COVER SHEET

PV-0

SHEET INDEX

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GENERAL INFORMATION

AHJ:	City of Flagstaff
Parcel Number:	100-43-003-B
Serving Utility:	APS
Governing Codes:	2017 NEC
Governing Codes:	2018 IFC

PROJECT DESCRIPTION

(###) Photovoltaic Modules will be installed on the roof of the new Mountain Line Downtown Connection Center. (5) Chint Power Systems SCA25KTL-DO-R/US-480 25kW Inverters will be installed in a utility room within the building. The total system size will be ### kW-DC / 125 kW-AC.

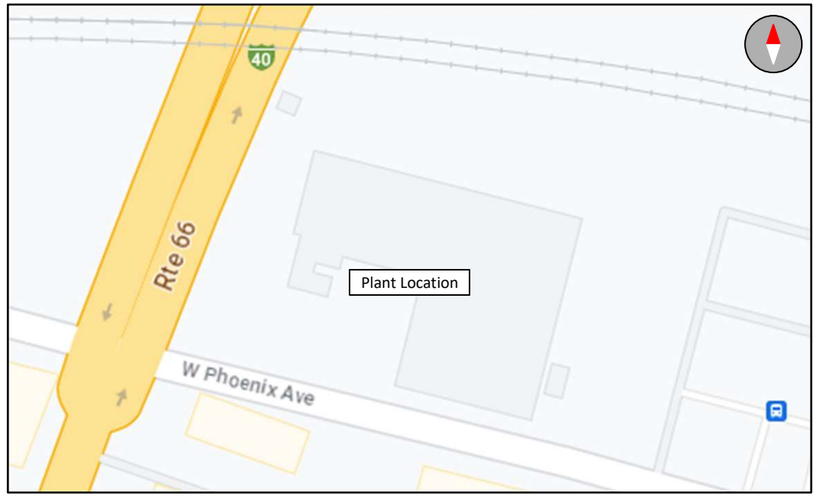
The modules will be split across 4 roof planes. The sub-arrays will be attached to the roof using S5 clamps or ballasted racking, as determined by the roof-type underlaying the sub-array.

The building electrical system has been designed and installed to accommodate up to 200A of backfed current from the PV System. The PV Equipment will be located in a 24-hour accessible utility room.

SCOPE OF WORK – BUILDING PREWIRE

During the construction of the building, the following circuits will be prewired in preparation for a future Photovoltaic System.

- 200A 3P circuit from the dedicated PV Breaker in SES-1NSH1 to the Utility Room where the PV Equipment will be located
- Ethernet drop in the Utility Room where the PV Equipment will be located
- (4) Home Run conduits from the Utility Room where the PV Equipment will be located to the sub-arrays on the roof – see sheet PV-1 for details



REV	DESCRIPTION	DATE	BY
0	Original drawing	10/30/23	JM
1	Design inverters inside the building, per customer request	11/3/23	JM

PROJECT NAME	Downtown Connection Center (Commercial PV Design)
ADDRESS	216 West Phoenix Avenue, Flagstaff, AZ 86001
CLIENT	Tino Hernandez
CONTACT INFO	602.738.8329 | thernandez@nationsgroup.com

Mountain Line – Downtown Connection Center
###kW-DC / ###kW-AC Photovoltaic System

DRAWN BY
Josh Morse
josh@rooftopsolar.us
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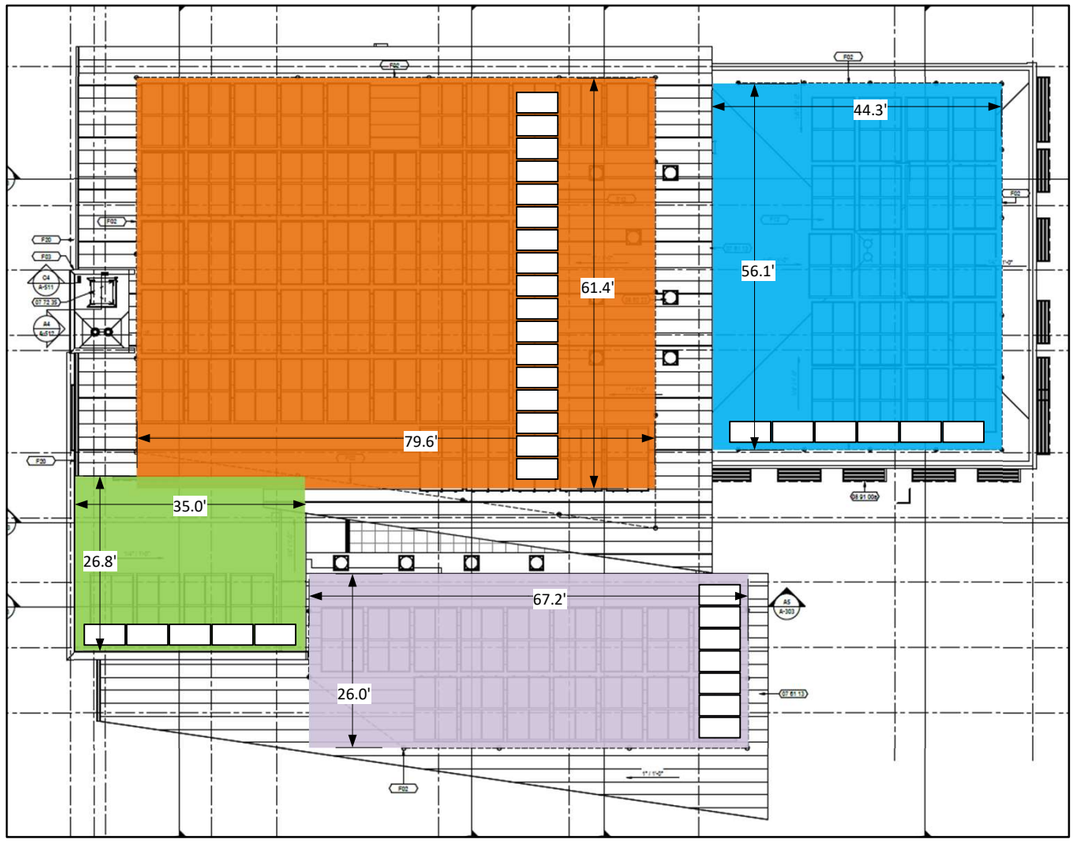
ROOFTOP SOLAR

SITE PLAN



1. (11) rows, (17) portrait modules each
   (187) total modules, (11) strings
   (22) #8 THWN Conductors
   (1) #10 THWN Ground
   (1) 2" EMT

2. (16) rows, (6) landscape modules each
   (96) total modules, (6) strings
   (12) #8 THWN Conductors
   (1) #10 THWN Ground
   (1) 1-1/2" EMT

3. (7) rows, (5) landscape modules each
   (35) total modules, (2) strings
   (4) #8 THWN Conductors
   (1) #10 THWN Ground
   (1) 1" EMT

4. (9) rows, (7) portrait modules each
   (63) total modules, (4) strings
   (8) #8 THWN Conductors
   (1) #10 THWN Ground
   (1) 1-1/4" EMT

This drawing is for appropriately sizing the home run conduits based on a maximum array layout. It is not intended to show an actual proposed array layout.

The layouts are based on the Mission Solar Energy MSE430SX9Z, which is a BAA-Compliant, 430W PV Module. These PV Modules are 82.13x41.5" (6.844x3.458').

Strings are based on the Chint Power Systems SCA25KTL-DO/US-480-UL 25kW Inverter. String lengths for this pairing of PV Modules and Inverter, in this location, can vary from 15 to 18 modules.

Exact conduit stub locations to be determined by others. Generally speaking, the shortest or simplest path that can be established from the utility room to a corner or edge of the sub-array served by the conduit is best.

NOTE: Utility has 24-hr unrestricted access to the service entrance equipment.

NOTE: Utility has 24-hr unrestricted access to all photovoltaic system components located at service entrance.

NOTE: There are no fences or gates on the property

NOTE: Reference Section 301.15 of the APS ESRM for electrical meter separation between water and gas.

NOTE: Roof access and pathways comply with the requirements of the 2018 IFC. Namely, a 4'-wide perimeter around the outer edge of the roof, and 4'-wide interior pathways around roof access hatches.

NOTE: Workspace in front of AC electrical system components shall be in accordance with APS and NEC requirements. For APS requirements, reference Section 300 of the APS ESRM and Section 8.2 of the APS Interconnection Requirements.

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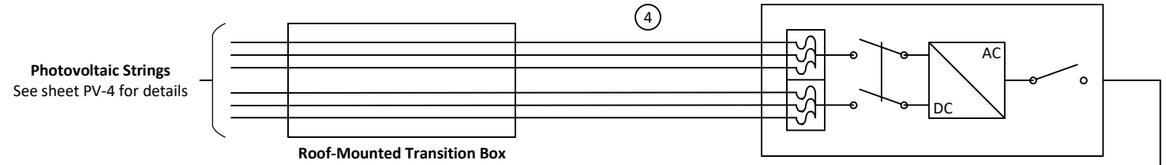
ONE-LINE DIAGRAM

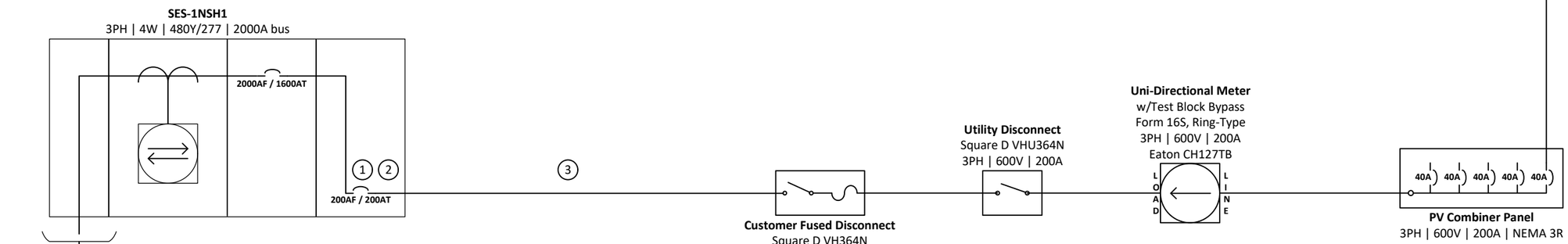
1. Interconnection complies with 705.12(B)(2)(3)(b) – the “120% rule” △1
2. Breaker to be provided and installed by others
3. This circuit between SES-1NSH1 and the future location of the Customer Fused Disconnect to be installed by others during the building construction
4. Conduits between the utility room containing the PV Equipment and the PV Arrays to be installed by others during the building construction. See sheet PV-1 for details



Photovoltaic Strings
See sheet PV-4 for details

Roof-Mounted Transition Box

Inverter (1) of (5)
CPS SCA25KTL-DO-R/US-480
With 20A Fuses, Rapid Shutdown, AC & DC Disconnects
2 MPPTs | 1000VDC
3PH | 25kW | 480Y/277
Max $I_{continuous}$: 30.5A



Utility Grid
3PH | 4W | 480Y/277
Calculated Available
Fault: 31.01 kA

Customer Fused Disconnect
Square D VH364N
3PH | 600V | 200A
RK1-Type fuses, 200A

Utility Disconnect
Square D VHU364N
3PH | 600V | 200A

Uni-Directional Meter
w/Test Block Bypass
Form 16S, Ring-Type
3PH | 600V | 200A
Eaton CH127TB

PV Combiner Panel
3PH | 600V | 200A | NEMA 3R

NOTE: Equipment shall be labeled as shown on sheets PV-6A and PV-6B, “PHOTOVOLTAIC SYSTEM LABELS”

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ELEVATION DRAWING

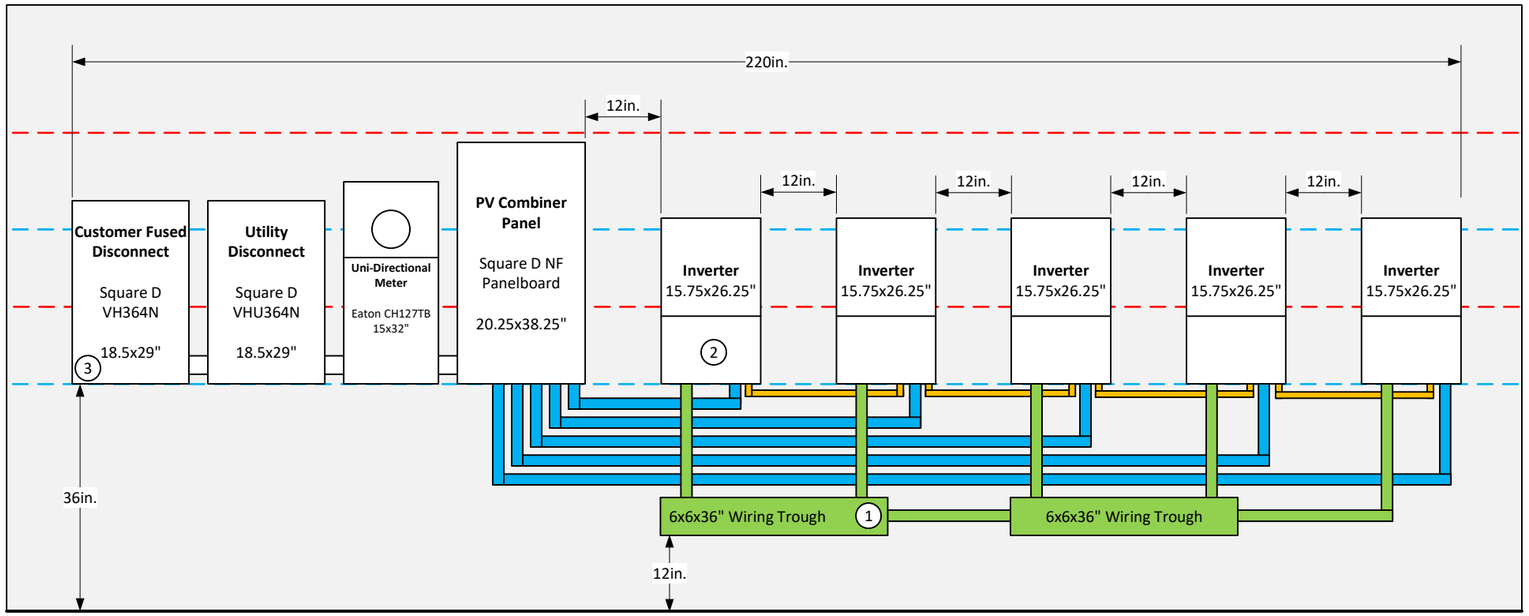
PV-5

ALL METERS: 75" - 48"
ALL DISCOS: 36" - 60"

1. Home run conduits from roof terminate in the back of the wiring trough
2. An ethernet connection is required for the first inverter in the row
3. 200A circuit back to the SES, installed by others

- DC circuits
- AC circuits
- Comms circuits

INTERIOR ELECTRICAL ROOM
(24-HOUR ACCESSIBLE)



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