

PROJECT SUMMARY:

THE PROJECT SCOPE INCLUDES THE DESIGN, SPECIFICATION, PROCUREMENT, INSTALLATION AND COMMISSIONING OF A COMPLETE, TURN-KEY, GRID-TIED PHOTOVOLTAIC ELECTRIC SYSTEM.

MODULE TYPE	(21) Q CELL Q.PEAK DUO G-5 320
INVERTER	(1) SE6000H-US
OPTIMIZER	(21) SOLAREEDGE P320
ARRAY PITCH	40°
ARRAY AZIMUTH	140°
RACKING	IRONRIDGE XRI00 ALUMINUM RAIL
ATTACHMENT	ALUMINUM L-FEET WITH SS LAG SCREWS, 3 X5/16

AUTHORITIES HAVING JURISDICTION:

BUILDING AUTHORITY	PORTLAND MAINE
ELECTRICAL AUTHORITY	PORTLAND MAINE
ZONING/PLANNING AUTHORITY	PORTLAND MAINE
ELECTRICAL UTILITY	CENTRAL MAINE POWER

DESIGN CRITERIA:

OCCUPANCY	RESIDENTIAL
DESIGN WIND LOAD	100 MPH
RISK CATEGORY	I
GROUND SNOW LOAD	60 PSF
EXPOSURE CATEGORY	C
ROOF HEIGHT	~20' ABOVE GRADE TO EAVES
ROOF COMPOSITION	ASPHALT SHINGLE
RAFTER	
RAFTER SPACING	









SHEET LIST:

G001	TITLE SHEET
A001	SITE PLAN
A002	MODULE LAYOUT
E001	ONE-LINE DIAGRAM

GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH LOCAL AND STATE ORDINANCES AND BUILDING CODES.
2. ELECTRICAL INSTALLATION SHALL COMPLY WITH STATE AND LOCALLY ADOPTED ELECTRICAL CODE.
3. ROOFTOP PENETRATIONS SHALL BE SEALED.
4. ALL EQUIPMENT SHALL BE LISTED AND TESTED BY A RECOGNIZED LABORATORY.
5. SYSTEM SHALL CONFORM TO RAPID SHUTDOWN REQUIREMENTS PER NEC 690.
6. CONDUIT RUNS BETWEEN SUB-ARRAYS, COMBINERS, AND DISCONNECTS SHALL BE INSTALLED IN THE MOST DIRECT ROUTE POSSIBLE.
7. ELECTRICAL EQUIPMENT SHALL BE INSTALLED TO MAINTAIN CLEARANCES REQUIRED BY NEC 110.
8. EQUIPMENT SHALL BE LABELED PER NEC 2017 REQUIREMENTS.

SYMBOLS:

 MOD	PV MODULE	 M	POWER METER
 MLPE	MODULE LEVEL POWER ELECTRONIC / OPTIMIZER		FUSED DISCONNECT SWITCH
 DCC	DC COMBINER AND DC DISCONNECT		NON-FUSED DISCONNECT SWITCH
 DC AC	PV DC TO AC INVERTER		
 60A	ENCLOSED CIRCUIT BREAKER		



**REVISION
ENERGY**

142 PRESUMSCOT STREET
PORTLAND, ME 04103
(207)-221-6342

CLIENT:

CHRIS LAVOIE
257 DEERING AVENUE
PORTLAND MAINE, 04103

SYSTEM TYPE:

6.72KW GRID TIED SOLAR
PHOTOVOLTAIC SYSTEM



Reviewed for Code Compliance
Permitting and Inspections Department
Approved with Conditions

06/26/2018

DESIGNED BY: GJD
REVISION: 0
PRINT SIZE: 11" X 17"
DATE: 4/24/2018

DWG TITLE:

TITLE SHEET

DWG NUMBER:

G001

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RAFTER	
RAFTER SPACING	

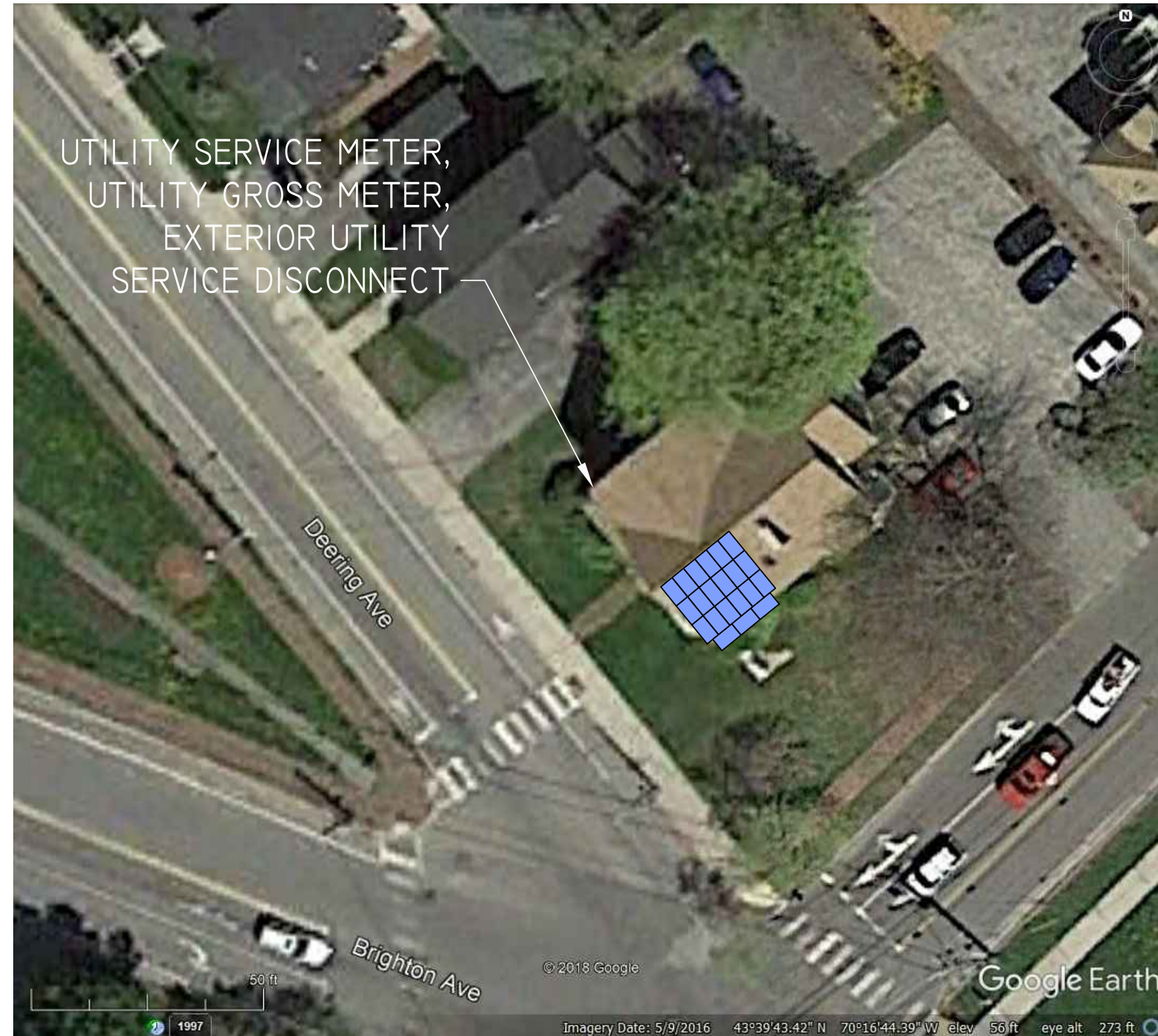
EQUIPMENT LOCATIONS:

BASEMENT INTERIOR:

MAIN LOAD CENTER
SOLAR INVERTER
PV AC TAP DISCONNECT

EXTERIOR:

UTILITY METER
UTILITY GROSS METER
UTILITY SERVICE DISCONNECT (RSID)



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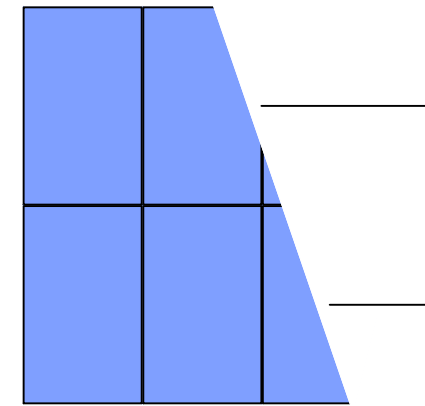
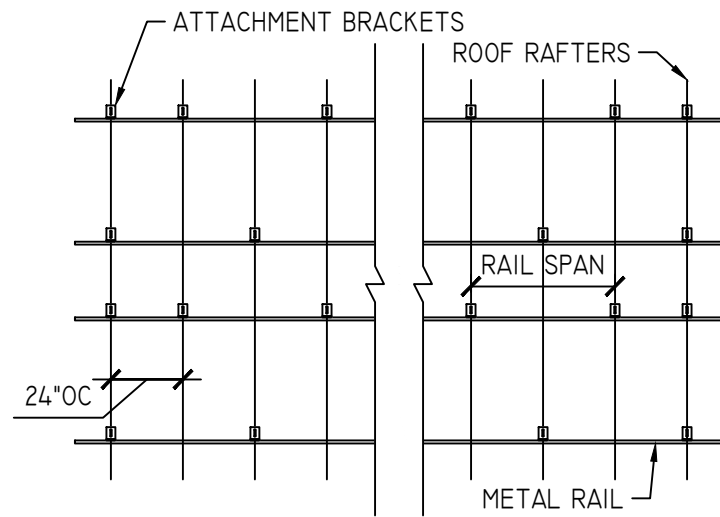
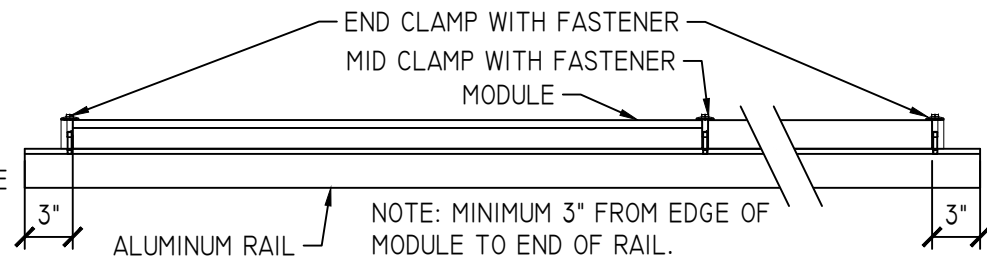
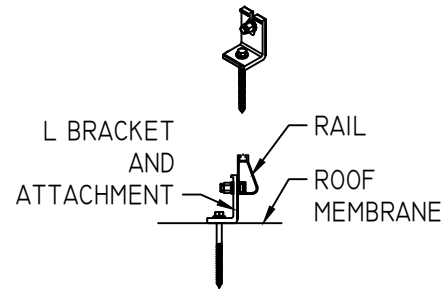
SITE PLAN

DWG NUMBER:

A001

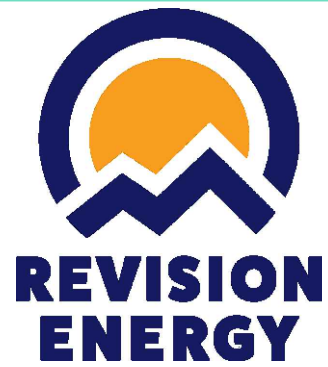
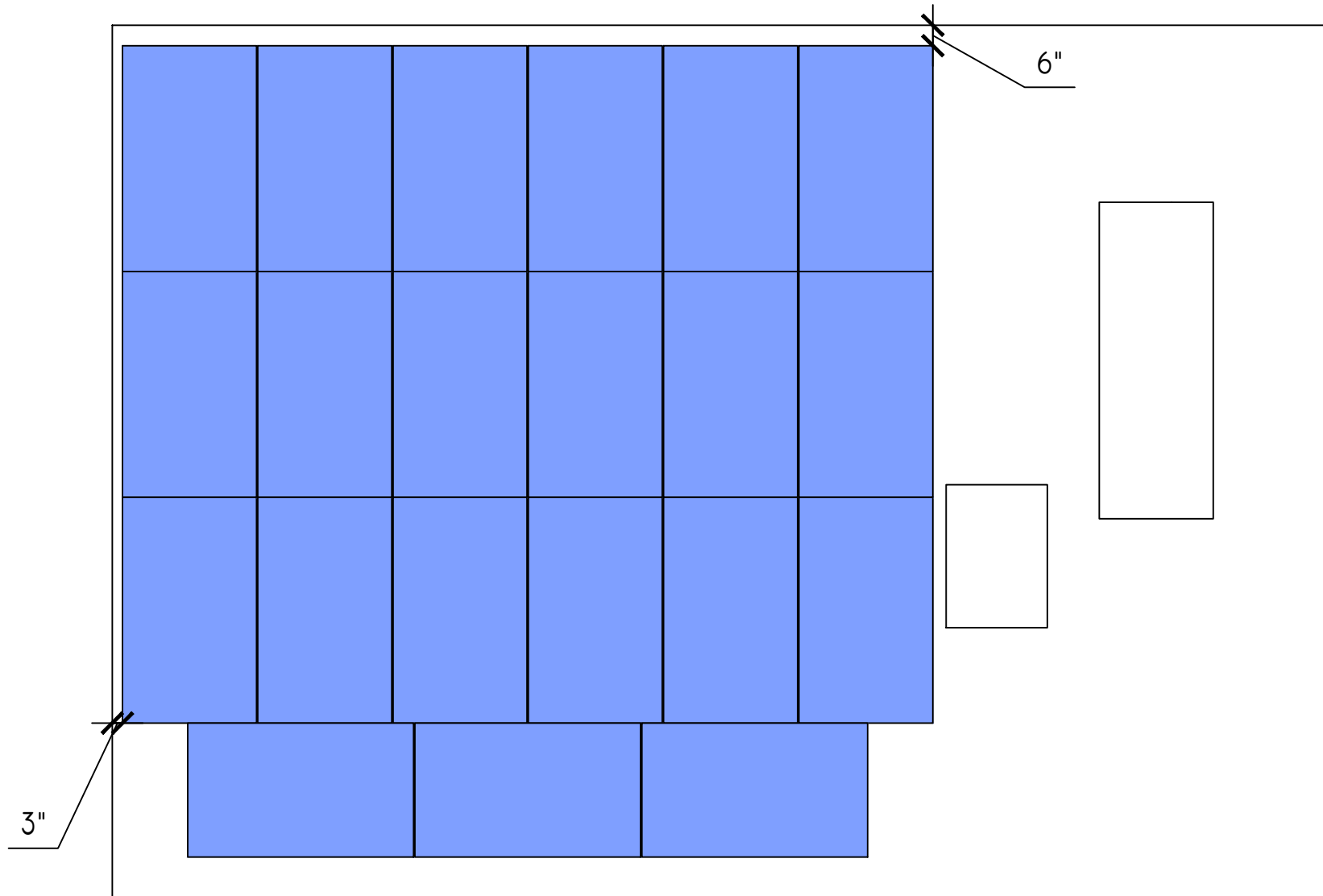
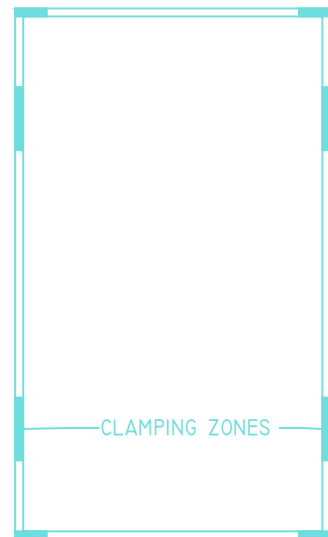
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ATTACHMENT NOTES:

1. MAXIMUM RAIL LENGTH IS 50' BEFORE EXPANSION GAP IS REQUIRED.
2. MAXIMUM RAIL SPAN IS TYPICALLY 4'. THIS DISTANCE WILL VARY BASED ON ROOF SLOPE, SNOW LOAD, WIND SPEED, AND EXPOSURE CATEGORY.
3. MAXIMUM RAIL CANTILEVER DISTANCE IS 0.40 X RAIL SPAN.
4. SEAL ALL ATTACHMENT POINTS WITH GEOCELL. SEALS SHALL BE WATERTIGHT BETWEEN THE ATTACHMENT BRACKETS, ROOF MATERIAL AND STRUCTURAL MEMBERS.
5. ROOF ATTACHMENTS SHALL BE STAGGERED FOR EVEN DISTRIBUTION OF LOAD ON ROOF RAFTERS.
6. CLEARANCE BETWEEN THE ROOF AND THE BOTTOM OF THE RAIL SHALL BE A MINIMUM OF 2"



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DWG TITLE: MODULE LAYOUT

DWG NUMBER: A002

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MODULE SPECIFICATIONS	
Q CELL Q.PEAK DUO G-5 320 QTY 21	
STC RATING	320
VMP	33.32
IMP	9.6
Voc	40.13
Isc	10.09
TEMP COEFF. Voc %	-0.0028

MODULE-LEVEL DC OPTIMIZER SPECIFICATIONS	
SOLAREEDGE P320 QTY 21	
NOMINAL DC RATING (WATTS)	320
MAX OUTPUT CURRENT Idc	15

GRID TIED INVERTER SPECIFICATIONS	
SE6000H-US QTY 1	
NOMINAL AC RATING	6000
NOMINAL Vac	240
MAX Iac	25
CEC EFFICIENCY	99.00%

DESIGN NOTES:

- ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
- SYSTEM VOLTAGE DROP SHALL NOT EXCEED 5%
- LOWEST EXPECTED AMBIENT TEMPERATURE IS BASED ON ASHRAE EXTREME MIN FOR THE SPECIFIED LOCATION.
- AVERAGE HIGH TEMPERATURE IS BASED ON ASHRAE 2% AVG. FOR THE SPECIFIED LOCATION.

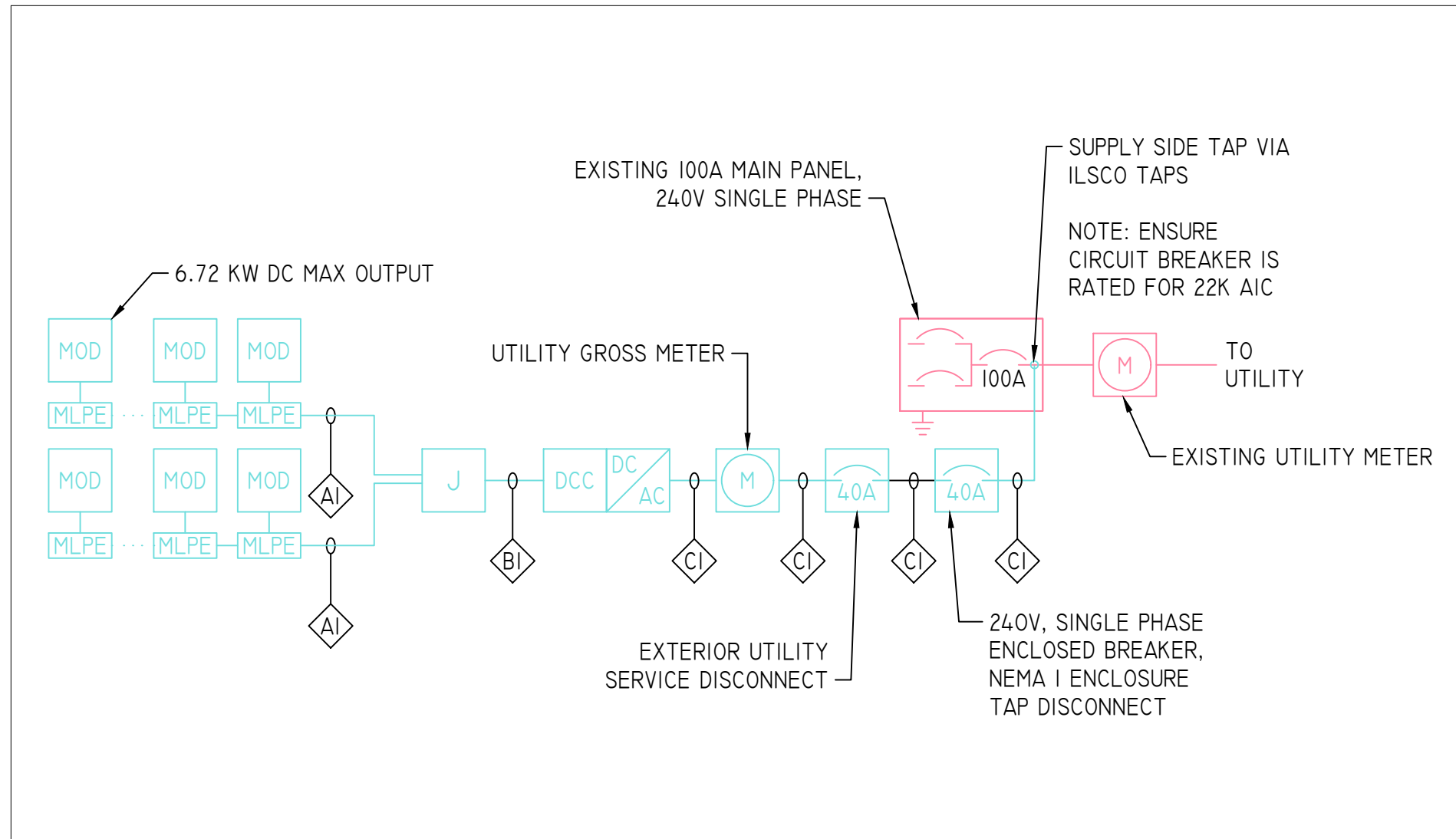
LINE TYPES:

- DEMOLITION
- EXISTING
- NEW

WIRING SCHEDULE								
TAG	DESCRIPTION	SETS	CABLE	INSULATION	CONDUIT	LENGTH	CONDUIT FILL	VOLTAGE DROP
AI	PV ARRAY TO JUNCTION BOX	1	L:(4)#10 AWG G:(1)#6 AWG	PV		40 FT		0.40%
BI	JUNCTION BOX TO INVERTER	1	L:(4)#10 AWG G:(1)#10 AWG	THWN-2	3/4" EMT	50 FT	19.80%	0.50%
CI	INVERTER TO INTERCONNECTION	1	L:(2)#8 AWG N:(1)#10 AWG G:(1)#10 AWG	THWN-2	3/4" EMT	80 FT	21.70%	1.30%

SYMBOLS:

MOD PV MODULE	DCC DC COMBINER AND DC DISCONNECT	60A ENCLOSED CIRCUIT BREAKER	FUSED DISCONNECT SWITCH
MLPE MODULE LEVEL POWER ELECTRONIC / OPTIMIZER	DC/AC PV DC TO AC INVERTER	M POWER METER	NON-FUSED DISCONNECT SWITCH



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ONE LINE AND EQUIPMENT
SPECIFICATIONS

DWG NUMBER:
E001

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