
E Hummingbird Ln
E Hummingbird Ln
E Hummingbird Ln
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E Quartz Mountain Rd
E Quartz Mountain Rd
E Quartz Mountain Rd
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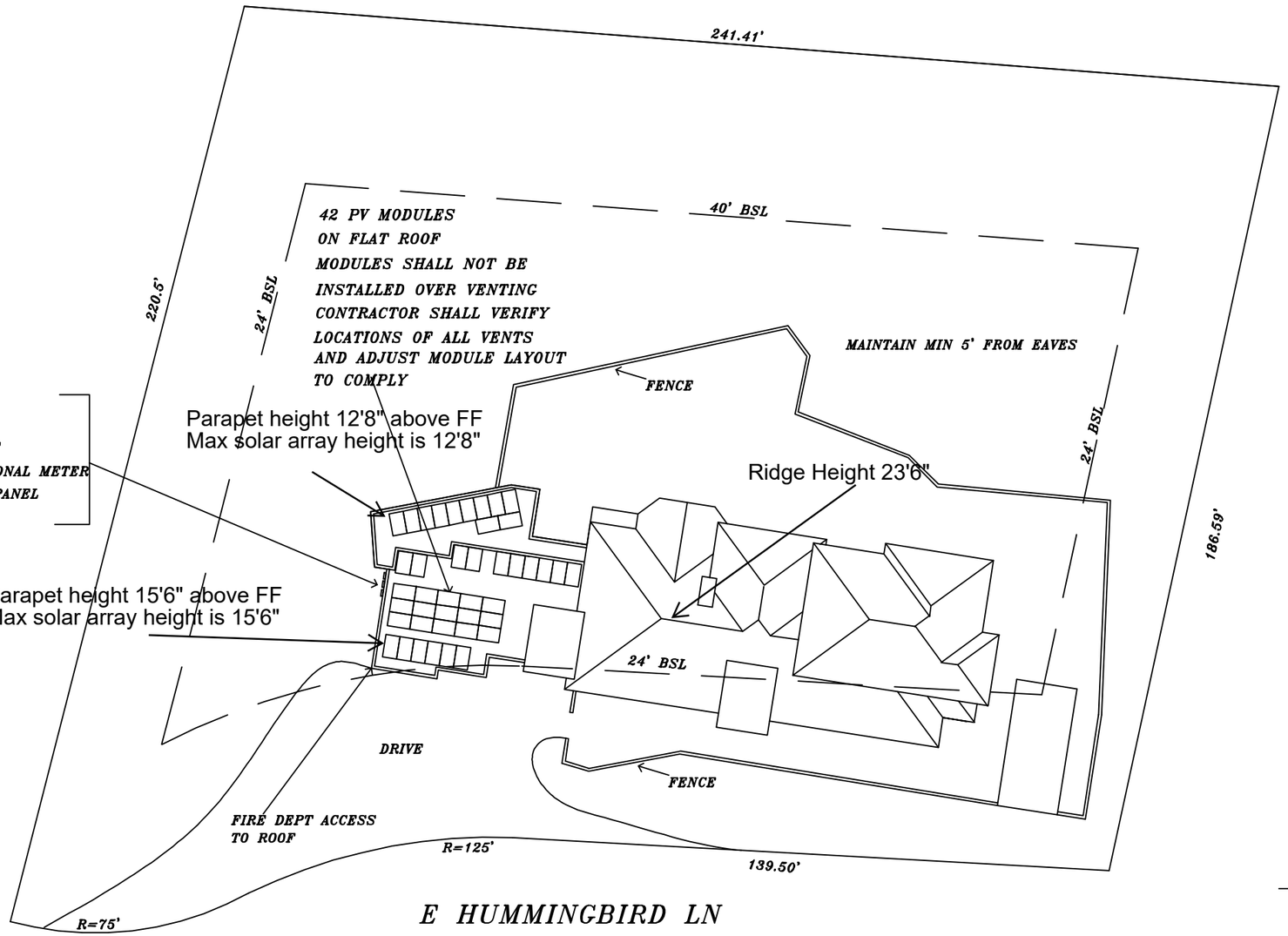
E Hummingbird



E HUMMINGBIRD LN

CODES
- 2014 NATIONAL ELECTRIC CODE (NEC)
- 2015 INTERNATIONAL RESIDENTIAL CODE (IBC)
- 2015 INTERNATIONAL BUILDING CODE (IBC)
- 2015 INTERNATIONAL FIRE CODE (IFC)

INSTALLATION SHALL BE IN COMPLIANCE WITH NEC 690

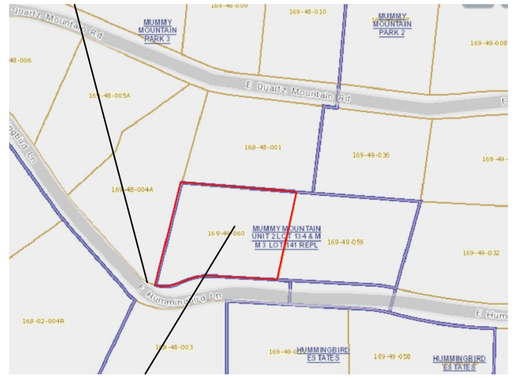
NOTE: NO NAOS OR PROTECTED NATIVE PLANTS SHALL BE AFFECTED BY INSTALLATION OF SOLAR PANELS

THE SOLAR INSTALLATION SHALL COMPLY WITH INTERNATIONAL FIRE CODE (IFC) SEC. 605.11 THRU 605.11.4 MICROINVERTER SYSTEM (NO HAZARDOUS DC VOLTAGE PRESENT)

0 10' 20' 30' 40' 50'

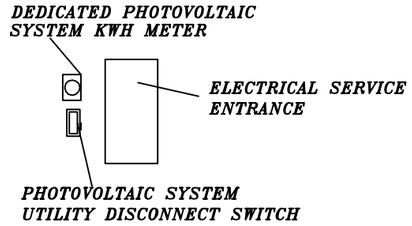
SITE PLAN
1" =30'

APS PLANT LOCATION



SOLAR PROJECT
6010 E HUMMINGBIRD LN
PARADISE VALLEY AZ 85253
APN 169 49 060
ZONING R-43
LOT#141
MUMMY MOUNTAIN UNIT 2
LOT 134 & MM3 LOT 141REPL
MCR 41950

13.65 KWAC PV SYSTEM
16.38 KWDC STC



METER AND SWITCH LAYOUT

NOTE: UTILITY HAS 24 HOUR UNRESTRICTED ACCESS TO ALL PHOTOVOLTAIC SYSTEM COMPONENTS LOCATED AT SERVICE ENTRANCE

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.

NOTE: REFERENCE SECTION 301.15 OF THE APS ESRM FOR ELECTRIC METER SEPARATION BETWEEN WATER AND GAS.

SHEET INDEX:

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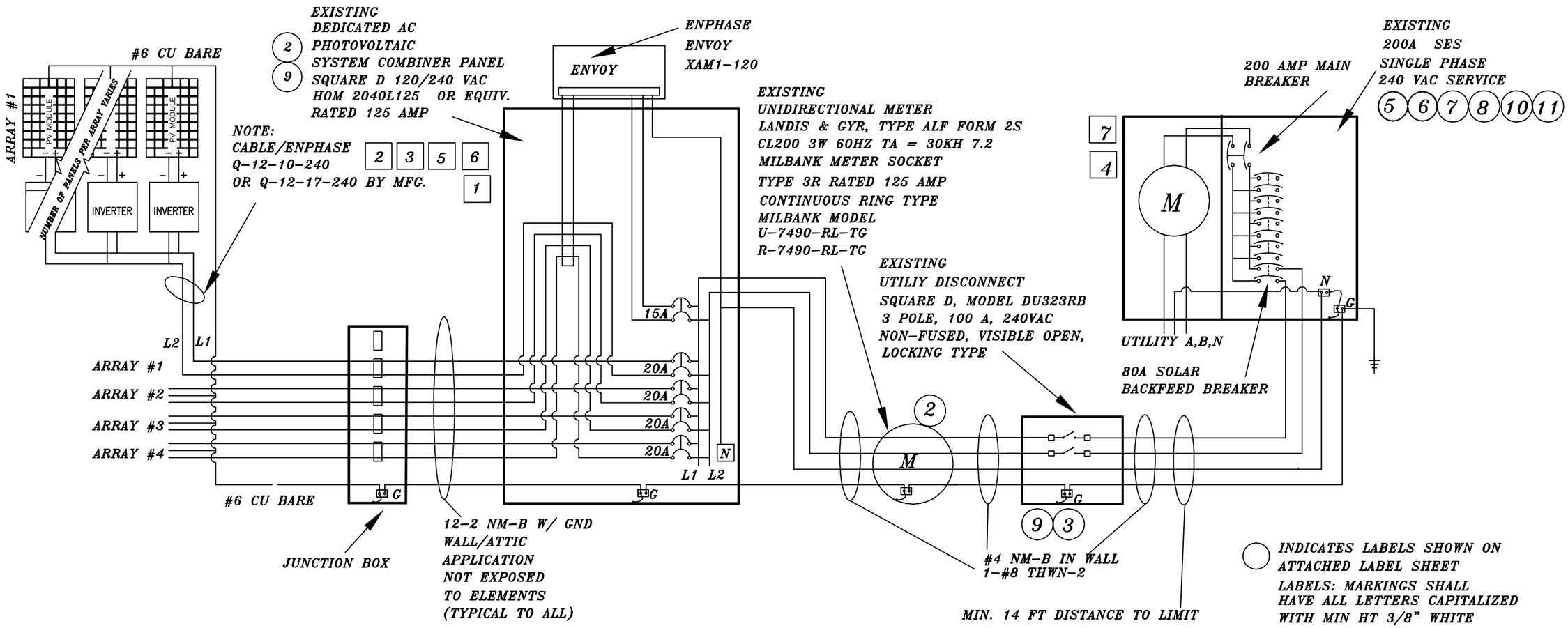
black platinum solar & electric

TASHMAN RESIDENCE
6010 E HUMMIMGBIRD LN
PARADISE VALLEY AZ 85253

DATE: 25-0312
BPSE PROJ.#20-0
APN 169 49 060
APS #

1 REV.
2 REV .2 .

SITE PLAN
S-1



KEYED NOTES:

1. *CONDUIT WILL BE USED, WHERE REQUIRED FOR AC WIRING OF PV SYSTEM WITHIN BUILDING PER NEC 690.31 (E)*
2. *PHOTOVOLTAIC ARRAY DC DISCONNECT IS ACCOMPLISHED VIA THE MC4 CONNECTOR AT EACH PANEL AND INVERTER LOCATION*
3. *LISTING AGENCY NAMES AND NUMBERS TO BE INDICATED ON POWER CONVERTERS ANDSOLAR MODULES PER NEC 110.3 (b)*
4. *BI-DIRECTIONAL UTILITY METER TO BE INSTALLED BY THE UTILITY COMPANY (WHEN REQUIRED)*
5. *ALL ROOFTOP CONDUITS SHALL BE IN CONDUIT MIN. 7/8" ABOVE THE ROOF TOP (NEC 310.15 (B)(3)(C)*
6. *ALL EXPOSED PV ROOFTOP CONDUCTORS NOT UNDER THE ARRAY SHALL BE PROTECTED BY A RACEWAY WITH LISTED JUNCTION BOX AT BOTH ENDS NEC 690.31(A)*
7. *PV BACK FED BREAKERS SHALL BE 22K A/C FULLY RATED OR A LISTED SERIES RATED BREAKER WITH THE MAIN OCP FOR 22/10K FOR 200A THROUGH 400A, SINGLE PHASE, 240VCH END. (NEC 690.31α) NEC 110.9, NEC 240.86(B)*

NOTE:
ALL EQUIPMENT SPECIFIED IN THIS SCHEMATIC IS NEW UNLESS INDICATED AS EXISTING

CALCULATION

ARRAY #1 10 INVERTERS X 1.35A = 13.50A X 1.25 = 16.88A = 20A BREAKER
ARRAY #2 10 INVERTERS X 1.35A = 13.50A X 1.25 = 16.88A = 20A BREAKER
ARRAY #3 11 INVERTERS X 1.35A = 14.85A X 1.25 = 18.56A = 20A BREAKER
ARRAY #4 11 INVERTERS X 1.35A = 14.85A X 1.25 = 18.56A = 20A BREAKER

42 INVERTERS X 1.35A = 56.70A X 1.25 = 70.88A = 80A SOLAR BREAKER

SYSTEM SIZE

13.65 KWAC PV SYSTEM
16.38 KWDC STC

SPECIFICATIONS

SOLAR MODULES- MEYER BERGER MB-B120AYB-390 (390W)
MODULE FIRE PERFORMANCE TYPE 1 (UL 1703)
INVERTERS - ENPHASE IQ8M-72-2-US

NOTE:
ALL TERMINATIONS RATED MIN. 75 DEGREES C
ART 110.14 (C) (1) (α)
TABLE 310.15 (B) (6)
75 DEG COLUMN

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TASHMAN RESIDENCE
6010 E HUMMIMGBIRD LN
PARADISE VALLEY AZ 85253

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APN 169 49 060
APS #

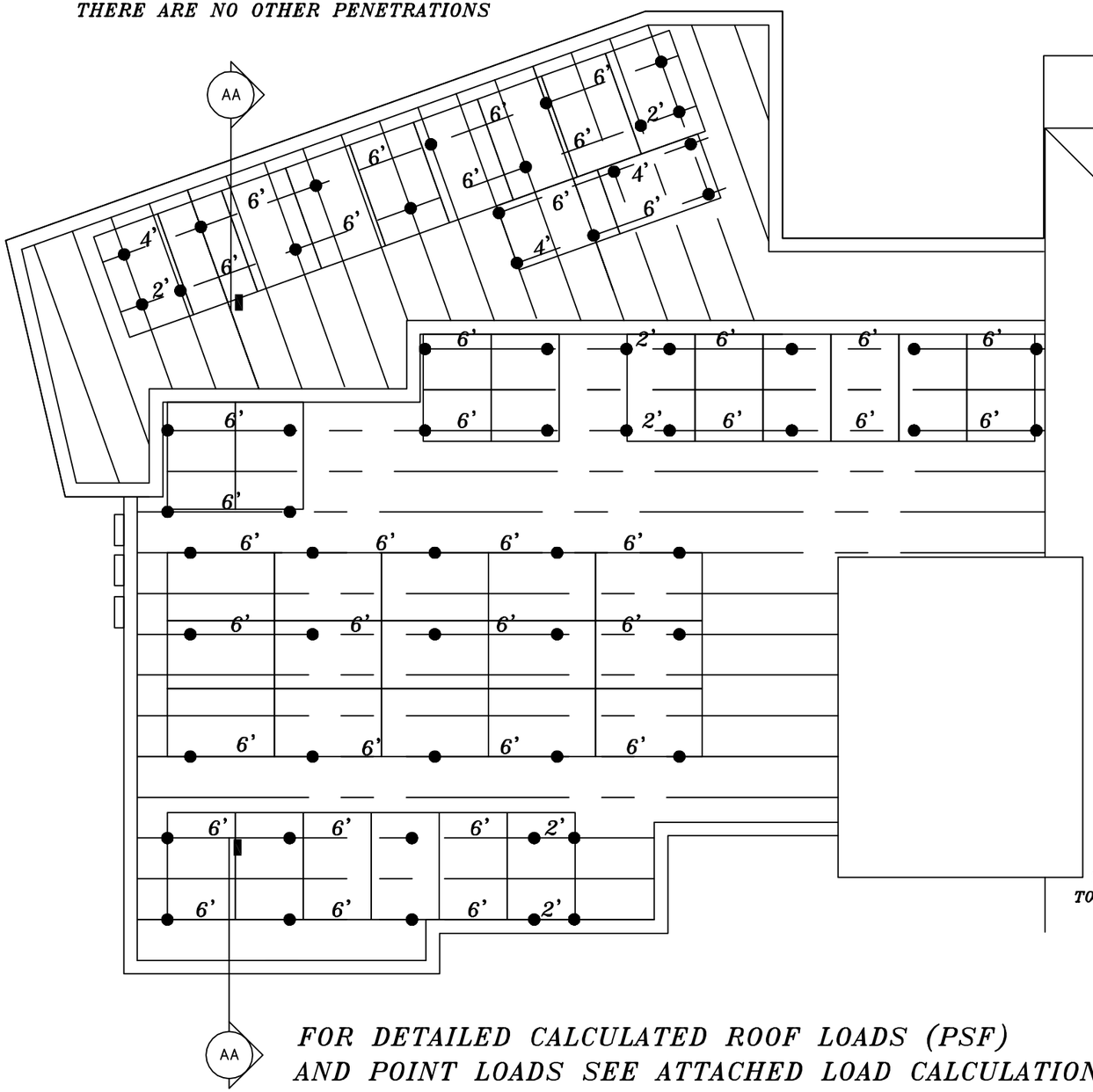
1 REV.
2 REV .2 .

3 LINE DIAGRAM
1 of 3

NOTE:
ALL PENETRATIONS OF SUPPORT BOLTS
AND CONDUIT SHALL BE SEALED
WITH NP1 ROOFING SEALANT (OR EQUAL)
THERE ARE NO OTHER PENETRATIONS

42 PV MODULES

DO NOT INSTALL OVER VENTS



FOR DETAILED CALCULATED ROOF LOADS (PSF)
AND POINT LOADS SEE ATTACHED LOAD CALCULATIONS

MOUNTS SHALL BE SPACED 6 FT O.C. OR LESS
STAGGER MOUNTS ON TRUSSES (TYPICAL)
TRUSSES 24" O.C. (TYPICAL)

ROOF MOUNTS PLAN

KEYED NOTES:

1. CONDUIT WILL BE USED, WHERE REQUIRED FOR AC WIRING OF PV SYSTEM WITHIN BUILDING PER NEC 690.31 (E)
2. PROVIDE WARNING SIGN PER NEC 690.17 READING "WARNING–ELECTRIC SHOCK HAZARD–DO NOT TOUCH TERMINALS–TERMINALS ON BOTH LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OFF POSITION.
3. PHOTOVOLTAIC ARRAY DC DISCONNECT IS ACCOMPLISHED VIA THE MC4 CONNECTOR AT EACH PANEL AND INVERTER LOCATION
4. LABEL "PHOTOVOLTAIC POWER SYSTEM DEDICATED KWH METER".
5. LABEL "PHOTOVOLTAIC SYSTEM UTILITY DISCONNECT SWITCH". SWITCH COVER TO BE LOCKED AT ALL TIMES. SWITCH TO BE VISABLE BLADE AND ACCESSABLE PER UTILITY REQUIREMENTS AND CONFORM TO NEC 705.22.
6. LABEL BREAKER "PHOTOVOLTAIC ELECTRIC POWER SOURCE" PER NEC 705.10, AND "BREAKERS ARE BACK FED" PER NEC 690.64 (b) (5). LABEL WITH MAXIMUM AC OUTPUT OPERATING CURRENT AND THE OPERATING VOLTAGE PER NEC 690.54.
7. LISTING AGENCY NAMES AND NUMBERS TO BE INDICATED ON POWER INVERTERS AND SOLAR MODULES PER NEC 110.3 (b)
8. BI–DIRECTIONAL UTILITY METER TO BE INSTALLED BY THE UTILITY COMPANY (WHEN REQUIRED).
9. LABLE "PV SYSTEM COMBINER PANEL WITH "DO NOT ADD LOADS TO THIS PANEL""
10. TAG AT SOLAR BREAKER INDICATING MAX AMPS AND SYSTEM AC VOLTAGE
11. PHOTOVOLTAIC POWER SOURCE BREAKERS ARE BACKFEEDING
12. WARNING! INVERTER OUTPUT CONNECTION. DO NOT RELOCATE THIS OVERCURRENT DEVICE
13. PHOTOVOLTAIC SYSTEM IS EQUIPPED W/ RAPID SHUTDOWN

ADDITIONAL NOTES:

A. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

B. 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).

C. FOLLOW MANIFACTURERS SUGGESTED INSTALLATION PRACTICES AND WIRING SPECIFICATIONS.

D. WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS.

E. DC DISCONNECT SHALL BE ACHEIVED VIA THE MC4 CONNECTOR AT EACH PANEL

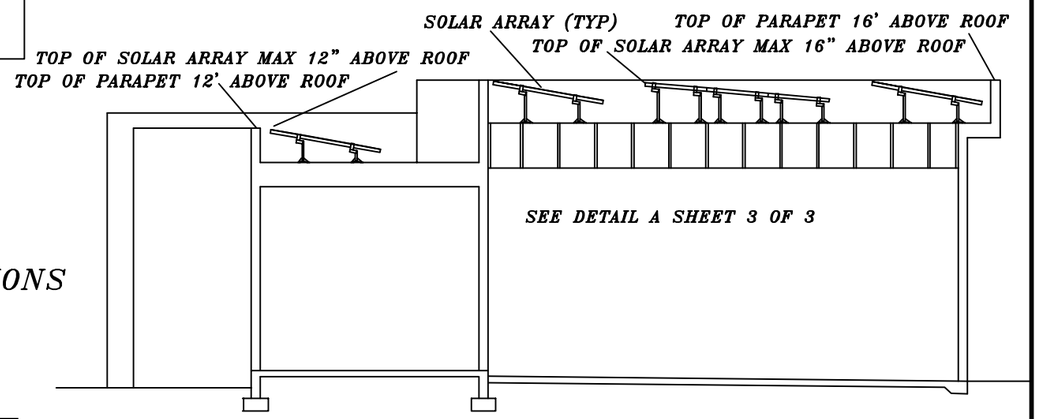
F. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE NEC AND ALL APPLICABLE REQUIREMENTS OF THE SERVING ELECTRIC UTILITY COMPANY AND AUTHORITY HAVING JURISDICTION.

G. PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH NEC 690 AND POSTED WITH APPLICABLE WARNINGS, SIGNS, AND PLAQUES PER NEC 705–10, 690–17 AND 690–64(b)(5)

H. EXISTING VENTS/FLUES THROUGH ROOF SHALL NOT BE COMPROMISED BY THE INSTALLATION OF THE SOLAR SYSTEM

I. THE COLLECTORS AND SUPPORTING STRUCTURE SHALL BE CONSTRUCTED OF NONCOMBUSTABLE MATERIALS

MANTAIN TOP OF PANELS BELOW PARAPET
WHERE VISABLE FROM THR STREET



SECTION AA

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TASHMAN RESIDENCE
6010 E HUMMIMGBIRD LN
PARADISE VALLEY AZ 85253

DATE: 25-0312
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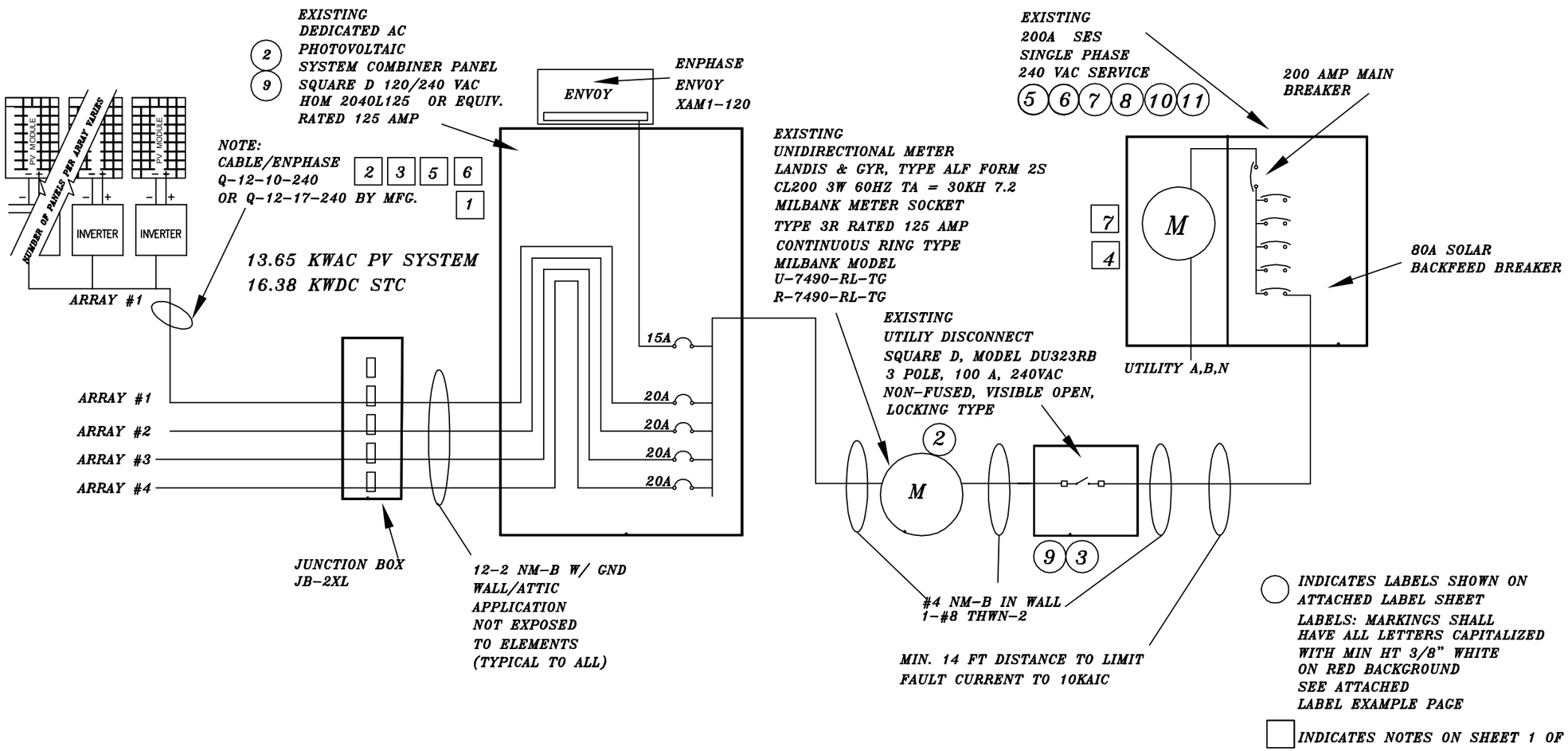
APS #

1 REV.
2 REV .2 .

GENERAL NOTES
2 of 3



NOTES:

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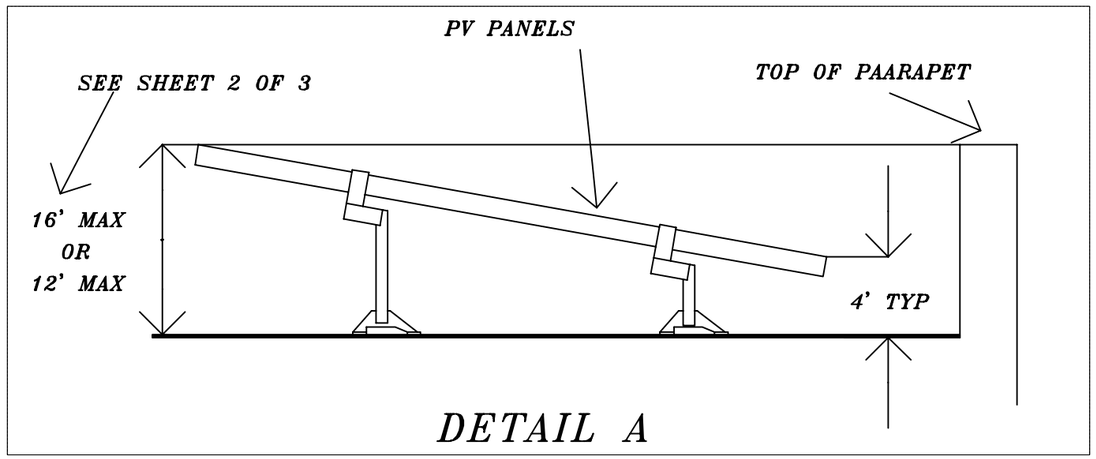

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APS #

1 REV.
2 REV .2 .

1 LINE DIAGRAM
3 of 3

1

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

2

UNI-DIRECTIONAL METER

3

UTILITY DISCONNECT

4

NOTICE

DEDICATED PHOTOVOLTAIC
SYSTEM COMBINER PANEL
DO NOT ADD LOADS TO THIS
PANEL

5

PHOTOVOLTAIC ELECTRIC
POWER SOURCE
MAXIMUM AC CURRENT ____ A
SYSTEM AC VOLTAGE ____ V

6

PHOTOVOLTAIC POWER SOURCE
BREAKERS
ARE BACKFEEDING

7

⚠ WARNING

INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

8

SOLAR PV SYSTEM EQUIPPED
WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN
SWITCH TO THE
"OFF" POSITION TO
SHUTDOWN PV SYSTEM
AND REDUCE
SHOCK HAZARD
IN ARRAY

9

⚠ WARNING

ELECTRICAL SHOCK
HAZARD
-DO NOT TOUCH TERMINALS-
TERMINALS ON BOTH THE LINE AND
LOAD SIDES MAY BE ENERGIZED IN
THE OPEN POSITION

10

PHOTOVOLTAIC SYSTEM
EQUIPPED WITH RAPID
SHUTDOWN

11

⚠ CAUTION ⚠

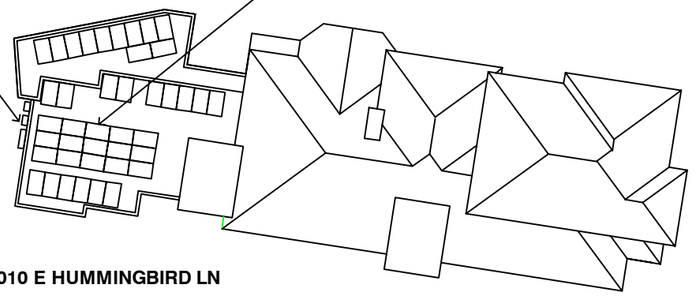
POWER TO THIS BUILDING IS SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN

SERVICE
ENTRANCE & METER

UTILITY DISCONNECT
UNIDIRECTIONAL METER

COMBINER PANEL
IN GARAGE

SOLAR INSTALLATION AREA



6" MIN

6" MIN

6010 E HUMMINGBIRD LN
PARADISE VALLEY AZ 85253

13.65 KWAC PV SYSTEM
16.38 KWDC STC

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APS #

1 REV.
2 REV .2 .

1 LINE DIAGRAM
3 of 3

10651 N Cave Creek Rd #C
Phoenix, AZ 85020
Office: 623-434-3340
AZ ROC 232364

Date: 03/12/2025

RE: Photovoltaic System for:

GM HUNT/Tashman Residence

6010 E Hummingbird Ln

Paradise Valley, AZ 85253

SUBJEC Calculated roof load and point load calculations for the proposed photovoltaic system:

Equipment	Model #	Count	Weight in Lb	Total Lbs
Solar Modules	Meyer Burger MB-B120AYB-390	42	39.7	1,667.4
Microinverters	Enphase Energy **IQ8M -72-2-US [240V]**	42	2.38	100.0
Mounting Hardware	IronRidge rails and mounting hardware	42	4.2	176.4
				1,943.8

Solar module dimensions (L x W):	66.38 " X 40.00 "		=	18.4 sf		
Solar panel installation square footage:	42 modules	X 18.4	= System sf:	774.4		
Applied weight per square foot:	Total System Weight:	1,943.8	÷ System sf:	774.4	=	**2.5 lb/sf**
Point load calculation 62 mounts @	1,943.8 lbs		**31.4** lbs/mount point			

NOTES:

Mounts are fastened in staggered truss attachments, thereby equalizing load and mounts over all trusses in the roof section

Spacing of supports not to exceed 6.0' point of attachment. Minimum lag bolt embed of 2 1/2 inches required.

Roof framing: TRUSS

Roof pitch: 5:20

Roof Covering: FLAT FOAM

Regards,

John A Black
ROC 232364

MEYER BURGER

Meyer Burger Black

Product type: MB_B120AyB_XXX

375 – 395 Wp

For maximum yields combined with outstanding design: Heterojunction high-performance solar module with SmartWire Connection Technology (SWCT®).

Made in Germany. Designed in Switzerland.
Production and development according to the highest quality standards.

Highly profitable
More energy yield over the same area even on cloudy or hot days.

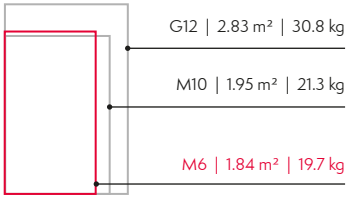
Extremely durable
Outstanding cell stability and high breakage resistance thanks to patented SmartWire Connection Technology.

Consistently sustainable
Regional value creation, made without lead and produced using 100 % renewable energy.

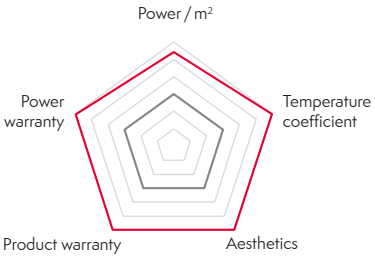
Guaranteed reliability
Industry-leading 25-year product and performance warranty.

Extremely aesthetic
Elegant Swiss design suitable for all roof shapes and sophisticated architecture.

Extremely practical
Convenient handling, maximum layout flexibility and maximum system performance thanks to compact format.



* Size formats compared



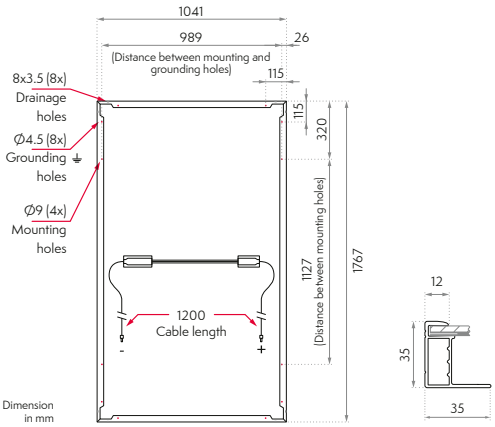
○ Meyer Burger
○ Market average

MEYER BURGER

Residential rooftop

Mechanical specification

Dimensions [mm]	1767 x 1041 x 35
Weight [kg]	19.7
Front cover	Tempered solar glass, 3.2 mm, with anti-reflective surface
Back cover	Black water-barrier backsheet
Frame	Black anodized aluminum
Solar cell type	120 half-cells, mono n-Si, HJT with SWCT®
Junction boxes	3 diodes, IP68 rated in accordance with IEC 62790
Cable	PV cable 4 mm², 1.2 m length in accordance with EN 50618
Connectors	1: MC4; 2: MC4-Evo2; 3: UKT Energy PV-CO02; 4: TE Connectivity PV4-S1 in accordance with IEC 62852, IP68 rated only when connected



Packages

1780 mm	1050 mm	1300 mm	650 kg	30 modules	max. 2 pallets	28 pallets	26 pallets

Delivery by container or truck. For truck freight, 0.78 loading meters per pallet and stacking factor 2 apply.

Electrical specification[1]

Product type: MB_B120AyB_XXX*

Power class	Efficiency	Power**		Short circuit current		Open circuit voltage		Current at MPP		Voltage at MPP	
	η	P_{max}		I_{sc}		V_{oc}		I_{mpp}		V_{mpp}	
	[%]	[W]		[A]		[V]		[A]		[V]	
	STC[2]	NMOT[3]	**STC**	NMOT	**STC**	NMOT	**STC**	NMOT	**STC**	NMOT	**STC**
375	**20.4**	283	**375**	8.5	**10.6**	42.2	**44.4**	7.9	**9.9**	35.7	**37.8**
380	**20.7**	287	**380**	8.5	**10.6**	42.2	**44.5**	8.0	**10.0**	36.1	**38.2**
385	**20.9**	291	**385**	8.5	**10.6**	42.3	**44.6**	8.0	**10.0**	36.4	**38.5**
390	**21.2**	294	**390**	8.5	**10.6**	42.4	**44.6**	8.0	**10.1**	36.7	**38.9**
395	**21.5**	298	**395**	8.5	**10.6**	42.4	**44.7**	8.1	**10.1**	37.0	**39.2**

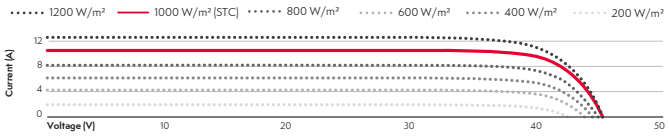
* XXX = power class, y = connector type | ** Power tolerance -0 W / +5 W for STC

Temperature coefficients

Temperature coefficient of I_{SC}	α	[%/K]	+0.033
Temperature coefficient of V_{OC}	β	[%/K]	-0.234
Temperature coefficient of P_{MPP}	γ	[%/K]	-0.259
Nominal Module Operating Temperature	NMOT[3]	[°C]	44±2

The temperature coefficients stated are linear values.

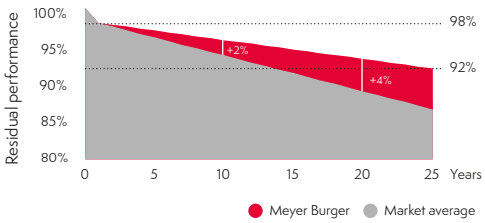
I-V curves at different irradiations



Properties for system design

Max. system voltage	[V]	1000
Overcurrent protection rating	[A]	20
Max. test load +/- (Safety factor for test load = 1.5)	[Pa]	6000/4000
Max. design load +/-	[Pa]	4000/2666
Safety class		II
Fire class (EN 13501-1 / EN 13501-5)		$E/B_{ROOF}(t1)$
Operation temperature	[°C]	-40 to +85

Meyer Burger warranty



2.0% Degradation in 1st year

0.25% Annual degradation

25 years Product & power warranty

Certificates

IEC 61215:2016, IEC 61730:2016, PID (IEC 62804), Salt Mist (IEC 61701), MCS 010 & MCS 005

Certification pending: Ammonia Resistance (IEC 62716), Dust & Sand (IEC 60068)

Test procedure according to IEC standard

Market standard	1× IEC
Meyer Burger materials testing	3× IEC

[1] Measurement according to IEC 60904-3, measurement tolerance: ±3%
[2] STC: Irradiance 1000 W/m², module temperature 25°C, AM1.5G Spectrum
[3] NMOT: Nominal Module Operating Temperature, with irradiance 800 W/m², AM1.5G spectrum, ambient temperature 20°C

Made in Germany. Designed in Switzerland.

Lead-free

Notice: All data and specifications are preliminary and subject to change without notice.

Visit us at meyerburger.com

WEEE Reg. No. DE 18170271

As of: Version Q2_2024_V7_en

Enphase IQ 8M and IQ 8A Microinverters

The high-powered smart grid-ready **Enphase IQ 8M™ and Enphase IQ 8A™ Series microinverters** are single-phase power conversion platforms that convert power in either direction: AC to DC or DC to AC, at up to 325VA (IQ 8M) or 349VA (IQ 8A), and which can operate in grid-tied or off-grid modes.

Part of the Enphase Ensemble™ energy management technology, the IQ 8M and IQ 8A microinverters integrate with the Enphase IQ Envoy™ and the Enphase Enlighten™ monitoring and analysis software.

IQ Series microinverters extend the reliability standards set forth by previous generations and undergo over a million hours of power-on testing, enabling Enphase to provide an industry-leading warranty of up to 25 years.

Easy to Install

- Lightweight and simple
- Faster installation with improved, lighter two-wire cabling
- Built-in rapid shutdown compliant (NEC 2014, 2017, & 2020)

Productive and Reliable

- Optimized for high-powered 60-cell/120 half-cell and 72-cell/144 half-cell PV modules
- More than a million hours of testing
- Class II double-insulated enclosure
- UL listed

Smart Grid Ready

- Complies with advanced grid support, voltage and frequency ride-through requirements
- Remotely updates to respond to changing grid requirements
- Configurable for varying grid profiles
- Meets CA Rule 21 (UL 1741-SA)

1. Enphase adapters are available for use with other connectors. Consult Enphase for more information.

Enphase IQ 8M and IQ 8A Microinverters

PRELIMINARY

INPUT DATA (DC)	IQ8M-72-2-US	IQ8A-72-2-US
Commonly used module pairings[2]	235 W - 460 W +	235 W - 510 W +
Module compatibility	60-cell/120 half-cell and 72-cell/144 half-cell PV modules	60-cell/120 half-cell and 72-cell/144 half-cell PV modules
Maximum input DC voltage	50 V	60 V
Peak power tracking voltage	33 V - 45 V	36 V - 45 V
Operating range	25 V - 48 V	25 V - 58 V
Min/Max start voltage	30 V / 48 V	30 V / 58 V
Max DC short circuit current (module Isc)	15 A	15 A
Overvoltage class DC port	II	II
DC port backfeed current	0 A	0 A
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	

OUTPUT DATA (AC)	IQ8M-72-2-US	IQ8A-72-2-US
Peak output power	330 VA	366 VA
Maximum continuous output power	325 VA	349 VA
Nominal (L-L) voltage/range[3]	240 V / 211-264 V	240 V / 211-264 V
Maximum continuous output current	1.35 A	1.45 A
Nominal frequency	60 Hz	60 Hz
Extended frequency range	50 - 68 Hz	50 - 68 Hz
AC short circuit fault current over 3 cycles	4.36 Arms	4.36 Arms
Maximum units per 20 A (L-L) branch circuit[4]	11	11
Overvoltage class AC port	III	III
AC port backfeed current	3mA	3mA
Power factor setting	1.0	1.0
Off-grid power factor	-1 to 0 to +1	-1 to 0 to +1
Grid-tied power factor (adjustable)	0.85 leading ... 0.85 lagging	0.85 leading ... 0.85 lagging

EFFICIENCY	@240 V	@240 V
Peak efficiency	97.7 %	97.1 %
CEC weighted efficiency	97.0 %	96.5 %

MECHANICAL DATA	
Ambient temperature range	-40°C to +60°C (-40°F to +140°F)
Relative humidity range	4% to 100% (condensing)
Connector type	Enphase Q™ Connector
Adapters (optional)	Q-DCC-5 Amphenol H4 UTX
Dimensions (HxWxD)	212 mm (8.3”) x 175 mm (6.9”) x 30.2 mm (1.2”) - without bracket
Weight	1.08 kg (2.38 lbs)
Cooling	Natural convection - No fans
Approved for wet locations	Yes
Pollution degree	PD3
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure
Environmental category / UV exposure rating	NEMA Type 6 / outdoor

FEATURES	
Communication	Power Line Communication (PLC)
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect means required by NEC 690 and C22.1-2018 Rule 64-220.
Compliance (pending)	CA Rule 21 (UL 1741-SA) UL 62109-1, UL1741/IEEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC 2014, NEC 2017, and NEC 2020 section 690.12 and C22.1-2018 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according to manufacturer’s instructions.

2. No enforced DC/AC ratio. See the compatibility calculator at https://enphase.com/en-us/support/module-compatibility.
3. Nominal voltage range can be extended beyond nominal if required by the utility.
4. Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

To learn more about Enphase offerings, visit **enphase.com**

ENPHASE.

Foam Jack™

Patent #6,360,491

Laboratory tested to 2,870 lbs.* (pullout) 2,615 lbs.* (axial side pull)

The patented design of the Fast Jack® is now available in an easy-to-foam version designed for use on commercial and metal rooftops! This industrial grade stanchion offers a full 2,870 lbs. of vertical strength using one 3/8" x 6" lag bolt!* It also offers an impressive 2,615 lbs. of axial (side) strength. Like the Commercial and Residential Fast Jack®, the primary connection to the roof is made directly under the point of load. *(Pat. #6,360,491)*

The Foam Jack™ base accepts one fastener up to 3/8" diameter. The post is available in a 1/2" thread version which fully integrates with commercially available steel strut using the optional Commercial Leveling Kit. The 3/8" threaded post version integrates with the Roof Trac® support rail.

6" High-1/2" Threaded Post

Part# FMJ-612L (Lag Bolt Version)
Part# FMJ-612T (Self tapping Screw Version)
For use with the 1/2" commercial leveling kit (sold separately)

6" High-3/8" Threaded Post

Part# FMJ-638L (Lag Bolt Version) *Pictured Left*
Part# FMJ-638T (Self tapping Screw Version)
Use this version when setting the Roof Trac® support rail directly on the post.

Leveling kit

Part# CFJ-LEVEL
For use with the FMJ-612L & FMJ-612T in conjunction with standard outdoor rated strut to adjust for minor roof variances

Benefits of the Foam Jack™

- Patented design locates the lag bolt or self tapping screw directly under the removable post for superior strength
- Use of foam versus a flashing provides leak-free connections at a fraction of the cost of conventional flashings
- Precision machined from extruded aluminum and tumbled clean for proper foam adhesion
- Significantly lighter than steel for installer convenience and reduced shipping costs
- Cylinder base design allows for even distribution of foam around the stanchion

LEVELING OPTION
PART #FMJ-612L / #FMJ-612T

Like the best-selling Commercial Fast Jack®, the Foam Jack™ is available in a 1/2" thread version to accept the Commercial Leveling Kit.

TYPICAL INSTALLATION SEQUENCE FOR FOAMING:

Step 1: Locate rafter/beam

Step 2: Use drill guide (sold separately) to drill a pilot hole.

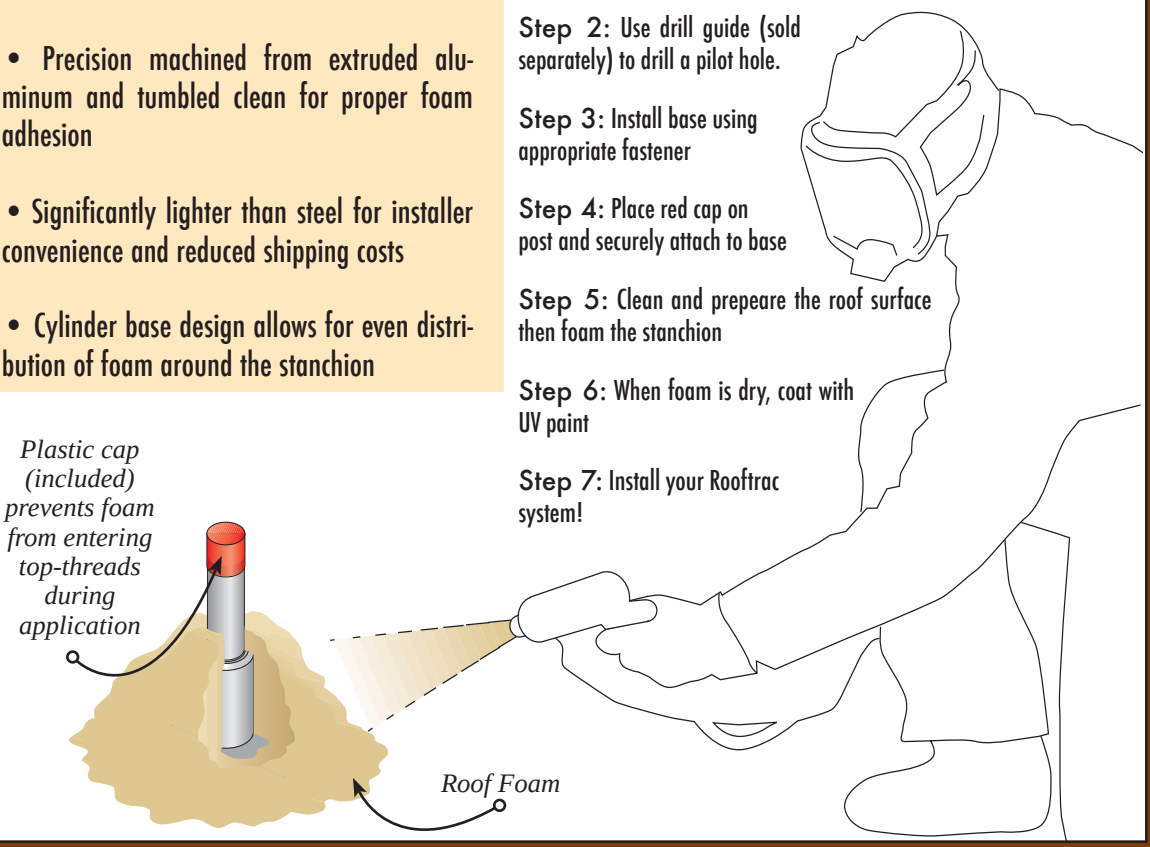
Step 3: Install base using appropriate fastener

Step 4: Place red cap on post and securely attach to base

Step 5: Clean and prepeare the roof surface then foam the stanchion

Step 6: When foam is dry, coat with UV paint

Step 7: Install your Rooftrac system!



Used for mounting:
- Solar Panels
- Communication Equipment
- Virtually anything needing structural attachment to a roof!

professional SOLAR products inc.
(800) 84-SOLAR
(805) 486-4700
(805) 486-4799 - fax
1551 S. Rose Ave.
Oxnard, CA 93033

View more info on our website at:

www.prosolar.com

*Tested using a 3/8" x 6" Stainless Steel Lag bolt in a 4" x 6" Douglas Fir wood beam.

Specifications

professional SOLAR products inc.

Test Data Available

Pull tested by an independent and accredited ICC approved testing laboratory to 2,870 lbs vertical and 2,615 axial (side) pull. Test conducted with a 3/8″ x 6″ lag bolt in a 4″ x 6″ Douglas Fir wood beam. Test report available upon purchase.

Measurements / Specifications

BASE: 1.5″ dia. x 2.6″ #6061 Aluminum
- 1/4″ hole for self tapping-screw base
- 3/8″ hole for lag bolt base

POSTS: 1″ dia. x 3″ #6061 Aluminum
- 3/8″ drilled & tapped (non-leveling version)
- 1/2″ threaded 2″ deep (leveling version)

HARDWARE: Red Plastic caps included - installer to supply appropriate fasteners. Leveling kits are available upon request

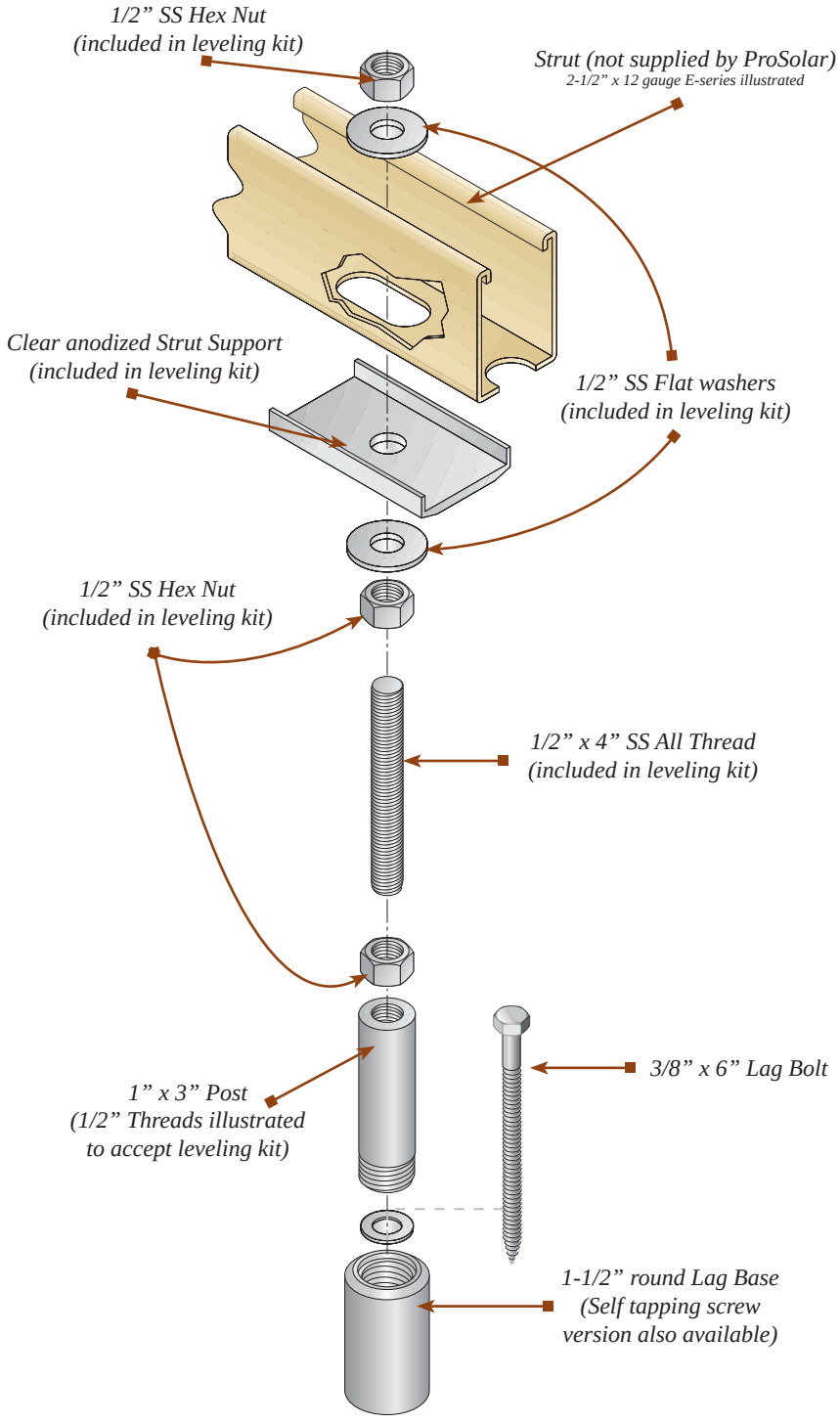
LEVELING KIT: leveling kit components
1/2″ x 4″ Stainless Steel all-thread (qty. 1)
1/2″ Stainless Steel hex nuts (qty. 3)
1/2″ Stainless Steel flat washers (qty. 2)
2″ x 3″ Anodized aluminum strut support (qty. 1)

DRILL GUIDE

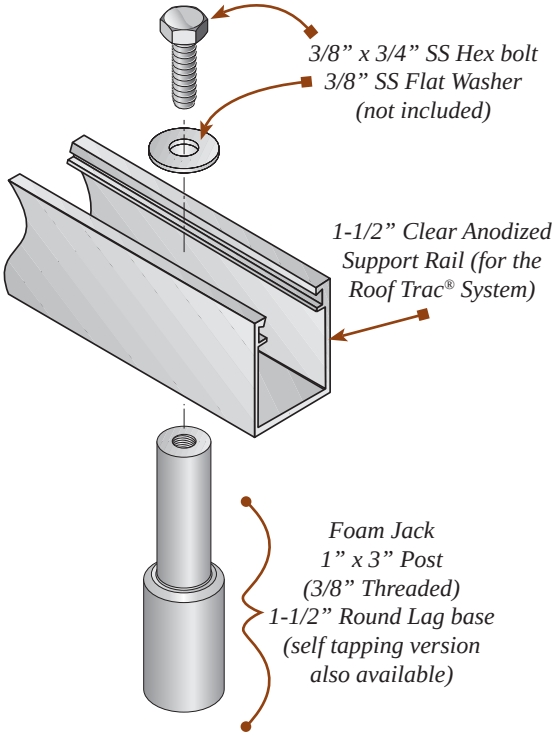
PART #FMJ-DRILL

Optional drill guide available with hardened drill guide bushing. Using the drill guide insures the installer will create a perfectly straight pilot hole into the rafter or structural member greatly enhancing strength.

INSTALLATION FOR LEVELING KIT VERSION - EXPLODED VIEW

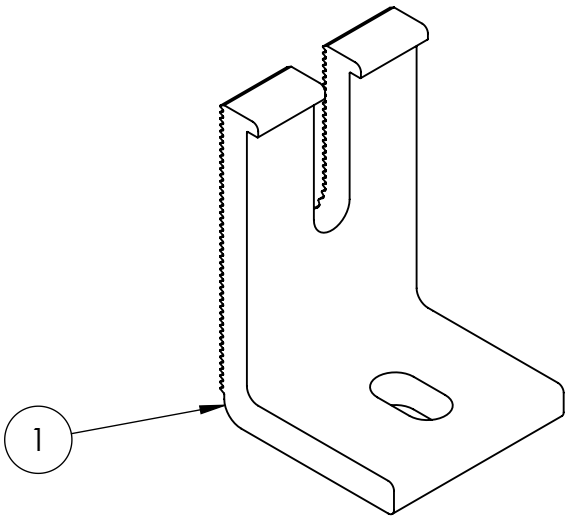


INSTALLATION FOR NON-LEVELING VERSION EXPLODED VIEW



IRONRIDGE

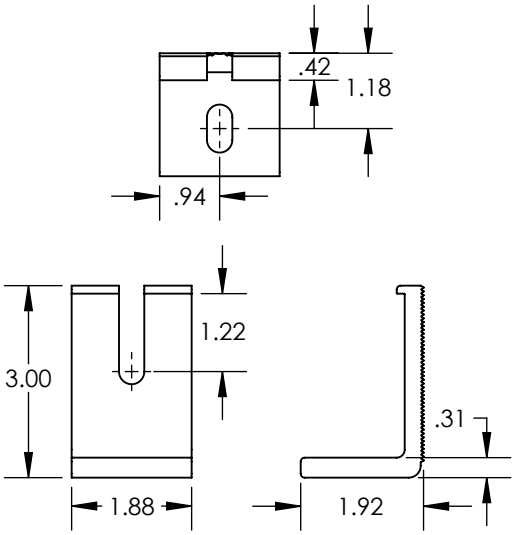
L-Foot



Item Number	Component	Qty in Kit
1	FOOT, EXTRUDED L - SLOTTED	4

Part Number	Description
FM-LFT-003	Kit, 4Pcs, Slotted L-Foot, Mill
FM-LFT-003-B	Kit, 4Pcs, Slotted L-Foot, Black

1) Foot, Extruded L - Slotted

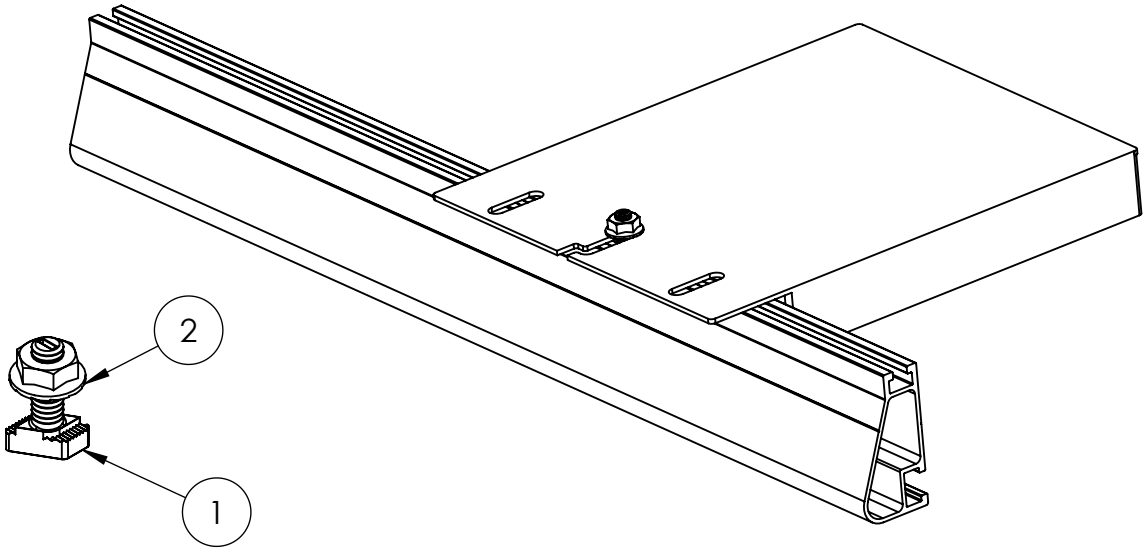


Property	Value
Material	Aluminum
Finish	Mill / Black

v1.0

IRONRIDGE

Microinverter Kit

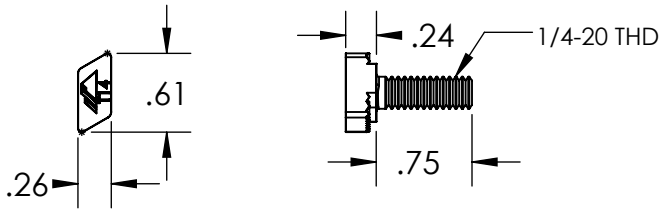


Item Number	Description	Qty. in Kit
1	Bolt, T CSTM 1/4-20 X .75" Lock SS	2
2	Nut, Flange, Hex 1/4-20 SS	2

Microinverter Kit

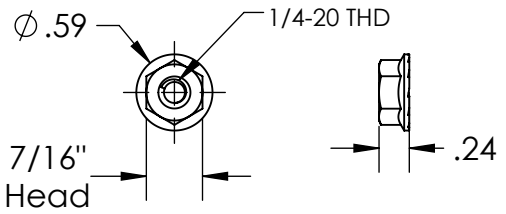
Part Number	Description
MI-BHW	Kit, 1/4 X 3/4 Microinverter Bonding Hardware, T-Bolt

1) Bolt, T CSTM 1/4-20 x .75



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

2) Nut, Flange Hex 1/4-20

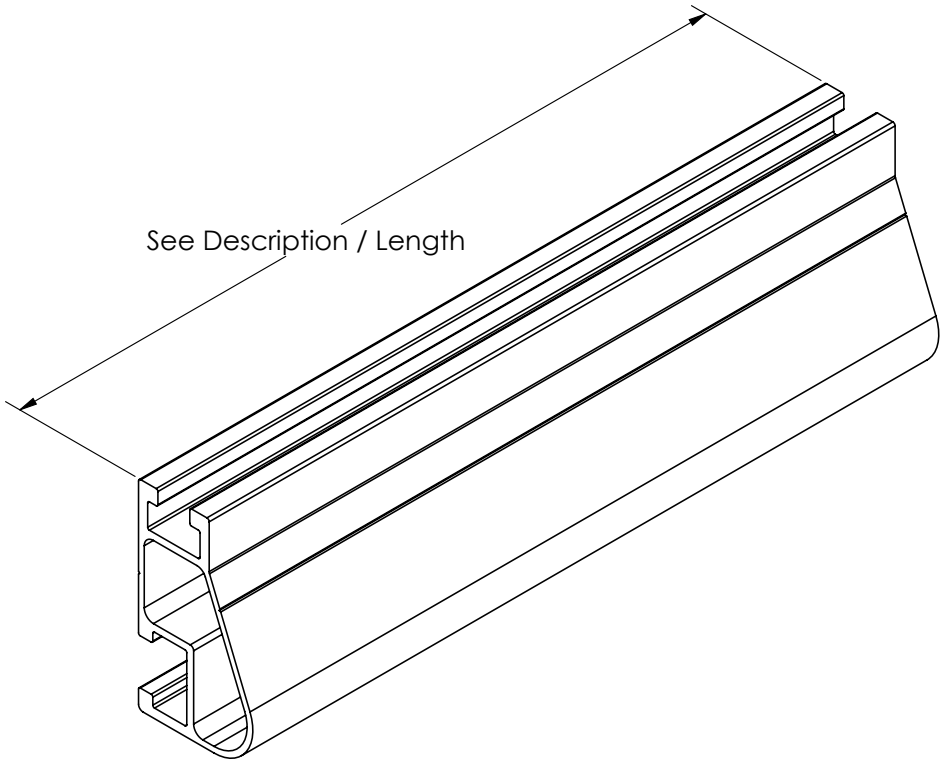


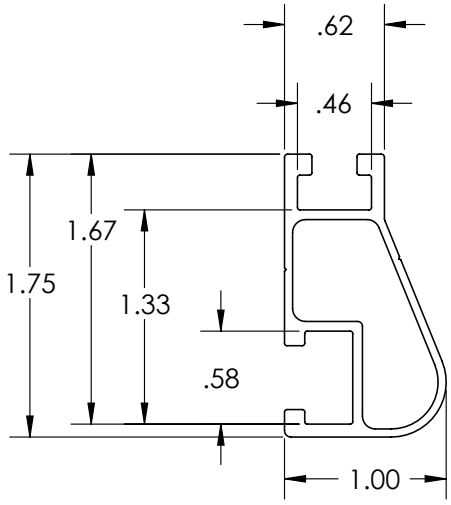
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.0

IRONRIDGE

XR10 Rail



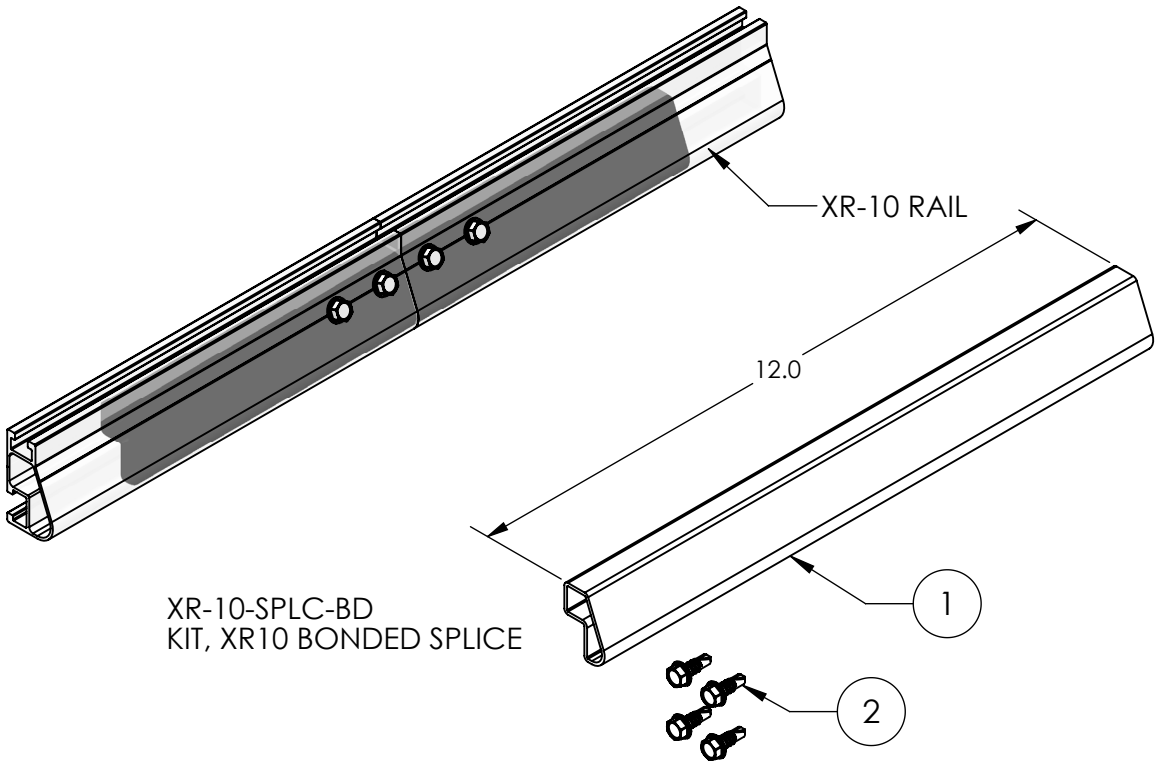


Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.363 in^2
Section Modulus (X-axis)	0.136 in^3
Moment of Inertia (X-axis)	0.124 in^4
Moment of Inertia (Y-axis)	0.032 in^4
Torsional Constant	0.076 in^3
Polar Moment of Inertia	0.033 in^4

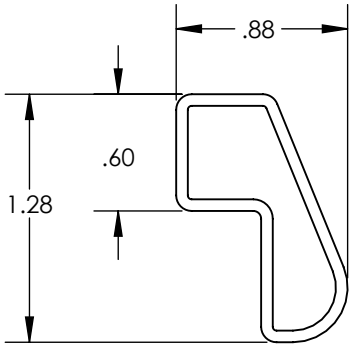
Clear Part Number	Black Part Number	Description / Length	Material	Weight
XR-10-132A	XR-10-132B	XR10, Rail 132" (11 Feet)	6000-Series Aluminum	4.67 lbs.
XR-10-168A	XR-10-168B	XR10, Rail 168" (14 Feet)		5.95 lbs.
XR-10-204A	XR-10-204B	XR10, Rail 204" (17 Feet)		7.22 lbs.

IRONRIDGE

XR10 Bonded Splice

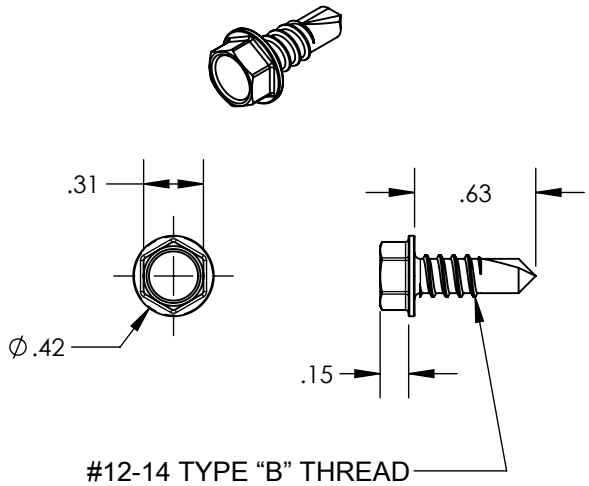


1) Splice, XR10, Mill 12" long



Property	Value
Material	6000 Series Aluminum
Finish	Mill

2) Screw, Self Drilling

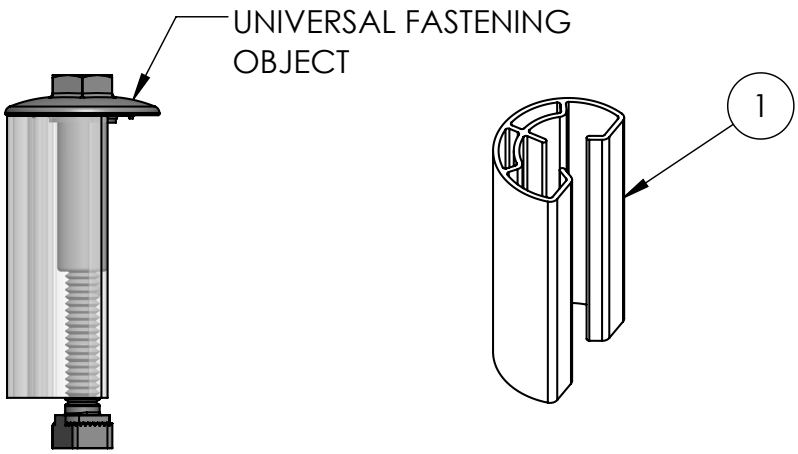


Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.0

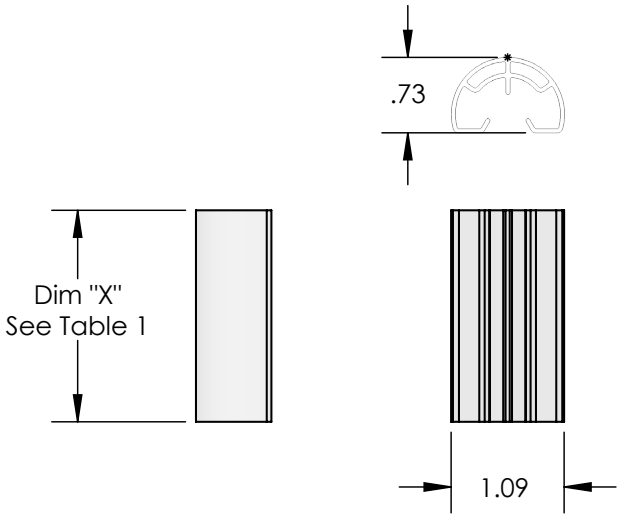
IRONRIDGE

Stopper Sleeve



ITEM NO.	COMPONENT	QTY. IN KIT
1	STOPPER SLEEVE	4

TABLE 1: STOPPER SLEEVE PART NUMBES AND HEIGHT		
MILL PART NUMBER	**BLACK PART NUMBER**	**HEIGHT "X" (mm)**
UFO-STP-32 mm	UFO-STP-32 mm-B	32
UFO-STP-33 mm	UFO-STP-33 mm-B	33
UFO-STP-35 mm	UFO-STP-35 mm-B	35
UFO-STP-38 mm	UFO-STP-38 mm-B	38
UFO-STP-40 mm	UFO-STP-40 mm-B	40
UFO-STP-46 mm	UFO-STP-46 mm-B	46



Property	Value
Material	6000 Series Aluminum
Finish	Mill or Black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