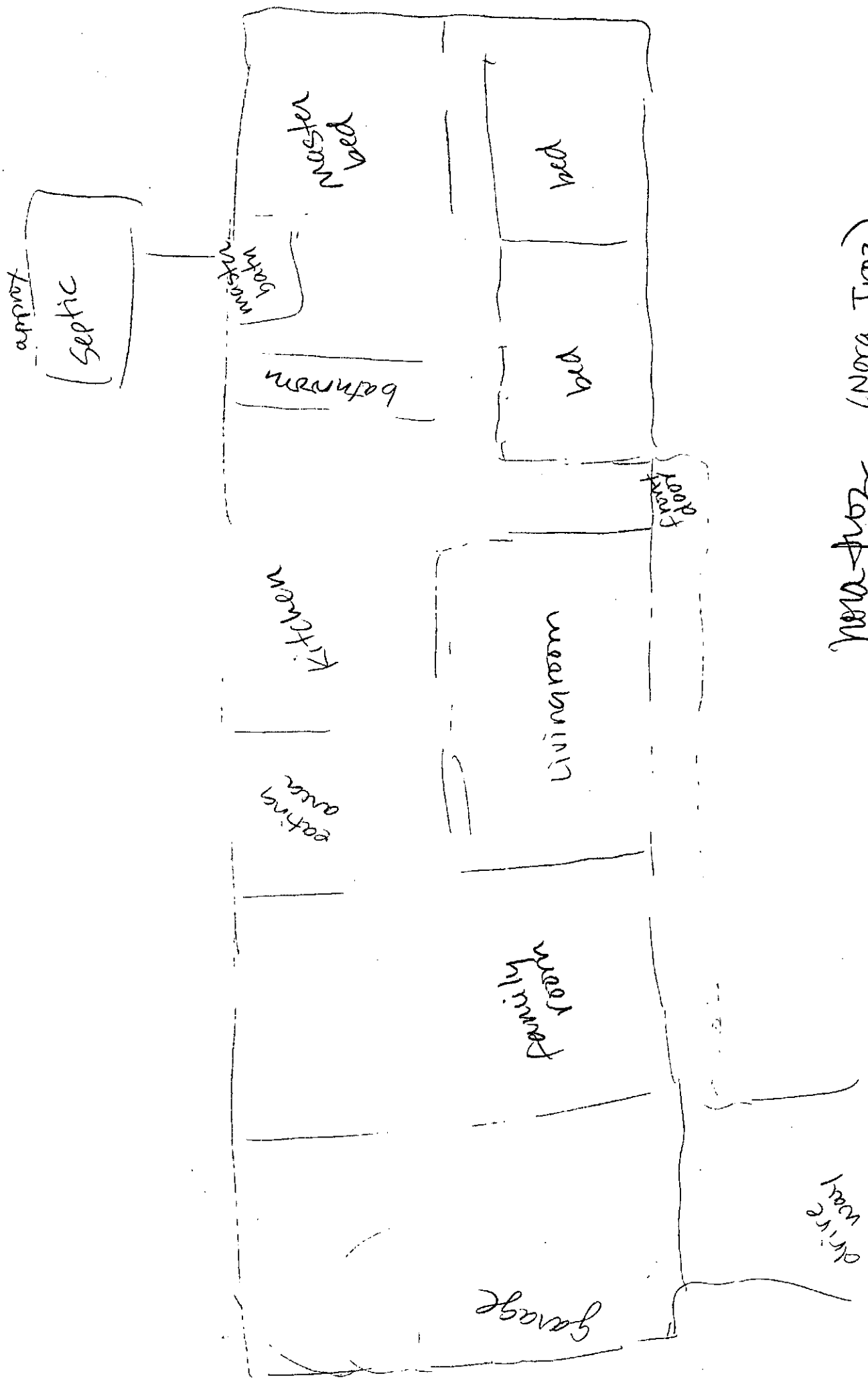


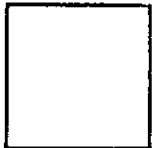
4696 Balsam St.



Nora Iroz



Type



Plans

0014 - 5195

Permit Number

8901

Street Number

Barnett Valley Rd

Street Name

TW1

Community Code

016 - 160 - 066

APN

COUNTY OF SONOMA - PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA 95403 (707) 565-1900 FAX (707) 565-1103

Please Print

Your Name: JASON Almirol (Alter Systems)

Date

Applied: 10/29/14

INFORMATION WITHIN HEAVY LINE TO BE COMPLETED BY APPLICANT

* SITE LOCATION INFORMATION - PRINT CLEARLY

Site Address: 8901 Barnett Valley Rd.	City: SEBASTOPOL	ZIP: 95472
Cross-Street: KENNEDY & SANDERS OFF-160-066	Project Phone #: (510) 868-0564	Project Fax #: ()
Directions:	Email address: jasonalmirol@gmail.com	Unit #
Describe Project: SOLAR PV Roof Mounted 7.1KW 26panel MICRO	Living Area	Contract Price: \$33,500
	Garage	
	Decks	

OWNER NAME AND ADDRESS

Name: DR. Rob Oliver
Mailing Address: 8901 Barnett Valley Rd.
City: SEBASTOPOL State: CA ZIP: 95472
Day Ph: (707) 8035207 Fax: ()

APPLICANT NAME AND ADDRESS

Name: JASON Almirol
Mailing Address: 373 Springdale St.
City: SEBASTOPOL State: CA ZIP: 95472
Day Ph: (707) 324-9444 Fax: ()

CONTRACTOR INFORMATION

Company Name: Alter Systems
Address: 2313 4th St.
City: Berkeley State: CA ZIP: 94710
Day Ph: (510) 868-0564 Fax: ()

OTHER PERSONS (ARCHITECT, ENGINEER, ETC.)

Name:
Address:
City:
Day Ph: () Fax: ()

WORKER'S COMPENSATION DECLARATION

I hereby affirm under penalty of perjury one of the following declarations:
☐ I have and will maintain a certificate of consent to self-insure for worker's compensation, as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.
☐ I have and will maintain worker's compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My worker's compensation insurance carrier and policy number are:

Carrier: STATE COMPENSATION INSURANCE FUND
 Policy No: 9056935

(This section need not be completed if the permit is for one hundred dollars (\$100) or less).
☐ I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the worker's compensation laws of California, and agree that if I should become subject to the worker's compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

Exp. Date: 06/15/15 Applicant: Alter Systems

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS (\$100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

OWNER-BUILDER DECLARATION

I hereby affirm under penalty of perjury that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code: Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractor's License Law (Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars (\$500).):

- ☐ I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044 Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his or her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he or she did not build or improve for the purpose of sale.).
- ☐ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law.).
- ☐ I am exempt under Sec. _____, B & P.C. for this reason _____

By my signature below I acknowledge that, except for my personal residence in which I must have resided for at least one year prior to completion of the improvements covered by this permit, I cannot legally sell a structure that I have built as an owner-builder if it has not been constructed in its entirety by licensed contractors. I understand that a copy of the applicable law, Section 7044 of the Business and Professions Code, is available upon request when this application is submitted or at the following website: <http://www.leginfo.ca.gov/calaw.html>.

Date: _____ Signature of Property Owner or Authorized Agent

LICENSED CONTRACTOR'S DECLARATION

I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

Lic. Class: C46 Lic. No: 910719
 Exp. Date: 02/29/16 Contractor: Alter Systems

ASBESTOS DECLARATION

Written asbestos notification pursuant to Part 61 of Title 40 of the Code of Federal Regulations is required when asbestos exists in buildings, or portions thereof, undergoing demolition. I hereby declare that demolition authorized by this permit is from construction that () does () does not contain asbestos, or that () no demolition is authorized by this permit.

I certify that I have read this application and affirm under penalty of perjury that the above information is correct. I agree to comply with all local Ordinances and State laws relating to building construction. I hereby authorize representatives of the County of Sonoma to enter upon the above-mentioned property for inspection purposes. If, after making the Certificate of Exemption for the Worker's Compensation provision of the Labor Code I should become subject to such provisions, I will forthwith comply. In the event I do not comply with the Workman's Compensation law, this permit shall be deemed revoked.

PERMITTEE SIGNATURE

2313 4th St. Berkeley CA 94710

☒ Contractor ☐ Owner ☐ Other Licensed Professional

THIS PERMIT SHALL EXPIRE IN THREE(3) YEARS FROM DATE FEES ARE PAID UNLESS OTHERWISE NOTED BY CODE ENFORCEMENT

CONSTRUCTION LENDING DECLARATION

I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued. (Sec. 3097, Civ. C.).

Lenders Name

Lenders Address

FOR DEPARTMENT USE

Zoning	File No.	Acres
Existing Use/Structures		
Proposed Use/Structures		
Zoning Min. Yard Requirements:	Front	Left
	Right	Back
NOTE: Fire Safe Standards require all parcels greater than 1 Acre to have a min. 30' setback unless mitigated. ☐ Mitigation Required ☐ Address subject to change		
Approval for Permit Issuance:	Approval for Occupancy:	
By: _____	By: _____	
Date: _____	Date: _____	
Conditions:		

Sewer Connection:	☐ Available	☐ Fees Paid
Approved by:	Date:	

Road Encroachment:	☐ Fees Paid
Approved by:	Date:

Septic System Permit/Clearance #
Approved by:
Date:

Flood Zone:	☐ Yes ☒ No	100 Year Flood Elevation:
-------------	---	---------------------------

Site Review
Drainage Review:
Approved by:
Date:

Fire:
Approved by:
Date:

Code Enforcement Violation	☐ Yes ☒ No	Violation #
This permit is limited to _____ days.		

Work Authorized: roof mounted PV system

☒ Plans Approved	☐ Post FIRM	☐ Alquist Priolo Report Available
☐ No Plans Subject to Field Inspection	☐ Pre FIRM	☐ Geotechnical report Available
Plancheck Cleared By: _____	Date: 10/29/14	Type of Construction: 415
Permit Search for Landmarks: _____	Date: 10-29-14	Occupancy: 03
		No. of Stories: _____
		No. of Bedrooms: _____
		Auto. Fire Sprinklers Req'd: _____
		No. of Units: _____
		Certificate of Occupancy: _____

PAYMENT REC'D

OCT 29 2014

PERMIT AND RESOURCE MANAGEMENT DEPARTMENT
 COUNTY OF SONOMA

Distribution: White - File Canary - Applicant Blue - Assessor Cardstock - Inspector

JOB ADDRESS:

8901 Barnett Valley Rd. TWT

PERMIT NUMBER:

B1814.5195

INSPECTION AREA:

7

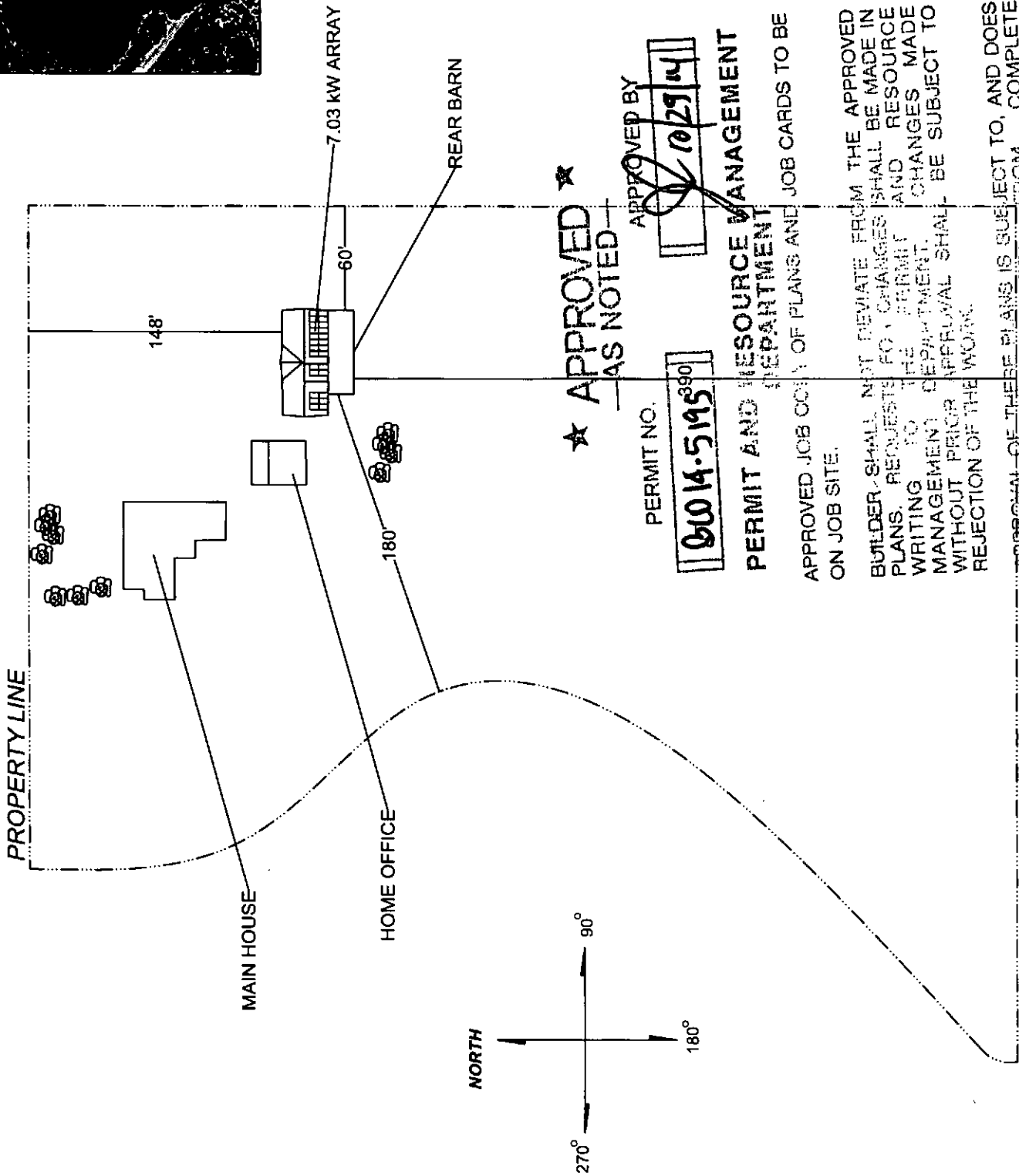
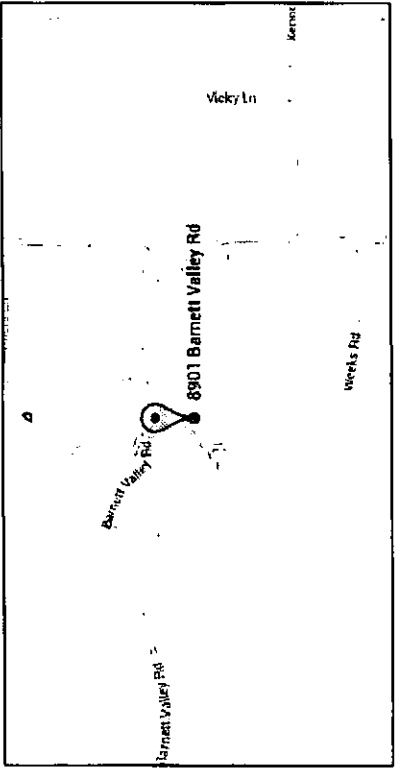
131) SPECIAL INSPECTION REQUIRED		☐ YES	☐ NO	IF YES, SEE ADDITIONAL SHEET	
INSPECTION RECORD		DATE	NAME	REMARKS	
101)	ROUGH GRADING				
103)	FOUNDATION				
	FORMS/SETBACK				
	FOOTING				
	WALLS				
106)	UFER GROUND #				
104)	CAISSONS/PIERS				
105)	SLAB				
107)	UNDERGROUND UTILITIES				
110)	MASONRY				
109)	RETAINING WALLS				
113)	FIREPLACE				
	FOOTING				
	HEARTH/PROTECTION				
	THROAT				
114)	CHIMNEY				
120)	UNDERFLOOR/UNDERSLAB				
115)	HYDRONICS				
116)	U/F ELECTRICAL				
117)	U/F MECHANICAL				
118)	U/F PLUMBING				
119)	U/F FRAMING				
139)	U/F INSULATION				
126)	SHEAR WALLS				
	☐ INTERIOR		☐ EXTERIOR		
127)	DIAPHRAGMS				
	☐ ROOF		☐ FLOOR		
134)	SIDING/SHEATHING				
125)	HOLD DOWNS				
132)	CLOSE-IN				
122)	ROUGH ELECTRICAL				
123)	ROUGH MECHANICAL				
124)	ROUGH PLUMBING				
128)	ROUGH FRAME				
160)	SMOKE DETECTORS				
139)	INSULATION				
142)	WALLBOARD				
143)	FIREWALLS				
135)	STUCCO/PLASTER				
	☐ LATH		☐ SCRATCH		
137)	ROOFING				
130)	TUB/SHOWER PAN				
162)	FIRE DAMPERS/DOORS				
164)	SUSPENDED CEILING				
	☐ ROUGH ELEC.		☐ ROUGH MECH.		
165)	EXITING - RAMPS/STAIRS				
163)	HANDRAILS/GUARDRAILS				
	CORRIDORS/DOORS				
166)	ACCESSIBILITY COMPLIANCE			650)	SUSMP INSPECTION
144)	WATER TANKS			651)	NPDES EROSION COMPLIANCE
	☐ SLAB		☐ WALLS	652)	NPDES SEDIMENT COMPLIANCE
170)	TEMPORARY OCCUPANCY			653)	NPDES DOCS/SWPPP
171)	TEMPORARY ELECTRICAL			FIRE INSPECTION REQUIRED	
172)	TEMPORARY GAS			☐ Yes	☐ No
174)	ELECTRIC METER AUTHORIZATION			759)	KNOX BOX
152)	PANEL BOARDS/SERVICE			760)	PROPANE TANK HOLD DOWNS
189)	SEPTIC ELECTRIC FINAL			770)	SPRINKLER FINAL
175)	GAS METER AUTHORIZATION			771)	ABOVEGROUND HYDROSTATIC
153)	GAS PRESSURE TEST			772)	UNDERGROUND HYDROSTATIC
	HOUSE			773)	UNDERGROUND FLUSH
	YARD			774)	THRUST BLOCKS
190)	MANUF. HOME FOUNDATION			775)	PIPE WELD
191)	MANUF. HOME INSTALLATION			776)	HYDRANTS/APPLIANCES
	CONTINUITY			777)	PUMP ACCEPTANCE
	STAIRS/SKIRTS			778)	WATER SUPPLY/TANK
	RIDGE BOLTING			779)	ALARM SYSTEM
193)	MANUF. HOME COND. FINAL			780)	HOOD & DUCT SYSTEM
	SWIMMING POOLS			781)	ABOVEGROUND TANK/DISPENSER
194)	PRE-GUNITE			198)	FIRE FINAL
195)	PRE-DECK			CLEARANCES:	
196)	PRE-PLASTER/FENCE			FIRE	☐ Local
197)	VINYL/FIBERGLASS POOL EXCAVATION				☐ County
102)	GRADING FINAL	11-10-14	AF	HEALTH DEPARTMENT	
176)	ELECTRICAL FINAL			ZONING	
177)	MECHANICAL FINAL			SANITATION	
178)	PLUMBING FINAL				
199)	FINAL	11-10-14	AF	PLAN RETENTION REQUIRED?	
OCCUPANCY (OK TO OCCUPY)				☐ Yes	☐ No

PERMIT # B1414.5195

OVERHEAD VIEW



VICINITY MAP



SYSTEM SUMMARY

- THIS IS A 7.02 KW PHOTOVOLTAIC SYSTEM USING (26) SUNEDISON 270 WATT SOLAR PV MODULES
- (26) ENPHASE ENERGY MICRO-INVERTER (240V)
- ARRAY IS FLUSH MOUNTED USING UNIRAC SM RACKING SYSTEM
- ROOF AND ARRAY TILT: 32° & 12°
- ROOF MATERIAL: COMPOSITE SINGLE
- ROOF FRAMING: 2X6" @ 16" O.C., 15' MAX. SPANS
- EAVE: 16"
- ARRAY AZIMUTH: 180°
- LOADING: ARRAY 1: 3.35 LBS./SQ.FT.
- ARRAY MAX. HEIGHT FROM ROOF PLANE: <10"

- ALL CONSTRUCTION WORK SHALL COMPLY WITH CALIFORNIA CODE OF REGULATIONS TITLE 24, INCLUDING: 2013 BUILDING CODE, 2013 RESIDENTIAL BUILDING CODE, 2013 ELECTRICAL CODE

SHEET INDEX

1. SITE PLAN
2. PV ARRAY AND EQUIPMENT LAYOUT PLAN
- 3A. STRUCTURAL ROOF PLAN
- 3B. ATTACHMENT DETAIL ARRAY 1
- 4A. ELECTRICAL LINE DIAGRAM
- 4B. ELECTRICAL NOTES & CALCULATIONS
- 5A. ENPHASE INVERTER SPECIFICATION SHEET
- 5B. ENPHASE CABLE SPECIFICATION SHEET
6. PV MODULE SPECIFICATION SHEET
- 7A. UNIRAC MOUNTING SPECIFICATION SHEETS
- 7B. UNIRAC CA COMPLIANCE LETTER
- 7C. UNIRAC MOUNTING DETAILS
- 7D. QUICKMOUNT PV SPECIFICATIONS
- 7E. QUICKMOUNT CA COMPLIANCE LETTER
8. GROUNDING SPECIFICATIONS SHEET
9. AC COMBINER & DISCONNECT SPECIFICATION SHEET
10. LABELS SPECIFICATION SHEETS

★ APPROVED
AS NOTED

APPROVED BY
PERMIT NO. 9014-5195
APPROVED DATE 10/29/14

PERMIT AND RESOURCE MANAGEMENT
DEPARTMENT

APPROVED JOB COPY OF PLANS AND JOB CARDS TO BE ON JOB SITE.

BUILDER SHALL NOT DEVIATE FROM THE APPROVED PLANS. REQUESTS FOR CHANGES SHALL BE MADE IN WRITING TO THE PERMIT AND RESOURCE MANAGEMENT DEPARTMENT. CHANGES MADE WITHOUT PRIOR APPROVAL SHALL BE SUBJECT TO REJECTION OF THE WORK.

REVISION OF THESE PLANS IS SUBJECT TO, AND DOES NOT AUTHORIZE DEVIATION FROM, COMPLETE COMPLIANCE WITH CODE REQUIREMENTS, SPECIAL INSPECTIONS WHEN REQUIRED AND FIELD INSPECTION.

PLEASE READ ALL PERTINENT SECTIONS OF APPLICABLE CODES.

PROPERTY LINE

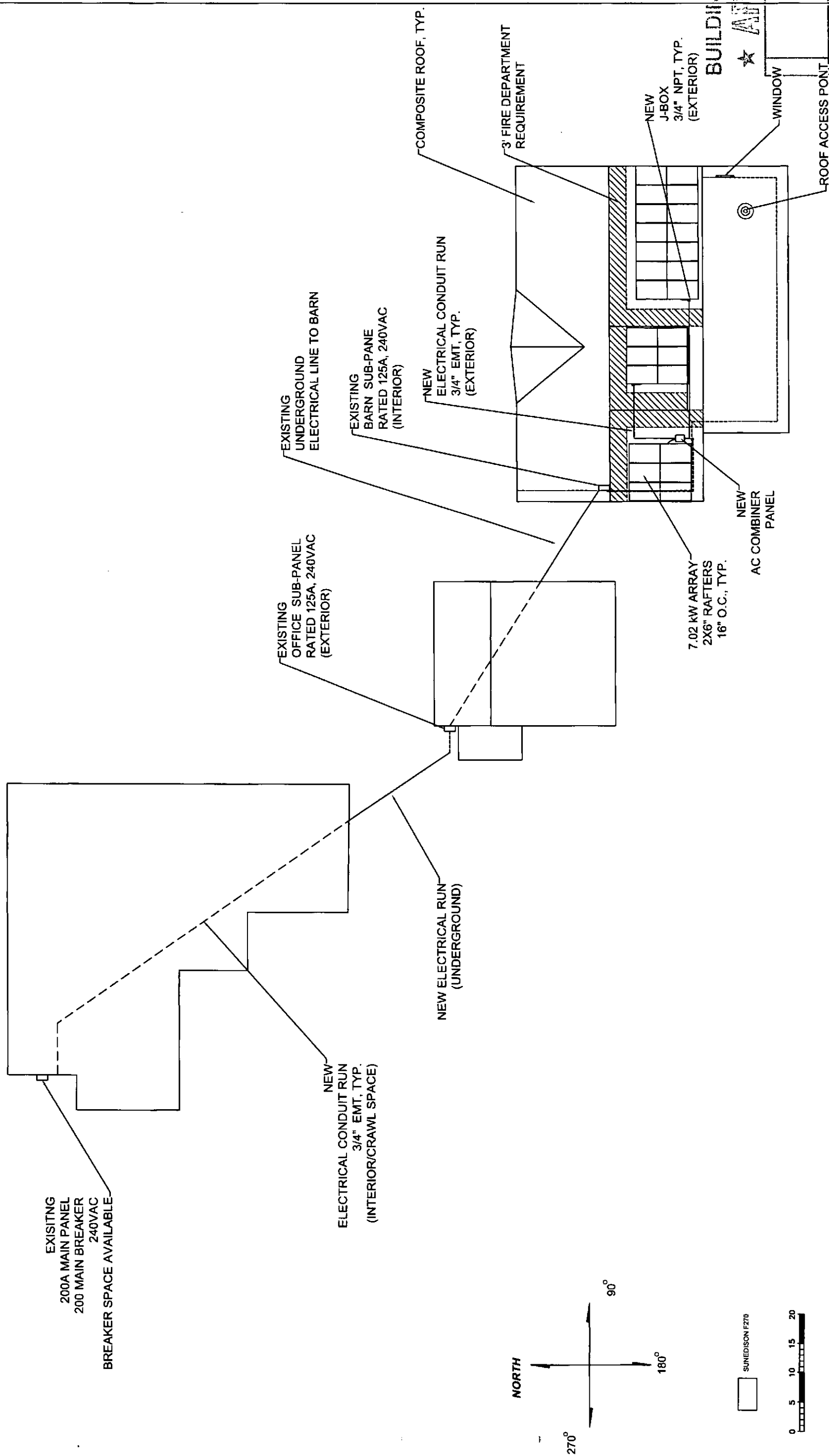
BUILDING PLAN CHECK

★ APPROVED ★

OCT 29 2014
CHAVEZ

PERMIT AND RESOURCE
MANAGEMENT DEPARTMENT

Sheet No. 1	Project No. ASI-4125	Creation Date: 10-18-14	Last. Rev. Date: 10-20-14	Drawn/Approved: FV	Project DR. ROBERT OLIVER 8901 BARNETT VALLEY ROAD SEBASTOPOL, CA 95472 707-823-5207 roliver04@comcast.net	Drawing SITE PLAN	Notes/Comments: 7.03 KW SYSTEM ROOF MOUNTED	Designer: FERNANDO VALENZUELA C-46, LIC.910719 2313 4TH STREET BERKELEY, CA 94710 510-502-7402	 alter systems go green for life
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BUILDING PLAN CHECK
★ APPROVED ★

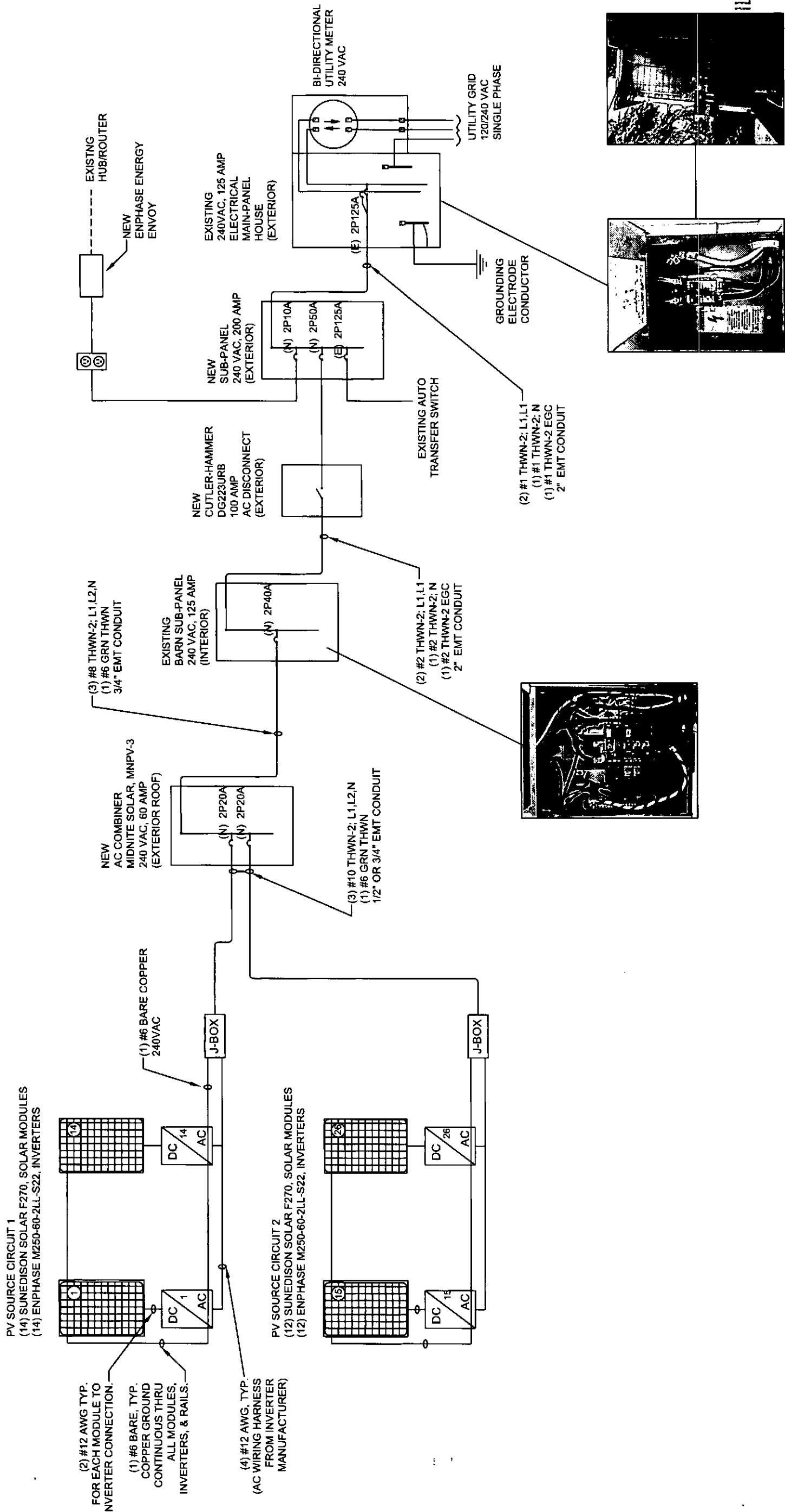
OCT 29 2014

PERMIT AND RESOURCE
MANAGEMENT DEPARTMENT



alter systems
go green for life™

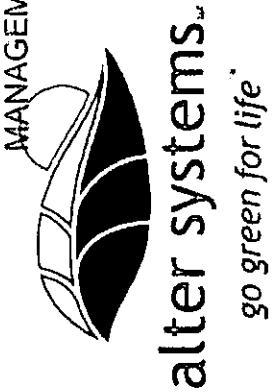
Sheet No. 2	Project No. ASI-4125	Creation Date: 10-18-14	Last. Rev. Date: 10-24-14	Drawn/Approved: FV	Project DR. ROBERT OLIVER 8901 BARNETT VALLEY ROAD SEBASTOPOL, CA 95472 707-823-5207 roliver04@comcast.net	Drawing PV ROOF PLAN, EQUIPMENT LOCATIONS, & ACCESS POINTS	Notes/Comments: PROPOSED 7.03 kW ARRAY & EQUIPMENT	Designer: FERNANDO VALENZUELA C-46, LIC. 910719 2313 4TH STREET BERKELEY, CA 94710 510-502-7402
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ILDIN 3 PLAN CHECK
APPROVED

CCT 2 9 2014

PERMIT AND RESOURCE
MANAGEMENT DEPARTMENT



Designer:
FERNANDO VALENZUELA
C-46, LIC.910719
2313 4TH STREET
BERKELEY, CA 94710
510-502-7402

Notes/Comments:
SUNEDISON MODULES
ENPHASE MICRO- INVERTERS

Drawing
ELECTRICAL LINE
DIAGRAM

Project
DR. ROBERT OLIVER
8901 BARNETT VALLEY ROAD
SEBASTOPOL, CA 95472
707-823-5207
roliver04@comcast.net

Drawn/Approved: FV

Last. Rev. Date:
10-25-14

Creation Date:
9-18-14

Project No.
ASI-4125

Sheet No.
4A

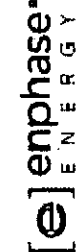
Enphase® M250



The **Enphase® M250 Microinverter** delivers increased energy harvest and reduces design and installation complexity with its all-AC approach. With the M250, the DC circuit is isolated and insulated from ground, so **no Ground Electrode Conductor (GEC) is required for the microinverter**. This further simplifies installation, enhances safety, and saves on labor and materials costs.

The Enphase M250 integrates seamlessly with the Engage® Cable, the Envoy® Communications Gateway™, and Enlighten®, Enphase's monitoring and analysis software.

- | PRODUCTIVE | SIMPLE | RELIABLE |
|---|---|--|
| - Optimized for higher-power modules | - No GEC needed for microinverter | - 4th-generation product |
| - Maximizes energy production | - No DC design or string calculation required | - More than 1 million hours of testing and millions of units shipped |
| - Minimizes impact of shading, dust, and debris | - Easy installation with Engage Cable | - Industry-leading warranty, up to 25 years |



INPUT DATA (DC)

M250-60-2LL-S22/S23/S24
Recommended input power (STC)
210 - 300 W
Maximum input DC voltage
48 V
Peak power tracking voltage
27 V - 39 V
Operating range
16 V - 48 V
Min/Max start voltage
22 V / 48 V
Max DC short circuit current
15 A
Max input current
10 A

OUTPUT DATA (AC)

	@208 VAC	@240 VAC
Peak output power	250 W	250 W
Rated (continuous) output power	240 W	240 W
Nominal output current	1.15 A (A rms at nominal duration)	1.0 A (A rms at nominal duration)
Nominal voltage/range	208 V / 183-229 V	240 V / 211-264 V
Nominal frequency/range	60.0 / 57-61 Hz	60.0 / 57-61 Hz
Extended frequency range*	57-62.5 Hz	57-62.5 Hz
Power factor	>0.95	>0.95
Maximum units per 20 A branch circuit	24 (three phase)	16 (single phase)
Maximum output fault current	850 mA rms for 6 cycles	850 mA rms for 6 cycles

EFFICIENCY

CEC weighted efficiency, 240 VAC	96.5%
CEC weighted efficiency, 208 VAC	96.0%
Peak inverter efficiency	96.5%
Static MPPT efficiency (weighted, reference EN50530)	99.4 %
Night time power consumption	65 mW max

MECHANICAL DATA

Ambient temperature range	-40°C to +65°C
Operating temperature range (internal)	-40°C to +85°C
Dimensions (WxDxH)	171 mm x 173 mm x 30 mm (without mounting bracket)
Weight	2.0 kg
Cooling	Natural convection - No fans
Enclosure environmental rating	Outdoor - NEMA 5

FEATURES

- | | |
|-------------------|--|
| Compatibility | Compatible with 60-cell PV modules. |
| Communication | Power line |
| Integrated ground | The DC circuit meets the requirements for ungrounded PV arrays in NEC 690.35. Equipment ground is provided in the Engage Cable. No additional GEC or ground is required. Ground fault protection (GFP) is integrated into the microinverter. |
| Monitoring | Free lifetime monitoring via Enlighten software |
| Compliance | UL1741/IEEE1547, FCC Part 15 Class B, CAN/CSA-C22.2 NO.0-M91 0.4-04, and 1071-01 |
- * Frequency ranges can be extended beyond nominal if required by the utility

To learn more about Enphase Microinverter technology, visit enphase.com

BUILDING PLAN CHECK

★ APPROVED ★

[e]enphase®
ENERGY

OCT 29 2014

PERMIT AND
MANAGEMENT
DEPARTMENT
RESOURCE

SILVANTIS® F-SERIES:
255 W TO 275 W
SOLAR MODULES

SunEdison is a recognized authority in silicon technology and manufacturing processes developed through more than 50 years of experience. With our vertically-integrated business model, SunEdison delivers best-in-class solar modules by continuously leveraging new technology and manufacturing techniques that maximize efficiency, minimize cost, and extend product lifetime. Our solar module factories are ISO 9001 and ISO 14001 certified, and incorporate an ongoing rigorous inspection to ensure the highest possible quality.

The SunEdison Silvantis solar module family continues our tradition of excellence by delivering the highest levels of performance worldwide.

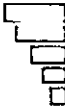
SunEdison is dedicated to providing local response customer service.



AESTHETIC DESIGN
Sleek black frame designed specifically with residential customers in mind.



QUALITY
Manufactured in highly automated, state-of-the-art facilities certified to ISO 9001 and ISO 14001.



HIGH EFFICIENCY
SunEdison modules are designed to the highest industry standards of power output.

KEY FEATURES

- CO₂-type monocrystalline cells for highest conversion efficiencies
- Positive power tolerance provides guaranteed power output
- Tempered glass with Anti-Reflective Coating (ARC) for higher energy production
- PID Resistant
- Withstands snow loads up to 5400 Pa as tested to IEC standards
- Non-corroding black anodized aluminum frame
- IEC certified by TÜV SÜD:
 - 61215 ensuring long-term operation in a variety of climates
 - 61730 to ensure electrical safety
 - 61701 Level 1 salt mist corrosion resistant for coastal regions
 - 62716 ammonia testing for agricultural environments (pending)
- UL 1703 listed by CSA for US and Canada
- MCS certified by BABT for the UK
- Automotive grade TS16949 & AQL Level II-0.4 manufacturing quality

MODULE FAMILY

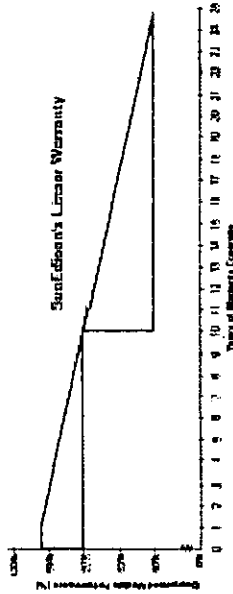
- Black frame standard on all models
- White back sheet: SE-F2xxCyc
- Black back sheet: SE-F2xxKyc

QUALITY & SAFETY

- 10-year limited warranty for materials and workmanship
- 25-year linear power warranty with coverage for power loss greater than 3.5% in the first year and 0.7% degradation per year thereafter
- Backed by SunEdison

WARRANTY INFORMATION

- 10-year limited warranty for materials and workmanship
- 25-year linear power warranty with coverage for power loss greater than 3.5% in the first year and 0.7% degradation per year thereafter
- Backed by SunEdison



Sheet No.
6

Project No.
ASI-4125

Creation Date:
9-18-14

Last. Rev. Date:
10-24-14

Project

DR. ROBERT OLIVER
8901 BARNETT VALLEY ROAD
SEBASTOPOL, CA 95472
707-823-5207
roliver04@comcast.net

Drawing

MODULE
SPECIFICATION
SHEET

Notes/Comments:

SUNEDISON 270 WATT MODULE

Designer:

FERNANDO
VALENZUELA
C-46, LIC.910719
2313 4TH STREET
BERKELEY, CA
94710
510-502-7402

alter systems.
go green for life



F255 W TO F275 W SOLAR MODULES

PHYSICAL PARAMETERS

Module Dimensions	1,659 mm x 990 mm x 50 mm
Module Weight	19.3 kg
Cell Type	CO ₂ monocrystalline
Number of Cells	60
Frame Material	Black Anodized Aluminum
Tempered ARC Coated Glass Thickness	3.2 mm
Connector Type (indicated in model #)	Amphenol Helios H4 (-38 or -28)

TEMPERATURE COEFFICIENTS AND PARAMETERS¹

Nominal Operating Cell Temperature (NOCT)	46 ± 2°C (Cycl. 49 ± 2°C (N/C))
Temperature Coefficient of Pmax	-0.45 %/°C
Temperature Coefficient of Voc	-0.34 %/°C
Temperature Coefficient of Isc	+0.06 %/°C
Operating Temperature	-40°C to +85°C
Maximum System Voltage	1000 V (UL16 1000 V IEC)
Limiting Reverse Current	9.20 A
Maximum Series Fuse Rating	15 A
Junction Box Rating	IP67
IEC 61730 Application	Class A
Packaging Specifications	20 modules/pallet 50 modules/40' container
Wind and Snow From Load	5,400 Pa
Wind Back Load	2,400 Pa
Reduction of STC efficiency from 1000 W/m ² to 200 W/m ²	(%) (k. <4%)

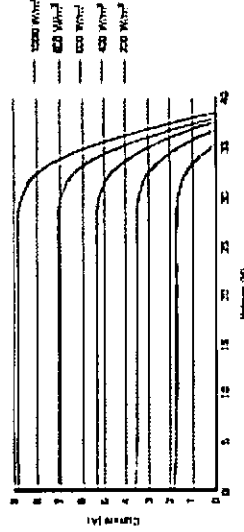
STC ELECTRICAL CHARACTERISTICS²

Model # ³	F255Cyc	F255Kyc	F260Cyc	F260Kyc	F270Cyc	F270Kyc	F265Kyc	F265Kyc	F270Kyc	F275Kyc
Frame/Back Sheet Color	Black/White	Black/White	Black/White	Black/White	Black/White	Black/Black	Black/Black	Black/Black	Black/Black	Black/Black
Rated Maximum Power (W)	255	260	260	265	270	275	265	265	270	275
Open-Circuit Voltage Voc (V)	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W	40.15 W -0.10 ± 5 W
Short-Circuit Current Isc (A)	8.00	8.30	8.30	8.50	8.70	8.90	8.50	8.50	8.70	8.90
Module Efficiency (%)	15.5	15.8	15.8	16.1	16.4	16.8	15.5	15.5	16.4	16.8
Voltage Vmp (V)	31.3	31.4	31.4	31.5	31.5	31.6	31.5	31.5	31.5	31.6
Current Imp (A)	8.15	8.30	8.30	8.43	8.58	8.72	8.30	8.30	8.58	8.72

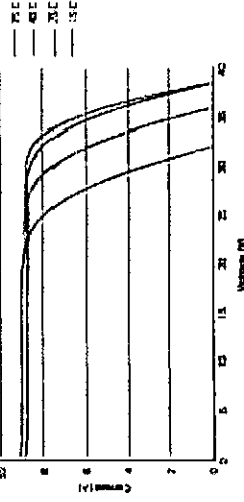
MOCT ELECTRICAL CHARACTERISTICS⁴

Model # ³	F255Cyc	F255Kyc	F260Cyc	F260Kyc	F270Cyc	F270Kyc	F265Kyc	F265Kyc	F270Kyc	F275Kyc
Rated Maximum Power (W)	186.3	190.0	190.0	193.6	197.3	200.9	186.0	186.0	193.2	196.7
Open-Circuit Voltage Voc (V)	34.8	35.1	35.1	35.3	35.5	35.6	34.5	34.5	35.3	35.5
Short-Circuit Current Isc (A)	7.30	7.35	7.35	7.39	7.42	7.45	7.15	7.15	7.25	7.30
Voltage Vmp (V)	27.4	27.7	27.7	28.1	28.4	28.8	27.4	27.4	28.2	28.6
Current Imp (A)	6.90	6.85	6.85	6.90	6.94	6.97	6.70	6.70	6.84	6.90

IV CURVES AT MULTIPLE IRRADIANCES (25°C)



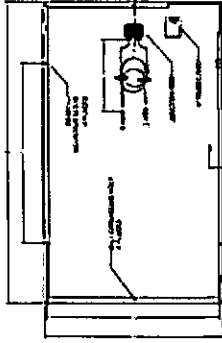
IV CURVES AT MULTIPLE TEMPERATURES (1000 W/m²)



For more information about SunEdison's Silvantis modules, please visit www.sunedison.com

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SOLAR MODULE DIMENSIONS mm (inch)



Module Dimensions
A - 990 [39.0] B - 1,658 [65.3]
C - 50 [2.0] D - 30 [1.18]

Mounting Hole Spacing
E - 950 [37.4] F - 984 [39.1]

Cable Length
L - 1,000 [39.4]

Junction Box Dimensions
101.5 x 60.0 x 25.5 [3.99 x 2.36 x 1.0]

¹Temperature coefficients may vary by ±10%
²All electrical data at standard test conditions (STC): 1000 W/m², AM1.5, 25°C
Electrical characteristics may vary by ±5% and power by 0-15 W
³* = connector type (F = Backsheet, S418 & B = Amphenol Helios H4)
⁴Indicates manufacturing location:
M = Malaysia, C = Canada,
D = Europe, X = Mexico,
P = FRC, I = Taiwan
⁵MOCT electrical characteristics measured under normal operating conditions of 800 W/m², 20°C, AM1.5, wind 1 m/s

BUILDING PLAN CHECK



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