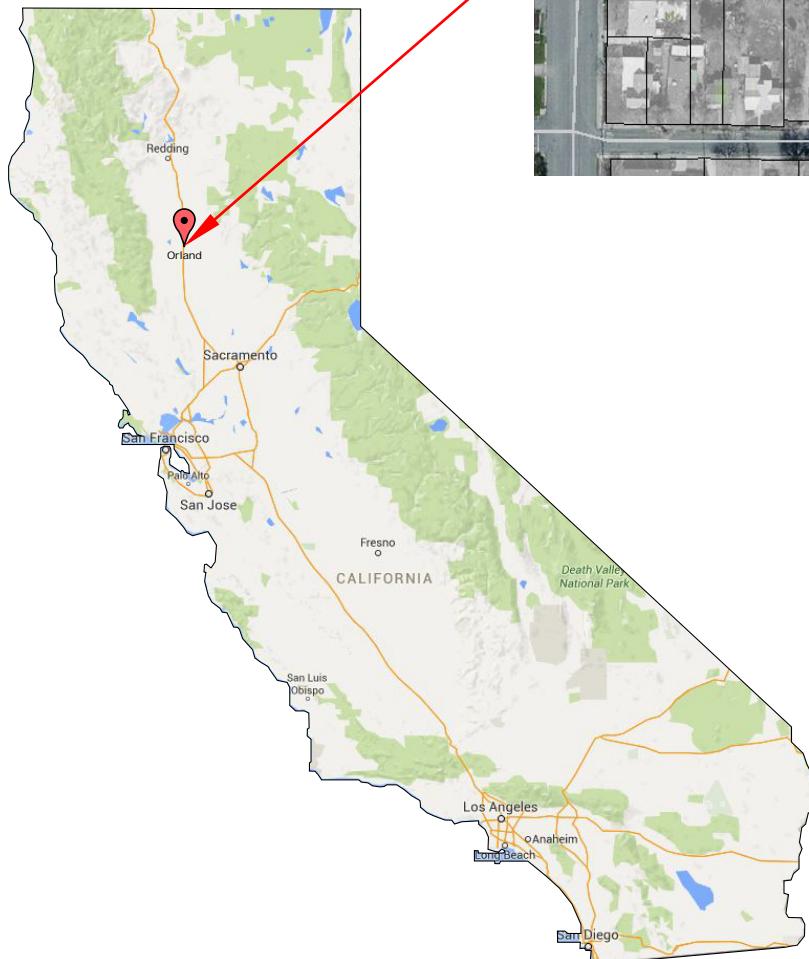


SOLAR PHOTOVOLTAIC SYSTEM

NORTH STATE GROCERY

ORLAND, CA



SITE INFORMATION

Site Latitude	36° 20' N
Occupancy Group	II
Zoning District	C-2
Flood Zone	X
Exposure Category	C

SYSTEM SPECIFICATIONS

Cold Design Temperature	23° F
Max Operating Temperature	131° F
Total # of Inverters	17
Total # of Modules	1,996
TOTAL DC SYSTEM SIZE	578.84 kW DC
Nominal AC Output Power	536 kW AC

GENERAL CONTRACTOR

BRIGHT POWER INC
DBA BPI
PO BOX 10637
NAPA, CA 94581
info@bpi-power.com
PHONE: (707) 252-9990
FAX: (707) 252-9992
WWW.BPI-POWER.COM
LICENSE NUMBER 930054
LICENSE CLASSIFICATION: A, C10

PROPERTY OWNER

XYZ ORLAND LLC
43801 OSGOOD RD.
FREMONT, CA 94539

ELECTRICAL ENGINEER

HIMANSHU BHARTIYA, ME, EE, FPE, LEED AP
SACRAMENTO ENGINEERING CONSULTANTS
10555 OLD PLACERVILLE ROAD
SACRAMENTO, CA 95827
himanshu@saceng.com
PHONE: (916) 368-4468 ext. 105
FAX: (916) 368-4490

STRUCTURAL ENGINEER

JESSYCA COCHRAN, PE
JVC ENGINEERING
303 POST ST
NAPA, CA 94559
jvcstructural@yahoo.com
PHONE: (805) 801-9915

SCOPE OF WORK

THE PROJECT IS TO INSTALL A NEW PHOTOVOLTAIC SYSTEM.
ALL CONSTRUCTION SHALL COMPLY WITH THE CODES ADOPTED BY THE CITY
OF ORLAND, CA AS DESCRIBED IN ORLAND, CA MUNICIPAL CODE 15.02.020
INCLUDING BUT NOT LIMITED TO 2013 CEC & 2013 CBC.

THE SYSTEM CONSISTS OF ROOF MOUNT FIXED TILT SOLAR ARRAYS, FLUSH
MOUNT ON SOLAR SUPPORT STRUCTURES, AND ASSOCIATED POWER
CONDITIONING EQUIPMENT.

THE SYSTEM WILL BE INTERCONNECTED TO AND WILL BE OPERATING IN
PARALLEL WITH THE ELECTRICAL UTILITY GRID PER THE REQUIREMENTS OF
PG&E AND THE 2013 CEC.

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PVO.3	PV SITE PLAN
PVO.4	MODULE LAYOUT OVERVIEW
PVO.5A	ROOF ARRAY DIMENSIONS & INVERTER FOOTPRINTS
PVO.5B	SOLAR STRUCTURES ARRAY DIMENSIONS & INVERTER FOOTPRINTS
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PV1.1	ROOF-ARRAY PV PLAN
PV1.2	SOLAR STRUCTURE PV PLAN
PV1.3	SOLAR STRUCTURE PV PLAN
PV1.4	METER-AREA PLAN
PV2.1A	SINGLE-LINE DIAGRAM
PV2.1B	SINGLE-LINE DIAGRAM
PV2.1C	SINGLE-LINE DIAGRAM
PV2.1D	SINGLE-LINE DIAGRAM
PV3.1	PV DETAILS
PV4.1	PV SIGNAGE
S1.0	GENERAL STRUCTURAL NOTES, SECTION & CONNECTION DETAILS
S2.0	FRAMING PLAN - STRUCTURE 1 PARTIAL CANTILEVER
S3.0	FRAMING PLAN - STRUCTURE 2 PARTIAL CANTILEVER
S4.0	FRAMING PLAN - STRUCTURE 3, 4, 5 DOUBLE CANTILEVER
S5.0	FRAMING PLAN - STRUCTURE 6 PARTIAL CANTILEVER
S6.0	FRAMING PLAN - STRUCTURE 7 PARTIAL CANTILEVER
S7.0	ROOF RACKING DETAILS



NSG1-ORLAND
35 E. WALKER STREET
ORLAND, CA
APN: 041-071-011-0

PVO
TITLE SHEET

DATE: 6-14-16
BY: JB
JOB NO.: C15-700.2

BPI
PO BOX 10637
NAPA, CA 94581
PH: (707)-252-9990

GENERAL NOTES			8.	REFILL AND RESTORE THE WORK AS DIRECTED, DURING CONSTRUCTION AND PRIOR TO PROJECT COMPLETION, TO MAINTAIN ACCEPTABLE SURFACE CONDITIONS.	17.	ALL CONSTRUCTION AND MATERIAL DELIVERY VEHICLES SHALL USE THE <u>SITE CLEARING NOTES (IF APPLICABLE)</u>				
1. ALL CONSTRUCTION SHALL COMPLY WITH THE CODES ADOPTED BY THE CITY OF ORLAND, CA AS DESCRIBED IN ORLAND, CA MUNICIPAL CODE 15.02.020 INCLUDING BUT NOT LIMITED TO 2013 CEC & 2013 CBC.			9.	ALL ADDITIONAL MATERIALS REQUIRED SHALL BE FURNISHED WITHOUT ADDITIONAL COST TO THE OWNER.		DESIGNATED ACCESS AND HAUL ROUTE(S) TO THE CONSTRUCTION SITE. ANY DEVIATION IN ROUTE(S) SHALL BE SUBJECT TO OWNER'S APPROVAL. THE ROUTE(S) SHALL BE MONITORED DURING THE PROJECT FOR ANY DAMAGE AND DEBRIS ATTRIBUTABLE TO THE PROJECT VEHICLES. ALL DAMAGE AND DEBRIS AS A RESULT OF THE PROJECT SHALL BE REPAIRED TO EXISTING STANDARDS.	1.	PROTECT FROM DAMAGE AND PRESERVE TREES, SHRUBS, AND OTHER PLANTS OUTSIDE THE LIMITS OF WORK AND WITHIN THE LIMIT OF THE WORK WHICH ARE DESIGNATED TO REMAIN UNDISTURBED.		
2. BEFORE INITIATING ANY WORK, THE CONTRACTOR SHALL NOTIFY ENGINEER OF RECORDS OF ANY DISCREPANCIES IDENTIFIED ON EXISTING CONDITIONS, STRUCTURE, ELECTRICAL, ETC.			10.	UNLESS SHOWN OR SPECIFIED OTHERWISE, ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE IBC, AND ANY OTHER CODES, REQUIREMENTS OR STANDARDS REQUIRED BY THE INSPECTING AGENCY AND AUTHORITIES HAVING JURISDICTION (AHJ).	18.	CONDUCT OPERATION ENTIRELY WITHIN THE PROJECT AREAS INDICATED IN THESE DRAWINGS.	2.	REMOVE OBSTRUCTIONS, TREES, SHRUBS, GRASS AND OTHER VEGETATION TO PERMIT INSTALLATION OF NEW CONSTRUCTION. REMOVAL INCLUDES DIGGING OUT STUMPS AND OBSTRUCTIONS AND GRUBBING ROOTS.		
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS, OSHA REQUIREMENTS AND SAFETY MEASUREMENTS ON SITE.			11.	ANY WORK BEGUN PRIOR TO ATTAINING APPROVAL AND SIGNATURES OF AHJ WILL BE AT CONTRACTOR'S RISK, AND WILL ONLY BE ALLOWED IF PRE-APPROVED BY PROJECT OWNER.	19.	WHERE ANY WORK IS BEING DONE IN AN OFF-SITE EASEMENT, NOTIFY THE PROPERTY OWNER TWO WORKING DAYS PRIOR TO COMMENCING WORK WITHIN SAID EASEMENT.	3.	FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SOIL MATERIAL APPROVED BY OWNER, UNLESS FURTHER EXCAVATION OR EARTHWORK IS INDICATED.		
4. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL MANUFACTURER'S OR ENGINEER'S DIRECTIONS AND INSTRUCTIONS.			12.	COORDINATE OPERATIONS WITH ALL REQUIRED MATERIALS TESTING SERVICES AS REQUIRED BY THESE DRAWINGS. EACH PHASE OF CONSTRUCTION SHALL BE TESTED AND APPROVED BY AHJ AS REQUIRED PRIOR TO PROCEEDING TO SUBSEQUENT PHASES.	20.	DO NOT DISPOSE OF CHLORINATED OR OTHER CHEMICALLY TREATED OR POLLUTED WATER INTO ANY DRAINAGE SYSTEM OR TO AREA SOILS.	4.	STRIP TOPSOIL WHERE REQUIRED. STOCKPILE IN AREA APPROVED BY OWNER.		
5. CONTRACTOR IS ADVISED THAT ALL DRAWINGS, COMPONENT MANUALS, ESPECIALLY INVERTER MANUALS, ARE TO BE READ AND UNDERSTOOD PRIOR TO INSTALLATION OR ENERGIZING OF ANY EQUIPMENT.			13.	NOTIFY ALL UTILITY COMPANIES INVOLVED IN THE DEVELOPMENT PRIOR TO BEGINNING OF WORK.		ELECTRICAL NOTES	5.	WITH OWNER'S APPROVAL, REMOVE EXISTING ABOVE AND BELOW GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.		
6. CONTRACTOR IS RESPONSIBLE FOR SELECTING AND PURCHASING EQUIPMENT THAT WILL LAST THE LIFETIME OF THE PV SYSTEM; ALL ENCLOSURES, CONDUITS, STRAPS, PAINTED METAL SURFACES, CONCRETE, GROUNDING EQUIPMENT AND OTHER EQUIPMENT AND OTHER PRODUCTS SHALL BE SELECTED TO LAST THE LIFECYCLE OF THE PHOTOVOLTAIC SYSTEM.			14.	COMPLY WITH ALL CURRENTLY APPLICABLE SAFETY LAWS OF ALL JURISDICTIONAL BODIES. PROVIDE AND MAINTAIN ALL BARRICADES, SAFETY DEVICES, AND CONTROL OF TRAFFIC WITHIN AND AROUND THE CONSTRUCTION AREA. FOR ALL TRENCH EXCAVATION 5 FEET OR MORE IN DEPTH, OBTAIN PERMITS PRIOR TO BEGINNING ANY EXCAVATION.	2.	SOLAR MODULES ARE ENERGIZED WHEN EXPOSED TO LIGHT. THE LINE AND LOAD TERMINALS ON THE DC DISCONNECTS MAY BE ENERGIZED IN THE OPEN POSITION. SWITCH IS TO BE LABELED TO COMPLY WITH ARTICLE 690.17 OF THE NEC.	6.	DISPOSE OF REMOVED TREES, BRUSH, STUMPS, ROOTS AND ORGANIC DEBRIS IN A LEGAL MANNER OFF THE SITE.		
7. WHENEVER ANY SURFACE IMPROVEMENTS SUCH AS PAVEMENT, CURBING, PEDESTRIAN WALKS, FENCING, OR TURFING HAVE BEEN REMOVED, DAMAGED, OR OTHERWISE DISTURBED BY THE CONTRACTOR'S OPERATIONS; THEY SHALL BE REPAIRED OR REPLACED TO THE PRE-EXISTING CONDITION. THE REPAIRS ARE TO MEET THE OWNER'S SATISFACTION.			15.	Maintain continuous temporary traffic barricades, with operable flashing devices, spaced at intervals of not to exceed 50 feet whenever the work area is adjacent to an existing traffic lane and there is a pavement cut, trench, or ditch which is over 2 inches in depth, or if the traffic lane used by vehicles is not paved. If the cut, trench or ditch is more than 10 feet from a traffic lane, then the barricade spacing may be greater, provided that it does not exceed 200 feet.	3.	PHOTOVOLTAIC SYSTEM SHALL BE CLEARLY MARKED IN ACCORDANCE WITH THE NEC LABELING REQUIREMENTS ARTICLE 690.	7.	RECORD DRAWINGS		
8. CONTRACTOR AGREES THAT, IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF THE CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY.			16.	ALL PG&E-REQUIRED EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH CURRENT PG&E GREENBOOK STANDARDS.	5.	THE ELECTRICAL CONTRACTOR IS REQUIRED TO USE PERMANENTLY COLOR CODED INSULATION AND PROVIDE A COLOR CODE TO IDENTIFY DC AND AC CIRCUITS AND IN ACCORDANCE WITH NEC.	8.	KEEP UP-TO-DATE AND ACCURATE A COMPLETE RECORD SET OF PRINTS FOR THE CONTRACT DRAWINGS SHOWING EVERY CHANGE FROM THE ORIGINAL DRAWINGS MADE DURING THE COURSE OF CONSTRUCTION INCLUDING FINAL LOCATION, ELEVATION, SIZES, MATERIALS, AND DESCRIPTION OF ALL WORK.		
9. IN EVERY PULL BOX, TERMINAL BOX, AND AT ALL PLACES WHERE WIRES MAY NOT BE READILY IDENTIFIED BY NAMEPLATE MARKINGS ON THE EQUIPMENT TO WHICH THEY CONNECT, IDENTIFY EACH CIRCUIT WITH A PLASTIC LABEL OR TAG FOR NUMBER, POLARITY, OR PHASE.			17.		6.	RECORDS SHALL BE "REDLINED" ON A SET OF CONSTRUCTION PLAN DRAWINGS AT THE SITE. A COMPLETE SET OF CORRECTED AND COMPLETED RECORD DRAWING PRINTS SHALL BE SUBMITTED TO OWNER PRIOR TO SUBSTANTIAL COMPLETION AT SITE.				
PV MODULE INFO		MFG Model	ET Solar	ET-M660290WB/WW 290W						
		STC Rating	290 W	29.12 V						
		Vmp	9.03 A	39.68 V						
		Imp	9.59 A	-0.31 %/°C						
		Voc								
		Isc								
		Voc temp. coeff.								
		Isc temp. coeff.		0.02 %/°C						

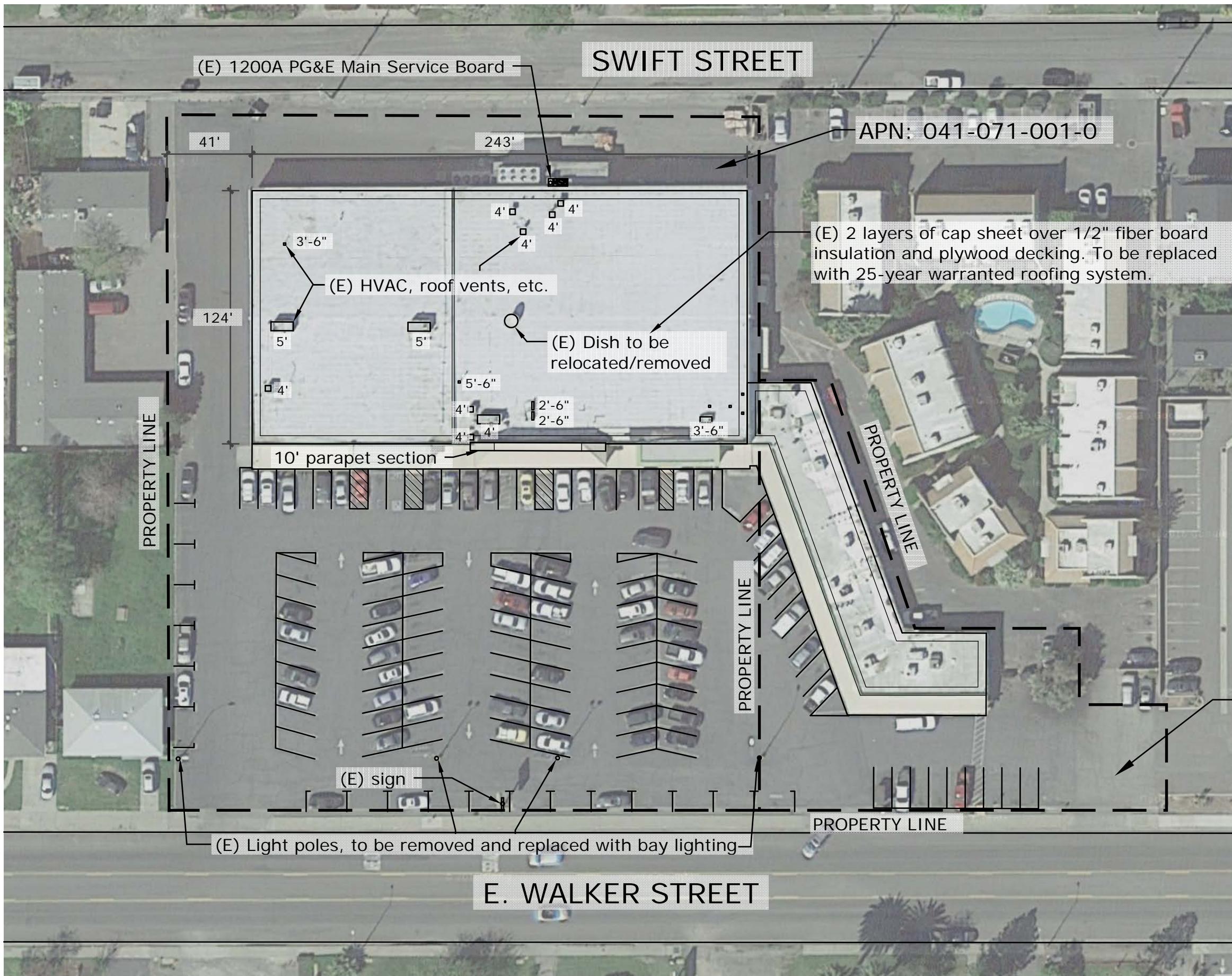
ROOF			SOLAR SUPPORT STRUCTURES										
Inverters	Inverter #1-#3	Inverter #4-#6	Inverter #7-#8	Inverter #9	Inverter #10	Inverter #11	Inverter #12	Inverter #13	Inverter #14	Inverter #15	Inverter #16	Inverter #17	
Manufacturer	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria	Solectria
Model	PVI-36TL	PVI-36TL	PVI-28TL	PVI-36TL	PVI-36TL	PVI-23TL	PVI-36TL	PVI-23TL	PVI-36TL	PVI-23TL	PVI-23TL	PVI-28TL	
Voltage AC	480	480	480	480	480	480	480	480	480	480	480	480	
Nominal AC Output Power	36 kW	36 kW	28 kW	36 kW	36 kW	23 kW	36 kW	23 kW	36 kW	23 kW	23 kW	28 kW	
CEC efficiency	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	98.0%	
Number of Strings/inverter	7	6	5	3 2	6	4	6	4	6	4	3	3 2	
Number of Panels/string	22	22	22	22 21	22	21	22	21	22	21	20	20 21	
Number of Panels/inverter	154	132	110	108	132	84	132	84	132	84	60	102	
STC DC subsystem size	133.98 kW	114.84 kW	63.80 kW	31.32 kW	38.28 kW	24.36 kW	38.28 kW	24.36 kW	38.28 kW	24.36 kW	17.40 kW	29.58 kW	
PV Module Azimuth	180°	180°	180°	270° 270°	270°	270°	270°	270°	270°	270°	230°	180° 180°	
PV Module Tilt	10°	10°	5°	5° 5°	5°	5°	5°	5°	5°	5°	5°	5° 5°	
Racking MFG	Renusol	Renusol	Skyline	Skyline	Skyline	Skyline	Skyline	Skyline	Skyline	Skyline	Skyline	Skyline	
Array Location	Roof	Roof	Structure 1	Structure 2	Structure 3	Structure 3	Structure 4	Structure 4	Structure 5	Structure 5	Structure 6	Structure 7	



NSG1-ORLAND
35 E. WALKER STREET
ORLAND, CA
APN: 041-071-011-0
PVO.1
PROJECT DETAILS
DATE: 6-14-16
BY: JB
JOB NO.: C15-700.2

BPI
PO BOX 10637
NAPA, CA 94581
PH: (707)-252-9990

Zoning District:	C-2
Front Setbacks:	0'
Side & Rear Setbacks:	0'



Scale: 1" = 50'

00 50 100



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35 E. WALKER STREET
ORLAND, CA
APN: 041-071-001-0

PVO.2
PLOT PLAN

DATE: 6-14-16

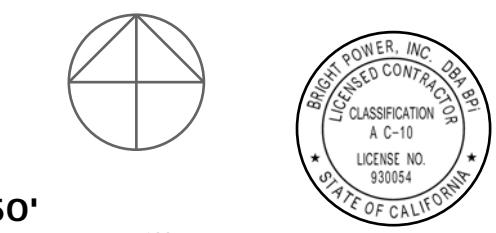
BY: JB

JOB NO.: C15-700.2

BPI
PO BOX 10637
NAPA, CA 94581
PH: (707)-252-9990



Zoning District:	C-2
Front Setbacks:	0'
Side & Rear Setbacks:	0'



NSG1-ORLAND
35 E. WALKER STREET
ORLAND, CA
APN: 041-071-011-0

PVO.3
PV SITE PLAN

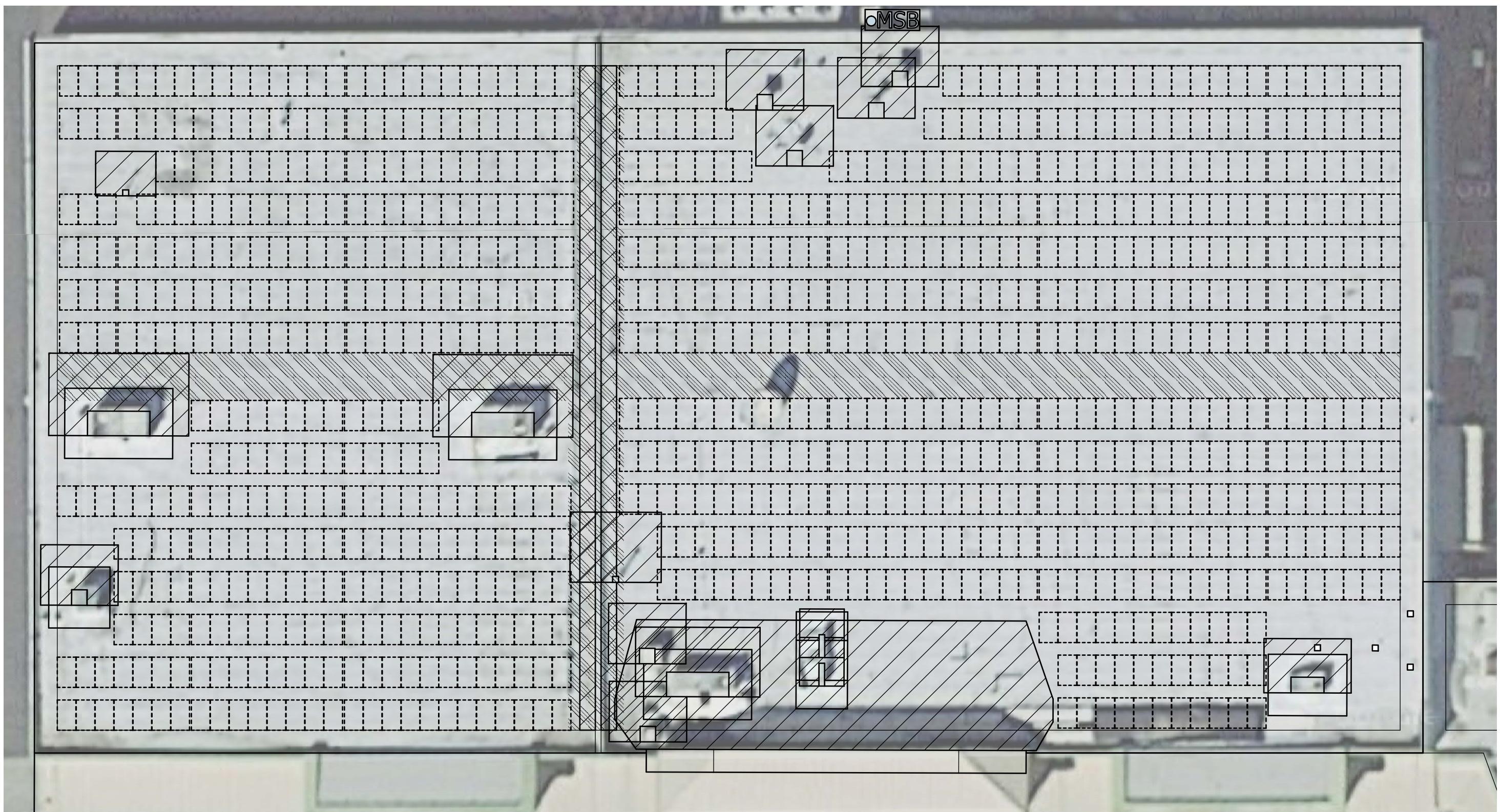
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BY: JB

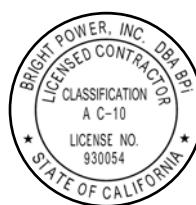
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- : Shading Setback
- : 4' Equipment Access Perimeter
- : Fire Access Walkways



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ORLAND, CA
APN: 041-071-011-0

PVO.4
MODULE LAYOUT
OVERVIEW
DATE: 6-14-16
BY: JB
JOB NO.: C15-700.2

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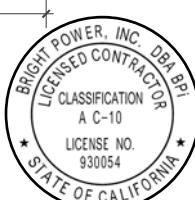
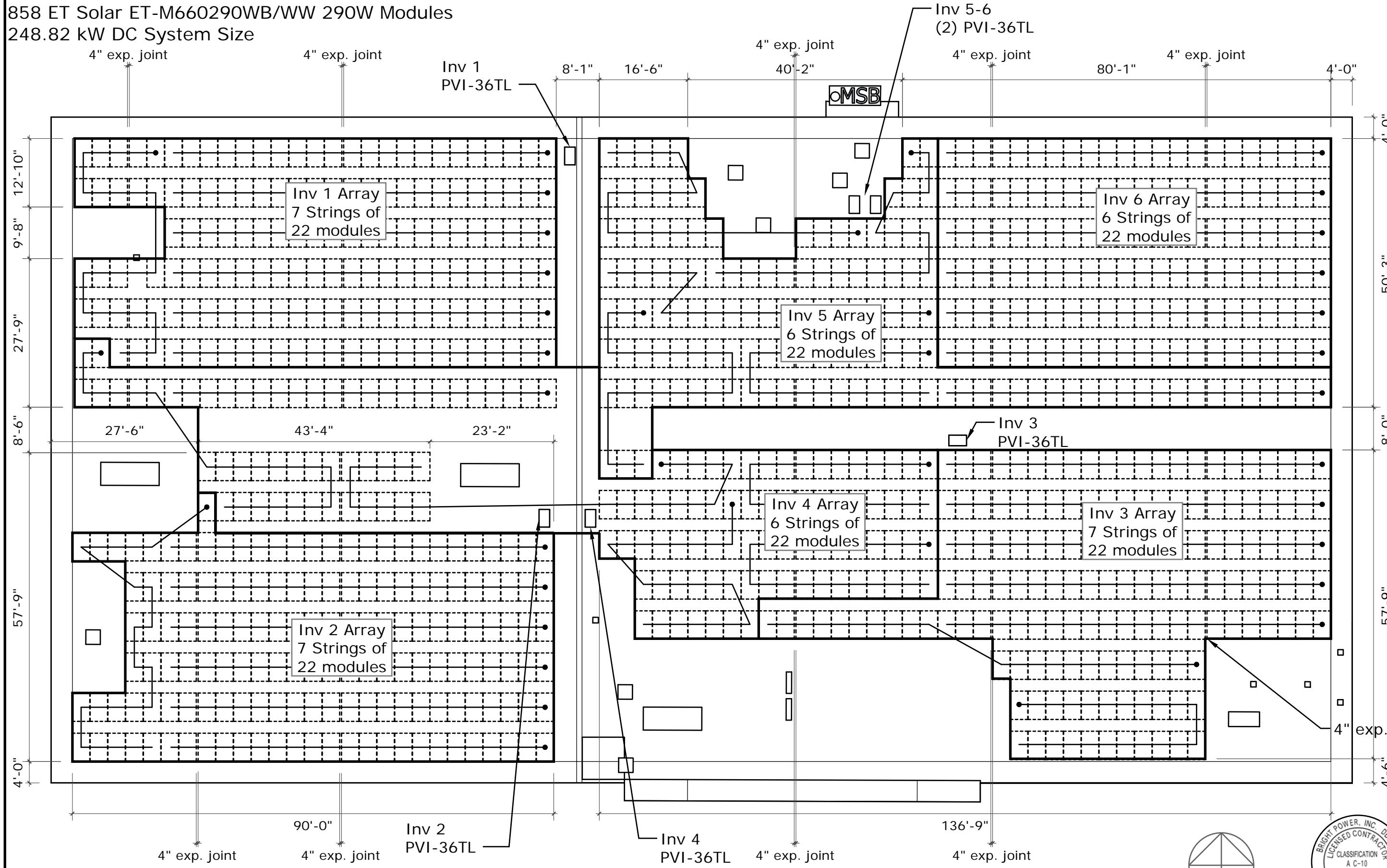
BY

Roof Array Configuration:

6 Solectria PVI-36TL Inverters

858 ET Solar ET-M660290WB/WW 290W Modules

248.82 kW DC System Size



NSG1-ORLAND
35 E. WALKER STREET
ORLAND, CA
MAY 11, 2021 2021

PVO.5A
ROOF ARRAY
DIMENSIONS &
INVERTER
FOOTPRINTS

Solar Structure Array Configuration:

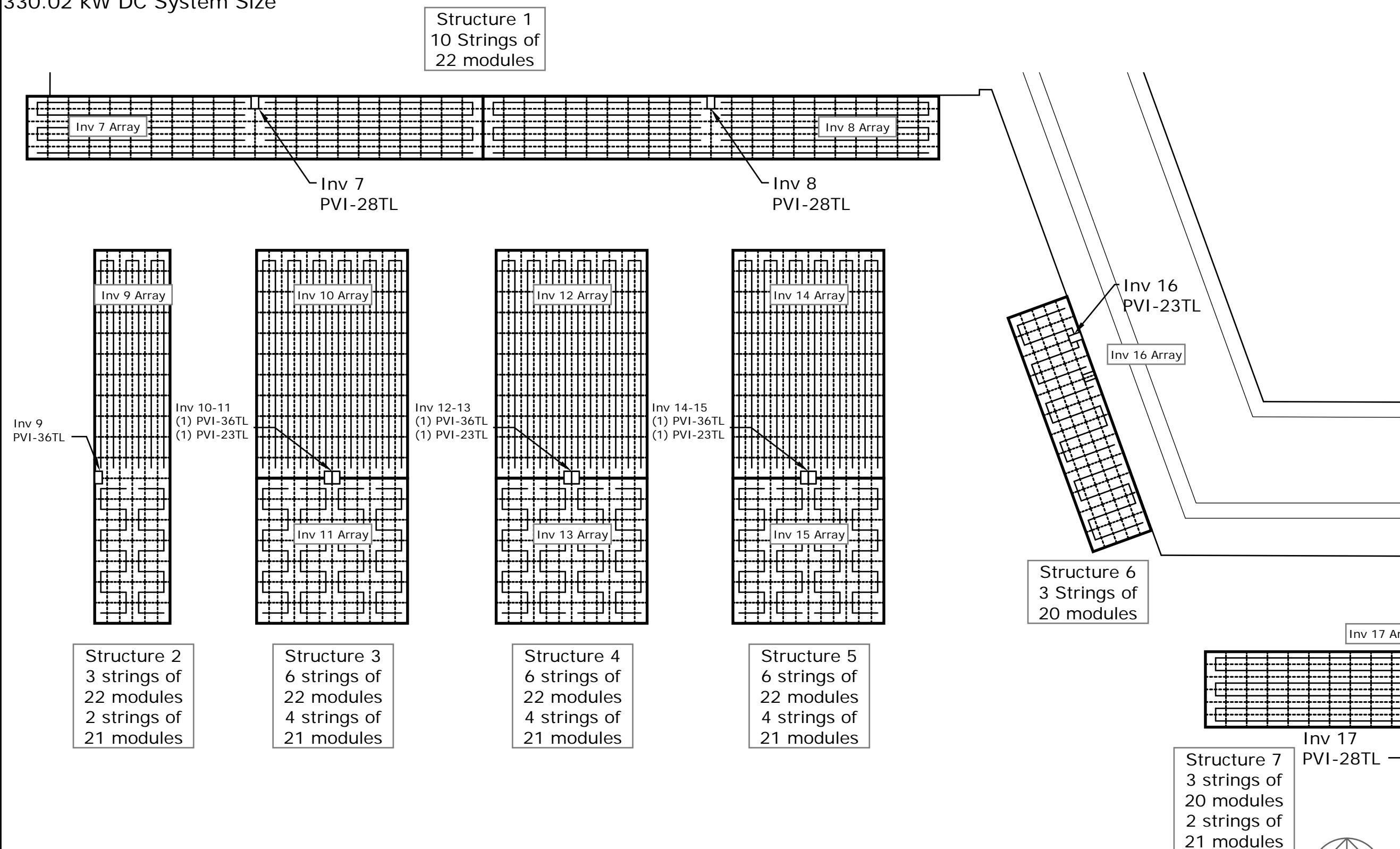
4 Solectria PVI-36TL Inverters

3 Solectria PVI-28TL Inverters

4 Solectria PVI-23TL Inverters

1,138 ET Solar ET-M660290WB/WW 290W Modules

330.02 kW DC System Size



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35 E. WALKER STREET
ORLAND, CA
APN: 041-071-011-0

PVO.5B
SOLAR STRUCTURE
STRINGING
DIAGRAM &
INVERTER
FOOTPRINTS
DATE: 6-14-16
BY: JB
JOB NO.: C15-700.2

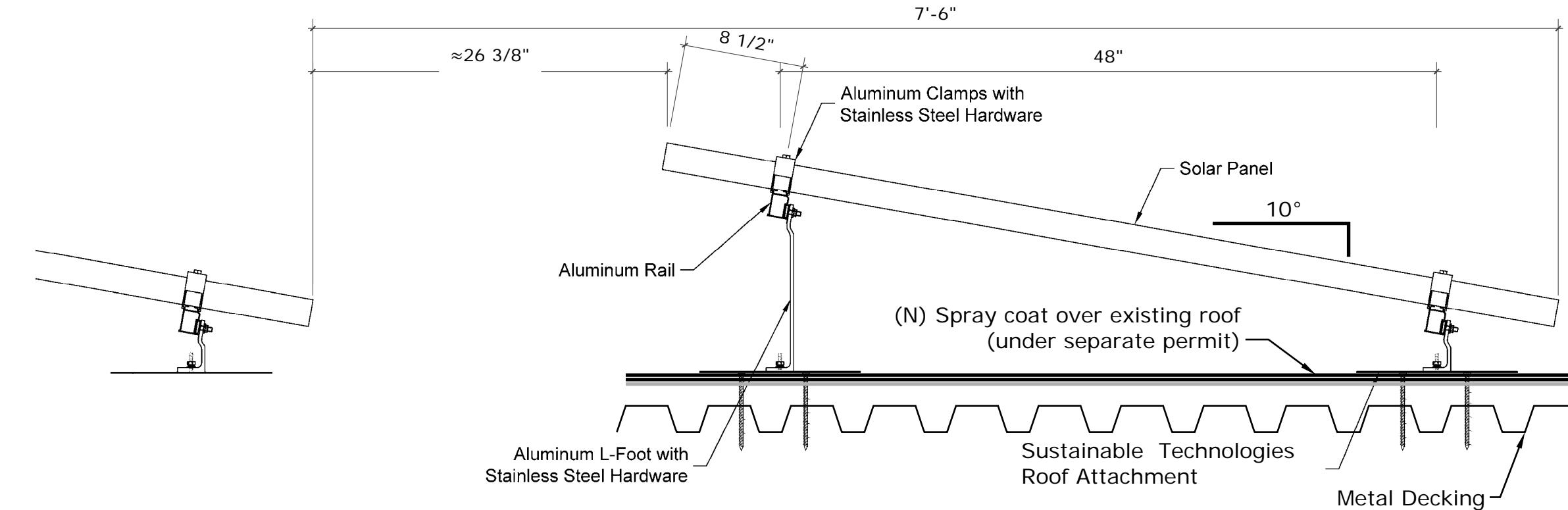


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PH: (707)-252-9990	
REV. NO	REV. DATE

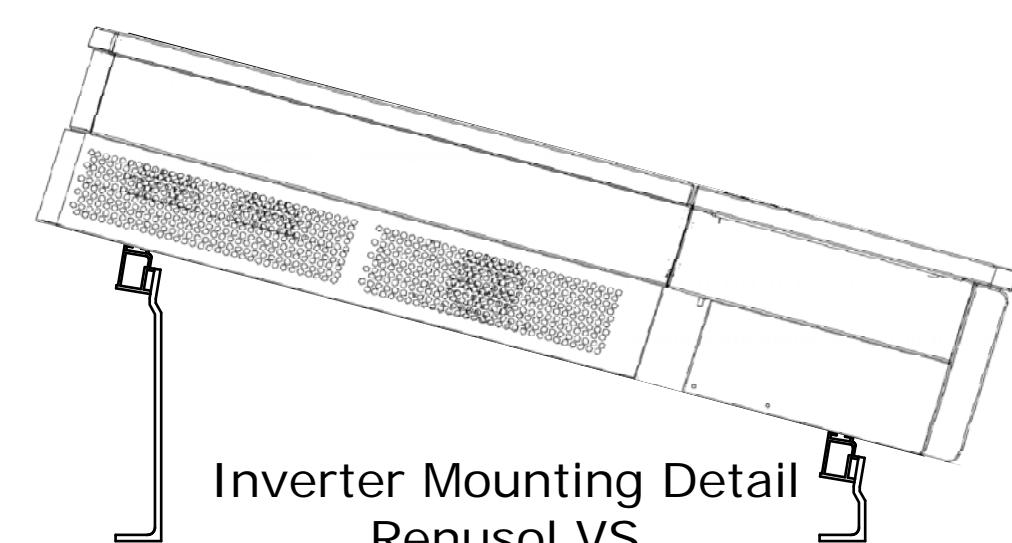
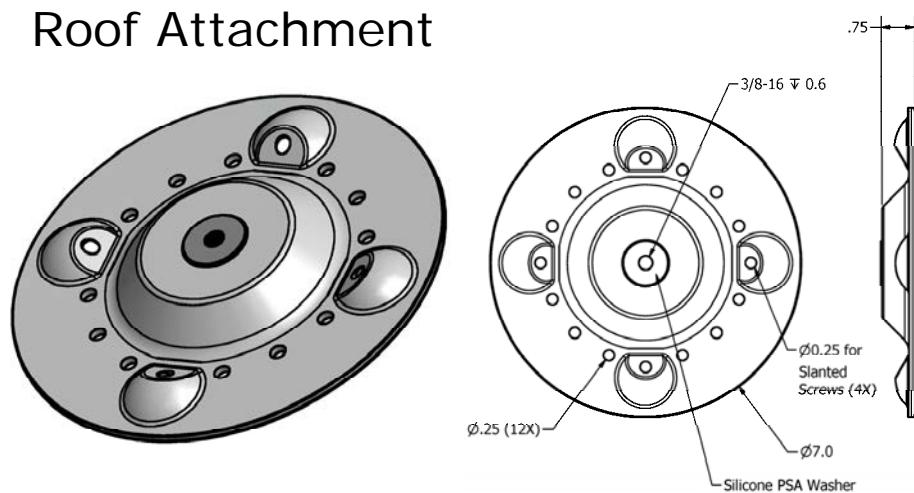
BY

ROOF RACKING DETAIL

Renusol VS Tilt System



Sustainable Technologies
Roof Attachment



NSC1-ORLAND
35 E. WALKER STREET
ORLAND, CA
APN: 041-071-011-0

S7.0
ROOF RACKING
DETAILS
DATE: 6-14-16
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BY