

IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS

GENERAL NOTES:

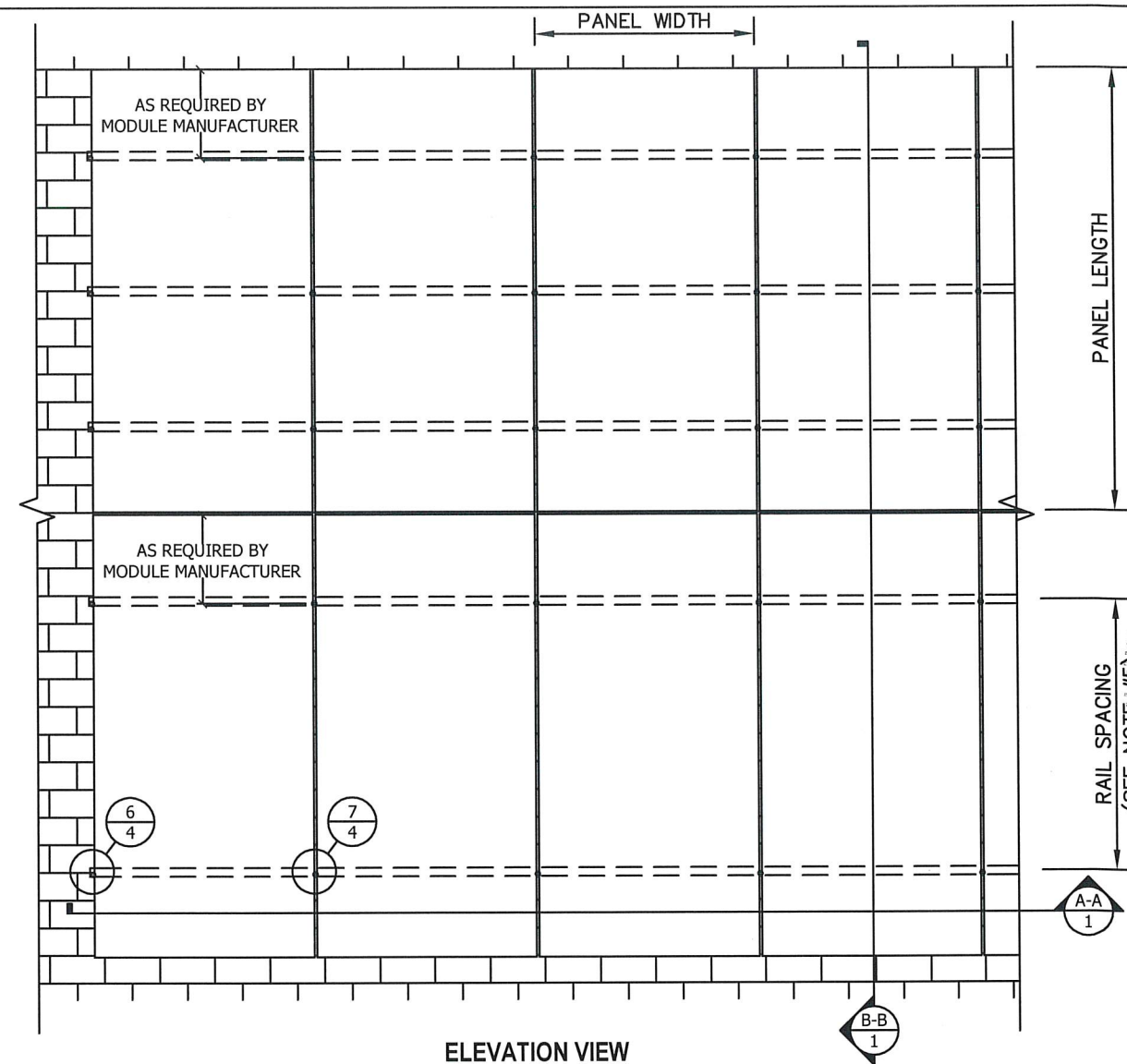
- THIS SYSTEM MEETS ALL OF THE REQUIREMENTS OF THE 7TH EDITION (2020) FLORIDA BUILDING CODE, INCLUDING THE HVHZ PROVISIONS.
- THIS SYSTEM HAS BEEN TESTED PER TAS 100(A) AND ASTM D7147. IT IS NOT A PART OF THE BUILDING ENVELOPE, AND IMPACT RESISTANCE IS NOT REQUIRED.
- THIS SYSTEM SHALL BE INSTALLED PER THE IRONRIDGE XR FLUSH MOUNT INSTALLATION MANUAL.
- THE PV PANELS ARE BY OTHERS AND ARE NOT A PART OF THIS APPROVAL.
- RAIL SPACING TO BE AS SPECIFIED BY THE PV PANEL MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- THE DESIGN OF THE ROOF SUBSTRATE IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD OR OTHER SPECIALTY ENGINEER, AND IS NOT A PART OF THIS APPROVAL. THE SUBSTRATE MUST SAFELY TRANSMIT THE LOADS APPLIED TO THIS SYSTEM TO THE BUILDING STRUCTURE.
- FIRE RATINGS OR FIRE RESISTANCE IS NOT A PART OF THIS REVIEW.
- ALL ANCHORS SECURING THE SYSTEM TO PRESSURE TREATED WOOD SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE CHEMICALS IN THE WOOD.
- MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL BE PROTECTED PER FBC REQUIREMENTS.
- NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS PRODUCT. Cd=1.6 WAS USED FOR WOOD SCREWS ONLY.

WINDLOAD NOTES:

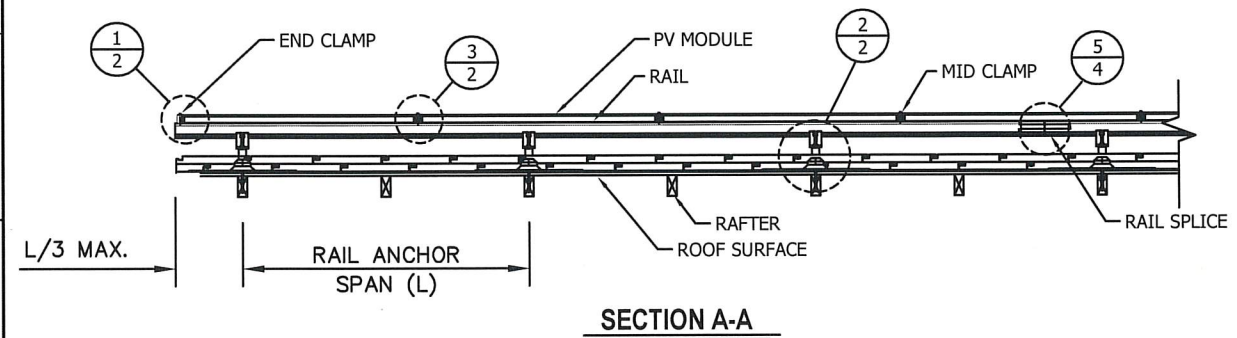
- DESIGN WINDLOADS MUST BE CALCULATED BY A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT FOR EACH PROJECT, PER ASCE 7-16 SECTION 29.4.4. DESIGN WINDLOADS MAY NOT EXCEED THE ALLOWABLE WINDLOADS SHOWN IN THIS CHART.
- PANEL SYSTEM LOCATION, HEIGHT, AND SPACING MUST MEET THE REQUIREMENTS OF ASCE 7-16 SECTION 29.4.4. WINDLOADS ACT NORMAL TO THE SURFACE OF THE PV PANEL SYSTEM.
- OTHER CONFIGURATIONS REQUIRE PROJECT SPECIFIC ANALYSIS BY A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT.
- ALLOWABLE WINDLOADS ARE BASED ON ANCHORING IN WOOD RAFTERS WITH S.G.=0.45 MIN.

THREE RAIL SYSTEM:

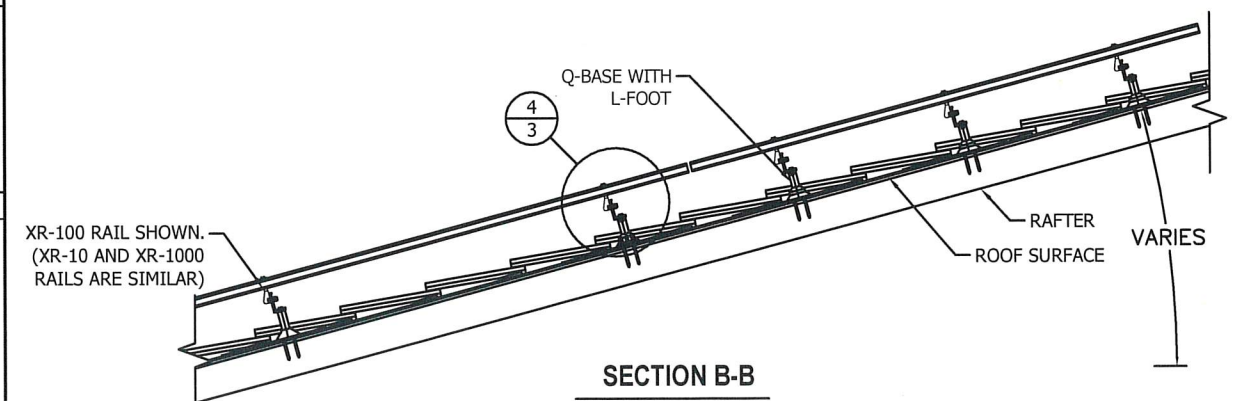
TWO RAIL SYSTEM:



ELEVATION VIEW



SECTION A-A



SECTION B-B

| ALLOWABLE WINDLOADS | | | | | | | | | | | |
|---------------------|-------------------|----------------------|----------------------|-----------------------|------------------------|-------------------|-------------------|----------------------|----------------------|-----------------------|-----------------------|
| TWO RAIL SYSTEM | | | | | | THREE RAIL SYSTEM | | | | | |
| PANEL WIDTH (in) | PANEL LENGTH (in) | ANCHOR SPAN (L) (in) | XR-10 RAIL (+/- psf) | XR-100 RAIL (+/- psf) | XR-1000 RAIL (+/- psf) | PANEL WIDTH (in) | PANEL LENGTH (in) | ANCHOR SPAN (L) (in) | XR-10 RAIL (+/- psf) | XR-100 RAIL (+/- psf) | XR-100 RAIL (+/- psf) |
| 45 | 67 1/2 | 16 | 90 | 90 | 90 | 45 | 67 1/2 | 16 | 135.0 | 135.0 | 135.0 |
| | | 24 | 65.4 | 90 | 90 | | | 24 | 98.1 | 135.0 | 135.0 |
| | | 32 | 56.1 | 90 | 90 | | | 32 | 84.2 | 135.0 | 135.0 |
| | | 36 | 49.9 | 90 | 90 | | | 36 | 74.9 | 135.0 | 135.0 |
| | | 48 | 37.4 | 85.6 | 90 | | | 48 | 56.1 | 128.4 | 135.0 |
| | | 64 | 28.1 | 64.2 | 75.9 | | | 64 | 42.2 | 96.3 | 113.9 |
| | 80 | 16 | 75.9 | 75.9 | 75.9 | | 80 | 16 | 113.9 | 113.9 | 113.9 |
| | | 24 | 55.2 | 75.9 | 75.9 | | | 24 | 82.8 | 113.9 | 113.9 |
| | | 32 | 47.3 | 75.9 | 75.9 | | | 32 | 71.0 | 113.9 | 113.9 |
| | | 36 | 42.1 | 75.9 | 75.9 | | | 36 | 63.2 | 113.9 | 113.9 |
| | | 48 | 31.6 | 72.2 | 75.9 | | | 48 | 47.4 | 108.3 | 113.9 |
| | | 64 | 23.7 | 54.2 | 64.1 | | | 64 | 35.6 | 81.3 | 96.2 |
| | 86 | 16 | 70.6 | 70.6 | 70.6 | | 86 | 16 | 105.9 | 105.9 | 105.9 |
| | | 24 | 51.3 | 70.6 | 70.6 | | | 24 | 77.0 | 105.9 | 105.9 |
| | | 32 | 44 | 70.6 | 70.6 | | | 32 | 66.0 | 105.9 | 105.9 |
| | | 36 | 39.1 | 70.6 | 70.6 | | | 36 | 58.7 | 105.9 | 105.9 |
| | | 48 | 29.4 | 67.2 | 70.6 | | | 48 | 44.1 | 100.8 | 105.9 |
| | | 64 | 22 | 50.4 | 59.6 | | | 64 | 33.0 | 75.6 | 89.4 |
| | 92 1/2 | 16 | 65.7 | 65.7 | 65.7 | | 92 1/2 | 16 | 98.6 | 98.6 | 98.6 |
| | | 24 | 47.7 | 65.7 | 65.7 | | | 24 | 71.6 | 98.6 | 98.6 |
| | | 32 | 40.9 | 65.7 | 65.7 | | | 32 | 61.4 | 98.6 | 98.6 |
| | | 36 | 36.4 | 65.7 | 65.7 | | | 36 | 54.6 | 98.6 | 98.6 |
| | | 48 | 27.3 | 62.5 | 65.7 | | | 48 | 41.0 | 93.8 | 98.6 |
| | | 64 | 20.5 | 46.9 | 55.5 | | | 64 | 30.8 | 70.4 | 83.3 |
| LANDSCAPE LAYOUT: | | | | | | | | | | | |
| 45 | 92 1/2 | 16 | 65.7 | 65.7 | 65.7 | 45 | 92 1/2 | 16 | 98.6 | 98.6 | 98.6 |
| | | 24 | 52.9 | 65.7 | 65.7 | | | 24 | 79.4 | 98.6 | 98.6 |
| | | 32 | 40.8 | 65.7 | 65.7 | | | 32 | 61.2 | 98.6 | 98.6 |
| | | 36 | 36 | 65.7 | 65.7 | | | 36 | 54.0 | 98.6 | 98.6 |
| | | 48 | 24.2 | 55 | 65.7 | | | 48 | 36.3 | 82.5 | 98.6 |
| | | 64 | 20.5 | 46.9 | 65.7 | | | 64 | 30.8 | 70.4 | 98.6 |
| | | 72 | 18.2 | 41.7 | 65.7 | 72 | 27.3 | 62.6 | 98.6 | | |

12/19/22
DATE

1ST SUBMITTAL
REV.#

PRINTS ISSUED FOR

SEAL: SCOTT WOLTERS
No. 62354
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DEC 19 2022

SCOTT WOLTERS
FL PE# 62354

WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

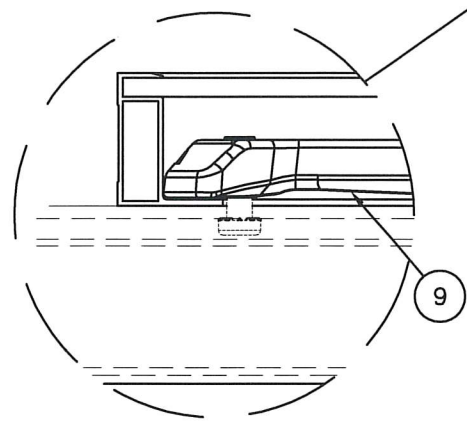
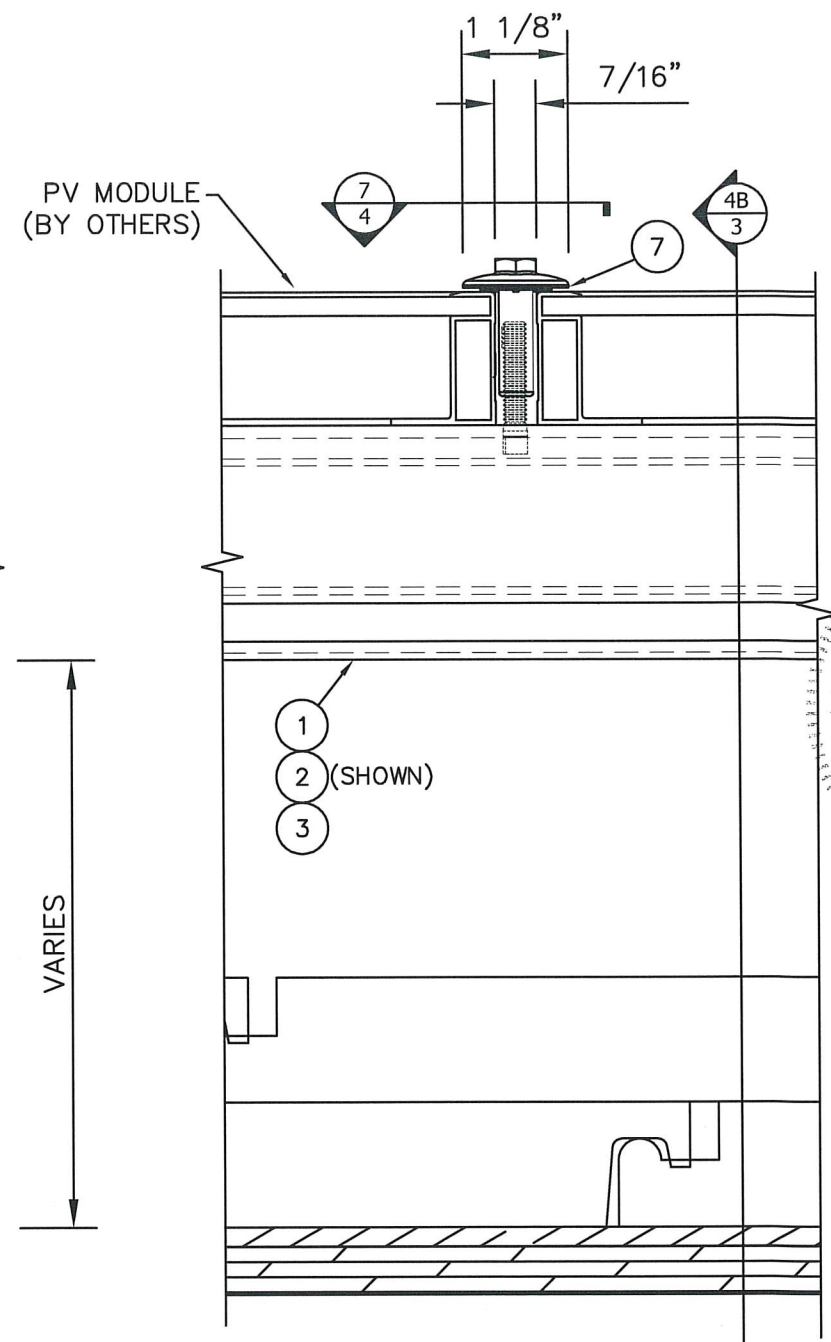
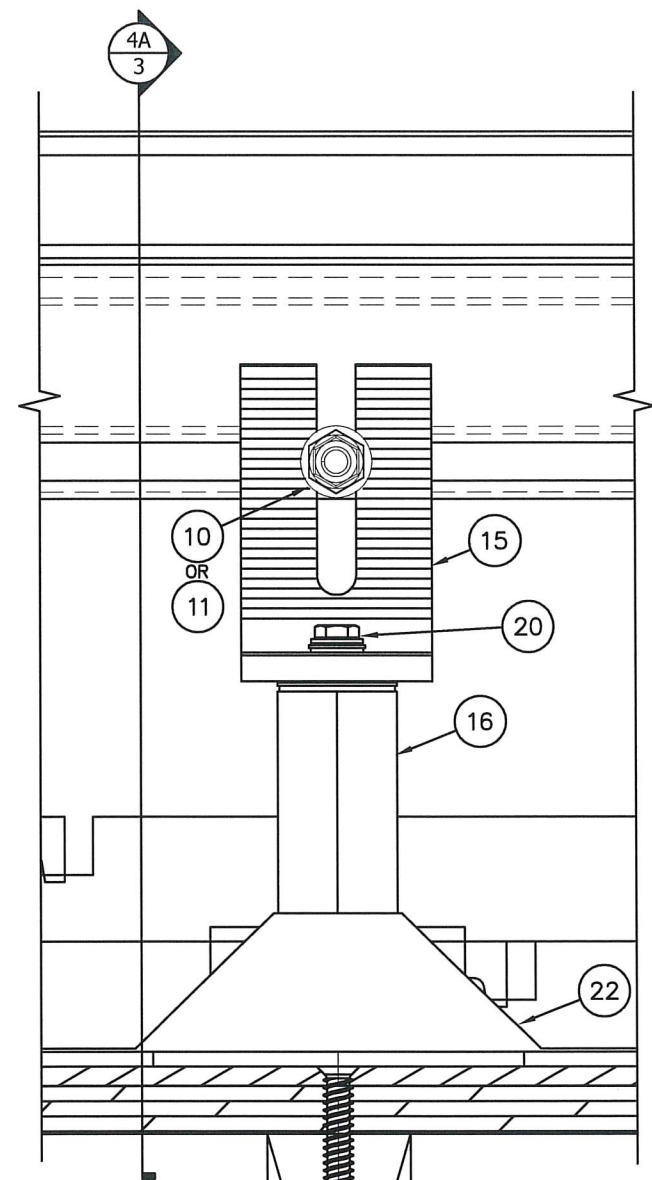
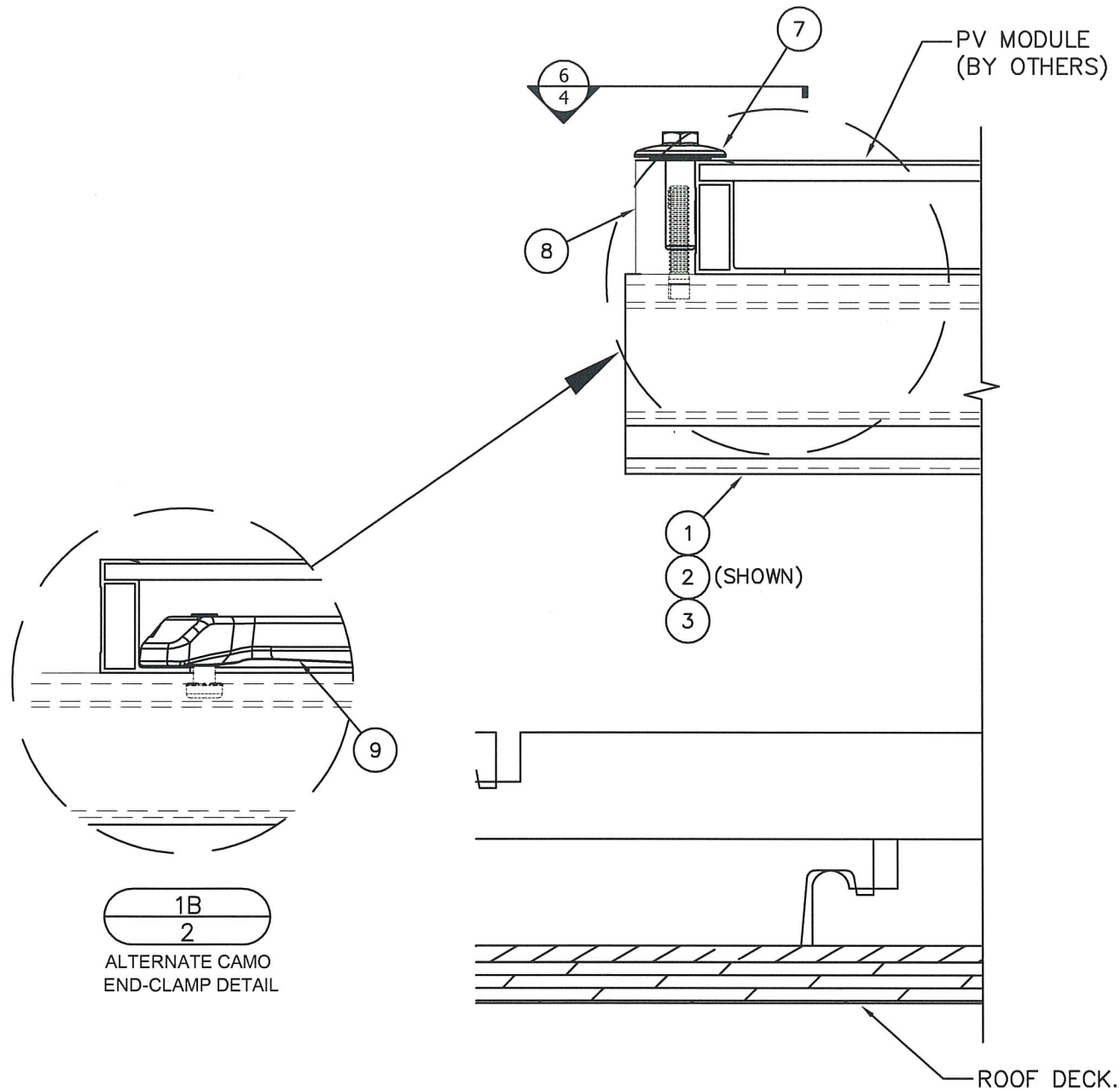
DWG: XR-QB

SHEET: 1/9

PHONE: (800) 227-9523
info@ironridge.com

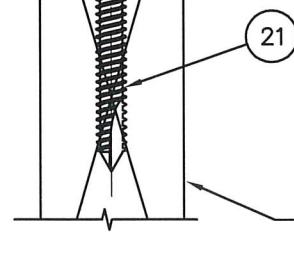
28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545

**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**



1B
2
ALTERNATE CAMO
END-CLAMP DETAIL

1
2
UFO END-CLAMP
WITH STOPPER SLEEVE



2
2
Q-BASE DETAIL

3
2
XR RAIL WITH
MID-CLAMP DETAIL

| | |
|-------------------|----------|
| DATE | 12/19/22 |
| REV.# | |
| 1ST SUBMITTAL | |
| PRINTS ISSUED FOR | |

SCOTT WOLTERS
FL PE# 62354

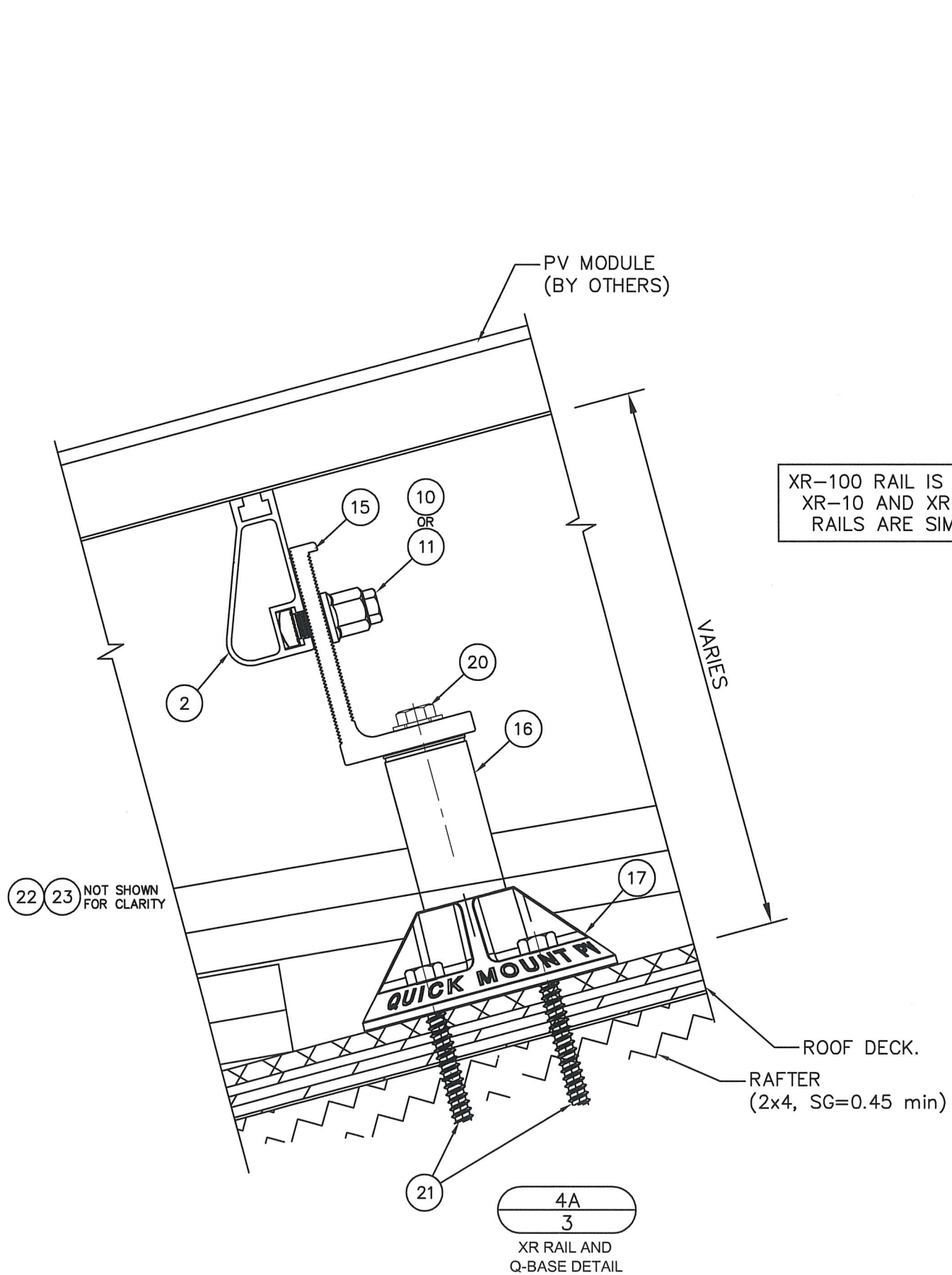
WOLTERS ENGINEERING
(CO.# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

STATE OF FLORIDA
REGISTERED PROFESSIONAL ENGINEER
SCOTT WOLTERS
NO. 62354
DEC 19 2022

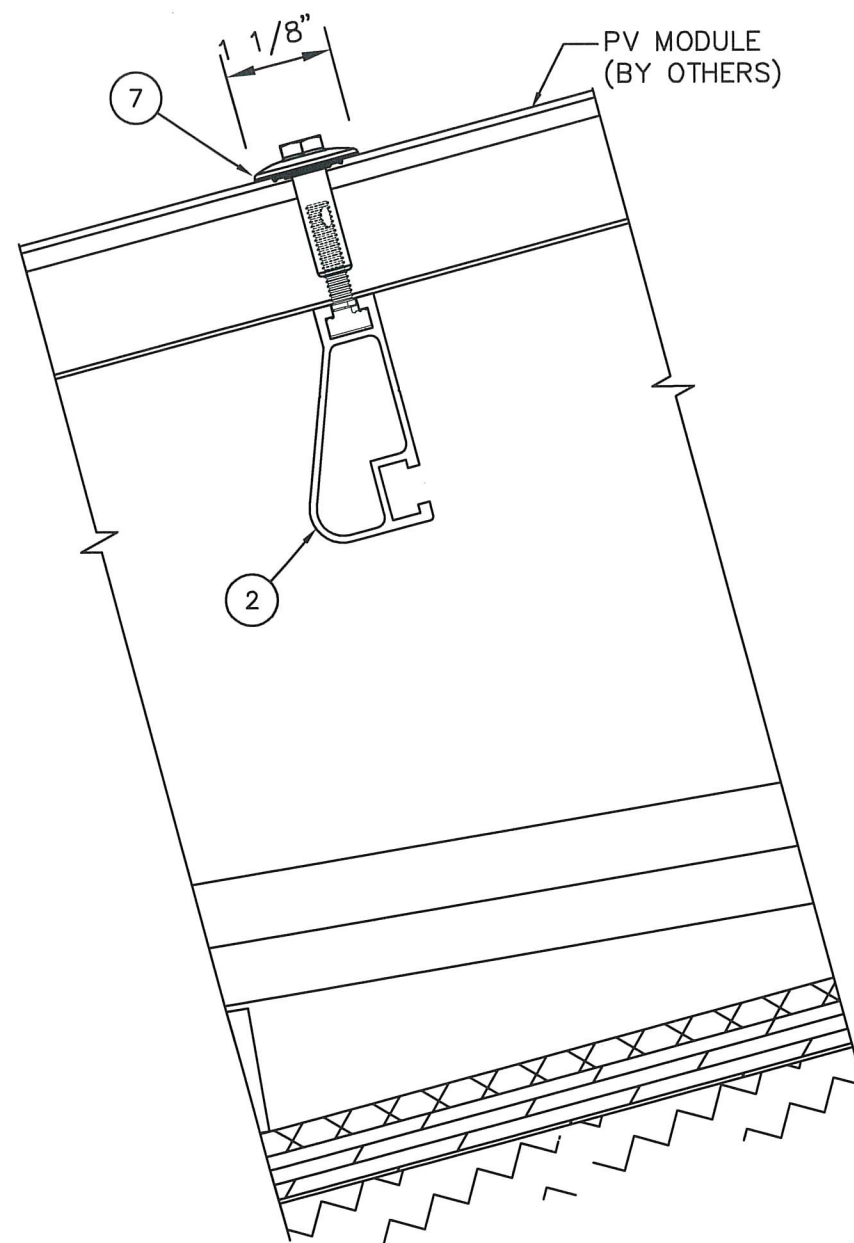


28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545
PHONE: (800) 227-9523
info@ironridge.com

**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**



XR-100 RAIL IS SHOWN.
XR-10 AND XR-1000
RAILS ARE SIMILAR.



SCOTT WOLTERS
FL PE# 62354

WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982



28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545

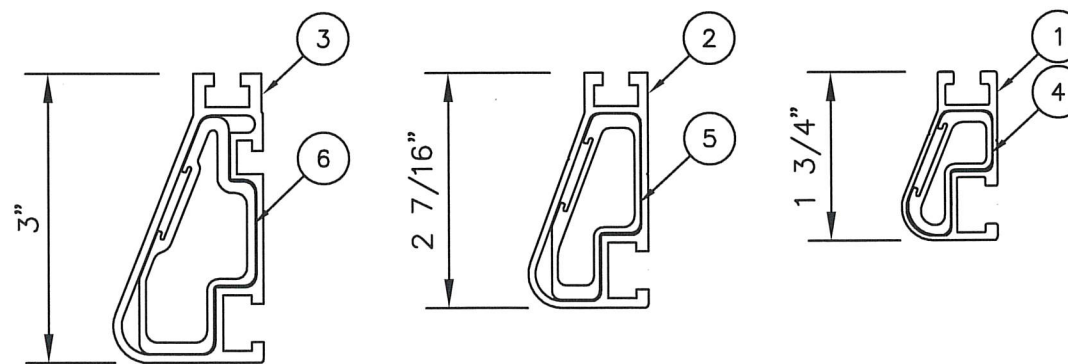
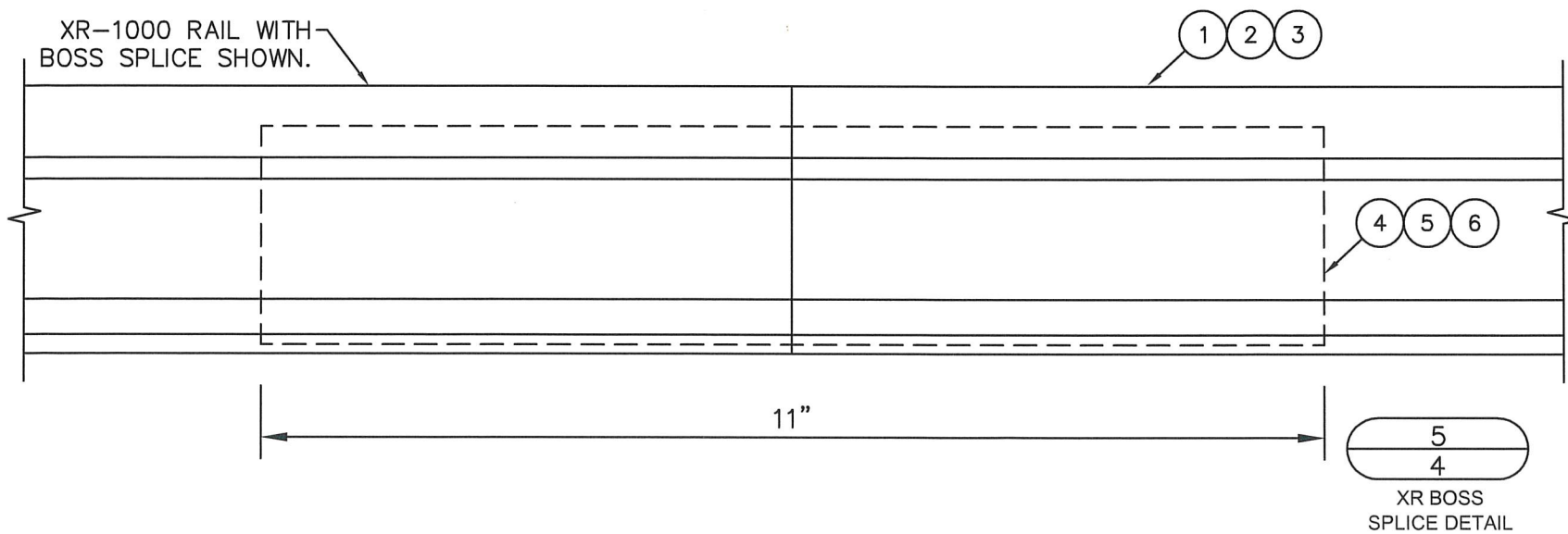
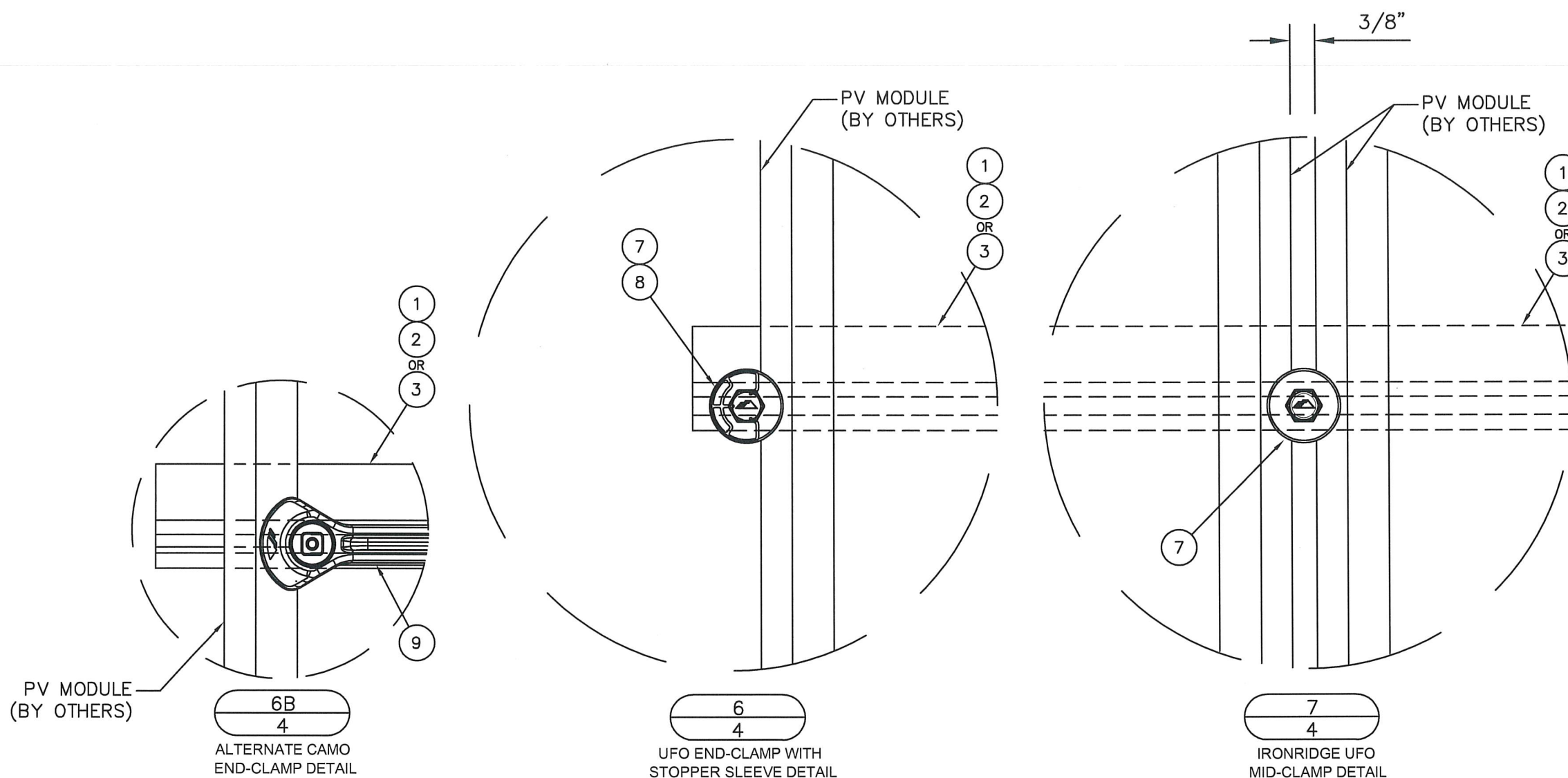
PHONE: (800) 227-9523
info@ironridge.com

DWG: XR-QB
SHEET: 3/9

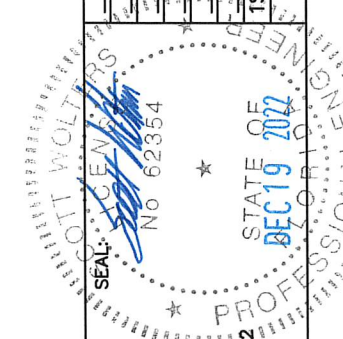
| REV.# | DATE |
|-------|----------|
| 1 | 12/19/22 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |

PRINTS ISSUED FOR

**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**



SPLICE MAY NOT BE LOCATED IN A CANTILEVER.



SCOTT WALTERS
FL PE# 62354
WALTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

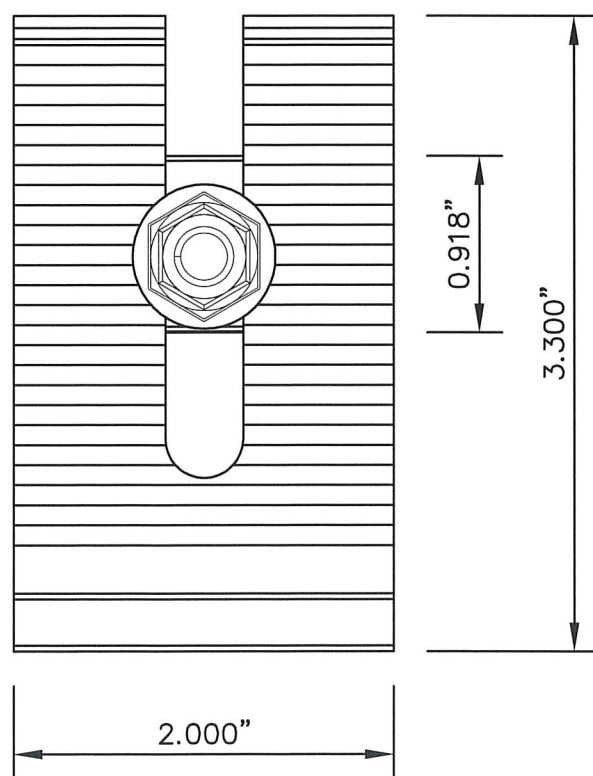
IRONRIDGE
28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545
PHONE: (800) 227-9523
info@ironridge.com

DWG: XR-QB
SHEET: 4/9

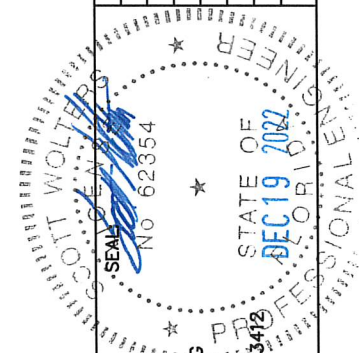
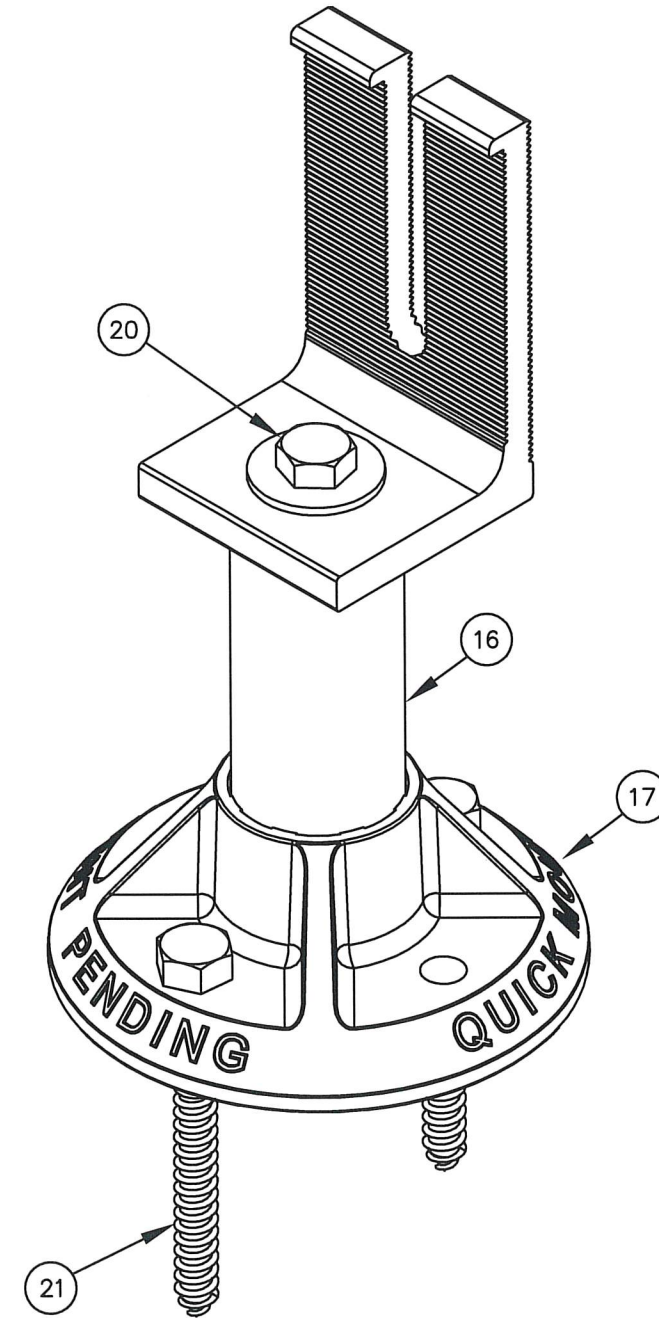
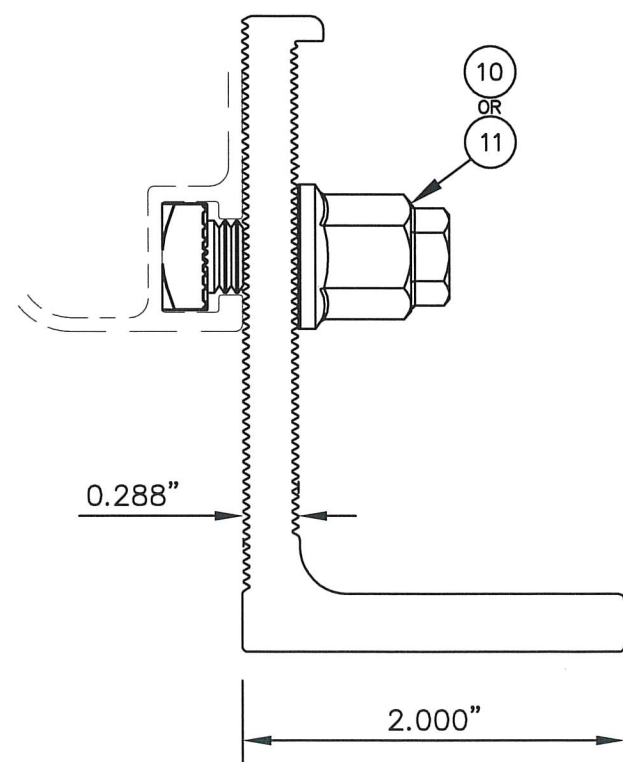
| REV.# | DATE |
|-------|----------|
| 1 | 12/19/22 |

**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**

| BILL OF MATERIALS- QuickMount Q-Base | | |
|--------------------------------------|---|----------------------|
| # | DESCRIPTION | MATERIALS/NOTES |
| 15 | OPEN SLOT L-FOOT, MILL OR BLACK | 6000 SERIES AL |
| 16 | 1 1/4" DIAMETER POST (3 1/4" MIN 12" MAX) | 6000 SERIES AL |
| 17 | QBASE BASE | 300 SERIES AL |
| 18 | 5/16" X 3/4" CAP SCREW, HEX | COATED STEEL |
| 19 | 5/16" X 1 1/4" OD WASHER | 300 SERIES SS & EPDM |
| 20 | 5/16" X 1" CAP SCREW, HEX | 300 SERIES SS |
| 21 | 5/16" X 3" HEX HEAD LAG SCREW | 300 SERIES SS |
| 22 | QBASE FLASHING | 3000 SERIES AL |
| 23 | COUNTER-FLASHING CAP | EPDM |



15



SCOTT WOLTERS
FL PE# 62354
WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N.
WEST PALM BEACH, FL 33412
(561) 225-1982

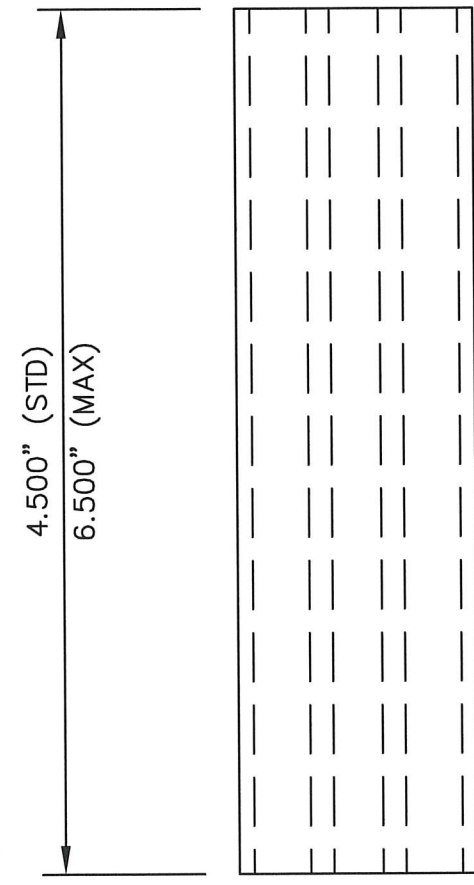
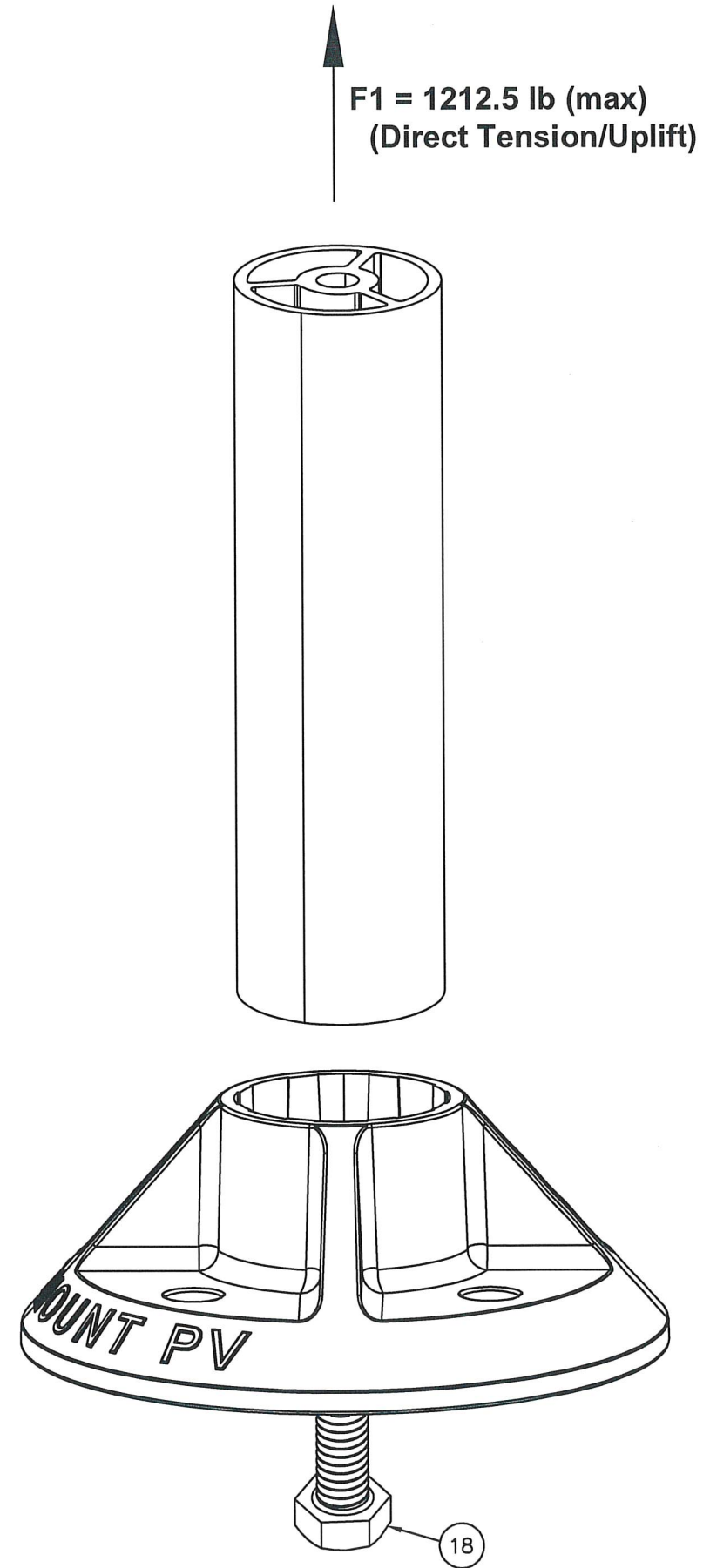
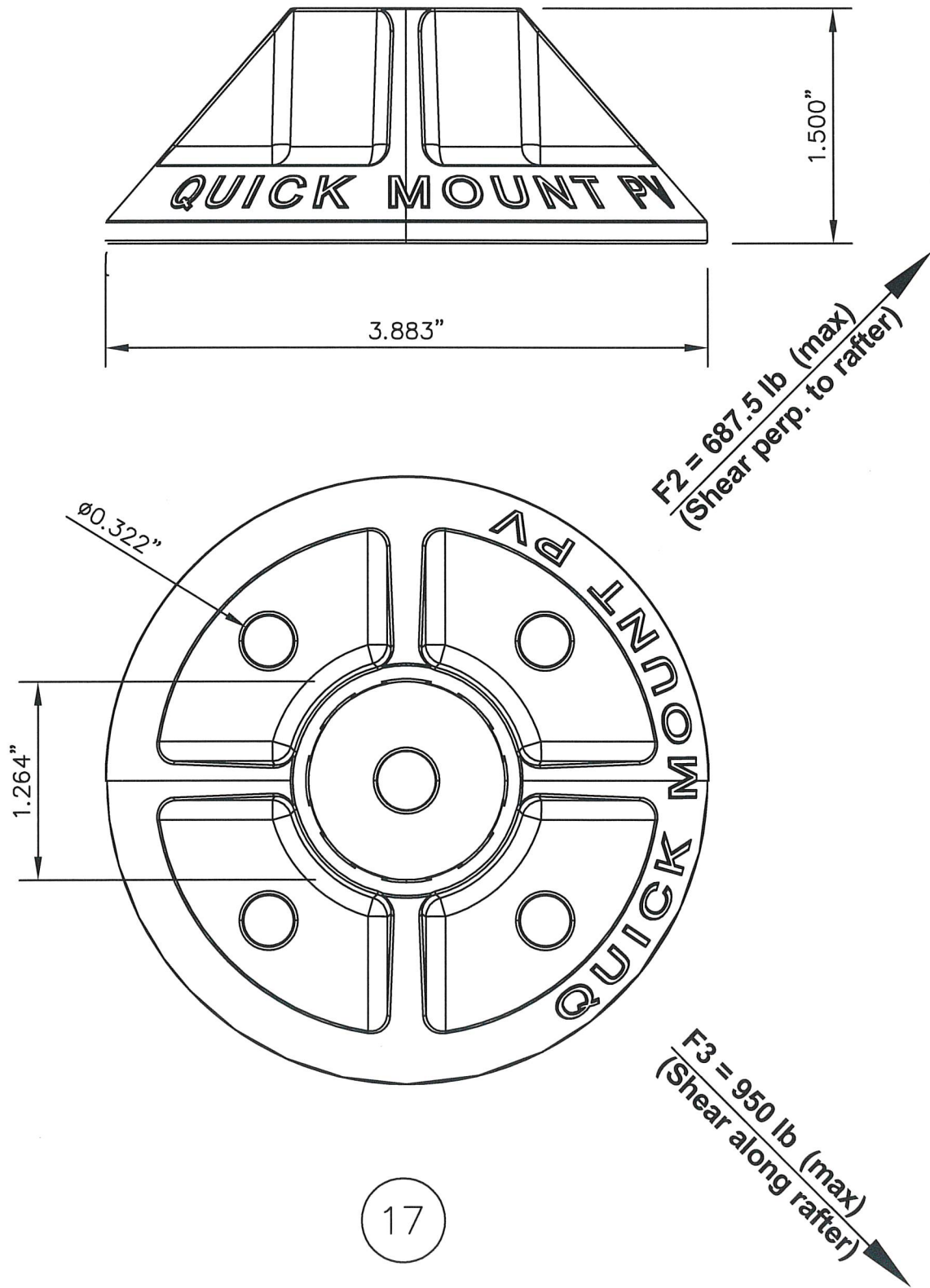
IRONRIDGE
28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545
PHONE: (800) 227-9523
info@ironridge.com

DWG: XR-QB
SHEET: 5/9

| REV.# | DATE |
|-------|----------|
| 1 | 12/19/22 |

1ST SUBMITTAL
PRINTS ISSUED FOR

**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**



ANCHOR CAPACITY:
ANCHOR CAPACITIES LISTED ARE
PER FLPA# 29846.

IRONRIDGE

28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545

PHONE: (800) 227-9523
info@ironridge.com

DWG: **XR-QB**

SHEET: **6/9**

SCOTT WOLTERS
FL PE# 62354

WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

SEAL: [Signature]

No. 62354

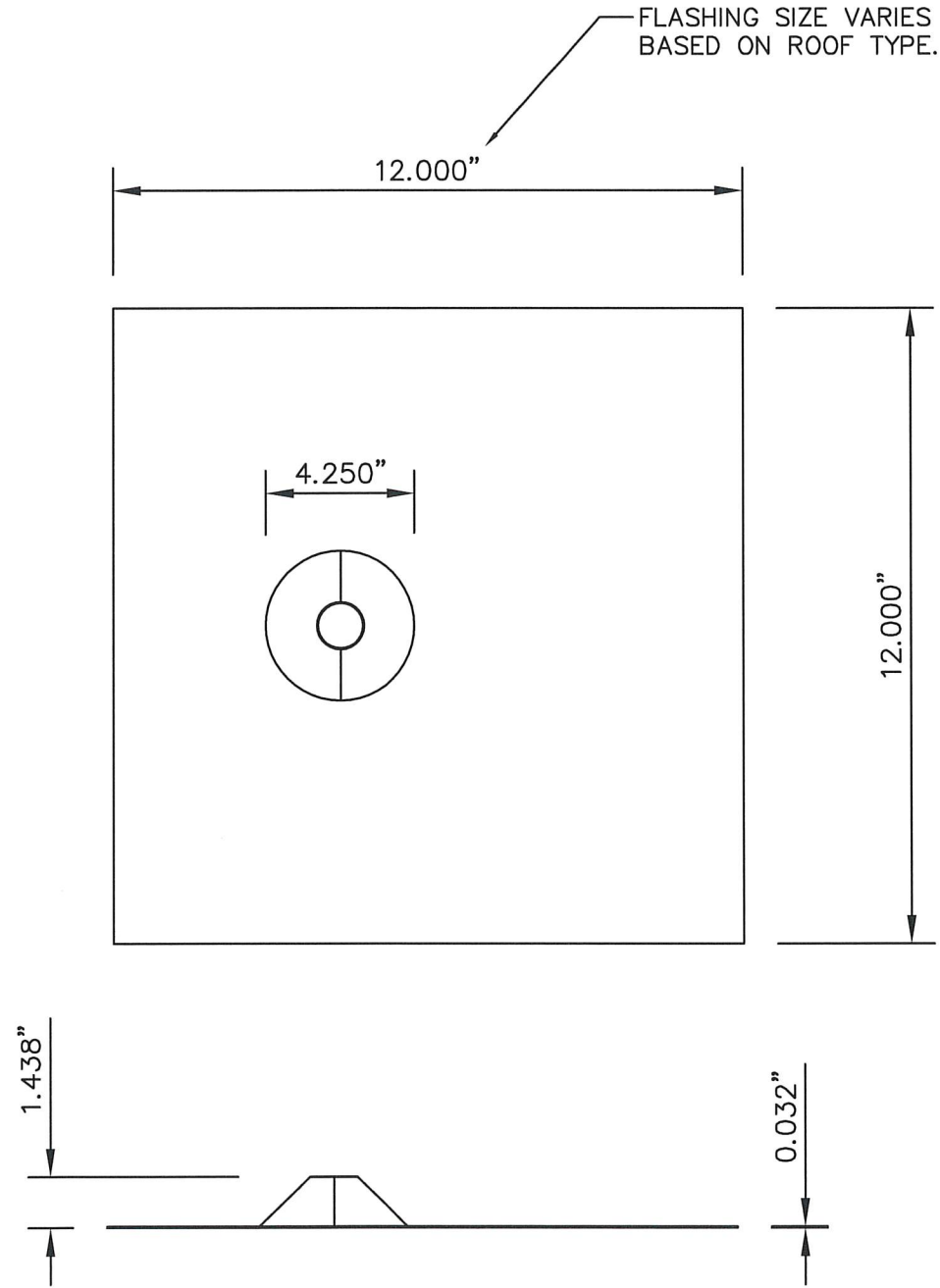
STATE OF FLORIDA
DEC 19 2017

PROFESSIONAL ENGINEER

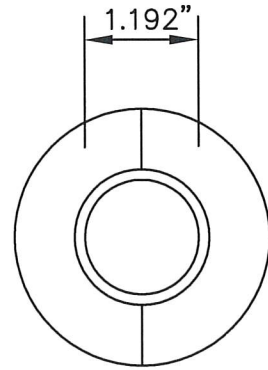
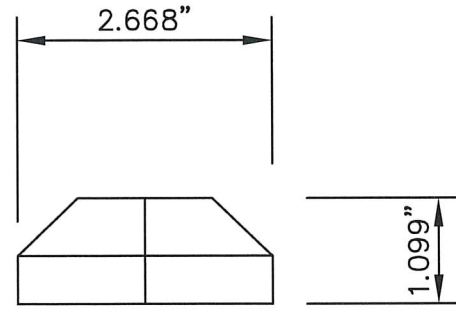
| | |
|-------|----------|
| REV.# | DATE |
| 1 | 12/19/22 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
| 29 | |
| 30 | |
| 31 | |
| 32 | |
| 33 | |
| 34 | |
| 35 | |
| 36 | |
| 37 | |
| 38 | |
| 39 | |
| 40 | |
| 41 | |
| 42 | |
| 43 | |
| 44 | |
| 45 | |
| 46 | |
| 47 | |
| 48 | |
| 49 | |
| 50 | |
| 51 | |
| 52 | |
| 53 | |
| 54 | |
| 55 | |
| 56 | |
| 57 | |
| 58 | |
| 59 | |
| 60 | |
| 61 | |
| 62 | |
| 63 | |
| 64 | |
| 65 | |
| 66 | |
| 67 | |
| 68 | |
| 69 | |
| 70 | |
| 71 | |
| 72 | |
| 73 | |
| 74 | |
| 75 | |
| 76 | |
| 77 | |
| 78 | |
| 79 | |
| 80 | |
| 81 | |
| 82 | |
| 83 | |
| 84 | |
| 85 | |
| 86 | |
| 87 | |
| 88 | |
| 89 | |
| 90 | |
| 91 | |
| 92 | |
| 93 | |
| 94 | |
| 95 | |
| 96 | |
| 97 | |
| 98 | |
| 99 | |
| 100 | |

1ST SUBMITTAL
PRINTS ISSUED FOR

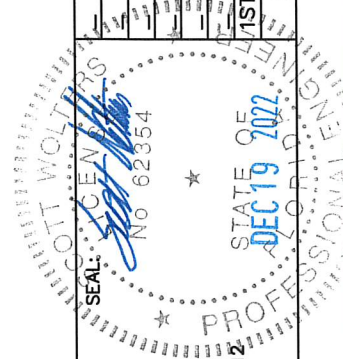
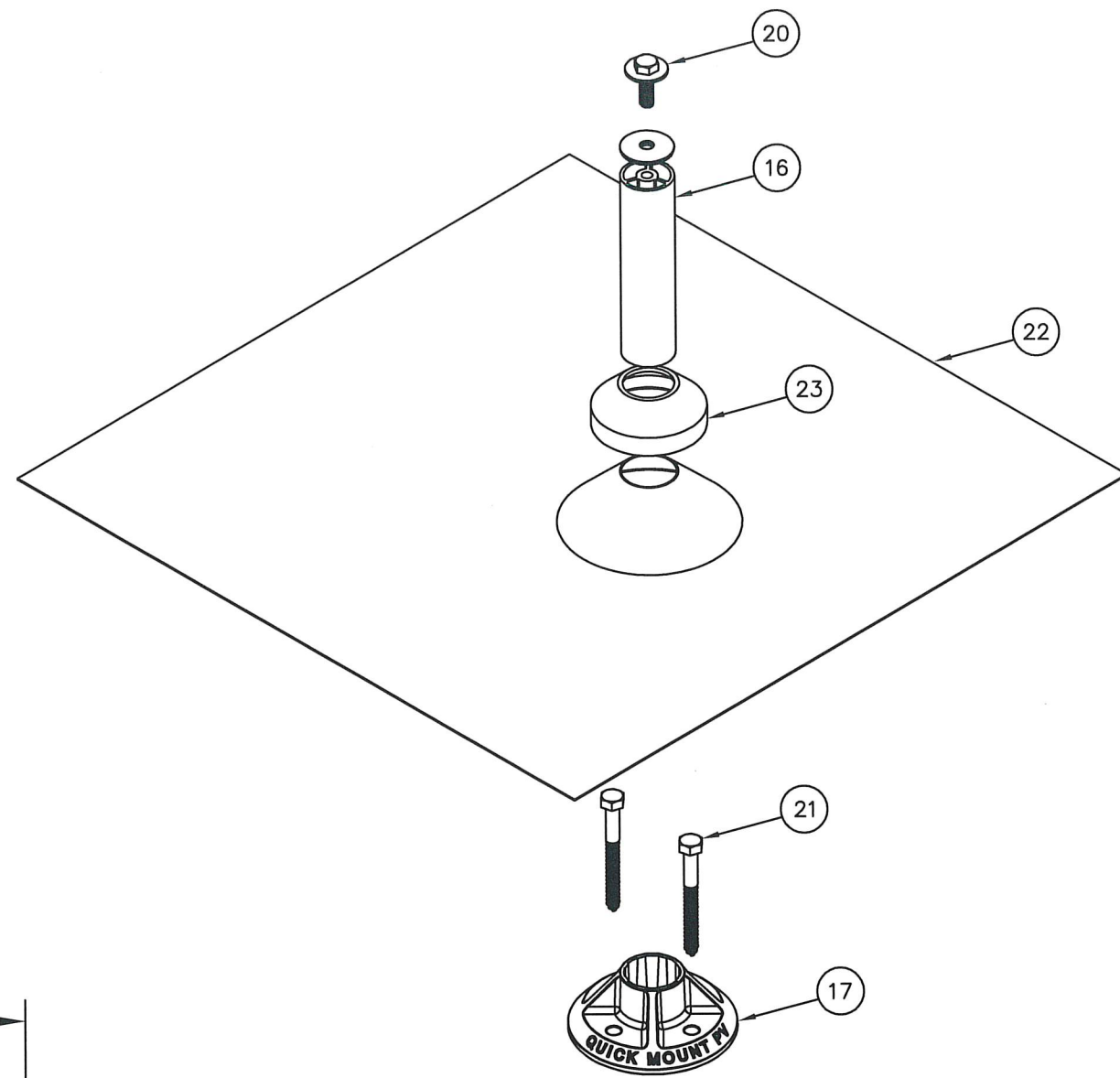
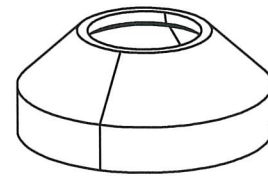
**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**



22



23



SCOTT WOLTERS
FL PE# 62354
WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

IRONRIDGE
28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545
PHONE: (800) 227-9523
info@ironridge.com

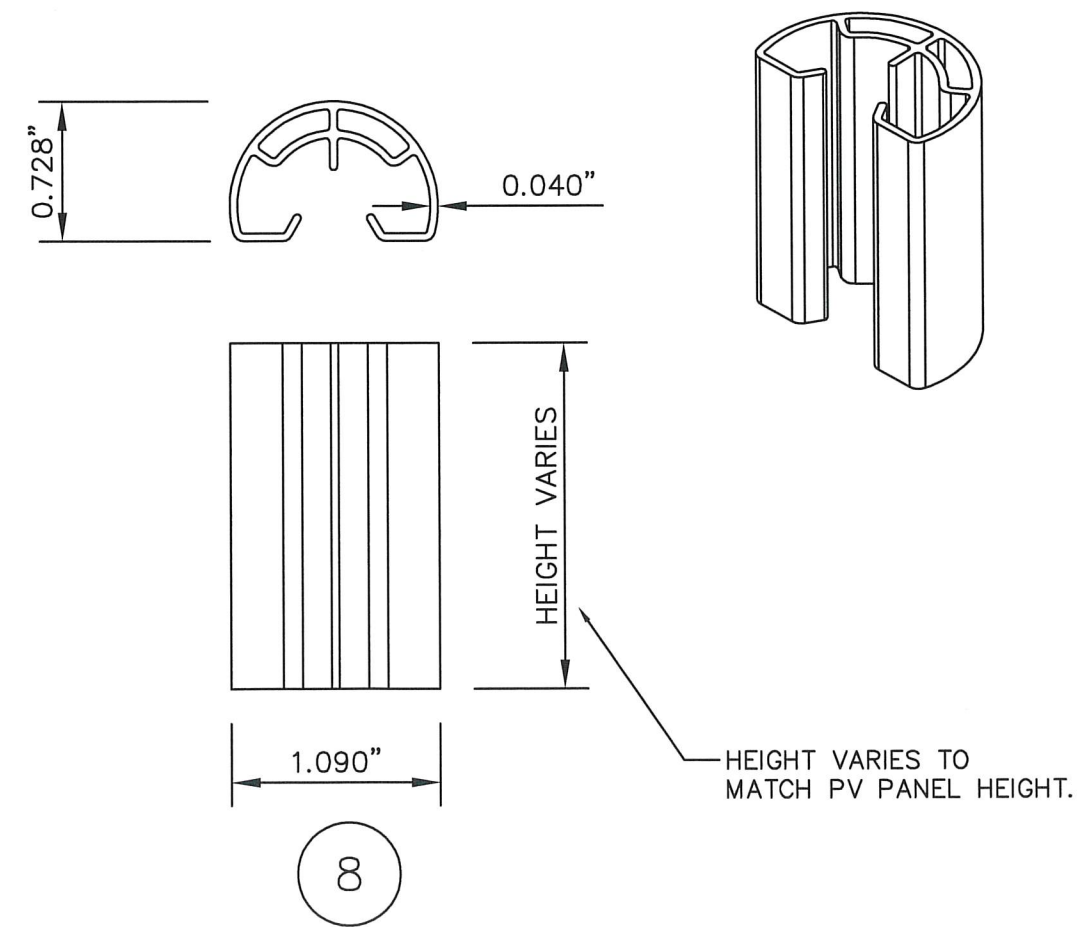
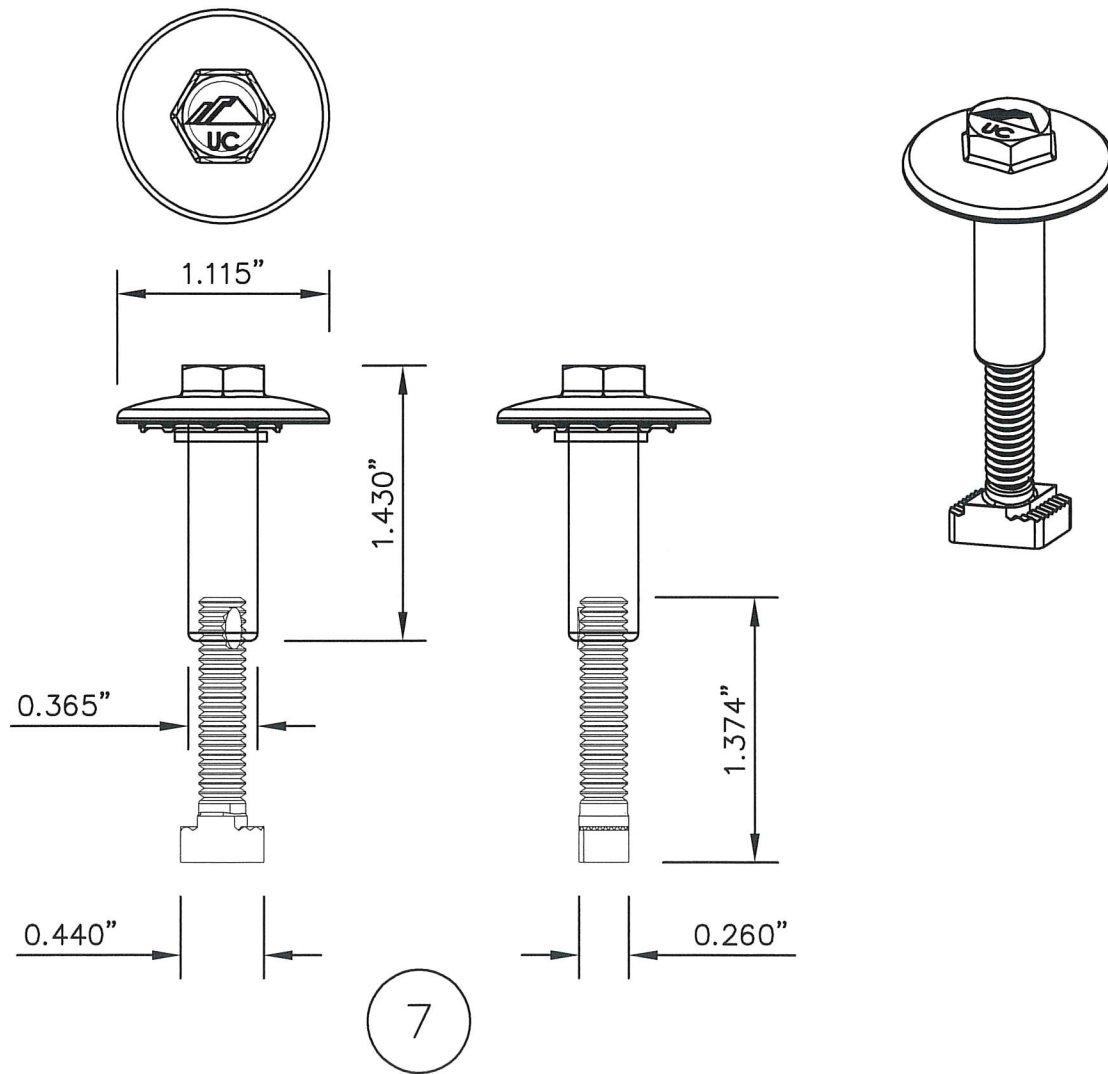
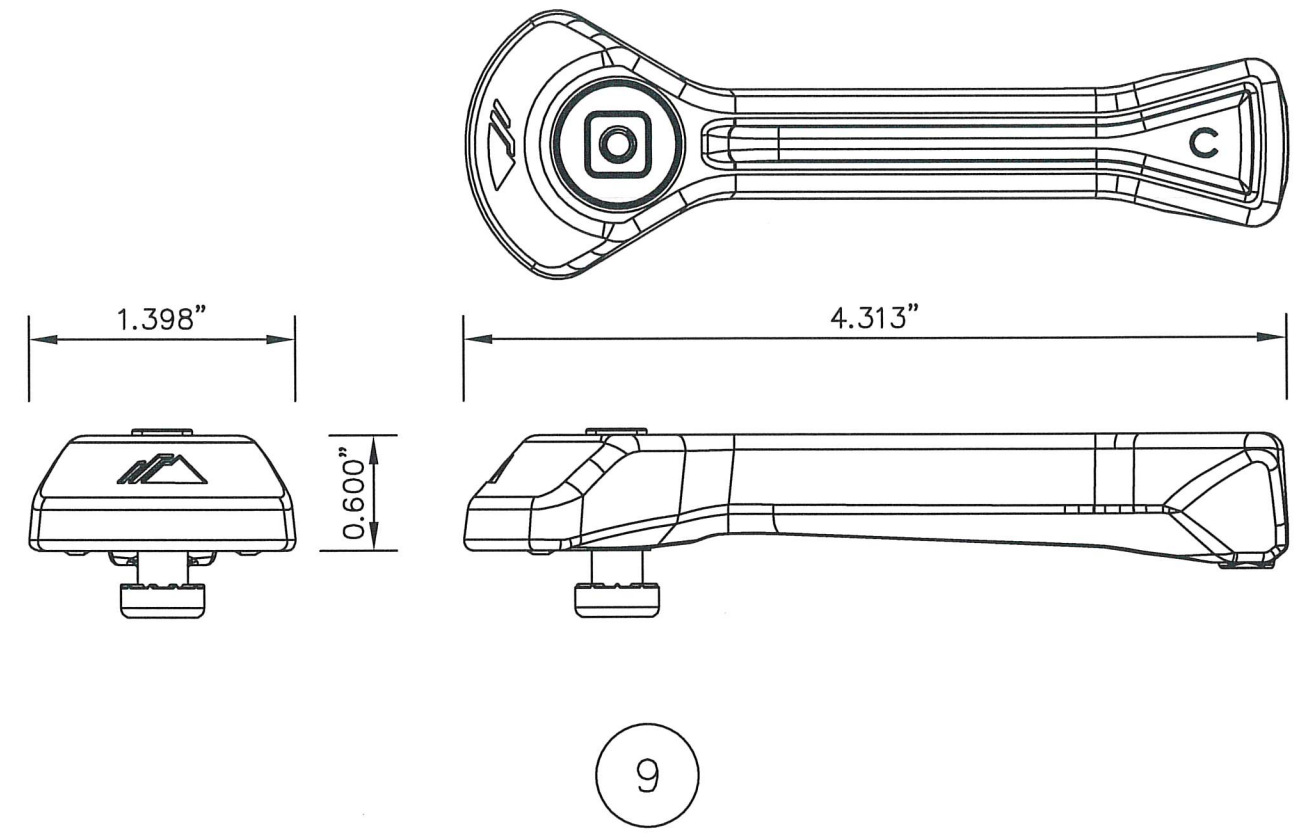
DWG: XR-QB
SHEET: 7/9

| REV.# | DATE |
|-------|----------|
| 1 | 12/19/22 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
| 29 | |
| 30 | |
| 31 | |
| 32 | |
| 33 | |
| 34 | |
| 35 | |
| 36 | |
| 37 | |
| 38 | |
| 39 | |
| 40 | |
| 41 | |
| 42 | |
| 43 | |
| 44 | |
| 45 | |
| 46 | |
| 47 | |
| 48 | |
| 49 | |
| 50 | |

IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS

| BILL OF MATERIALS- XR System | | |
|------------------------------|--|--------------------------------|
| # | DESCRIPTION | MATERIALS/NOTES |
| 1 | XR-10 RAIL | 6000 SERIES AL |
| 2 | XR-100 RAIL | 6000 SERIES AL |
| 3 | XR-1000 RAIL | 6000 SERIES AL |
| 4 | XR-10 BOSS SPLICE | 6000 SERIES AL & 300 SERIES SS |
| 5 | XR-100 BOSS SPLICE | 6000 SERIES AL & 300 SERIES SS |
| 6 | XR-1000 BOSS SPLICE | 6000 SERIES AL & 300 SERIES SS |
| 7 | UFO UNIVERSAL MODULE CLAMP | 300 SERIES SS |
| 8 | STOPPER SLEEVE | 6000 SERIES AL |
| 9 | CAMO HIDDEN END CAM | 300 SERIES AL & 300 SERIES SS |
| 10 | 3/8" X 1" SQUARE BOLT BONDING HARDWARE | 300 SERIES SS |
| 11 | 3/8" X 1" T-BOLT BONDING HARDWARE | 300 SERIES SS |
| 12 | XR-10 RAIL END CAP (OPTIONAL) | POLYMERIC |
| 13 | XR-100 RAIL END CAP (OPTIONAL) | POLYMERIC |
| 14 | XR-1000 RAIL END CAP (OPTIONAL) | POLYMERIC |

FOR 6000 SERIES EXTRUSIONS $F_{UT}=38$ ksi min, $F_Y=34$ ksi min.
FOR 300 SERIES STAINLESS STEEL $F_Y=65$ ksi min.



SCOTT WOLTERS
FL PE# 62354

WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

STATE OF FLORIDA
PROFESSIONAL ENGINEER
No. 62354
DEC 19 2022

1ST SUBMITTAL
PRINTS ISSUED FOR

| REV.# | DATE |
|-------|----------|
| 1 | 12/19/22 |

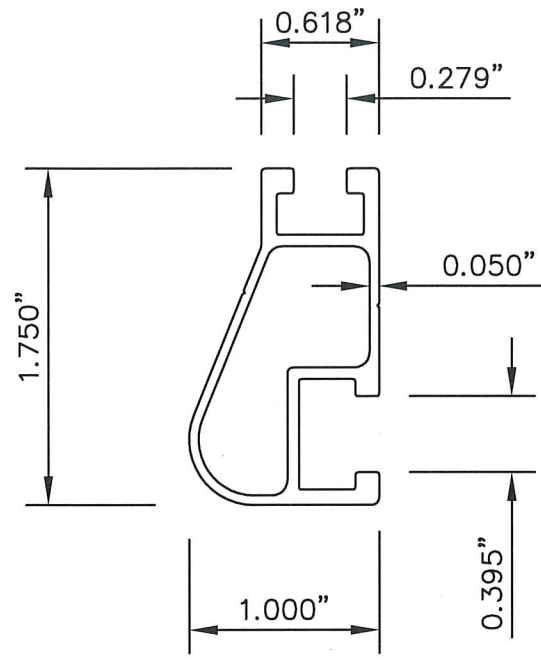
28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545

PHONE: (800) 227-9523
info@ironridge.com

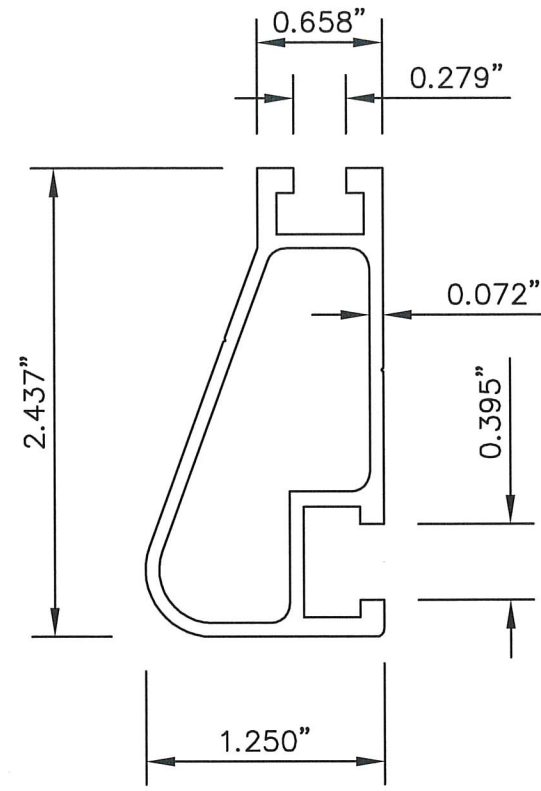
DWG: XR-QB

SHEET: 8/9

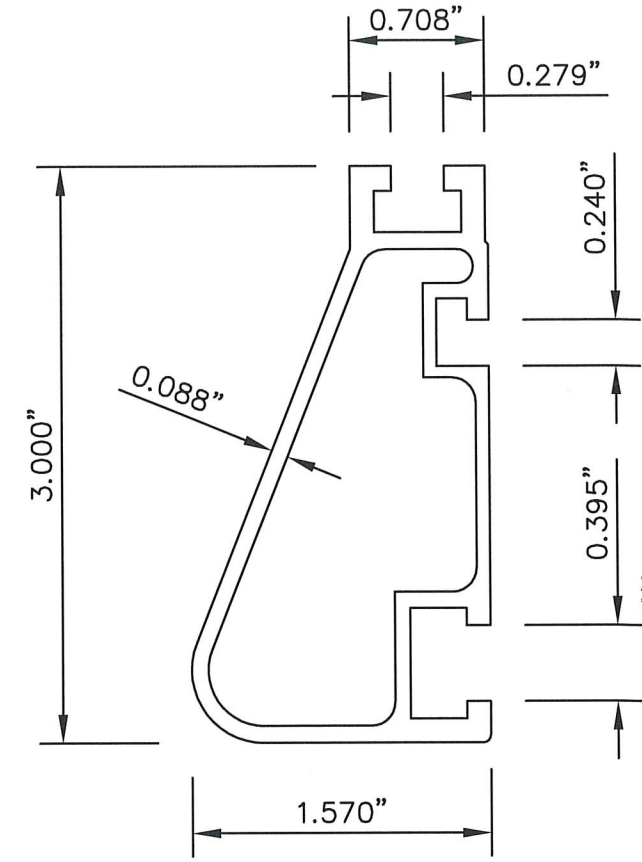
**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH QUICKMOUNT Q-BASE ROOF ATTACHMENTS**



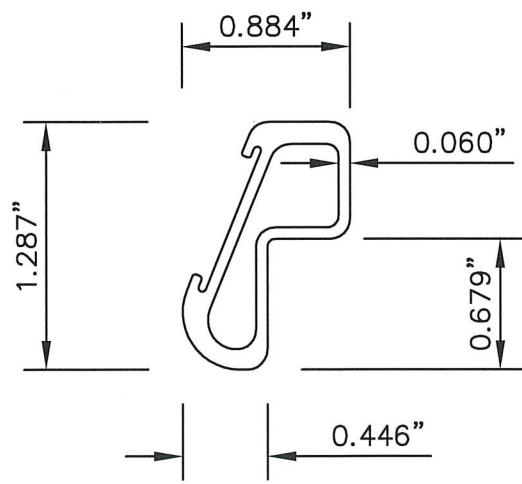
1



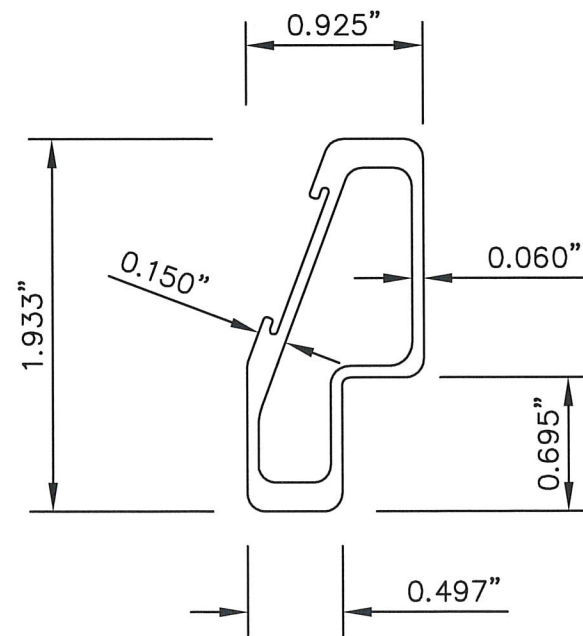
2



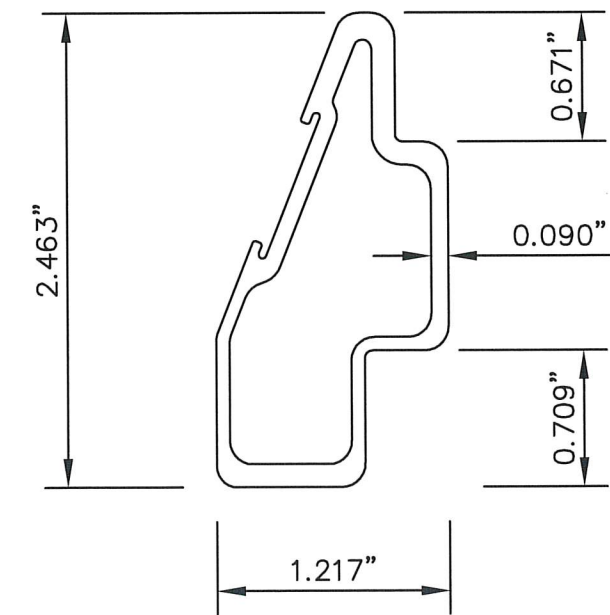
3



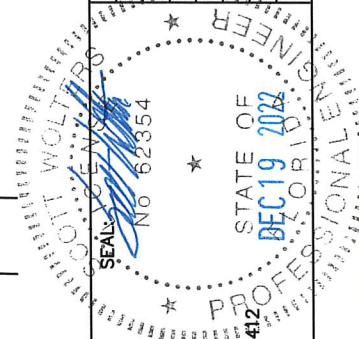
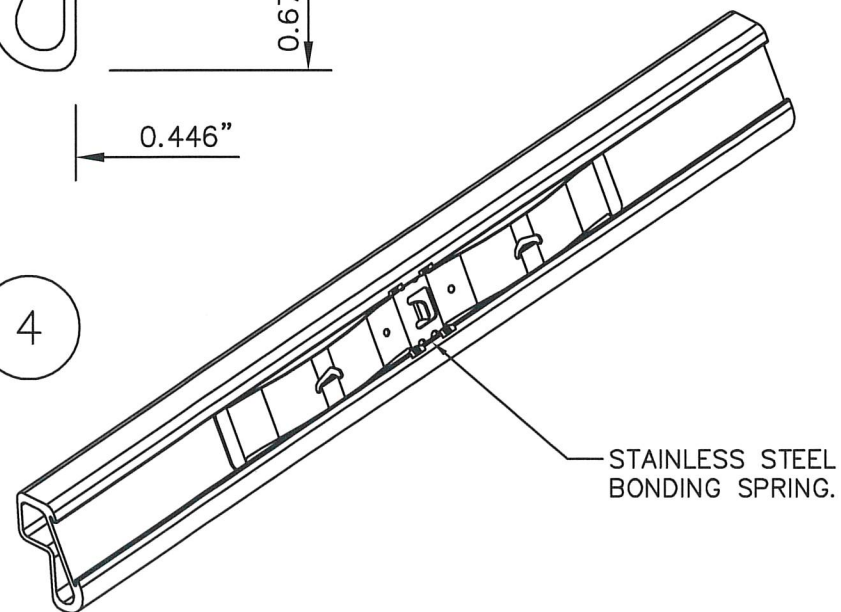
4



5



6



SCOTT WOLTERS
FL PE# 62354
WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

IRONRIDGE
28357 INDUSTRIAL BLVD.
HAYWARD, CA 94545
PHONE: (800) 227-9523
info@ironridge.com

DWG: XR-QB
SHEET: 9/9

| REV.# | DATE |
|-------|----------|
| 1 | 12/19/22 |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
| 29 | |
| 30 | |
| 31 | |
| 32 | |
| 33 | |
| 34 | |
| 35 | |
| 36 | |
| 37 | |
| 38 | |
| 39 | |
| 40 | |
| 41 | |
| 42 | |
| 43 | |
| 44 | |
| 45 | |
| 46 | |
| 47 | |
| 48 | |
| 49 | |
| 50 | |
| 51 | |
| 52 | |
| 53 | |
| 54 | |
| 55 | |
| 56 | |
| 57 | |
| 58 | |
| 59 | |
| 60 | |
| 61 | |
| 62 | |
| 63 | |
| 64 | |
| 65 | |
| 66 | |
| 67 | |
| 68 | |
| 69 | |
| 70 | |
| 71 | |
| 72 | |
| 73 | |
| 74 | |
| 75 | |
| 76 | |
| 77 | |
| 78 | |
| 79 | |
| 80 | |
| 81 | |
| 82 | |
| 83 | |
| 84 | |
| 85 | |
| 86 | |
| 87 | |
| 88 | |
| 89 | |
| 90 | |
| 91 | |
| 92 | |
| 93 | |
| 94 | |
| 95 | |
| 96 | |
| 97 | |
| 98 | |
| 99 | |
| 100 | |