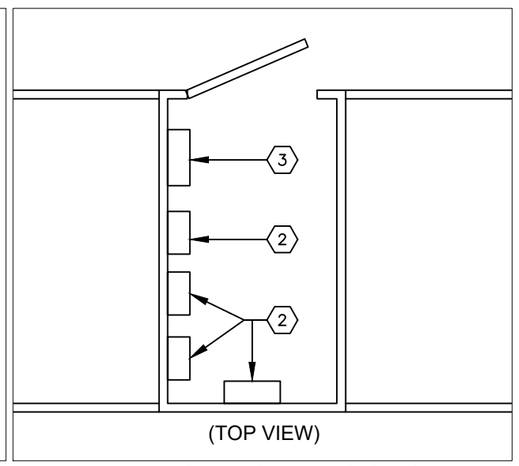
182 CANADIAN SOLAR CS6K-265P
03 SOLAREDGE SE11,400A-US
01 SOLAREDGE SE3800A-US
01 EATON 200A FUSED DISCONNECT
01 COOPER-B-LINE 200A METER
01 EATON 200A UTILITY DISCONNECT
01 200A SOLAR COMBINER PANEL



(OUTSIDE)



(ELECTRICAL ROOM)



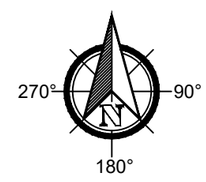
(ELECTRICAL ROOM)

ROOF LEGEND	
⊗	GAS VENT
▭	T-TOP VENT
⊠	DORMER VENT

MP1	PITCH: 5 AZIMUTH: 202 MATERIAL: Foam MOUNTING: Tilt Structure

S# SUNEYE SHOTS SHADE REPORT

PARCEL INFO
PARCEL #: 169-22-133
SQUARE FOOTAGE: 28,696
CONST. YEAR: 2016



SCALE: 1/8" = 1'

SHEET: PV2

DATE: 5/3/2017

Revision: 0

Designer: Jefferson Daniel

TITLE: SITE PLAN
Schultz Residence
4134 E Keim Dr, Paradise Valley , AZ 85253

51.150 kW-AC
48.230 kW-DC

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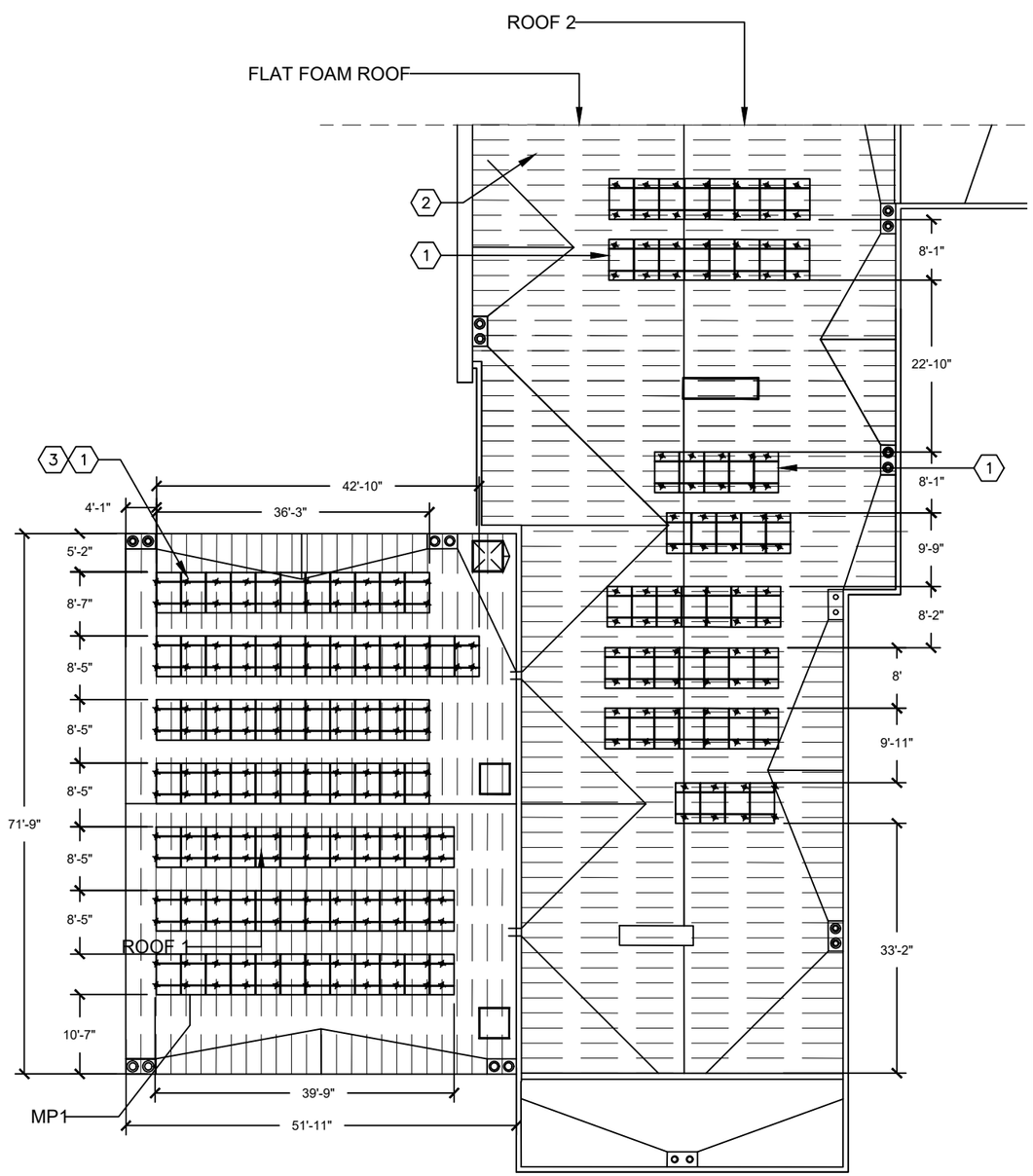
ROOF PLAN



MP1	PITCH: 5 AZIMUTH: 202 MATERIAL: Foam MOUNTING: Tilt Structure

ROOF LEGEND

- GAS VENT
- T-TOP VENT
- DORMER VENT

ROOF 1 LOAD CALCULATIONS:

DESIGN PER ASCE 7-10 2.4.1 & IBC 2012
SOLAR MODULE WEIGHT = 40.1 LBS.
EXPOSURE CATEGORY = B
BASIC WIND SPEED = 115 MPH

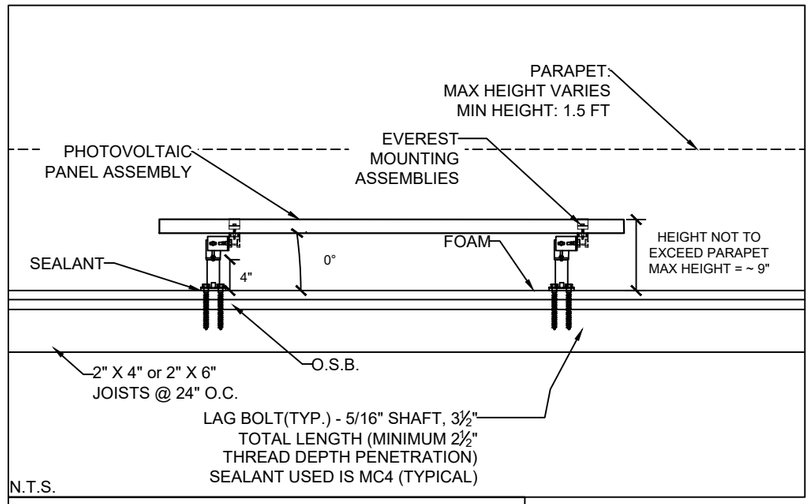
STRUCTURAL NOTES:
1) TOTAL ASSEMBLY WEIGHT: 3839.0 LBS
2) TOTAL AREA COVERED BY MODULES: 1519.2 FT2
3) DEAD LOAD = 3839.0 / 1519.2 = 2.5 LBS/FT2
4) POINT LOAD CALCULATIONS [# OF POINTS (150)] - 25.6 lb/point
5) TOTAL DESIGN LOAD (DOWNFORCE) = 10.7 psf
6) TOTAL DESIGN LOAD (UPFORCE) = -23.5 psf

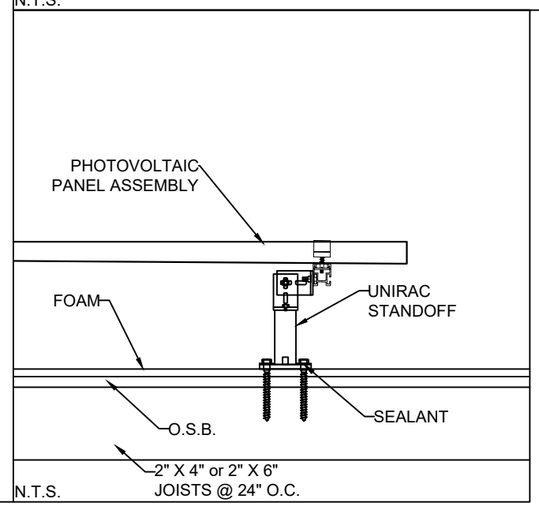
ROOF 2 LOAD CALCULATIONS:

DESIGN PER ASCE 7-10 2.4.1 & IBC 2012
SOLAR MODULE WEIGHT = 40.1 LBS.
EXPOSURE CATEGORY = B
BASIC WIND SPEED = 115 MPH

STRUCTURAL NOTES:
1) TOTAL ASSEMBLY WEIGHT: 2387.7 LBS
2) TOTAL AREA COVERED BY MODULES: 944.9 FT2
3) DEAD LOAD = 2387.7 / 944.9 = 2.5 LBS/FT2
4) POINT LOAD CALCULATIONS [# OF POINTS (92)] - 26.0 lb/point
5) TOTAL DESIGN LOAD (DOWNFORCE) = 13.9 psf
6) TOTAL DESIGN LOAD (UPFORCE) = -28.6 psf

RAILS TO BE BONDED TO GROUND (EGC)
RAIL SPLICES TO BE ELECTRICALLY BONDED
FLASHING REQUIRED FOR STANDOFF PENETRATIONS
FOLLOW MODULE INSTRUCTION ON FRAME MOUNTING POINT





ROOF PLAN NOTES:

1. (NEW) PHOTOVOLTAIC PANEL ARRAY TILTED TO ROOF WITH 5DEG TILT
2. 2" x 4" TRUSS @ 24" O.C.
3. RACKING INFORMATION
   - EVEREST MOUNTING RAIL
   - UNIRAC STANDOFF – 4"
   - TRUSS SPACING = 24" O.C.
   - PENETRATION POINTS = 4' SPACING

SHEET: PV3.1
DATE: 5/3/2017
Revision: 0
Designer: Jefferson Daniel
51.150 kW-AC
48.230 kW-DC
TITLE: ROOF PLAN
Schultz Residence
4134 E Keim Dr, Paradise Valley, AZ 85253

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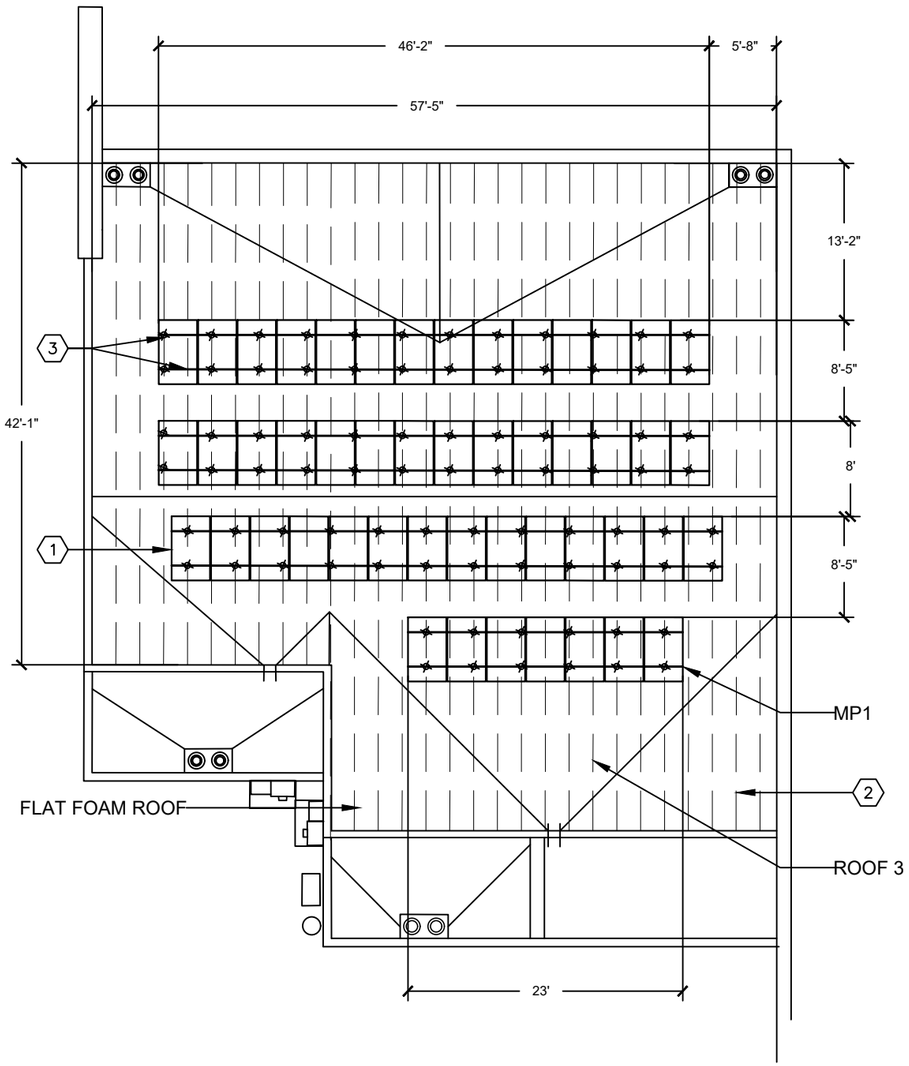
ROOF PLAN



MP2	PITCH: 10 AZIMUTH: 202 MATERIAL: Foam MOUNTING: Tilt Structure

ROOF LEGEND

- GAS VENT
- T-TOP VENT
- DORMER VENT

ROOF PLAN NOTES:

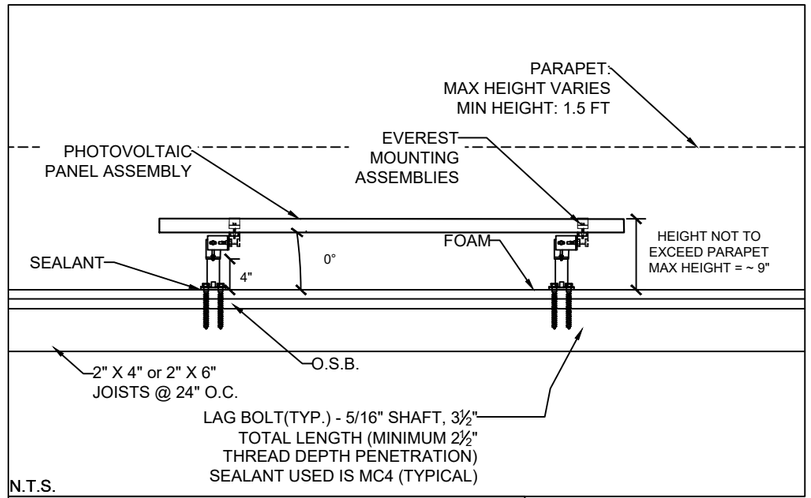
1. (NEW) PHOTOVOLTAIC PANEL ARRAY TILTED TO ROOF WITH 5DEG TILT
2. 2" x 4" TRUSS @ 24" O.C.
3. RACKING INFORMATION
   - EVEREST MOUNTING RAIL
   - UNIRAC STANDOFF – 4"
   - TRUSS SPACING = 24" O.C.
   - PENETRATION POINTS = 4' SPACING

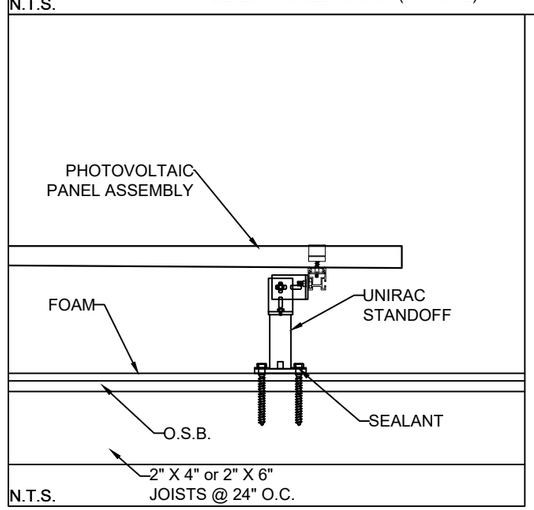
ROOF 3 LOAD CALCULATIONS:

DESIGN PER ASCE 7-10 2.4.1 & IBC 2012
SOLAR MODULE WEIGHT = 40.1 LBS.
EXPOSURE CATEGORY = B
BASIC WIND SPEED = 115 MPH

STRUCTURAL NOTES:
1) TOTAL ASSEMBLY WEIGHT: 2294.0 LBS
2) TOTAL AREA COVERED BY MODULES: 907.8 FT2
3) DEAD LOAD = 2294.0 / 907.8 = 2.5 LBS/FT2
4) POINT LOAD CALCULATIONS [# OF POINTS (84)] - 27.3 lb/point
5) TOTAL DESIGN LOAD (DOWNFORCE) = 12.7 psf
6) TOTAL DESIGN LOAD (UPFORCE) = -25.5 psf

RAILS TO BE BONDED TO GROUND (EGC)
RAIL SPLICES TO BE ELECTRICALLY BONDED
FLASHING REQUIRED FOR STANDOFF PENETRATIONS
FOLLOW MODULE INSTRUCTION ON FRAME MOUNTING POINT





SHEET: PV3.1

DATE: 5/3/2017

Revision: 0

Designer: Jefferson Daniel

TITLE: ROOF PLAN

Schultz Residence

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51.150 kW-AC
48.230 kW-DC

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SYSTEM EQUIPMENT TAG LIST

1 REQ'D BY: NEC 690.5 (C)
APPLY TO: TRANSFORMERLESS INVERTERS / DC J-BOX / DC DISCONNECTS

2 REQ'D BY: NEC 690.54
APPLY TO: AC PANEL

3 REQ'D BY:
APPLY TO: PV KWH METER

4 REQ'D BY: NEC 690.14(C)(2)
APPLY TO: AC DISCONNECT

5 REQ'D BY: NEC 690.17
APPLY TO: DISCONNECT, COMBINER PANELS

6 REQ'D BY:
APPLY TO: DEAD FRONT

7 REQ'D BY: NEC 690.53
APPLY TO: DC DISCONNECT

8 REQ'D BY: 2012 IFC 605.11.1.1 -605.11.1.4
2012 NEC 690.31 (E)(3)

- LABEL WITH CAPITALIZED LETTERS MINIMUM HEIGHT 3/8 INCH WHITE LETTERS ON RED BACKGROUND
- LABEL MUST BE REFLECTIVE AND WEATHER RESISTANT
- LABEL PLACED ON INTERIOR AND EXTERIOR DC CONDUIT, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLIES EVERY 10 FEET, WITHIN 1 FOOT OF TURNS OR BENDS AND WITHIN 1 FOOT ABOVE AND BELOW PENETRATIONS OF ROOF/CELINGS ASSEMBLIES, WALL OR BARRIERS.

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

PHOTOVOLTAIC POWER SOURCE
BREAKERS ARE BACKFED
MAX AC CURRENT: ____ A
OPERATING VOLTAGE: 240 VAC

PHOTOVOLTAIC SYSTEM METER

PHOTOVOLTAIC SYSTEM
AC UTILITY DISCONNECT SWITCH

WARNING - ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS - TERMINALS ON BOTH THE LINE AND LOAD MAY BE ENERGIZED IN THE OFF POSITION

PHOTOVOLTAIC POWER SOURCE BREAKERS ARE BACKFEEDING

INVERTER
1, 2, 3

INVERTER
4

9 REQ'D BY: NEC 705.12 (D)(2)
APPLY TO: ABOVE MAIN BREAKER

BREAKER HAS BEEN DE-RATED PER NEC 705.12 (D)(2)

10 REQ'D BY: UTILITY
APPLY TO:

WARNING
OTHER POWER SOURCE CONNECTED IS A PHOTOVOLTAIC SYSTEM
UTILITY DISCONNECT SWITCH FOR THIS SOURCE IS LOCATED APPROX.

11 REQ'D BY:
APPLY TO: FRONT COMBINER PANEL

DEDICATED PHOTOVOLTAIC SYSTEM COMBINER PANEL
LOADS NOT TO BE ADDED TO THIS PANEL

12 REQ'D BY: SUN VALLEY SOLAR
APPLY TO: INVERTERS

QUALITY INSTALLATION BY:
SUN VALLEY SOLAR SOLUTIONS
3225 N Colorado St
Chandler, AZ 85225
PHONE: 1 888 5 SOLAR UP

SYSTEM LABEL 690.53 - [ARRAY 1 & 2]
RATED MAX. POWER-POINT CURRENT (Imp): 42.40 Adc
RATED MAX. POWER-POINT VOLTAGE (Vmp): 350 Vdc
MAXIMUM SYSTEM VOLTAGE (Voc): 500 Vdc
MAXIMUM SYSTEM CURRENT (Isc): 15 Adc per String

SYSTEM LABEL 690.53 - [ARRAY 3]
RATED MAX. POWER-POINT CURRENT (Imp): 13.63 Adc
RATED MAX. POWER-POINT VOLTAGE (Vmp): 350 Vdc
MAXIMUM SYSTEM VOLTAGE (Voc): 500 Vdc
MAXIMUM SYSTEM CURRENT (Isc): 15 Adc per String

SYSTEM LABEL 690.53 - [ARRAY 1]
RATED MAX. POWER-POINT CURRENT (Imp): 10.6 Adc
RATED MAX. POWER-POINT VOLTAGE (Vmp): 350 Vdc
MAXIMUM SYSTEM VOLTAGE (Voc): 500 Vdc
MAXIMUM SYSTEM CURRENT (Isc): 15 Adc per String

WARNING: PHOTOVOLTAIC POWER SOURCE
WARNING: PHOTOVOLTAIC POWER SOURCE

WARNING:
PHOTOVOLTAIC
POWER SOURCE

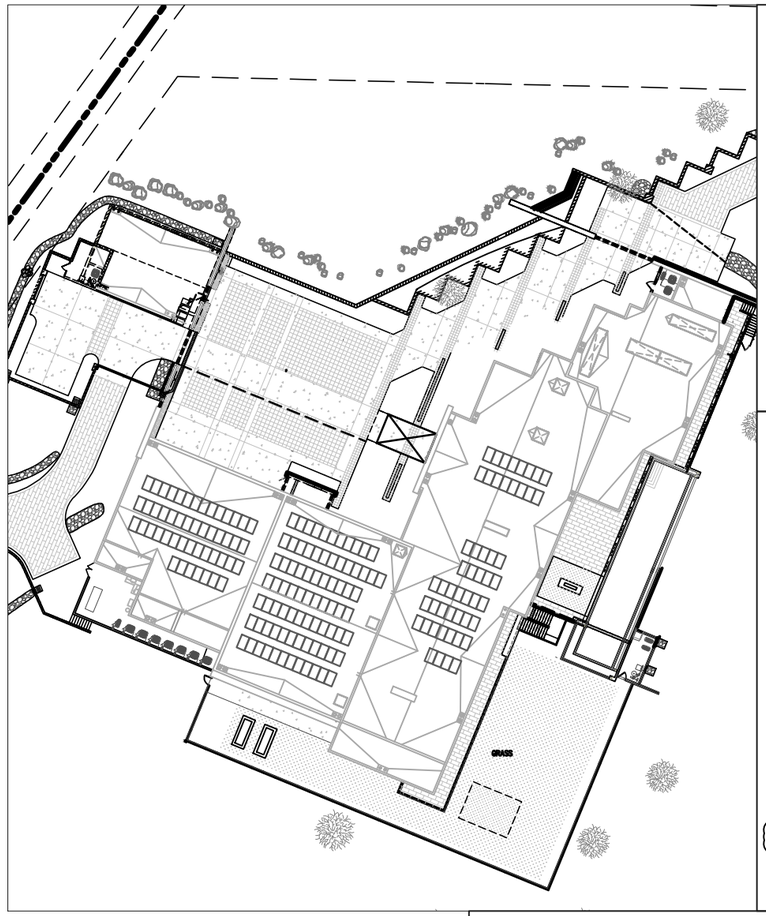
Notes:
-
-
-

Competent Person: _____

Crew Lead: _____

Emergency Center

N



REQUIRED PPE

- ☐ STEEL TOE BOOTS
- ☐ HARD HAT
- ☐ HARNESS/FALL PROTECTION
- ☐ SAFTEY GLASSES
- ☐ GLOVES
- ☐ HIGH VOLTAGE GLOVES

ELECTRICAL PPE CAT

- ☐ -0
- ☐ -1
- ☐ -2
- ☐ -3
- ☐ -4

SPECIALTY

Mark Up Key

- (P) Permanent Anchor
- (T) Temporary Anchor
- (D) Warning Line Delineator
- (G) Guard Rail Stanchon
- IL Installer Ladder
- AL Auditor Ladder
- CB Combiner Box
- SO Stubout
- SkyLight
- No Ladder Access
- Restricted Area
- Conduit

OSHA SECTIONS PURSUANT TO JOB TASKS:

Ladders-1926 Subpart X	☐ PPE & Life Saving Equip-1926 Subpart E
Fall Protection-1926 Subpart M	☐ Lifelines & Lanyards-1926.104
Electrical-1926 Subpart K	☐ Tools-Hand and Power-1926-Subpart I
Excavation-1926 Subpart P	☐ Toxic Substances-1926 Subpart Z
First Aid & Medical-1926.23	☐ Steel Erection- 1926 Subpart R

Installer Signatures:
1._____ 5._____
2._____ 6._____
3._____ 7._____
4._____ 8._____

SHEET: L1

DATE: 2/17/2017

Revision: 0

Designer: Jefferson Daniel

TITLE: LABELS - SAFETY51.150 kW-AC
48.230 kW-DC
Schultz Residence
4134 E Keim Dr, Paradise Valley , AZ 85253

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