

UNIRAC, INC. MIAMI-DADE TEST REPORT

SCOPE OF WORK

TAS 100(A) TESTING ON L-FOOT, SOLAR MOUNT

REPORT NUMBER

M6310.01-109-18

TEST DATE(S)

08/04/21

ISSUE DATE

08/28/21

REVISED DATE

09/13/21

MIAMI-DADE COUNTY NOTIFICATION NO.

ATI 21046

LABORATORY CERTIFICATION NO.

20-0831.14

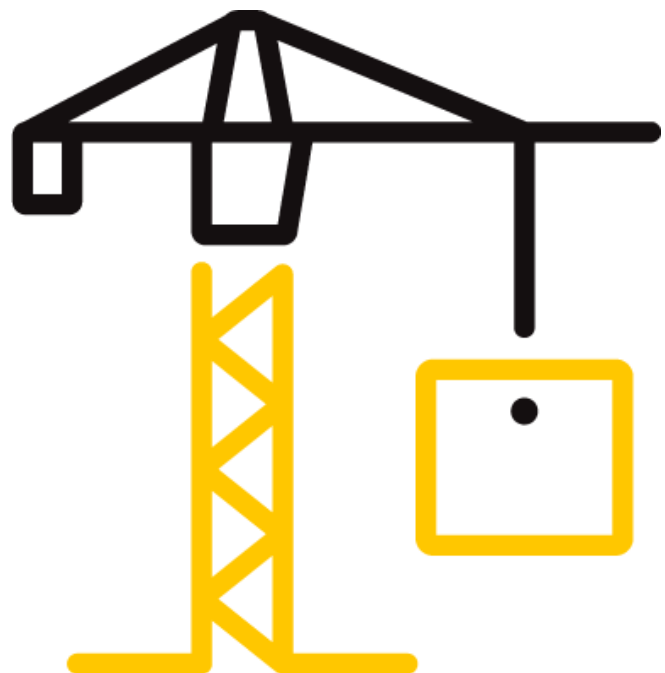
PAGES

19

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-7808 (05/23/19)

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TEST REPORT FOR UNIRAC, INC.

Report No.: M6310.01-109-18

Revision 1: 09/13/21

Date: 08/28/21

REPORT ISSUED TO

UNIRAC, INC.

1411 Broadway Boulevard NE

Albuquerque, New Mexico 87102-1545

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Unirac, Inc. to perform TAS 100(A) testing in accordance with Miami-Dade County requirements on L-Foot, solar mount. Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

For INTERTEK B&C:

COMPLETED BY:	Robert J. Beatty
TITLE:	Technician - Product Testing
SIGNATURE:	
DATE:	09/13/21

REVIEWED BY:	Vinu J. Abraham, P.E.
TITLE:	Vice President, Products Building & Construction
SIGNATURE:	
DATE:	09/13/21

RJB:nls/vlm

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SECTION 2

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

TAS 100 (A)-95, *Test Procedure for Wind and Wind Driven Rain Resistance and/or Increased Windspeed Resistance of Soffit Ventilation Strip and Continuous or Intermittent Ventilation System Installed at the Ridge Area*

SECTION 3

MATERIAL SOURCE

Test sample materials were provided by the client from Unirac, Inc. located in Albuquerque, New Mexico. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of ten years from the test completion date.

SECTION 4

EQUIPMENT/CALIBRATION

Vane Axial Fan – Y003346

Stopwatch – INT00974

Weather Station – 63316

Tape Measure Verification – 63788

Windstream, water supply, and water distribution calibration were performed prior to testing. Reference Intertek B&C Calibration Report No. M1448.01-109-18, dated 04/28/21, for descriptions and results.

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Tyler J. Holland	Intertek B&C
Daniel C. Culbert, P.E.	Intertek B&C
Robert J. Beatty	Intertek B&C

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SECTION 6

TEST SPECIMEN DESCRIPTION

Manufacturer: Unirac, Inc.

Product Type: Solar Mount

Series/Model: L-Foot

Roof Deck Description: An 8' 0" wide by 6' 0" long roof deck on a 2:12 slope was utilized. The roof deck consisted of #2 Spruce-Pine-Fir nominal 2x6 intermediate supports sheathed with APA 32/16 span rated 15/32" plywood sheathing. The intermediate supports were spaced 24" on center. The plywood was secured to the rafters with 8d common nails spaced 6" on center around the perimeter and 12" on center at the intermediate supports. The sheathing was covered with #30 felt underlayment and three-tab shingles.

Installation of Test Specimens #1 and #2 Unirac® L-Foot with 3" Flashing: The L-Foot was installed onto a 0.042" thick by 3" wide by 12" long aluminum flashing. A 7/32" hole was drilled prior to the installation of the flashing. The flashing was installed under a row of shingles. The flashing utilized a U-shaped bead of silicone sealant on the underside. The L-Foot was installed through the installation hole of the flashing using a 5/16" x 4" hex head lag bolt with a flat EPDM washer. The bolt went through the rubber grommet of the L-Foot and into the center of one of the rafters on the test deck.

Installation of Test Specimens #3 and #4 Unirac® L-Foot with 8" Flashing: The L-Foot was installed onto a 0.038" thick by 8" wide by 12" long aluminum flashing. A 7/32" hole was drilled prior to the installation of the flashing. The flashing was installed under a row of shingles. The flashing utilized a U-shaped bead of silicone sealant on the underside. The L-Foot was installed through the installation hole of the flashing using a 5/16" x 4" hex head lag bolt with a flat EPDM washer. The bolt went through the rubber grommet of the L-Foot and into the center of one of the rafters on the test deck.

Unirac® L-Foot Description: The test specimens consisted of a 2" wide by 1-7/8" long by 2-13/16" tall aluminum angle measuring 5/16" at the base and 1/4" thick at the return. The base of the aluminum angle utilized a 3/8" thick ID rubber grommet.

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SECTION 7

TEST RESULTS

Protocol TAS 100(A)-95, *Test Procedure for Wind and Wind Driven Rain Resistance and/or Increased Windspeed Resistance of Soffit Ventilation Strip and Continuous or Intermittent Ventilation System Installed at the Ridge Area.*

Test Date(s): 08/04/21

The temperature during testing was 75°F. The results are tabulated as follows:

Test Procedure: The wind speed intervals were conducted as follows:

Interval No.	Wind Speed (mph)	Time (min)	Water Spray
1	35	15	On
2	0	5	Off
3	70	15	On
4	0	5	Off
5	90	15	On
6	0	5	Off
7	110	5	On
8	0	5	Off

Test Results: The TAS 100(A) test results are as follows:

Wind Speed	Results
35 mph	0 oz.
70 mph	0 oz.
90 mph	0 oz.
110 mph	0 oz.

Total Leakage: 0.00 oz.

Allowable: 13.34 oz.

Result(s): Pass

Notes:

Tested at a 2:12 roof pitch.

Test Specimens #1 - #4 were evaluated on a common test deck.

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SECTION 8

CONCLUSION

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek B&C will service this report for the entire test record retention period. The test record retention period ends ten years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

SECTION 9

PHOTOGRAPHS



Photo No. 1
Top Side Before Testing

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Photo No. 2
Underside Before Testing



Photo No. 3
35 MPH Top Side

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Photo No. 4
35 MPH Underside



Photo No. 5
35 MPH Top Side After

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Photo No. 6
70 MPH Top Side



Photo No. 7
70 MPH Underside

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Photo No. 8
70 MPH Top Side After



Photo No. 9
90 MPH Top Side

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Photo No. 10
90 MPH Underside



Photo No. 11
90 MPH Top Side After

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Photo No. 12
110 MPH Top Side



Photo No. 13
110 MPH Underside

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Photo No. 14
Post Test Top Side



Photo No. 15
Post Test Underside



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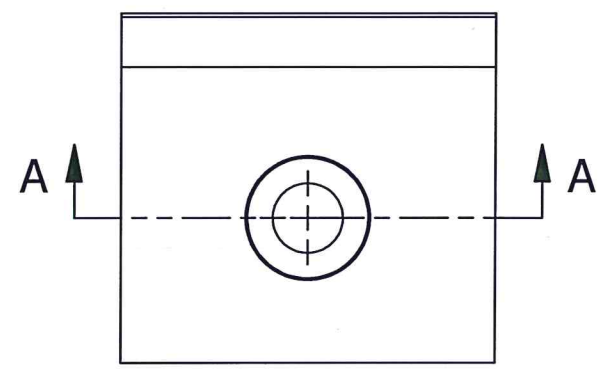
Date: 08/28/21

SECTION 10

DRAWINGS

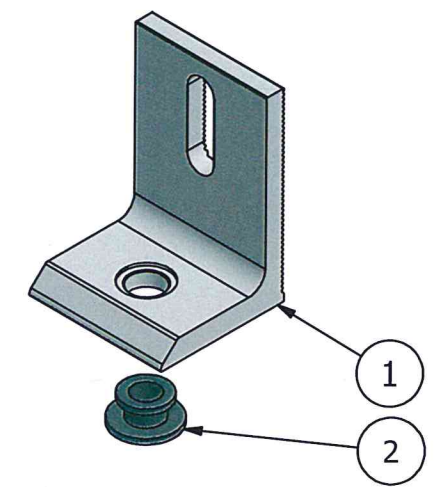
The test specimen drawings have been reviewed by Intertek B&C and are representative of the test specimen(s) reported herein. Test specimen construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

REVISION HISTORY				
REV	DRAWN BY	DESCRIPTION	DATE	APPROVED
A	R INGE	INITIAL RELEASE	6/7/2018	SU
B	R INGE	ITEM 1 WAS REV-A; CHANGED PER ECR#07242018-01	7/25/2018	SU
C	R INGE	ITEM 1 WAS REV-B; CHANGED PER ECR#08032018-01	8/3/2018	SU

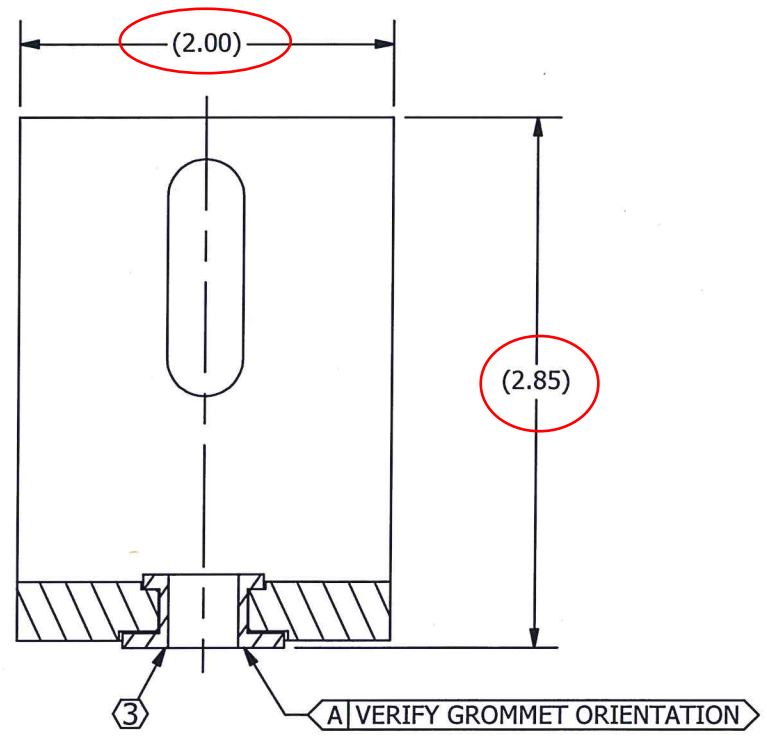


TOP
SCALE 1 : 1

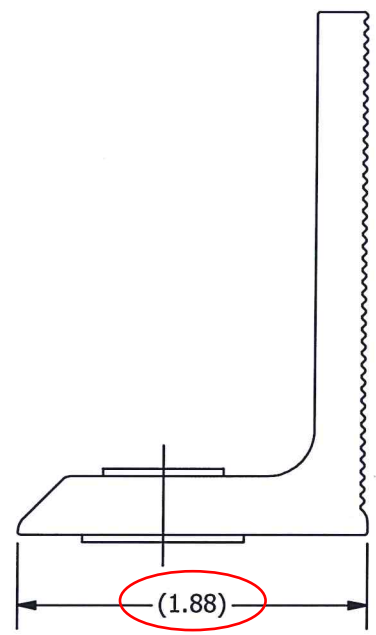
ASSEMBLY TABLE	
Part Number	ITEM 1 L-FOOT
P28405005M	P28405002M
P28405005D	P28405002D
P28405005C	P28405002C



EXPLODED VIEW
SCALE 1 / 2



SECTION A-A
SCALE 1 : 1



SIDE
SCALE 1 : 1

PARTS LIST				
ITEM	QTY	PART NUMBER	REV	DESCRIPTION
1	1	SEE ASSEMBLY TABLE	C	L-FOOT
2	1	P28401003	A	SFM SH GROMMET

- NOTES:
1. MATERIAL: SEE PARENT DRAWINGS.
 2. FINISH: SEE PARENT DRAWINGS.
 - ③ INSTALL GROMMET AS SHOWN.
 4. AFTER ASSEMBLY GROMMET FLANGES MUST LAY FLAT ON L-FOOT COUNTERBORES. NO RUFFLES ALLOWED.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS: ±1/16 ANGLES: ±1° DECIMALS: .XX ±.03 .XXX ±.010 DO NOT SCALE DRAWING		ALL INFORMATION PROVIDED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND IS THE SOLE PROPERTY OF UNIRAC. REPRODUCTION AND/OR DISTRIBUTION WITHOUT WRITTEN PERMISSION IS FORBIDDEN AND WILL CONSTITUTE COPYRIGHT INFRINGEMENT UNDER U.S. LAW		
DIMENSIONING AND TOLERANCES PER ASME Y14.5-2009				1411 Broadway Blvd. NE Albuquerque NM 87102 USA Phone: 505.242.6411 WWW.UNIRAC.COM
DRAWING TYPE: MANUFACTURING	THIRD ANGLE PROJECTION	ENGINEERING APPROVAL: <i>[Signature]</i>	TITLE: L-FOOT WITH GROMMET ASSY	
APPLICATION ENGINEERING BY:	MATERIAL: NOTED	QUALITY APPROVAL: <i>[Signature]</i>	DRAWING NUMBER: P28405005	
APPLICATION ENGINEERING APPROVAL:	FINISH: NOTED	DATE: 6/7/2018	SHEET SIZE: B	REV: C
				SHEET: 1 OF 1

	Report #:	M6310
	Date:	8/16/21
	Verified by:	<i>[Signature]</i>

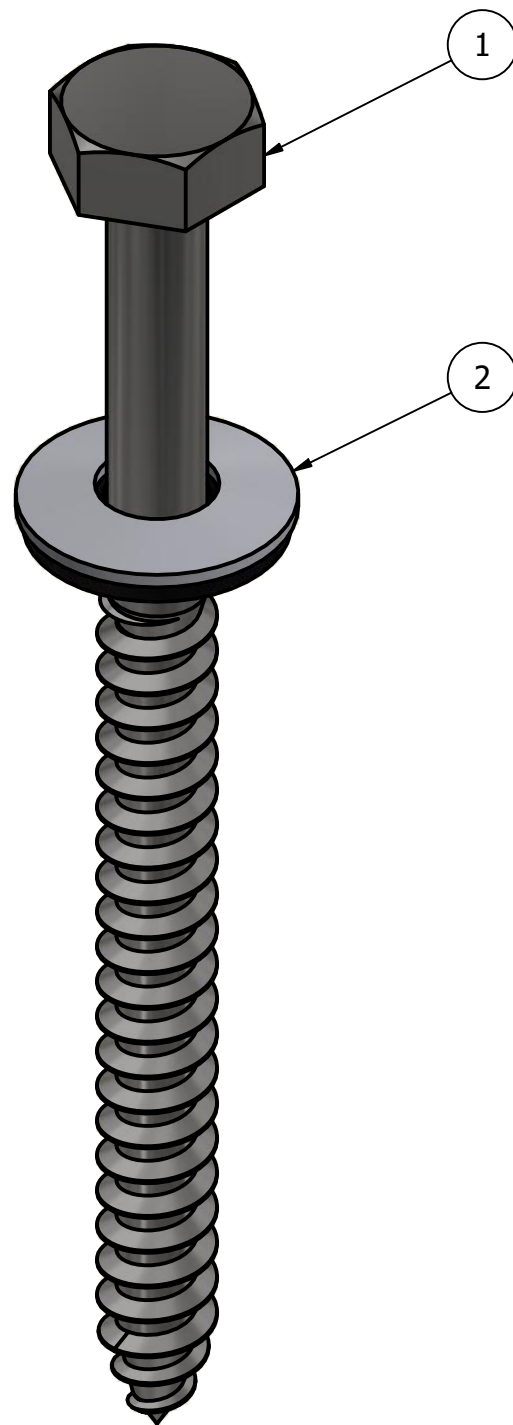
4

3

2

1

REVISION HISTORY				
REV	DRAWN BY	DESCRIPTION	DATE	APPROVED
A	D VIGIL	INITIAL RELEASE	6/27/2018	SU
B	D VIGIL	REPLACED PART M35350 WITH M31150; UPDATED PARTS LIST PER ECR # EC 202163-00151	7/14/2021	JB



ASSEMBLY TABLE	
PART NUMBER	ASSY WT
P28405007-01	0.011 lb

PARTS LIST				
ITEM	QTY	PART NUMBER	REV	DESCRIPTION
1	1	M31150	A	312 X 4.00 HEX HEAD LAG SCREW, SS
2	1	M30062	A	5/16 EPDM WASHER SS

- NOTES:
 1. MATERIAL: SEE PARENT DRAWING.
 2. FINISH: SEE PARENT DRAWING.
 3. SEE PACKAGING DETAIL FOR BOX QUANTITY.

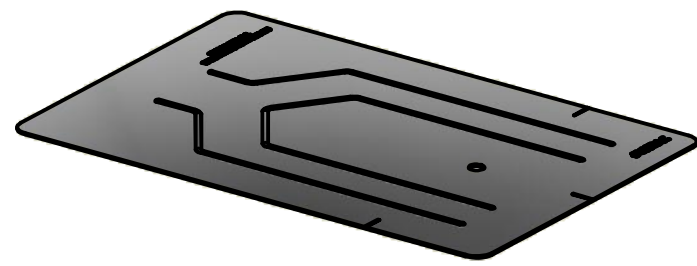
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS: ±1/16 ANGLES: ±1° DECIMALS: .XX ±.03 .XXX ±.010 DO NOT SCALE DRAWING	ALL INFORMATION PROVIDED HEREIN IS CONFIDENTIAL AND PROPRIETARY AND IS THE SOLE PROPERTY OF UNIRAC. REPRODUCTION AND/OR DISTRIBUTION WITHOUT WRITTEN PERMISSION IS FORBIDDEN AND WILL CONSTITUTE COPYRIGHT INFRINGEMENT UNDER U.S. LAW	
	ENGINEERING APPROVAL: <i>[Signature]</i>	1411 Broadway Blvd. NE Albuquerque NM 87102 USA Phone: 505.242.6411 WWW.UNIRAC.COM
DIMENSIONING AND TOLERANCES PER ASME Y14.5-2009	MANUFACTURING	UNIRAC
DRAWING TYPE: MANUFACTURING	THIRD ANGLE PROJECTION	TITLE: LAG BOLT / WASHER ASSY SH
APPLICATION ENGINEERING BY:	APPLICATION ENGINEERING APPROVAL:	DRAWING NUMBER: P28405007
	NOTED	DATE: 5/23/2018
	NOTED	SHEET SIZE: B REV: B SHEET: 1 OF 1

	Report #: M6310
	Date: 8/16/21
	Verified by: <i>[Signature]</i>

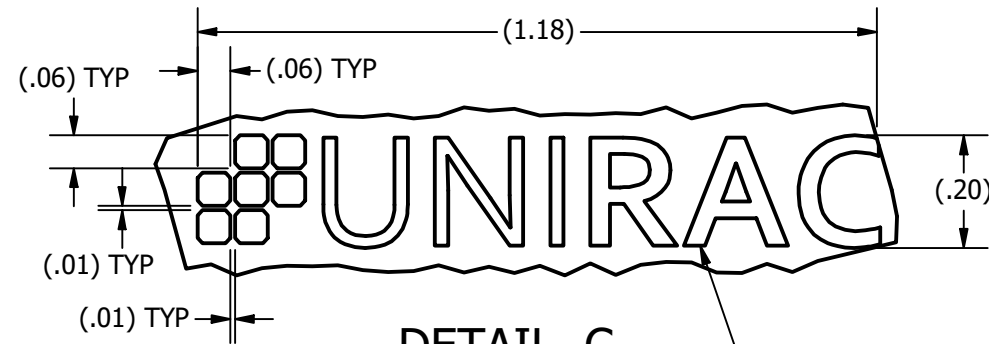
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3

2

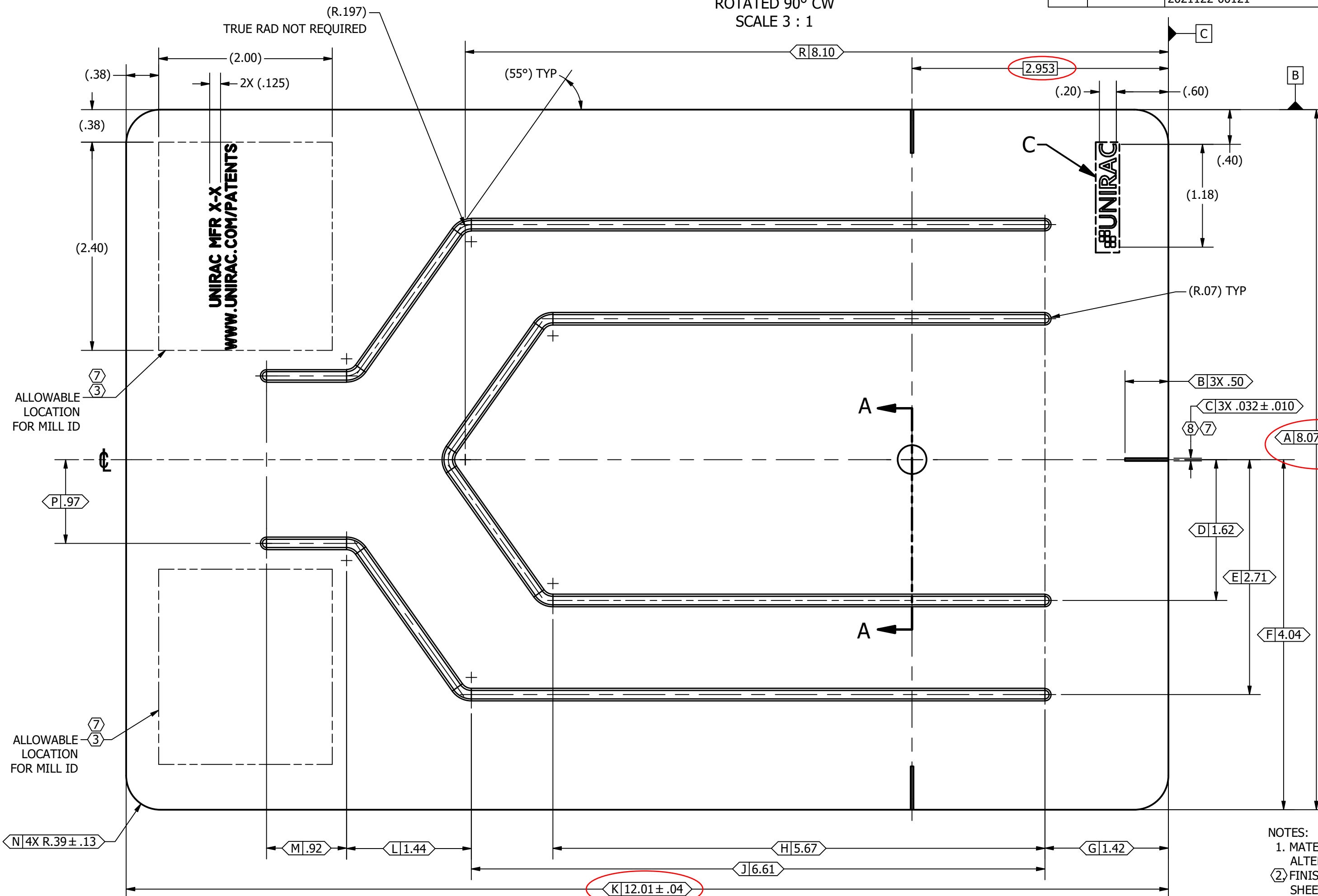


OBLIQUE VIEW

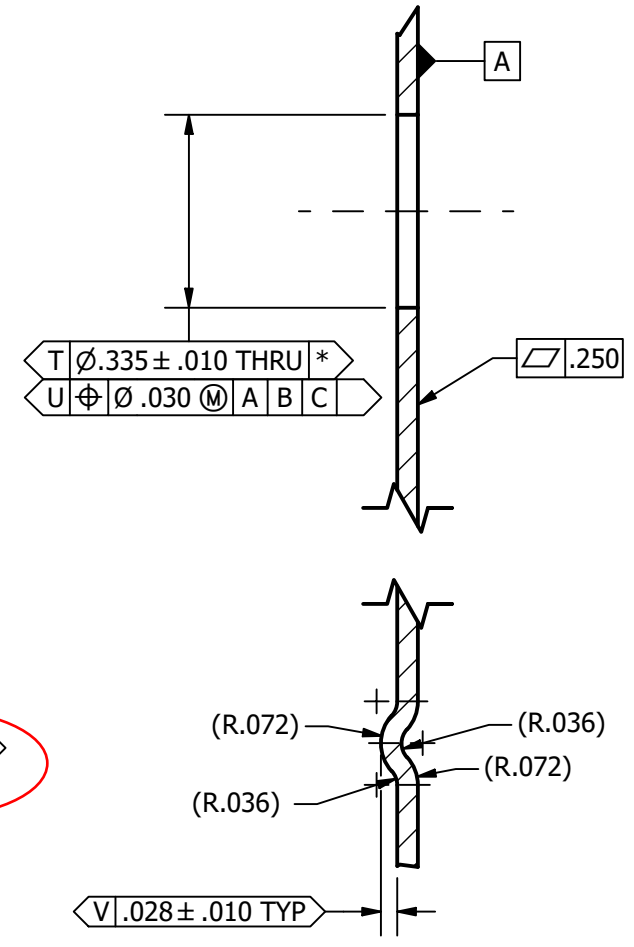


DETAIL C
ROTATED 90° CW
SCALE 3 : 1

REVISION HISTORY				
REV	DRAWN BY	DESCRIPTION	DATE	APPROVED
A	R INGE	INITIAL RELEASE	5/4/2018	SU
E	R INGE	ADDED TEXT "WWW ... "; CHANGED PER ECR#09122018-02	10/15/2018	SU
F	D VIGIL	ADDED INSPECTION DIM'S W AND X; MOVED DIM V FROM SECTION B-B- TO A-A; DELETED SECTION B-B; CHANGED PER ECR #EC 2020416-00072	4/20/2020	SU
G	DEEPTHI	REMOVED PROTRUSION AND UPDATED SECTION A-A; REMOVED INSPECTION DIM S; REMOVED REFERENCE DIM'S 0.407 AND R.020; CHANGED PER ECR # EC 2021112-00120	1/12/2021	TG
H	DEEPTHI	UPDATED THE DIM V FROM 0.032 TO 0.028; ADDED CALLOUT 2; CHANGED DIM W AND X TO REFERENCE DIMENSIONS; CHANGED PER ECR #EC 2021122-00121	2/14/2021	TJ

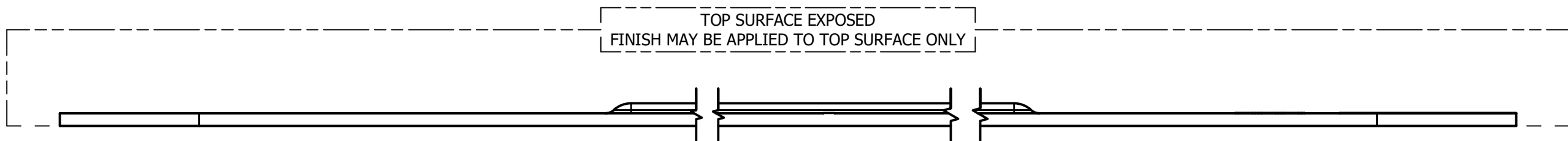


TOP VIEW
SCALE 1 : 1



SECTION A-A
SCALE 3 : 1

- NOTES:
- MATERIAL: ALUMINUM, 5005-H34, 19 GAGE .0359 ± .003 THICK, ALTERNATES 5052-H32, 5052-H34.
 - FINISH: BLACK POLYESTER POWDER COAT, THICKNESS .001 MIN - .005 MAX SHEEN: SEMI-GLOSS, MATTE; WEATHERABILITY PER AAMA 2603. ALTERNATE FINISH: AAMA 611-12: AA-M12C22A24 BLACK 0.1 MIL MIN.
 - MARK PER UNIRAC DRAWING 000PD-010 MILL IDENTIFICATION EXCEPT: MARKING METHOD IS STAMPING ONLY, MARKING DEPTH IS .010 ± .003
 - * DESIGNATES CRITICAL DIMENSIONS.
 - NO BURRS, NICKS, STEPS, OR MISMATCHED EDGES ALONG PERIMETER.
 - PART IS SYMMETRICAL TO CENTERLINE EXCEPT FOR EMBOSS PATTERN.
 - VERIFY MARKINGS ARE LEGIBLE AT 1X AFTER PROCESSING.
 - MARKING IS SOLID PRINT, MARA Poi PY 070 WHITE, OR UNIRAC APPROVED INK.



SIDE VIEW
SCALE 3 : 1

PART TABLE	
Part Number	FINISH
P28403001	BLACK - SEE NOTE 2
P28403000	AAMA 611-12: AA-M12

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DRAWING TYPE: MANUFACTURING		UNIRAC 1411 Broadway Blvd. NE Albuquerque NM 87102 USA Phone: 505.242.6411 WWW.UNIRAC.COM	
DIMENSIONING AND TOLERANCES PER ASME Y14.5-2009		TITLE: 8 IN FLASHING SH	
APPLICATION ENGINEERING BY: [Signature]		DRAWING NUMBER: P2840300X	
APPLICATION ENGINEERING APPROVAL: [Signature]		DATE: 3/19/2018	
FINISH: NOTED		SHEET SIZE: C	
REVISION: NOTED		REV: H	
		SHEET: 1 OF 1	

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SECTION 11

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	08/28/21	N/A	Original Report Issue
1	09/13/21	4	Corrected Installation Descriptions