
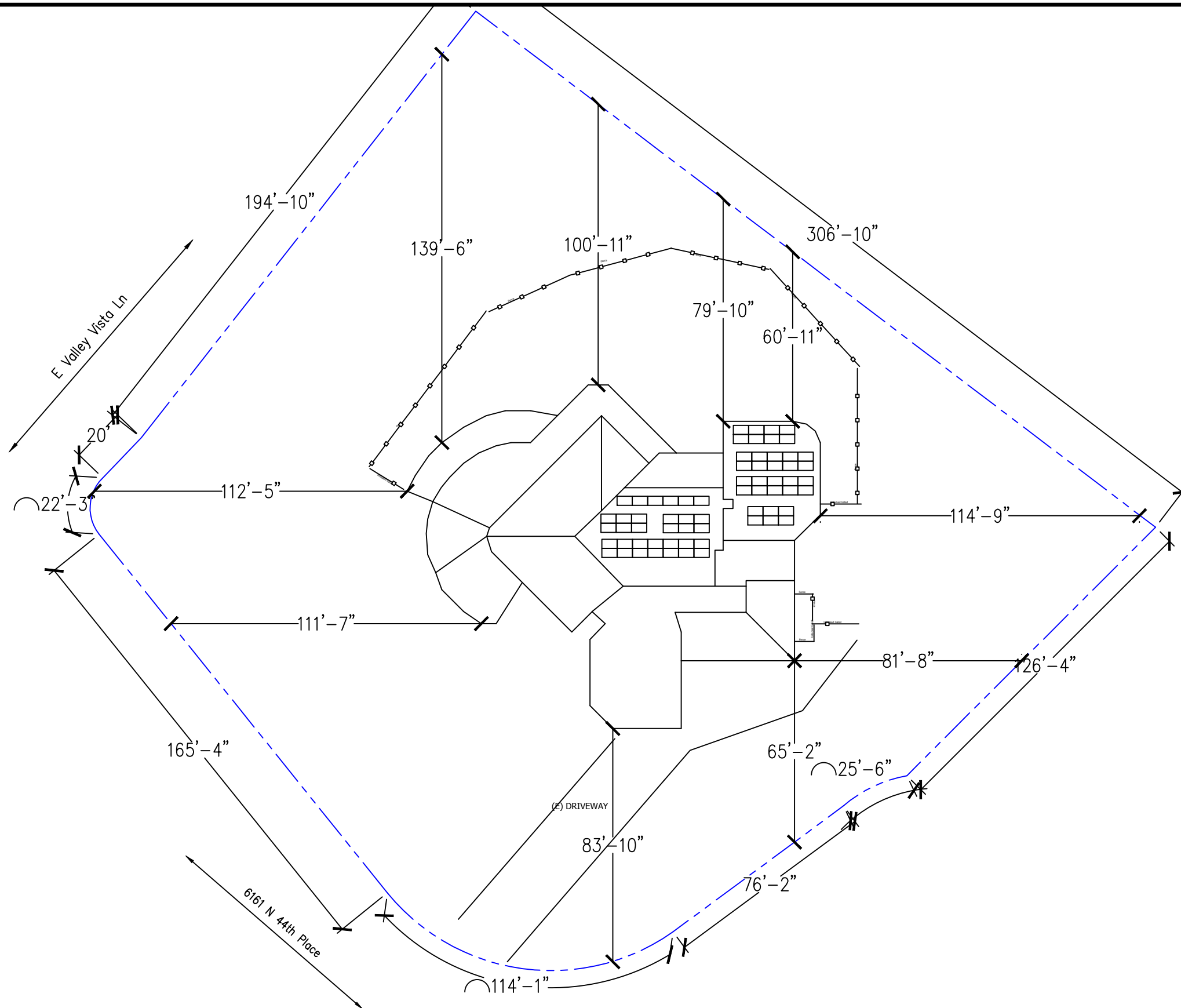
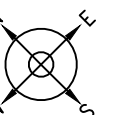


<div>ABBREVIATIONS</div> <div>A AMPERE AC ALTERNATING CURRENT BLDG BUILDING CONC CONCRETE DC DIRECT CURRENT EGC EQUIPMENT GROUNDING CONDUCTOR (E) EXISTING EMT ELECTRICAL METALLIC TUBING FSB FIRE SET-BACK GALV GALVANIZED GEC GROUNDING ELECTRODE CONDUCTOR GND GROUND HDG HOT DIPPED GALVANIZED I CURRENT Imp CURRENT AT MAX POWER Isc SHORT CIRCUIT CURRENT kVA KILOVOLT AMPERE kW KILOWATT LBW LOAD BEARING WALL MIN MINIMUM (N) NEW NEUT NEUTRAL NTS NOT TO SCALE OC ON CENTER PL PROPERTY LINE POI POINT OF INTERCONNECTION PV PHOTOVOLTAIC SCH SCHEDULE S STAINLESS STEEL STC STANDARD TESTING CONDITIONS TYP TYPICAL UPS UNINTERRUPTIBLE POWER SUPPLY V VOLT Vmp VOLTAGE AT MAX POWER Voc VOLTAGE AT OPEN CIRCUIT W WATT 3R NEMA 3R, RAINLIGHT</div>		<div>ELECTRICAL NOTES</div> <div>1. THIS SYSTEM IS GRID-INTERTIED VIA A UL-LISTED POWER-CONDITIONING INVERTER. 2. THIS SYSTEM HAS NO BATTERIES, NO UPS. 3. A NATIONALLY-RECOGNIZED TESTING LABORATORY SHALL LIST ALL EQUIPMENT IN COMPLIANCE WITH ART. 110.3. 4. WHERE ALL TERMINALS OF THE DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A SIGN WILL BE PROVIDED WARNING OF THE HAZARDS PER ART. 690.17. 5. EACH UNGROUNDED CONDUCTOR OF THE MULTIWIRE BRANCH CIRCUIT WILL BE IDENTIFIED BY PHASE AND SYSTEM PER ART. 210.5. 6. CIRCUITS OVER 250V TO GROUND SHALL COMPLY WITH ART. 250.97, 250.92(B). 7. DC CONDUCTORS EITHER DO NOT ENTER BUILDING OR ARE RUN IN METALLIC RACEWAYS OR ENCLOSURES TO THE FIRST ACCESSIBLE DC DISCONNECTING MEANS PER ART. 690.31(E). 8. ALL WIRES SHALL BE PROVIDED WITH STRAIN RELIEF AT ALL ENTRY INTO BOXES AS REQUIRED BY UL LISTING. 9. MODULE FRAMES SHALL BE GROUNDED AT THE UL-LISTED LOCATION PROVIDED BY THE MANUFACTURER USING UL LISTED GROUNDING HARDWARE. 10. MODULE FRAMES, RAIL, AND POSTS SHALL BE BONDED WITH EQUIPMENT GROUND CONDUCTORS.</div>		<div>JURISDICTION NOTES</div> <div>PV ARRAY IN COMPLIANCE WITH OPEN SPACE CRITERIA. 1. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. 2. GROUND WIRE MUST BE CONTINUOUS AND INSTALLED TO ALLOW FOR PANEL REMOVAL WITHOUT DISRUPTING CONTINUITY. ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC 690.4(C) 3. FOLLOW MANUFACTURERS SUGGESTED INSTALLATION PRACTICES AND WIRING SPECIFICATIONS. 4. WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS.</div>																													
<div>LICENSE</div> <div>BLDG CL KB-01: ROC243771 ELEC CL K-11: ROC 245450</div> <div>MODULE GROUNDING METHOD: ZEP SOLAR</div> <div>AHJ: Paradise Valley</div> <div>UTILITY: Arizona Public Service Company</div>		<div>GENERAL NOTES</div> <div>1. ALL WORK SHALL COMPLY WITH THE 2015 IBC AND 2006 IRC. 2. ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2014 NATIONAL ELECTRIC CODE.</div>		<div>VICINITY MAP</div> <div></div>			<div>INDEX</div> <div>PV1 COVER SHEET PV2 COVER SHEET PV3 PROPERTY PLAN PV4 SITE PLAN PV5 STRUCTURAL DETAILS & UPLIFT CALCS PV6 ELEVATION PV7 THREE LINE DIAGRAM Cutsheets Attached</div> <table><tr><th>REV</th><th>BY</th><th>DATE</th><th>COMMENTS</th></tr><tr><td>REV A</td><td>NAME</td><td>DATE</td><td>COMMENTS</td></tr><tr><td>*</td><td>*</td><td>*</td><td>*</td></tr><tr><td>*</td><td>*</td><td>*</td><td>*</td></tr><tr><td>*</td><td>*</td><td>*</td><td>*</td></tr><tr><td>*</td><td>*</td><td>*</td><td>*</td></tr></table>			REV	BY	DATE	COMMENTS	REV A	NAME	DATE	COMMENTS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
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<div>CONFIDENTIAL - THE INFORMATION HEREIN CONTAINED SHALL NOT BE USED FOR THE BENEFIT OF ANYONE EXCEPT TESLA INC., NOR SHALL IT BE DISCLOSED IN WHOLE OR IN PART TO OTHERS OUTSIDE THE RECIPIENT'S ORGANIZATION, EXCEPT IN CONNECTION WITH THE SALE AND USE OF THE RESPECTIVE TESLA EQUIPMENT, WITHOUT THE WRITTEN PERMISSION OF TESLA INC.</div>		<div>JOB NUMBER: JB-8528152 00</div> <div>MOUNTING SYSTEM: ZS Ramp Foot</div> <div>MODULES: (66) Hanwha Q-Cells # Q.Peak-G4.1/SC300</div> <div>INVERTER: SOLAREEDGE # SE7600A-US002SNU2</div>		<div>PREMISE OWNER: SURENDER GUNNALA 6161 N 44TH PLACE PARADISE VALLEY, AZ 85253</div>		<div>DESCRIPTION: Surender Gunnala RESIDENCE 19.8 KW PV ARRAY 15.2 KW (AC NAMEPLATE) PV ARRAY</div> <div>PAGE NAME: COVER SHEET</div>		<div>DESIGN: Thremaine Johnson</div> <div>SHEET: PV 1 REV: 8/6/2017 DATE:</div> <div>TESLA</div>																									



PROPERTY PLAN

Scale: 1" = 40'-0"



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JOB NUMBER: JB-8528152 00

MOUNTING SYSTEM:
ZS Ramp Foot

MODULES:
(66) Hanwha Q-Cells # Q.Peak-G4.1/SC300

INVERTER:
SOLAREDGE # SE7600A-US002SNU2

PREMISE OWNER:
SURENDER GUNNALA
6161 N 44TH PLACE
PARADISE VALLEY, AZ 85253

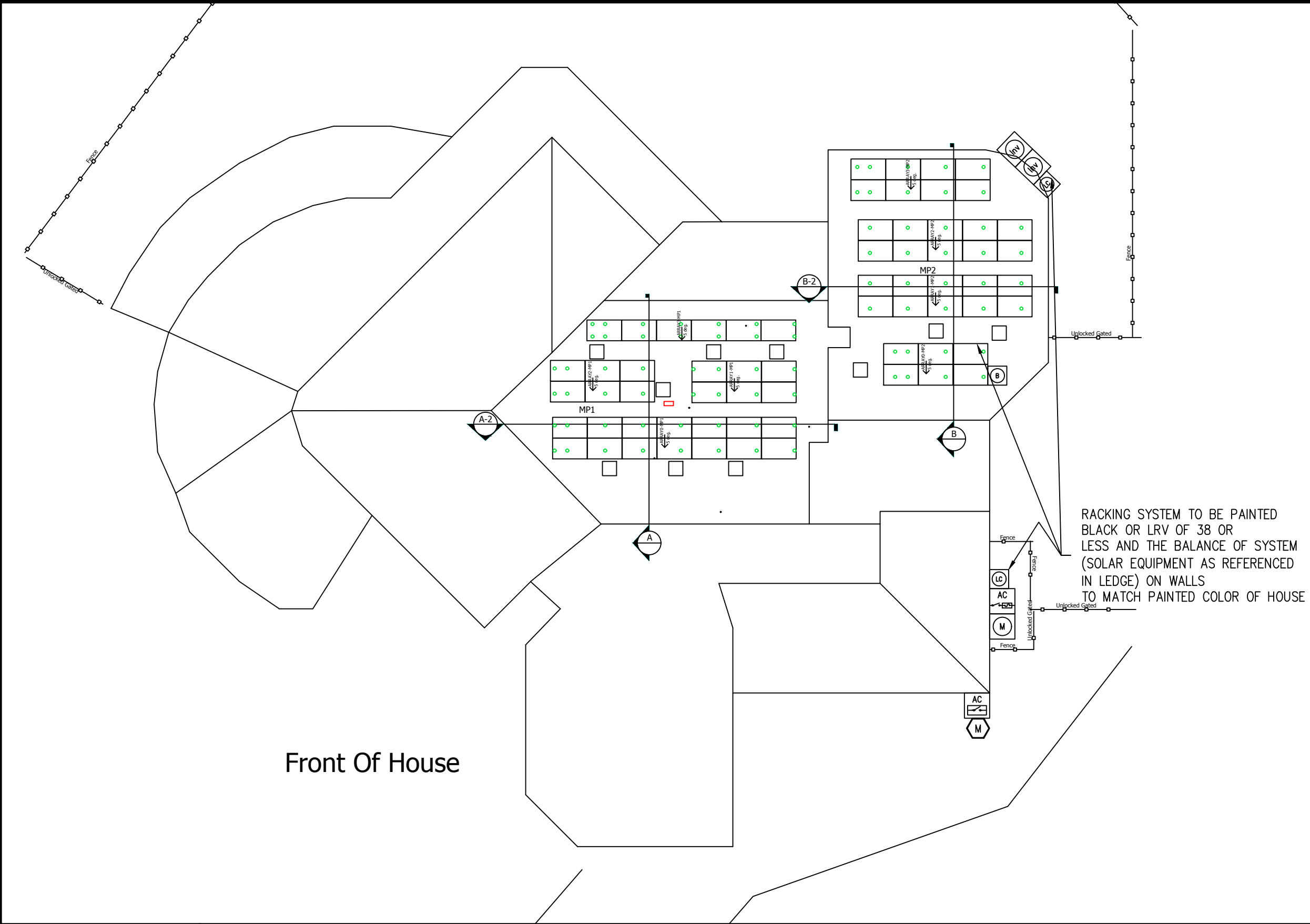
DESCRIPTION:
Surender Gunnala RESIDENCE
19.8 KW PV ARRAY
15.2 KW (AC NAMEPLATE) PV ARRAY

PAGE NAME:
PROPERTY PLAN

DESIGN:
Thremain Johnson

SHEET: PV 3
REV: 8/6/2017
DATE:

TESLA



MP1	PITCH: 3 AZIMUTH: 225 MATERIAL: Foam	ARRAY PITCH: 5 ARRAY AZIMUTH: 225 STORY: 2 Stories
MP2	PITCH: 3 AZIMUTH: 225 MATERIAL: Foam	ARRAY PITCH: 5 ARRAY AZIMUTH: 225 STORY: 2 Stories

LEGEND

- (E) UTILITY METER & WARNING LABEL
- INVERTER W/ INTEGRATED DC DISCO & WARNING LABELS
- DC DISCONNECT & WARNING LABELS
- AC DISCONNECT & WARNING LABELS
- DC JUNCTION/COMBINER BOX & LABELS
- DISTRIBUTION PANEL & LABELS
- LOAD CENTER & WARNING LABELS
- DEDICATED PV SYSTEM METER
- RAPID SHUTDOWN
- STANDOFF LOCATIONS
- CONDUIT RUN ON EXTERIOR
- CONDUIT RUN ON INTERIOR
- GATE/FENCE
- HEAT PRODUCING VENTS ARE RED
- INTERIOR EQUIPMENT IS DASHED

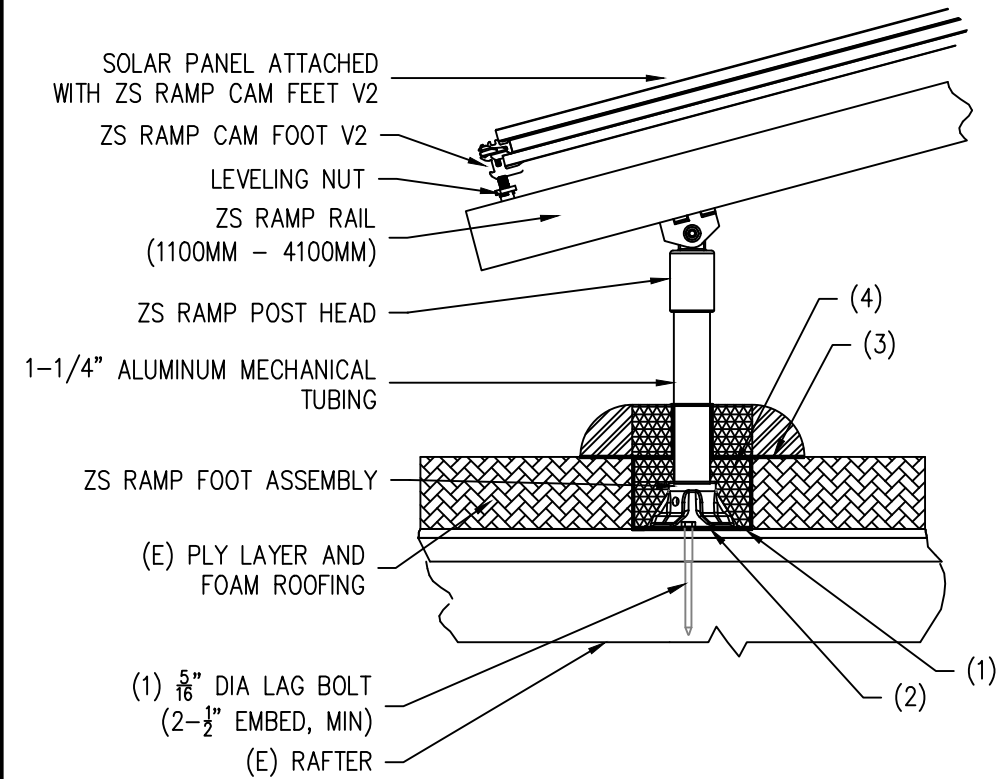
SITE PLAN

Scale: 1/16" = 1'



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	MOUNTING SYSTEM: ZS Ramp Foot				
	MODULES: (66) Hanwha Q-Cells # Q.Peak-G4.1/SC300				
	INVERTER: SOLAREDGE # SE7600A-US002SNU2			SHEET: PV 4 REV: DATE: 8/6/2017	

UPLIFT CALCULATIONS



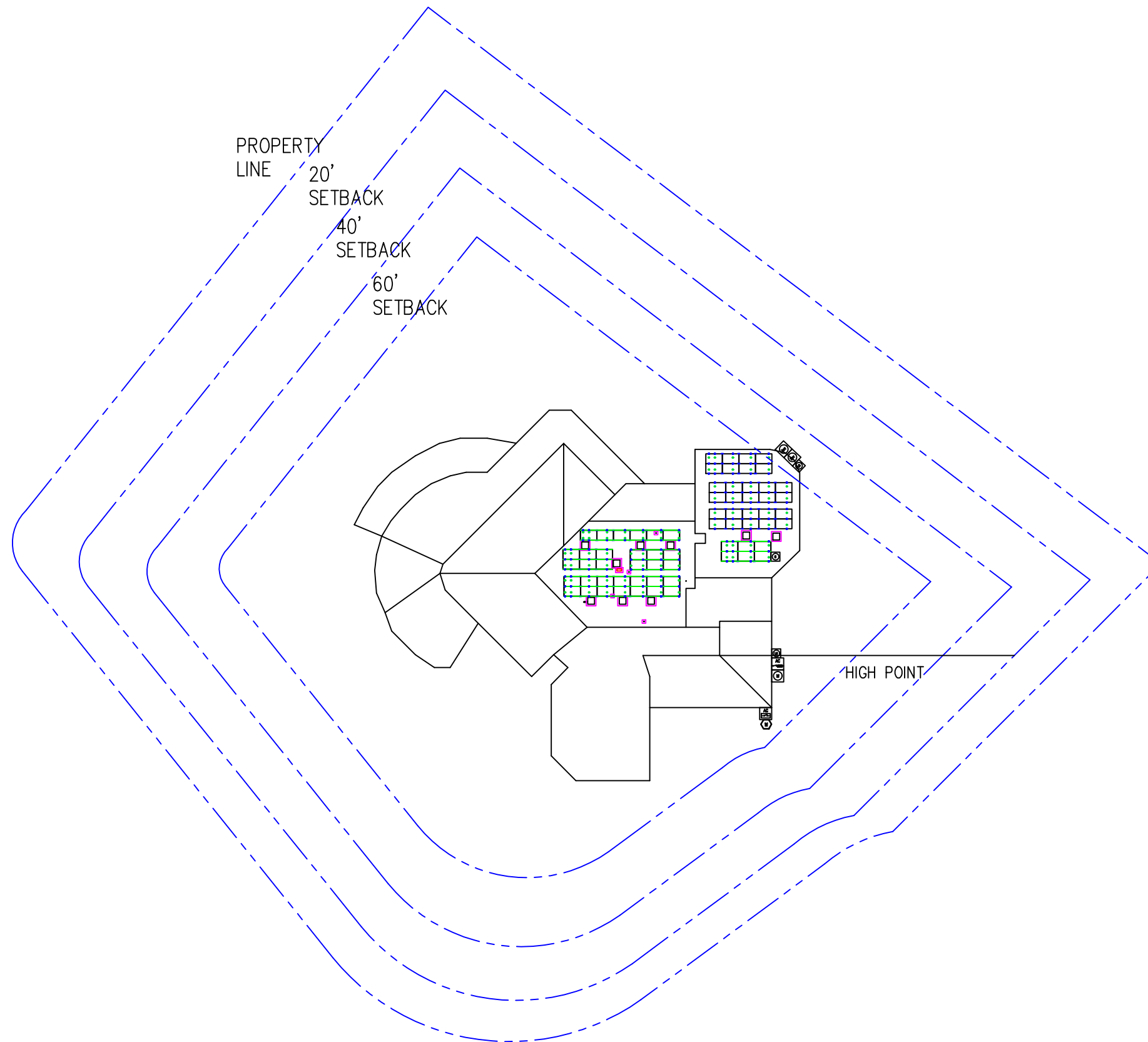
- INSTALLATION ORDER
- (1) CLEAN ROOF DECK.
- (2) APPLY M1 SEALANT BENEATH FOOT ASSEMBLY AND ON PIPE CONNECTION TO FOOT ASSEMBLY. MOUNT FOOT WITH LAG, INSTALL VERTICAL PIPE, AND POST HEAD.
- (3) M-1 STRUCTURAL SEALANT AT BASE OF CHEMCURB AND AROUND PENETRATION.
- (4) 1 PART POURABLE SEALANT.

S1 STANDOFF

Scale: 1 1/2" = 1'

08.06.2017
Version #69.4

DESIGN SUMMARY							
Jobsite Specific Design Criteria							
Design Code		I		ASCE 7-10		Fig. 1609A Section 26.7 ASCE Table 7-1	
Importance Factor		V-Ult		1.0			
Ultimate Wind Speed		pg		115 mph			
Exposure Category				C			
Ground Snow Load							
MP Specific Design Information							
Design Info	MP Name	MP1	MP2				
	Roofing	Built Up / Modified Roofing	Built Up / Modified Roofing				
	Standoff	ZS Ramp Foot	ZS Ramp Foot				
	Pitch	3°	3°				
	SL/RLL: PV						
	SL/RLL: Non-PV	20.0 psf	20.0 psf				
Standoff Spacing and Layout							
Landscape	MP Name	MP1	MP2				
	X-Spacing	72"	72"				
	X-Cantilever	24"	24"				
	Y-Spacing	72"	72"				
Portrait	Y-Cantilever	24"	24"				
	X-Spacing	48"	48"				
	X-Cantilever	21"	21"				
	Y-Spacing	72"	72"				
	Y-Cantilever	24"	24"				
	Layout	Not-Staggered	Not-Staggered				
X and Y are maximums that are always relative to the structure framing that supports the PV. X is across rafters and Y is along rafters.							



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JOB NUMBER: JB-8528152 00

MOUNTING SYSTEM:
ZS Ramp Foot

MODULES:
(66) Hanwha Q-Cells # Q.Peak-G4.1/SC300

INVERTER:
SOLAREEDGE # SE7600A-US002SNU2

PREMISE OWNER:
SURENDER GUNNALA
6161 N 44TH PLACE
PARADISE VALLEY, AZ 85253

DESCRIPTION:
Surender Gunnala RESIDENCE
19.8 KW PV ARRAY
15.2 KW (AC NAMEPLATE) PV ARRAY

PAGE NAME:
ELEVATION

DESIGN:
Thremaine Johnson

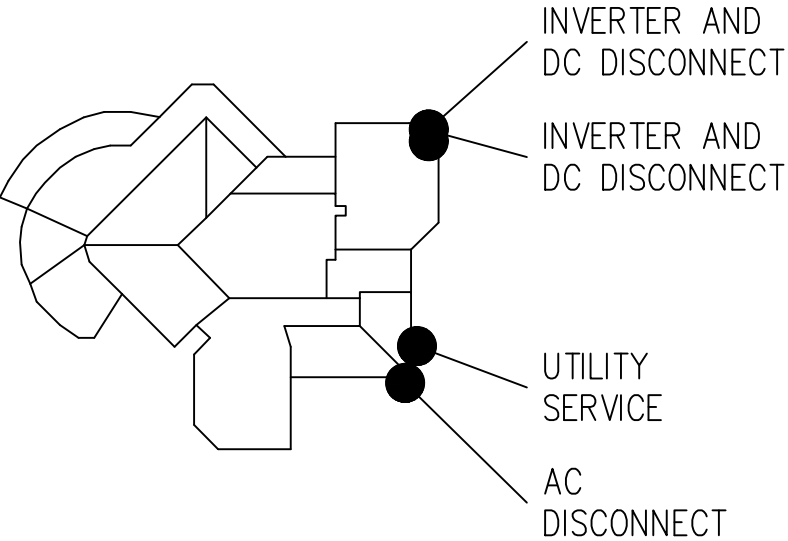
SHEET: PV 6 REV: DATE: 8/6/2017

TESLA

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN:

- Address: 6161 N 44th Place



[SOLAR PHOTOVOLTAIC ARRAY(S)]

**PHOTOVOLTAIC BACK-FED CIRCUIT BREAKER IN MAIN ELECTRICAL PANEL
IS AN A/C DISCONNECT PER NEC 690.17**

OPERATING VOLTAGE = 240V

JB-8528152-00

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JOB NUMBER: JB-8528152 00

MOUNTING SYSTEM:
ZS Ramp Foot

MODULES:
(66) Hanwha Q-Cells # Q.Peak-G4.1/SC300

INVERTER:
SOLAREEDGE # SE7600A-US002SNU2

PREMISE OWNER:
SURENDER GUNNALA
6161 N 44TH PLACE
PARADISE VALLEY, AZ 85253

DESCRIPTION:
Surender Gunnala RESIDENCE
19.8 KW PV ARRAY
15.2 KW (AC NAMEPLATE) PV ARRAY

PAGE NAME:
SITE PLAN PLACARD

DESIGN:
Thremaine Johnson

SHEET: PV 8 REV: 8/6/2017 DATE:

TESLA

WARNING: PHOTOVOLTAIC POWER SOURCE

Label Location:
(C)
Per Code:
2012 IFC
Label Location:
(CB)

WARNING
ELECTRIC SHOCK HAZARD
NO USER SERVICABLE
PARTS INSIDE
CONTACT AUTHORIZED
SERVICER FOR ASSISTANCE

PV COMBINER BOX
WARNING: ELECTRIC SHOCK
HAZARD

Label Location:
(CB)
Per Code:
NEC 690.14.C.2

DC PHOTOVOLTAIC
DISCONNECT

Label Location:
(DC) (INV)
Per Code:
NEC 690.14.C.2

MAXIMUM POWER-
POINT CURRENT (I_{mp}) A
MAXIMUM POWER-
POINT VOLTAGE (V_{mp}) V
MAXIMUM SYSTEM
VOLTAGE (V_{oc}) V
SHORT-CIRCUIT
CURRENT (I_{sc}) A

Label Location:
(DC) (INV)
Per Code:
NEC 690.53

AC PHOTOVOLTAIC
DISCONNECT

Label Location:
(AC) (POI)
Per Code:
NEC 690.14.C.2

MAXIMUM AC
OPERATING CURRENT A
MAXIMUM AC
OPERATING VOLTAGE V

Label Location:
(AC) (POI)
Per Code:
NEC 690.54

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

Label Location:
(AC) (POI)

PHOTOVOLTAIC
SYSTEM DEDICATED
KWH METER

Label Location:
(AC)

PHOTOVOLTAIC SYSTEM
UTILITY
DISCONNECT SWITCH

Label Location:
(AC)

PHOTOVOLTAIC POWER
SOURCE BREAKERS
ARE BACKFEEDING

Label Location:
(POI)

BREAKER HAS
BEEN DE-RATED
PER NEC 690.64(B)(2)

Label Location:
(D)

WARNING
A GENERATION SOURCE IS
CONNECTED TO THE SUPPLY
(UTILITY) SIDE OF THE MAIN
SERVICE DISCONNECT. FOLLOW
PROPER LOCK-OUT/TAG-OUT
PROCEDURES TO ENSURE
THE PHOTOVOLTAIC SYSTEM
UTILITY DISCONNECT SWITCH IS
OPENED PRIOR TO PERFORMING
WORK ON THIS DEVICE

Label Location:
(D)

NOTICE
INVERTER AND DISCONNECT
LOCATED IN GARAGE

Label Location:
(D)

WARNING
INVERTER OUTPUT
CONNECTION
DO NOT RELOCATE
THIS OVERCURRENT
DEVICE

Label Location:
(POI)
Per Code:
NEC 690.64.B.7

NOTICE
PV SYSTEM COMBINER PANEL
DO NOT ADD LOADS
TO THIS PANEL

Label Location:
(D) (POI)

CAUTION
SOLAR PV SYSTEM INSTALLED
WHEN POWER IS DISCONNECTED
SOLAR PANELS AND WIRING IN
CONDUIT TO INVERTER MAY
REMAIN ENERGIZED DURING
DAYLIGHT HOURS

Label Location:
(D)

PHOTOVOLTAIC POINT OF
INTERCONNECTION
WARNING: ELECTRIC SHOCK
HAZARD. DO NOT TOUCH
TERMINALS. TERMINALS ON
BOTH THE LINE AND LOAD SIDE
MAY BE ENERGIZED IN THE OPEN
POSITION. FOR SERVICE
DE-ENERGIZE BOTH SOURCE
AND MAIN BREAKER.
PV POWER SOURCE
MAXIMUM AC
OPERATING CURRENT A
MAXIMUM AC
OPERATING VOLTAGE V

Label Location:
(POI)
Per Code:
NEC 690.17.4; NEC 690.54

CAUTION
DUAL POWER SOURCE
SECOND SOURCE IS
PHOTOVOLTAIC SYSTEM

Label Location:
(POI)
Per Code:
NEC 690.64.B.4

(AC): AC Disconnect
(C): Conduit
(CB): Combiner Box
(D): Distribution Panel
(DC): DC Disconnect
(IC): Interior Run Conduit
(INV): Inverter With Integrated DC Disconnect
(LC): Load Center
(M): Utility Meter
(POI): Point of Interconnection



Delta Solar Inverters Datasheet for SolarCity

	SOLIVIA 3.0 TL	SOLIVIA 3.8 TL	SOLIVIA 5.2 TL	SOLIVIA 6.6 TL	SOLIVIA 7.6 TL
INPUT (DC)					
Max. System Voltage	600 V				
Nominal Voltage	380 V				
Operating Voltage Range	85 ~ 550 V				
Full Power MPPT Range	200 - 500 V				
Max. Usable Current	18.0 A	20.0 A	20.0 A per MPP tracker		
Max. Short Circuit Current @ STC	25.0 A per MPP tracker				
Max. Allowable Imbalance Power	-		4200 W	5000 W	5600 W
Allowed DC Loading Ratio	1.5				
DC Disconnect	Internal				
MPP Tracker	1		2		
Total Input Strings Available	2		4		
OUTPUT (AC)					
Nominal Power	3000 W	3800 W	5200 W	6600 W	7600 W
Max. Continuous Power	3000 W @ 208 V / 3000 W @ 240 V	3300 W @ 208 V / 3800 W @ 240 V	5200 W @ 208 V / 5200 W @ 240 V	6600 W @ 208 V / 6600 W @ 240 V	6600 W @ 208 V / 7600 W @ 240 V
Voltage Range	183 ~ 228 V @ 208 V / 211 ~ 264 V @ 240 V				
Nominal Current	14.4 A @ 208 V / 12.5 A @ 240 V	15.8 A @ 208 V / 15.8 A @ 240 V	24.0 A @ 208 V / 21.6 A @ 240 V	31.7 A @ 208 V / 27.5 A @ 240 V	31.7 A @ 208 V / 31.7 A @ 240 V
Nominal Frequency	60 Hz				
Frequency Range	59.3 ~ 60.5 Hz				
Adjustable Frequency Range	57.0 ~ 63.0 Hz				
Night Consumption	< 1.5 W				
Total Harmonic Distortion @ Nominal Power	< 3%				
Power Factor @ Nominal Power	> 0.99				
Adjustable Power Factor Range	0.85i ~ 0.85c				
Acourtic Noise Emission	<50 db(A) @ 1m				
GENERAL SPECIFICATION					
Max. Efficiency	98%				
CEC Efficiency	97.5% @ 208V / 97.5% @ 240V				
Operating Temperature Range	-13 ~ 158°F (-25~70°C) derating above 122°F (50°C)				
Storage Temperature Range	-40 ~ 185°F (-40 ~ 85°C)				
Humidity	0 ~ 100%				
Max. Operating Altitude	2000m above sea level				
MECHANICAL DESIGN					
Size L x W x D inches (L x W x D mm)	19.5 x 15.8 x 8.5 in (495 x 401 x 216 mm)		26.8 x 15.8 x 8.5 in (680 x 401 x 216 mm)		
Weight	43.0 lbs (19.5 kg)		65.0 lbs (29.5 kg)		
Cooling	Natural Convection				
AC Connectors	Spring terminals in connection box				
Compatible Wiring Guage in AC	AWG 12 ~ AWG 6 Copper (According to NEC 310.15)				
DC Connectors	2 pairs of spring terminals in connection box		4 pairs of spring terminals in connection box		
Compatible Wiring Guage in DC	AWG 12 ~ AWG 6 Copper (According to NEC 690.8)				
Communication Interface	ZigBee				
Display	3 LEDs, 4-Line LCD				
Enclosure Material	Diecast Aluminum				
STANDARDS / DIRECTIVES					
Enclosure Protection Rating	NEMA 4X, IEC 60068-2-11 Salt mist				
Safety	UL 1741 Second Edition, CSA C22.2 No.107.1-01				
SW Approval	UL 1998				
Ground-Fault Protection	NEC 690.35, UL 1741 CRD				
Anti-Islanding Protection	IEEE 1547, IEEE 1547.1				
EMC	FCC part 15 Class B				
AFCI	UL 1699B (Type 1), NEC 690.11				
PV Rapid Shutdown	UL 1741 CRD PVRSS, NEC 690.12 (with SMART RSS)				
Integrated Meter	ANSI C12.1 (meet 1% Accuracy)				
Regulation of Grid Support	California Rule 21, HECO Compliant, IEEE1547				
WARRANTY					
Standard Warranty	10 years				

Delta Products Corporation, Inc.
46101 Fremont Blvd,
Fremont, CA 94538
Sales Email: inverter.sales@deltaww.com
Support Email: inverter.support@deltaww.com
Sales Hotline: +1-877-440-5851 or +1-626-369-8021
Support Hotline: +1-877-442-4832
Support (Intl.): +1-626-369-8019
Monday to Friday from 7 am to 5 pm PST (apart from Holidays)



Solar Inverters

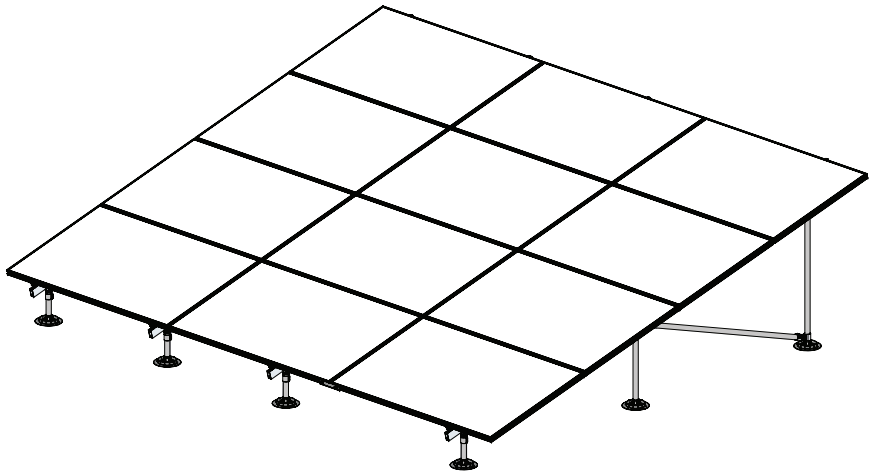
Transformerless (TL): 3.8 kW, 5.2 kW, 6.6 kW, 7.6 kW

- Wide Operating Voltage Range: 85 ~ 550V
- Wide Operating Temperature Range: -13 ~ 158°F (-25 ~ 70°C)
- High CEC Efficiency: 97.5%
- Integrated AFCI (Arc Fault Circuit Interruption)
- NEMA 4X plus Salt Mist Corrosion Protection
- Natural Convection Cooling
- Dual MPPT (5.2kW / 6.6kW / 7.6kW)
- Compact and Lightweight
- UL 1741 / IEEE 1547 / IEEE 1547.1 / CEC Listed /UL 1699B(Type 1) / NEC 690.11



ZS Ramp

for residential low-slope roofs



ZS Ramp Array



Description

- PV Mounting Solution for Residential Low-Slope Roofs

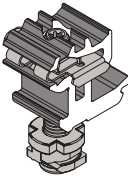
Specifications

- Tilt Angle: 0-15 degrees
- Designed for low slope roofs
- Corrosion resistant materials (Aluminum, Stainless Steel)
- ZS Ramp has a UL 1703 Class “A” system level fire rating when installed with modules from any manufacturer with a Type 1 or Type 2 fire classification.
- UL listed to UL 2703

This document does not create any express warranty by Zep Solar or about its products or services. Zep Solar’s sole warranty is contained in the written product warranty for each product. The end-user documentation shipped with Zep Solar’s products constitutes the sole specifications referred to in the product warranty. The customer is solely responsible for verifying the suitability of Zep Solar’s products for each use. Specifications are subject to change without notice. Patents and Apps: zspats.com.

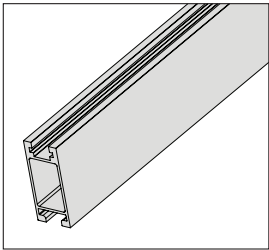
Components

Cam Foot V2



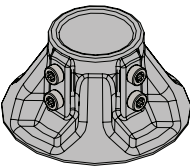
Part No. 850-1564
UL listed to UL 2703

Rail



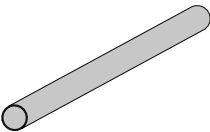
Part No. 850-1568
850-1567
850-1566
and 850-1565
UL listed to UL 2703

Base Foot



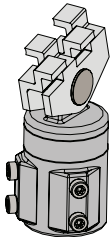
Part No. 850-1563
UL listed to UL 2703

Mechanical Tubing
(MT)



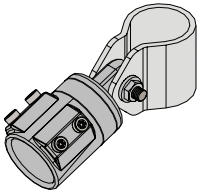
Part No. 850-1583
UL listed to UL 2703
1.51" Outer Diameter

Post Mount



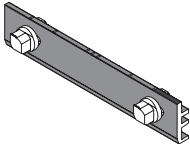
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UL listed to UL 2703

Cross Brace Assembly



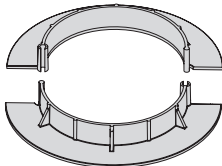
Part No. 850-1636
UL listed to UL 2703

Interlock



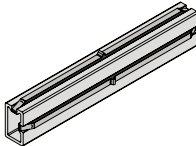
Part No. 850-1388 or 850-1613
UL listed to UL 2703

Sealant Ring



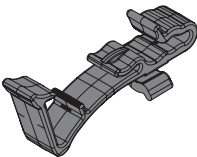
Part No. 850-1638

Splice Assembly,
Ramp



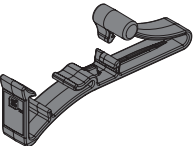
Part No. 850-1635
UL listed to UL 2703

DC Wire Clip



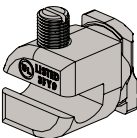
Part No. 850-1509
UL listed to UL 1565

Home Run Wire Clip



Part No. 850-1510
UL listed to UL 1565

Ground Zep



Part No. 850-1511
UL listed to UL 467 and
UL 2703

This document does not create any express warranty by Zep Solar or about its products or services. Zep Solar’s sole warranty is contained in the written product warranty for each product. The end-user documentation shipped with Zep Solar’s products constitutes the sole specifications referred to in the product warranty. The customer is solely responsible for verifying the suitability of Zep Solar’s products for each use. Specifications are subject to change without notice. Patents and Apps: zspats.com.

powered by

Q.ANTUM

Q.PEAK-G4.1/SC 295-305

Q.ANTUM ULTRA SOLAR MODULE

The new high-performance module **Q.PEAK-G4.1/SC** is the ideal solution for all applications thanks to its innovative cell technology **Q.ANTUM ULTRA** and a black **Zep Compatible™** frame design for improved aesthetics, easy installation and increased safety. The world-record cell design was developed to achieve the best performance under real conditions – even with low radiation intensity and on clear, hot summer days.



LOW ELECTRICITY GENERATION COSTS

Higher yield per surface area and lower BOS costs thanks to higher power classes and an efficiency rate of up to 18.6%.



INNOVATIVE ALL-WEATHER TECHNOLOGY

Optimal yields, whatever the weather with excellent low-light and temperature behavior.



ENDURING HIGH PERFORMANCE

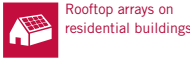
Long-term yield security with Anti-PID Technology¹, Hot-Spot-Protect and Traceable Quality Tra.Q™.



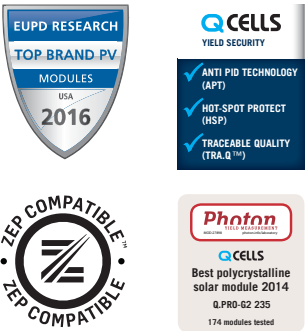
A RELIABLE INVESTMENT

Inclusive 12-year product warranty and 25-year linear performance guarantee².

THE IDEAL SOLUTION FOR:



Engineered in Germany

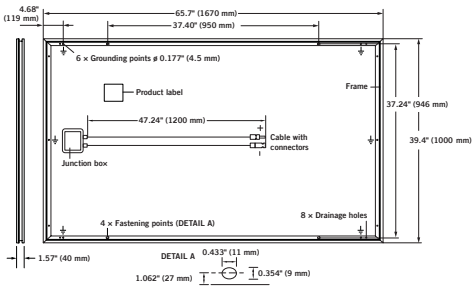


¹ APT test conditions: Cells at -1500V against grounded, with conductive metal foil covered module surface, 25°C, 168h
² See data sheet on rear for further information.



MECHANICAL SPECIFICATION

Format	65.7 in x 39.4 in x 1.57 in (including frame) (1670 mm x 1000 mm x 40 mm)
Weight	44.09 lbs (20.0 kg)
Front Cover	0.13 in (3.2 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	Composite film
Frame	Black anodized aluminum
Cell	6 x 10 monocrystalline Q.ANTUM ULTRA solar cells
Junction box	2.60-3.03 in x 4.37-3.54 in x 0.59-0.75 in (66-77 mm x 111-90 mm x 15-19 mm), Protection class IP67, with bypass diodes
Cable	4 mm² Solar cable; (+) 47.24 in (1200 mm), (-) 47.24 in (1200 mm)
Connector	Multi-Contact MC4, IP68

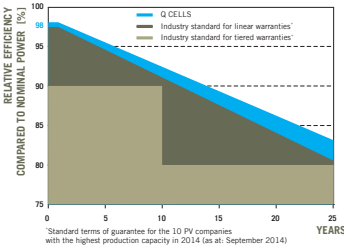


ELECTRICAL CHARACTERISTICS

POWER CLASS				295	300	305
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC ¹ (POWER TOLERANCE +5 W / -0 W)						
Minimum	Power at MPP ²	P _{MPP}	[W]	295	300	305
	Short Circuit Current*	I _{SC}	[A]	9.70	9.77	9.84
	Open Circuit Voltage*	V _{OC}	[V]	39.48	39.76	40.05
	Current at MPP*	I _{MPP}	[A]	9.17	9.26	9.35
	Voltage at MPP*	V _{MPP}	[V]	32.19	32.41	32.62
	Efficiency ²	η	[%]	≥ 17.7	≥ 18.0	≥ 18.3
MINIMUM PERFORMANCE AT NORMAL OPERATING CONDITIONS, NOC ³						
Minimum	Power at MPP ²	P _{MPP}	[W]	218.1	221.8	225.5
	Short Circuit Current*	I _{SC}	[A]	7.82	7.88	7.94
	Open Circuit Voltage*	V _{OC}	[V]	36.92	37.19	37.46
	Current at MPP*	I _{MPP}	[A]	7.20	7.27	7.35
	Voltage at MPP*	V _{MPP}	[V]	30.30	30.49	30.67

¹1000 W/m², 25 °C, spectrum AM 1.5G ² Measurement tolerances STC ± 3 %; NOC ± 5 % ³ 800 W/m², NOCT, spectrum AM 1.5G * typical values, actual values may differ

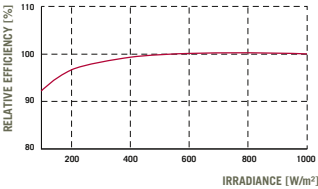
Q CELLS PERFORMANCE WARRANTY



At least 98% of nominal power during first year. Thereafter max. 0.6% degradation per year. At least 92.6% of nominal power up to 10 years. At least 83.6% of nominal power up to 25 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

PERFORMANCE AT LOW IRRADIANCE



Typical module performance under low irradiance conditions in comparison to STC conditions (25 °C, 1000 W/m²).

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{sc}	α	[%/K]	+0.04	Temperature Coefficient of V _{oc}	β	[%/K]	-0.28
Temperature Coefficient of P _{MPP}	γ	[%/K]	-0.39	Normal Operating Cell Temperature	NOCT	[°F]	113 ± 5.4 (45 ± 3 °C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{sys}	[V]	1000 (IEC) / 1000 (UL)	Safety Class	II
Maximum Series Fuse Rating	[A DC]	20	Fire Rating	C (IEC) / TYPE 1 (UL)
Design load, push (UL) ²	[lbs/ft²]	75 (3600 Pa)	Permitted module temperature on continuous duty	-40 °F up to +185 °F (-40 °C up to +85 °C)
Design load, pull (UL) ²	[lbs/ft²]	55.6 (2666 Pa)	² see installation manual	

QUALIFICATIONS AND CERTIFICATES

UL 1703; CE-compliant; IEC 61215 (Ed.2); IEC 61730 (Ed.1) application class A



PACKAGING INFORMATION

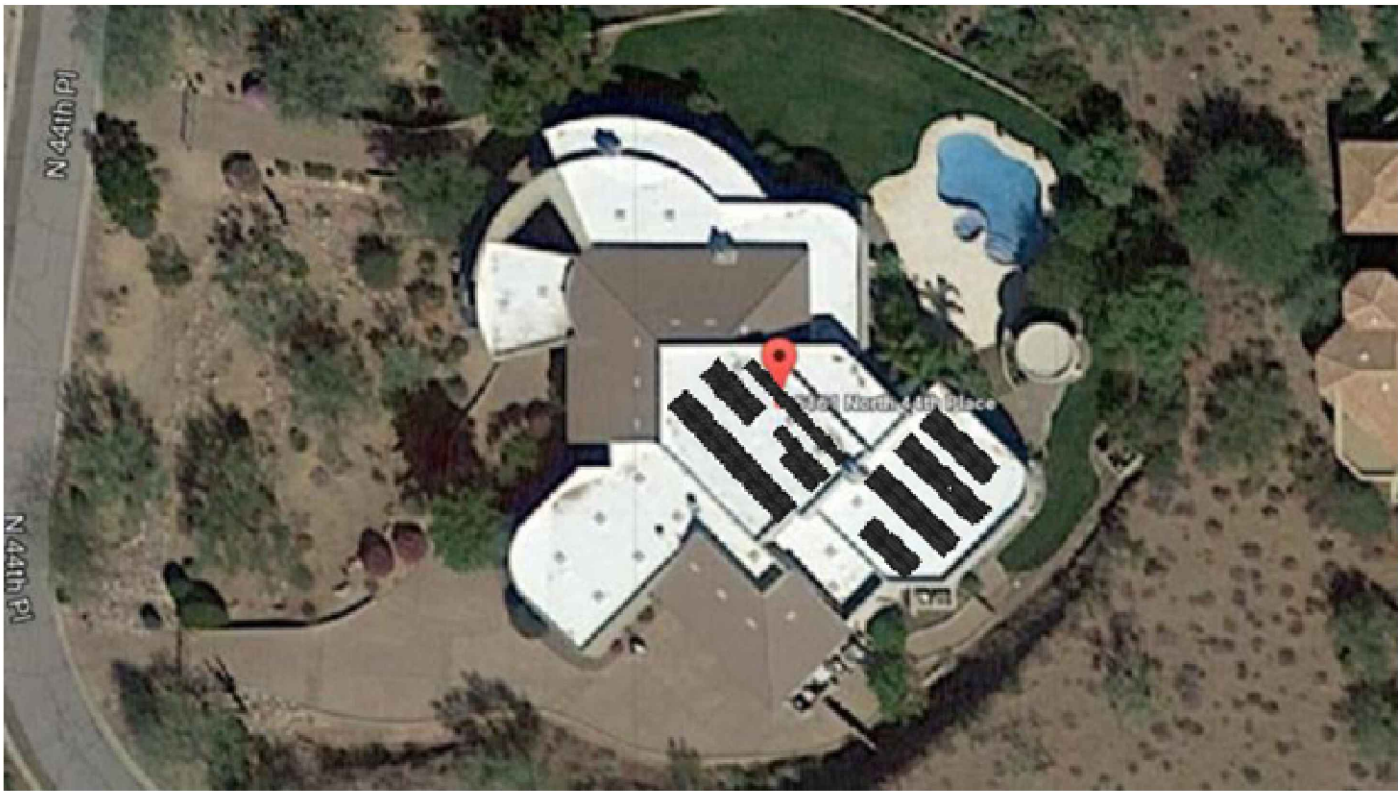
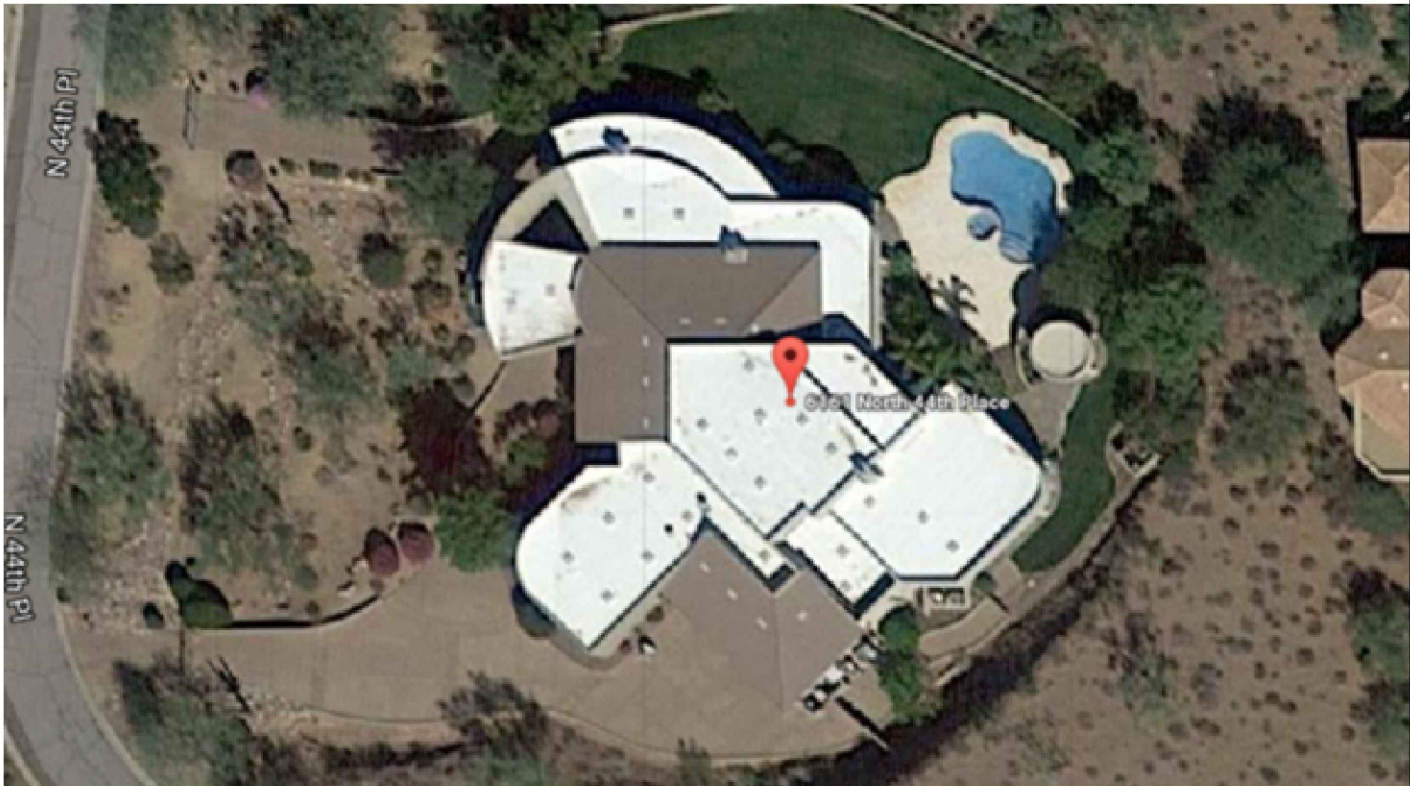
Number of Modules per Pallet	26
Number of Pallets per 53' Container	32
Number of Pallets per 40' Container	26
Pallet Dimensions (L x W x H)	68.7 in x 45.3 in x 46.1 in (1745 mm x 1150 mm x 1170 mm)
Pallet Weight	1254 lbs (569 kg)

NOTE: Installation instructions must be followed. See the installation and operating manual or contact our technical service department for further information on approved installation and use of this product.

Hanwha Q CELLS America Inc.
300 Spectrum Center Drive, Suite 1250, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us.q-cells.com | WEB www.q-cells.us

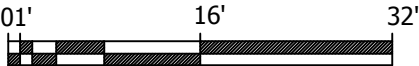
PROJECT NARRATIVE

The project includes install of Rooftop solar on 6161 N 44TH PLACE. The project consists of 66 modules on two mounting planes facing south west WITH 8 ARRAYS, at an Azimuth of 225 degreeS. Panels are not visible over parapets. All parapets are existing, and modules are at or below the level of the parapets.



SITE PLAN

Scale:1/16" = 1'



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JOB NUMBER: JB-8528152 00

MOUNTING SYSTEM:
ZS Ramp Foot

MODULES:
(66) Hanwha Q-Cells # Q.Peak-G4.1/SC300

INVERTER:
SOLAREDGE # SE7600A-US002SNU2

PREMISE OWNER:
SURENDER GUNNALA
6161 N 44TH PLACE
PARADISE VALLEY, AZ 85253

DESCRIPTION:
Surender Gunnala RESIDENCE
19.8 KW PV ARRAY
15.2 KW (AC NAMEPLATE) PV ARRAY

PAGE NAME:
HBC 1

DESIGN:
Thremaine Johnson

SHEET: HBC 1
REV: 8/6/2017
DATE:

TESLA

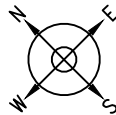
Identify color and LRV value of rack system

Rack is bare metal, framing is black on modules

Identify color and LRV value

Rack System is bare metal, framing is black on modules.

photovoltaic meter will be painted to match house. Paint color will be match to home and determined at install



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INVERTER:	SOLAREEDGE # SE7600A-US002SNU2

PREMISE OWNER:
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PARADISE VALLEY, AZ 85253

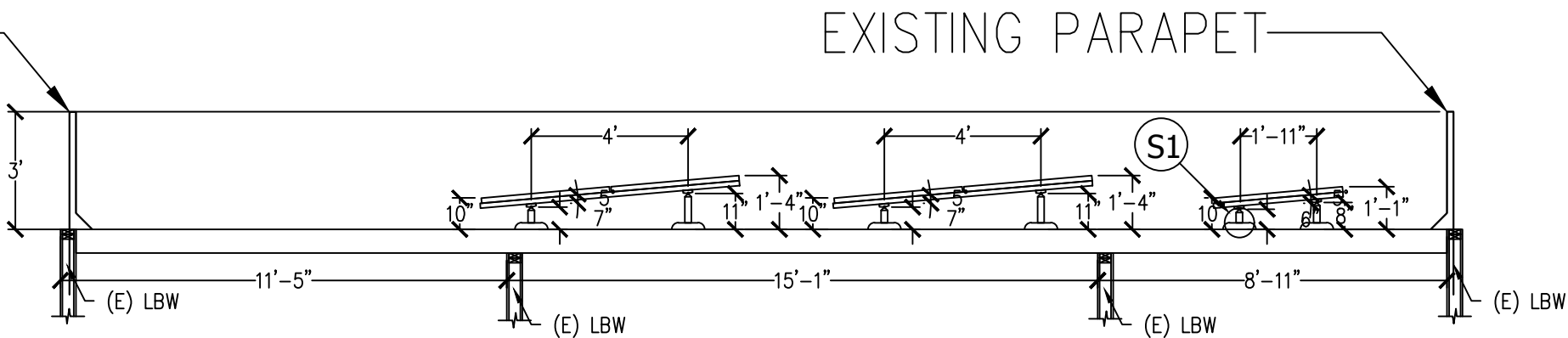
DESCRIPTION:
Surender Gunnala RESIDENCE
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15.2 KW (AC NAMEPLATE) PV ARRAY

PAGE NAME:
HBC 2

DESIGN:	Thremaina Johnson
SHEET:	HBC 2
REV:	
DATE:	8/6/2017



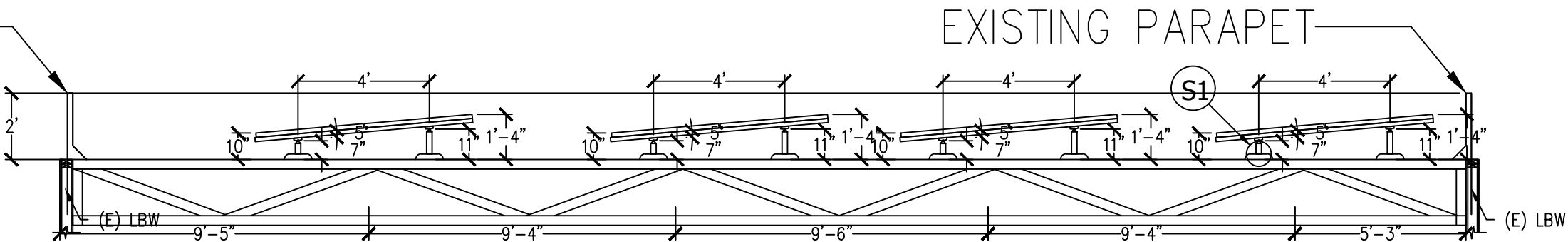
EXISTING PARAPET



A SIDE VIEW OF MP1 NTS

MP1	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	72"	24"	72"	24"	
PORTRAIT	48"	21"	72"	24"	
RAFTER	2x8 @ 24" OC		ROOF AZI 225 ARRAY AZI 225	PITCH 3 PITCH 5 Foam	STORIES: 2
X AND Y ARE ALWAYS RELATIVE TO THE STRUCTURE FRAMING THAT SUPPORTS THE PV. X IS ACROSS RAFTERS AND Y IS ALONG RAFTERS.					

EXISTING PARAPET



B SIDE VIEW OF MP2 NTS

MP2	X-SPACING	X-CANTILEVER	Y-SPACING	Y-CANTILEVER	NOTES
LANDSCAPE	72"	24"	72"	24"	
PORTRAIT	48"	21"	72"	24"	
TOP CHORD 2x4 @ 24" OC			ROOF AZI 225	PITCH 3	STORIES: 2
BOT CHORD 2x4 @24" OC			ARRAY AZI 225	PITCH 5	
			Foam		
X AND Y ARE ALWAYS RELATIVE TO THE STRUCTURE FRAMING THAT SUPPORTS THE PV.					
X IS ACROSS RAFTERS AND Y IS ALONG RAFTERS.					

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INVERTER:
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PAGE NAME:
HBC 3

DESIGN:
Thremaine Johnson

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REV: 8/6/2017
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TESLA

VIEW A



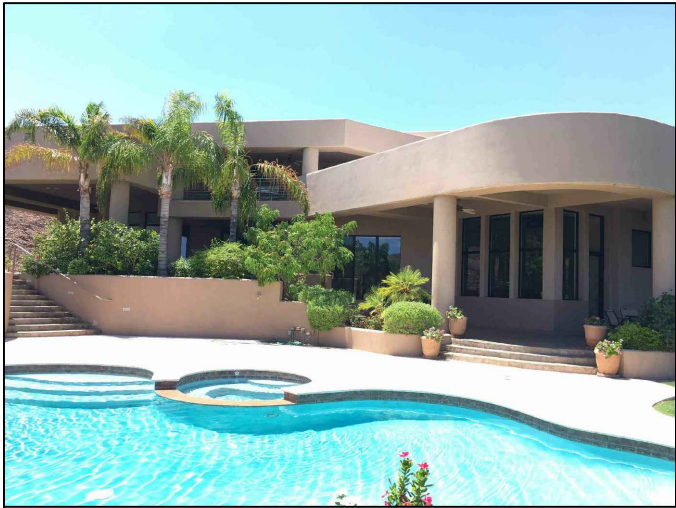
VIEW C



VIEW E



VIEW G



VIEW B



VIEW D



VIEW F



VIEW H



AC DISCO AND NEW LC

PV METER AND AC DISCO

INVERTER AND LOAD CENTER LOCATION

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