

FORTRESS BUILDING PRODUCTS TEST REPORT

SCOPE OF WORK

STRUCTURAL PERFORMANCE TESTING ON THE *AL13 HOME* GUARDRAIL SYSTEM WITH *TWO ACCENT TOP RAILS* AND THREE INFILL OPTIONS

REPORT NUMBER

L0294.01-119-19 R1

TEST DATES

06/15/20 - 09/04/20

ISSUE DATE

09/17/20

REVISED DATE

09/25/20

RECORD RETENTION END DATE

09/04/24

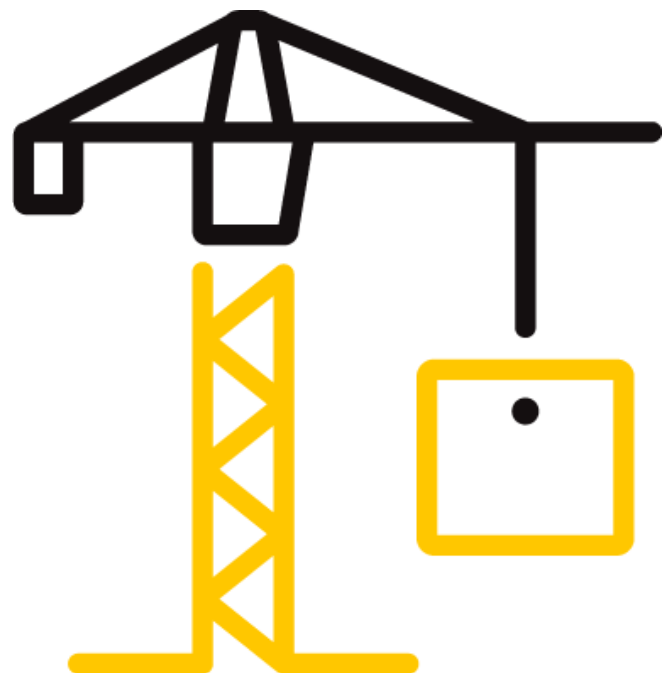
PAGES

59

DOCUMENT CONTROL NUMBER

RT-R-AMER-Test-2846 (02/09/18)

© 2017 INTERTEK



TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

REPORT ISSUED TO

FORTRESS BUILDING PRODUCTS

1720 North First Street

Suite B

Garland, Texas 75040

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Fortress Building Products to perform structural performance testing in accordance with the 2018 IRC on the *A/13 Home* guardrail system with two accent top rails and three infill options. This report is in conjunction with Intertek Report No. I6590.01-119-19 which includes structural performance testing of the 2 in and 3 in *A/13 Home* post mounts. All tests performed were to evaluate structural performance of the guardrail assembly to carry and transfer imposed loads to the supporting structure. The test specimens evaluated included the infill, rails, rail brackets, and support posts. Anchorage of support posts to the supporting structure is not included in the scope of this testing and would need to be evaluated separately.

Results obtained are tested values and were secured by using the designated test method(s). Testing was conducted at Intertek test facility in York, PA. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

SECTION 2

SUMMARY OF TEST RESULTS

The specimens met the 2018 IRC design load performance requirements.

For INTERTEK B&C:

COMPLETED BY:	Adam J. Schrum
TITLE:	Project Manager
SIGNATURE:	
DATE:	09/25/20

REVIEWED BY:	V. Thomas Mickley, Jr., P.E.
TITLE:	Senior Staff Engineer
SIGNATURE:	
DATE:	09/25/20

AJS:vtm/aas

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

SECTION 3

TEST METHOD(S)

The specimens were evaluated in accordance with the following:

2018, *International Residential Code*[®], International Code Council

Structural tests were performed according to Chapter 17 (Structural Tests and Special Inspections) of the 2018 *International Building Code*[®], International Code Council.

Limitations

Section 2407 of the 2018 *International Building Code*[®] requires glass in guardrails to be laminated glass. Tempered glass conforming to ANSI Z97.1 Class A, may be used if there is no walking surface below the guardrail or the walking surface is permanently protected from the risk of falling glass. The guardrail system tested herein utilized tempered glass therefore its use is limited to the conditions noted above.

SECTION 4

MATERIAL SOURCE/INSTALLATION

Test samples were provided by the client. Representative samples of the test specimen(s) will be retained by Intertek B&C for a minimum of four years from the test completion date.

The guardrail assemblies were installed and tested as a single railing section by surface mounting the posts to steel channels (simulated concrete) for the level guardrails and by directly securing the posts to a rigid steel test fixture, which rigidly restrained the posts from deflecting for the stair guardrails. Transducers mounted to an independent reference frame were located to record movement of reference points on the guardrail system components (ends and mid-point) to determine net component deflections. See photographs in Section 11 for individual test setups.

SECTION 5

EQUIPMENT

The guardrails were tested in a self-contained structural frame designed to accommodate anchorage of the guardrail assembly and application of the required test loads. The specimens were loaded using either an electric winch mounted to a rigid steel test frame or by using a hydraulic cylinder mounted on a forklift. High strength steel cables, nylon straps, and load distribution beams were used to impose test loads on the specimens. Applied load was measured using an electronic load cell located in-line with the loading system. Electronic linear motion transducers were used to measure deflections.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Kevin J. Eichelberger	Intertek B&C

SECTION 7

TEST PROCEDURE

Each test specimen was inspected prior to testing to verify size and general condition of the materials, assembly, and installation. No potentially compromising defects were observed prior to testing.

An initial load, not exceeding 50% of design load, was applied and transducers were zeroed. Load was then applied at a steady uniform rate until reaching 2.0 times design load in no less than 10 seconds. After reaching 2.0 times design load, the load was released. After allowing a minimum period of one minute for stabilization, load was reapplied to the initial load level used at the start of the loading procedure, and deflections were recorded and used to analyze recovery. Load was then increased at a steady uniform rate until reaching 2.5 times design load or until failure occurred. The testing time was continually recorded from the application of initial test load until the ultimate test load was reached.

The test load adjustment factor was 2.5 x design load for loads applied to the rail and posts and 4.0 x design load for loads applied to or transferred through the glass infill.

Deflection and permanent set were component deflections relative to their end-points; they were not overall system displacements. All loads and displacement measurements were horizontal, unless noted otherwise.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

SECTION 8

TEST SPECIMEN DESCRIPTION

Test specimens were assembled by an Intertek technician. Fortress Railing Products provided the test components with the following details:

PRODUCT	<i>AL13 Home guardrail system with two Accent Top Rails</i>
MATERIAL	Extruded Aluminum (unspecified alloy)
COLORS	- Black - White
RAIL LENGTH	- 69, 69-1/2 in or 94 in (inside of post to inside of post) (level) - 78 in or 96 in (inside of post to inside of post) (stair)
RAIL HEIGHT	- 40-7/8 - 41 in (top of top rail to bottom of bottom rail) (level) - 40 in or 41 in (top of top rail to bottom of bottom rail; measured parallel to the baluster) (stair) - 42 in (nominal)
TOP RAIL CAP	- Flat: 1-5/8 in high by 2-3/8 in wide by 0.070 in thick aluminum extrusion - Round: 2-1/16 in high by 2-3/8 in wide by 0.070 in thick contoured aluminum extrusion
TOP RAIL SPACER	- 1-7/16 in high by 2-3/16 in wide by 0.070/0.060 in thick aluminum extrusion (continuous) (used in guardrail system with the Flat top rail) - 1-7/16 in high by 2-3/16 in wide by 1-3/4 in long by 0.070/0.060 in thick aluminum extrusion (spaced 2 in from each end and 15 in on center) (used in guardrail systems with the Round top rail)
TOP RAIL SUBRAIL/ BOTTOM RAIL	- Vertical Cable System (Level): 1-1/4 in high by 1-1/4 in wide by 0.100 in thick "closed box" aluminum extrusion - Vertical Cable System (Stair): 1-1/4 in high by 1-1/4 in wide by 0.100 in thick "open box" aluminum extrusion - Glass Picket System: 1-1/4 in high by 1-1/4 in wide by 0.110/0.140 in thick aluminum extrusion with slotted holes for picket grommets - Glass Panel System: 1-1/4 in high by 1-1/4 in wide by 0.075/0.085 in thick aluminum extrusion with 9/32 in wide slot for glass panel and rubber gasket

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

IN-FILL	<ul style="list-style-type: none"> - 1/8 in diameter, 1x19, stainless steel vertical cables (twenty-one (level) and fifteen (stair) equally spaced in groups of three) with six equally spaced 5/8 in diameter by 0.125 in thick vertical intermediate support balusters - 39-3/8 in high by 3-3/4 in wide by 5/16 in thick tempered glass pickets - 39 in high by 61-1/4 in wide by 1/4 in thick tempered glass full view panel
RAIL BRACKETS	<ul style="list-style-type: none"> - Level: 1-1/2 in high by 1-5/8 in wide by 1 in deep (0.160/0.150 in wall) cast aluminum brackets - Stair: Two piece, cast aluminum hinged bracket
POST	<p>2 in square by 0.120 in extruded aluminum tube with an integral screw chase at each corner, connected to a 4-9/16 in square by 0.30 in thick steel base plate with four M8 by 70 mm long flat head machine screws (one in each screw chase); the base plate included four 1/2 in diameter holes, four 5/16 in diameter holes, and one 3/4 in diameter hole</p>
SUPPORT FOOT	<p>5/8 in square by 2 in high cast aluminum tube with cap plate</p>

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Fastening Schedule

CONNECTION	FASTENER
Rail Bracket to Post	Two 1/4-14 by 1" (0.157 in minor diameter) Torx drive, flat-head, self-drilling screws
Rail Bracket to Rail	One 1/4-14 by 1" (0.157 in minor diameter) Torx drive, flat-head, self-drilling screw on the protected side of the rail
Hinged Bracket Connection	Two-piece fastener consisting of one, 1-1/2 in long pan head smooth outside shank female threaded pin and one, #8-32 by 1/4" pan head screw
Rail Spacer to Rail	#10-16 by 1/2" (0.127 in minor diameter) hex head, self-drilling screws(two per piece, one protected side and one exterior side when spacer is non-continuous; 2 in from each end and 18 in on center staggered (protected side/exterior side) when spacer is continuous)
Intermediate Support Baluster to Top/Bottom Rail	One, 1/4-24 by 1-1/8", allen drive, pan-head, stainless steel machine screw with washer
Cable Infill to Top Rail	Level: Stainless steel swage connector with 5/16 in threaded end, nylon lock nut and washer Stair: Stainless steel swage connector with 5/16 in threaded end, nut and cast aluminum angled washer
Cable Infill to Bottom Rail	Level: Stainless steel swage connector with snap ring Stair: Stainless steel swage connector with snap ring and cast aluminum washer
Glass Panel or Picket to Top/Bottom Rail	Slip Fit - No mechanical connections
Top Rail Cap to Top Rail Spacer	Snap Fit - No mechanical connections
Support Block to Bottom Rail	Channel fit - no mechanical connection to rail
Steel Post Mount to Substructure	Four 3/8 in Grade 5 hex-head bolts with nut and washer

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

SECTION 9

TEST RESULTS

Key to Test Results Tables:

Load Level: Target test load

Test Load: Actual applied load at the designated load level (target).

Elapsed Time (E.T.): The amount of time into the test with zero established at the beginning of the loading procedure.

Test Series No. 1

8 ft (94 in) by 42 in A/13 Home Level Guardrail with Vertical Cable Infill and Round Accent Top Rail Cap

Test No. 1 - 06/30/20

Design Load: 50 lb / 1 square ft at Center of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	105	00:18	--	0.88	--	--
Initial Load	25	02:07	--	0.09	--	--
90% Recovery from 2.0 x Design Load						
2.5x Design Load	129	02:20	Achieved Load without Failure			

Test No. 2 - 06/30/20

Design Load: 50 lb / 1 square ft at Bottom of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:16	--	0.74	--	--
Initial Load	25	01:47	--	0.06	--	--
92% Recovery from 2.0 x Design Load						
2.5x Design Load	125	02:04	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 3 - 06/30/20

Design Load: 50 lb / 1 square ft at Center of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	103	00:12	--	0.71	--	--
Initial Load	25	01:44	--	0.03	--	--
96% Recovery from 2.0 x Design Load						
2.5x Design Load	130	01:59	Achieved Load without Failure			

Test No. 4 - 06/30/20

Design Load: 50 lb / 1 square ft at Bottom of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	104	00:13	--	0.63	--	--
Initial Load	25	01:48	--	0.02	--	--
97% Recovery from 2.0 x Design Load						
2.5x Design Load	131	01:57	Achieved Load without Failure			

Test No. 5 - 06/30/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	403	00:46	1.11	2.56	1.33	1.34
Initial Load	50	02:31	0.05	0.22	0.12	0.14
90% Recovery from 2.0 x Design Load						
2.5x Design Load	502	03:13	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 6 - 06/30/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	801	01:15	3.02	3.53
Initial Load	80	03:09	0.43	0.79
86% Recovery (Rail End #1) and 78% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1003	04:34	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 2

8 ft (94 in) by 42 in A13 Home Level Guardrail with Vertical Cable Infill and Flat Accent Top Rail Cap

Test No. 1 - 06/30/20

Design Load: 50 lb / 1 square ft at Center of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	104	00:11	--	0.81	--	--
Initial Load	25	01:43	--	0.04	--	--
95% Recovery from 2.0 x Design Load						
2.5x Design Load	129	02:00	Achieved Load without Failure			

Test No. 2 - 06/30/20

Design Load: 50 lb / 1 square ft at Bottom of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	102	00:18	--	0.77	--	--
Initial Load	25	01:51	--	0.03	--	--
96% Recovery from 2.0 x Design Load						
2.5x Design Load	131	02:05	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 3 - 06/30/20

Design Load: 50 lb / 1 square ft at Center of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	102	00:12	--	0.66	--	--
Initial Load	25	01:37	--	0.04	--	--
94% Recovery from 2.0 x Design Load						
2.5x Design Load	130	01:49	Achieved Load without Failure			

Test No. 4 - 06/30/20

Design Load: 50 lb / 1 square ft at Bottom of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	104	00:14	--	0.58	--	--
Initial Load	25	01:35	--	0.02	--	--
97% Recovery from 2.0 x Design Load						
2.5x Design Load	128	01:49	Achieved Load without Failure			

Test No. 5 - 06/30/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	403	00:45	1.18	2.37	1.29	1.14
Initial Load	50	02:37	0.06	0.14	0.09	0.07
94% Recovery from 2.0 x Design Load						
2.5x Design Load	502	03:37	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 6 - 06/30/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	801	01:07	3.20	3.23
Initial Load	80	02:58	0.59	0.56
82% Recovery (Rail End #1) and 83% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1000	04:11	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 3

6 ft (69-1/2 in) by 42 in A113 Home Level Guardrail with PureView Glass Balusters and Round Top Rail Cap

Test No. 1 - 06/15/20

Design Load: 50 lb / 1 square ft at Center of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:10	--	0.55	--	--
Initial Load	25	01:37	--	0.02	--	--
96% Recovery from 2.0 x Design Load						
4.0x Design Load	203	01:52	Achieved Load without Failure			

Test No. 2 - 06/15/20

Design Load: 50 lb / 1 square ft at Bottom of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	108	00:10	--	0.33	--	--
Initial Load	25	01:45	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
4.0x Design Load	211	02:07	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 3 - 06/15/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	407	00:50	1.15	1.82	1.30	0.60
Initial Load	50	02:26	0.02	0.04	0.04	0.01
98% Recovery from 2.0 x Design Load						
2.5x Design Load	505	02:53	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

Test No. 4 - 06/15/20

Design Load: 200 lb Vertical Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	50	00:00	--	0.00	--	--
2.0x Design Load	412	00:16	--	0.10	--	--
Initial Load	50	01:44	--	0.03	--	--
70% Recovery from 2.0 x Design Load						
4.0x Design Load	801	02:07	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

Test No. 5 - 06/15/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	803	00:58	3.43	3.22
Initial Load	80	02:40	0.71	0.59
79% Recovery (Rail End #1) and 82% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1001	03:54	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test Series No. 4

6 ft (69-1/2 in) by 42 in A13 Home Level Guardrail with PureView Glass Balusters and Flat Top Rail Cap

Test No. 1 - 06/30/20

Design Load: 50 lb / 1 square ft at Center of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:15	--	0.53	--	--
Initial Load	25	01:49	--	0.02	--	--
96% Recovery from 2.0 x Design Load						
4.0x Design Load	205	02:09	Achieved Load without Failure			

Test No. 2 - 06/30/20

Design Load: 50 lb / 1 square ft at Bottom of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	105	00:10	--	0.33	--	--
Initial Load	25	01:39	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
4.0x Design Load	206	02:00	Achieved Load without Failure			

Test No. 3 - 06/30/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	403	00:55	1.66	2.20	1.69	0.53
Initial Load	50	02:35	0.22	0.23	0.22	0.01
98% Recovery from 2.0 x Design Load						
2.5x Design Load	504	03:13	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 4 - 06/30/20

Design Load: 200 lb Vertical Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	50	00:00	--	0.00	--	--
2.0x Design Load	406	00:14	--	0.08	--	--
Initial Load	50	01:47	--	0.03	--	--
63% Recovery from 2.0 x Design Load						
4.0x Design Load	805	02:20	Achieved Load without Failure			

Test No. 5 - 06/30/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)
Initial Load	40	00:00	0.00
2.0x Design Load	403	00:42	3.45
Initial Load	40	02:15	0.78
77% Recovery from 2.0 x Design Load			
2.5x Design Load	505	02:47	Achieved Load without Failure

Test Series No. 5

6 ft (69 in) by 42 in A13 Home Level Guardrail with PureView Full Glass Panel and Round Top Rail Cap

Test No. 1 - 06/18/20

Design Load: 50 lb / 1 square ft at Center of Full Glass Panel In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:51	--	0.31	--	--
Initial Load	25	04:14	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
4.0x Design Load	202	05:13	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 2 - 06/18/20

Design Load: 50 lb / 1 square ft at Bottom of Full Glass Panel In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:31	--	0.26	--	--
Initial Load	25	03:31	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
4.0x Design Load	200	04:28	Achieved Load without Failure			

Test No. 3 - 06/18/20

Design Load: 50 lb / 1 square ft at Middle Edge of Full Glass Panel In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:35	--	0.38	--	--
Initial Load	25	02:47	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
4.0x Design Load	200	03:46	Achieved Load without Failure			

Test No. 4 - 06/18/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	400	01:37	1.31	1.84	1.36	0.51
Initial Load	50	04:36	0.15	0.17	0.14	0.03
94% Recovery from 2.0 x Design Load						
2.5x Design Load	501	06:35	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 5 - 09/04/20

Design Load: 200 lb Vertical Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	50	00:00	--	0.00	--	--
2.0x Design Load	415	00:19	--	0.20	--	--
Initial Load	50	01:52	--	0.03	--	--
85% Recovery from 2.0 x Design Load						
4.0x Design Load	801	02:21	Achieved Load without Failure			

Test No. 6 - 06/18/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	801	01:06	3.53	3.30
Initial Load	80	03:04	0.83	0.65
76% Recovery (Rail End #1) and 80% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1000	04:38	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 6

6 ft (69 in) by 42 in A13 Home Level Guardrail with PureView Full Glass Panel and Flat Top Rail Cap

Test No. 1 - 06/18/20

Design Load: 50 lb / 1 square ft at Center of Full Glass Panel In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:37	--	0.28	--	--
Initial Load	25	03:10	--	0.01	--	--
96% Recovery from 2.0 x Design Load						
4.0x Design Load	202	03:54	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 2 - 06/18/20

Design Load: 50 lb / 1 square ft at Bottom of Full Glass Panel In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:36	--	0.24	--	--
Initial Load	25	04:23	--	0.02	--	--
92% Recovery from 2.0 x Design Load						
4.0x Design Load	201	05:11	Achieved Load without Failure			

Test No. 3 - 06/18/20

Design Load: 50 lb / 1 square ft at Middle Edge of Full Glass Panel In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:36	--	0.38	--	--
Initial Load	25	03:04	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
4.0x Design Load	201	05:17	Achieved Load without Failure			

Test No. 4 - 06/18/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	405	01:19	1.36	1.82	1.29	0.50
Initial Load	50	05:29	0.10	0.33	0.11	0.23
54% Recovery from 2.0 x Design Load						
2.5x Design Load	501	07:36	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 5 - 09/04/20

Design Load: 200 lb Vertical Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	50	00:00	--	0.00	--	--
2.0x Design Load	402	00:25	--	0.15	--	--
Initial Load	50	02:13	--	0.05	--	--
75% Recovery from 2.0 x Design Load						
4.0x Design Load	803	03:00	Achieved Load without Failure			

Test No. 6 - 06/18/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	803	01:02	3.72	3.56
Initial Load	80	02:46	1.03	0.83
72% Recovery (Rail End #1) and 77% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1001	04:16	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 7

8 ft (96 in) by 42 in by 35° A13 Home Stair Guardrail with Vertical Cable Infill and Round Top Rail Cap

Test No. 1 - 06/19/20

Design Load: 50 lb / 1 square ft at Center of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:13	--	0.94	--	--
Initial Load	25	01:41	--	0.05	--	--
95% Recovery from 2.0 x Design Load						
2.5x Design Load	130	01:51	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 2 - 06/19/20

Design Load: 50 lb / 1 square ft at Bottom of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:10	--	0.94	--	--
Initial Load	25	01:36	--	0.03	--	--
97% Recovery from 2.0 x Design Load						
2.5x Design Load	130	01:50	Achieved Load without Failure			

Test No. 3 - 06/19/20

Design Load: 50 lb / 1 square ft at Center of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:10	--	0.71	--	--
Initial Load	25	01:43	--	0.02	--	--
97% Recovery from 2.0 x Design Load						
2.5x Design Load	131	01:56	Achieved Load without Failure			

Test No. 4 - 06/19/20

Design Load: 50 lb / 1 square ft at Bottom of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:12	--	1.01	--	--
Initial Load	25	01:46	--	0.02	--	--
98% Recovery from 2.0 x Design Load						
2.5x Design Load	130	01:59	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 5 - 06/19/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	402	00:28	0.21	1.69	0.07	1.55
Initial Load	50	02:18	0.00	0.08	0.00	0.08
95% Recovery from 2.0 x Design Load						
2.5x Design Load	503	03:00	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

Test No. 6 - 06/19/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	806	00:57	0.69	0.52
Initial Load	80	02:35	0.09	0.06
87% Recovery (Rail End #1) and 88% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1009	03:08	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 8

8 ft (96 in) by 42 in by 35° A113 Home Stair Guardrail with Vertical Cable Infill and Flat Top Rail Cap

Test No. 1 - 06/19/20

Design Load: 50 lb / 1 square ft at Center of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:16	--	0.82	--	--
Initial Load	25	01:42	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
2.5x Design Load	133	02:02	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 2 - 06/19/20

Design Load: 50 lb / 1 square ft at Bottom of Cable In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:13	--	0.90	--	--
Initial Load	25	01:37	--	0.00	--	--
100% Recovery from 2.0 x Design Load						
2.5x Design Load	126	01:52	Achieved Load without Failure			

Test NO. 3 - 06/19/20

Design Load: 50 lb / 1 square ft at Center of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:14	--	0.67	--	--
Initial Load	25	04:13	--	0.02	--	--
97% Recovery from 2.0 x Design Load						
2.5x Design Load	131	04:31	Achieved Load without Failure			

Test No. 4 - 06/19/20

Design Load: 50 lb / 1 square ft at Bottom of Support Baluster

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	103	00:20	--	0.98	--	--
Initial Load	25	01:56	--	0.02	--	--
98% Recovery from 2.0 x Design Load						
2.5x Design Load	129	02:12	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 5 - 06/19/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	402	00:28	0.22	1.40	0.07	1.26
Initial Load	50	02:19	0.00	0.06	0.00	0.06
95% Recovery from 2.0 x Design Load						
2.5x Design Load	504	03:04	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

Test No. 6 - 06/19/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	806	00:46	0.76	0.48
Initial Load	80	02:59	0.11	0.07
86% Recovery (Rail End #1) and 85% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1008	03:57	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 9

6 ft (78 in) by 42 in by 35° A113 Home Stair Guardrail with PureView Glass Balusters and Round Top Rail Cap

Test No. 1 - 06/25/20

Design Load: 50 lb / 1 square ft at Center of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	104	00:14	--	0.48	--	--
Initial Load	25	02:05	--	0.05	--	--
90% Recovery from 2.0 x Design Load						
4.0x Design Load	201	02:47	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 2 - 06/25/20

Design Load: 50 lb / 1 square ft at Bottom of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	101	00:14	--	0.46	--	--
Initial Load	25	01:24	--	0.02	--	--
96% Recovery from 2.0 x Design Load						
4.0x Design Load	207	01:53	Achieved Load without Failure			

Test No. 3 - 06/25/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	428	00:18	0.11	1.04	0.20	0.89
Initial Load	50	03:24	0.02	0.04	0.01	0.03
97% Recovery from 2.0 x Design Load						
2.5x Design Load	506	03:52	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

Test No. 4 - 06/25/20

Design Load: 200 lb Vertical Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	50	00:00	--	0.00	--	--
2.0x Design Load	413	00:23	--	0.39	--	--
Initial Load	50	01:56	--	0.12	--	--
69% Recovery from 2.0 x Design Load						
4.0x Design Load	814	02:20	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 5 - 06/25/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	806	00:27	0.49	0.58
Initial Load	80	02:15	0.08	0.06
84% Recovery (Rail End #1) and 90% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1004	02:48	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

Test Series No. 10

6 ft (78 in) by 42 in by 35° A113 Home Stair Guardrail with PureView Glass Balusters and Flat Top Rail Cap

Test No. 1 - 06/25/20

Design Load: 50 lb / 1 square ft at Center of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	102	00:10	--	0.42	--	--
Initial Load	25	01:39	--	0.04	--	--
90% Recovery from 2.0 x Design Load						
4.0x Design Load	205	01:53	Achieved Load without Failure			

Test No. 2 - 06/25/20

Design Load: 50 lb / 1 square ft at Bottom of Glass Balustrade In-fill

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	25	00:00	--	0.00	--	--
2.0x Design Load	100	00:10	--	0.39	--	--
Initial Load	25	01:37	--	0.01	--	--
97% Recovery from 2.0 x Design Load						
4.0x Design Load	203	01:52	Achieved Load without Failure			

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

Test No. 3 - 06/25/20

Design Load: 200 lb Horizontal Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET ¹
Initial Load	50	00:00	0.00	0.00	0.00	0.00
2.0x Design Load	400	00:26	0.10	0.82	0.17	0.69
Initial Load	50	02:15	0.02	0.03	0.00	0.02
97% Recovery from 2.0 x Design Load						
2.5x Design Load	504	02:44	Achieved Load without Failure			

¹ Net displacement was mid-rail displacement relative to the rail at the support posts.

Test No. 4 - 06/25/20

Design Load: 200 lb Vertical Concentrated Load at Midspan of Top Rail

LOAD LEVEL	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)			
			END	MID	END	NET
Initial Load	50	00:00	--	0.00	--	--
2.0x Design Load	419	00:15	--	0.37	--	--
Initial Load	50	02:16	--	0.07	--	--
81% Recovery from 2.0 x Design Load						
4.0x Design Load	801	02:52	Achieved Load without Failure			

Test No. 5 - 06/25/20

Design Load: 200 lb Horizontal Concentrated Load at Ends of Top Rail (Brackets)

LOAD LEVEL ¹	TEST LOAD (lb)	E.T. (min:sec)	RAIL DISPLACEMENT (in)	
			RAIL END #1	RAIL END #2
Initial Load	80	00:00	0.00	0.00
(2.0x Design Load) x 2	807	00:44	0.34	0.51
Initial Load	80	02:23	0.04	0.03
88% Recovery (Rail End #1) and 94% Recovery (Rail End #2) from 2.0 x Design Load				
(2.5x Design Load) x 2	1011	02:59	Achieved Load without Failure	

¹ A spreader beam was used to impose loads on both ends of the railing system; therefore, loads were doubled.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

**SECTION 10
CONCLUSION**

Using performance criteria of withstanding an ultimate load of 2.5 and 4.0 (loads applied to or transferred through the glass infill) times design load, the test results substantiate compliance with the design load requirements of the referenced building codes for the guardrails detailed in the following table:

AL13 HOME ALUMINUM GUARDRAIL SYSTEM	GUARDRAIL TYPE	BALUSTER	ACCENT TOP RAIL CAP	SUPPORT POST ¹	CODE OCCUPANCY CLASSIFICATION
8 ft (94 in) by 42 in	Level / In-Line Application	Vertical Cable Infill	Round	2 in Square <i>Al13 Home</i> Post Mount or 3 in Square <i>Al13 Home</i> Post Mount	IRC - One- and Two-Family Dwellings
6 ft (69-1/2 in) by 42 in			Top		
6 ft (69 in) by 42 in		<i>PureView</i> Glass Balusters	Round		
	Top				
8 ft (96 in) by 42 in by 35°	Stair	Vertical Cable Infill	Round		
			Top		
6 ft (78 in) by 42 in by 35°		<i>PureView</i> Glass Balusters	Round		
			Top		

¹ Structural performance testing conducted herein utilized the 2 in *Al13 Home* post mount which was deemed worst-case when compared to the 3 in *Al13 Home* post mount. Reference Intertek report No. I6590.01-119-19 for structural performance testing of both post mounts. Testing reported herein qualifies the use of both the 2 in and 3 in *Al13 Home* post mounts for use with the configurations noted.

Anchorage of support posts to the supporting structure is not included in the scope of this testing and would need to be evaluated separately.

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

SECTION 11

PHOTOGRAPHS



Photo No. 1
In-Fill Load Test at Center of Cable Infill



Photo No. 2
In-Fill Load Test at Bottom of Glass Baluster Infill

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20



Photo No. 3
In-Fill Load Test at Center of Glass Panel



Photo No. 4
In-Fill Load Test at Bottom of Glass Panel

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20



Photo No. 5
In-Fill Load Test at Edge of Glass Panel



Photo No. 6
Horizontal Concentrated Load Test at Midspan of Top Rail (Cable Infill and Glass Balusters)

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20



Photo No. 7

Horizontal Concentrated Load Test at Midspan of Top Rail (Glass Panel Guardrail)



Photo No. 8

Vertical Concentrated Load Test at Mid Span of Top Rail

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20



Photo No. 9
Concentrated Load Test at Ends of Top Rail (Brackets)



Photo No. 10
Stair Rail Bracket

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20



Photo No. 11
Level Rail Bracket



Photo No. 12
Intermittent Spacers

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20



Photo No. 13
Continuous Spacers



Photo No. 14
Glass Panel Stamp

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

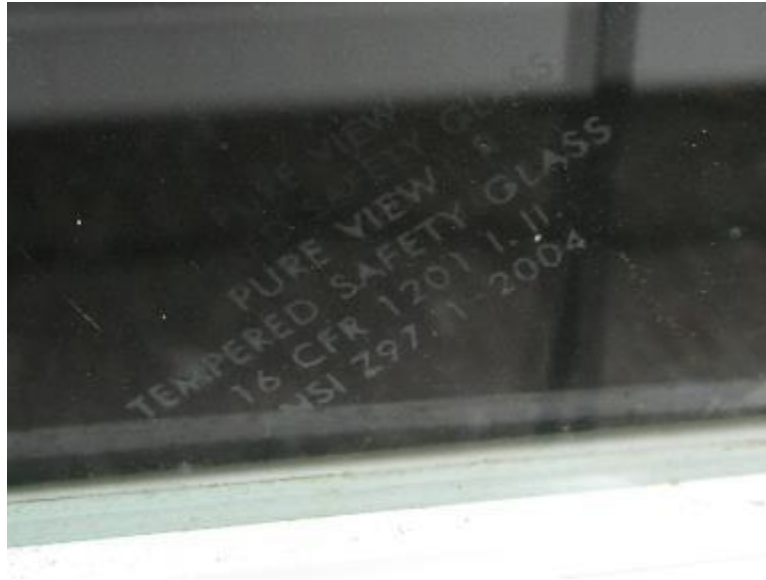


Photo No. 15
Glass Picket Stamp

SECTION 12 **DRAWINGS**

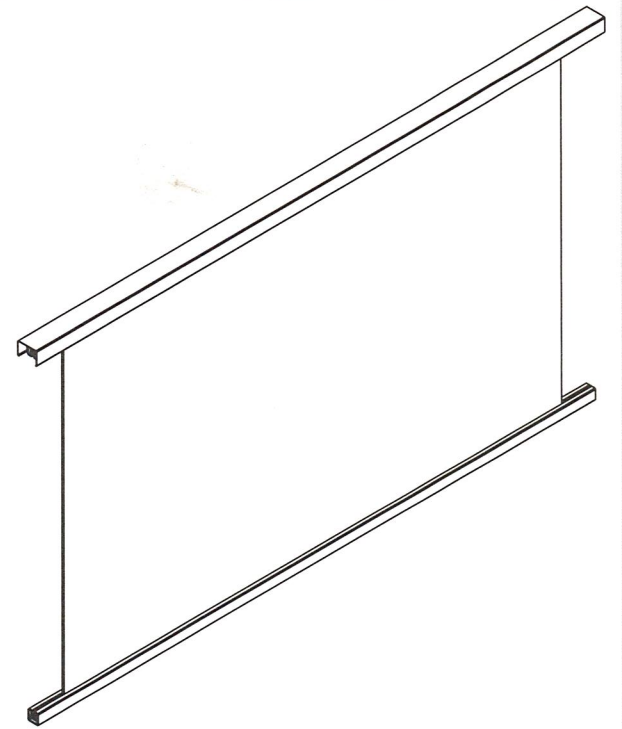
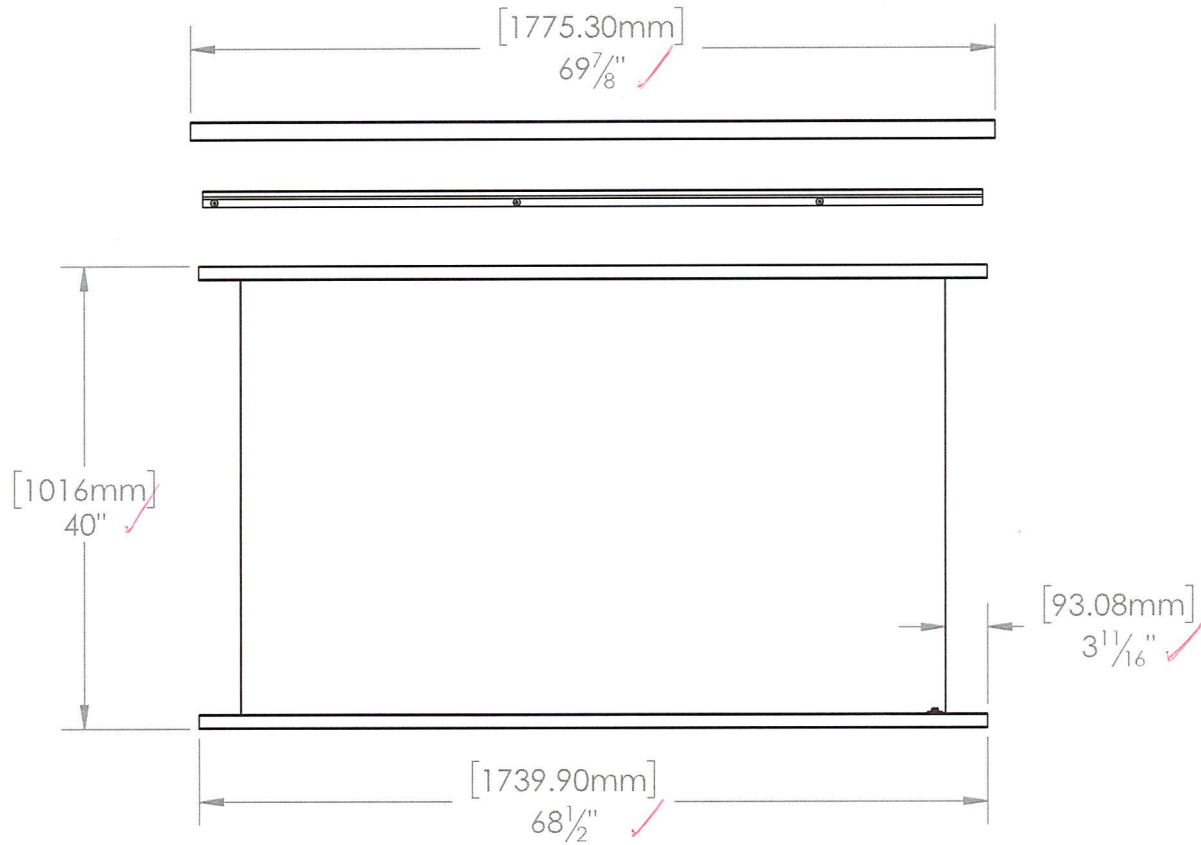
The "As-Built" drawings for the *A/13 Home* guardrail systems which follow have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294-01-119-18

Date 7/13/20 Tech AJS



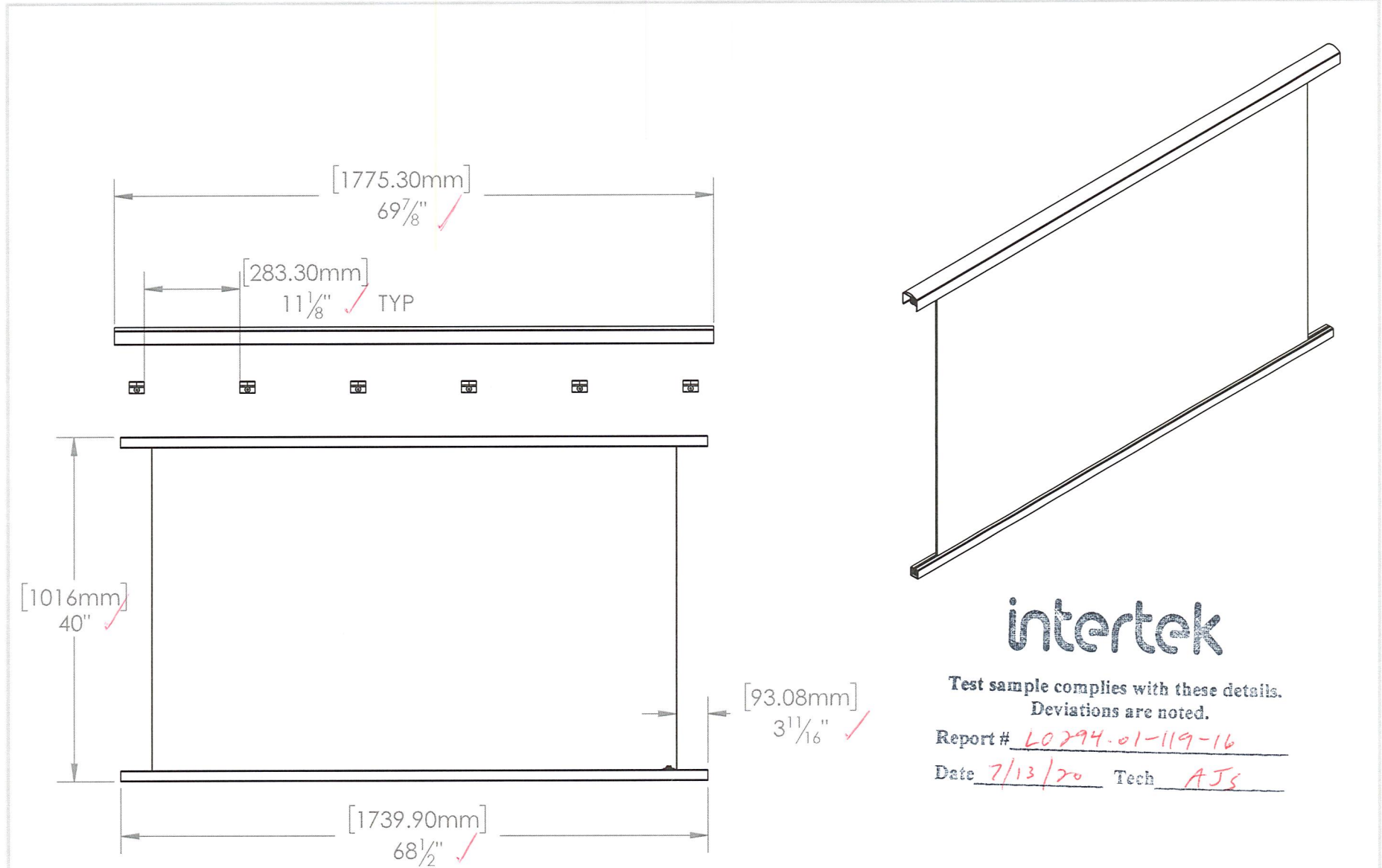
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

02/06/20	TF	Initial Drawing	
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL 13 Home PV 40" X 6' PANEL			
DRAWN BY: TylerF		SCALE: 1:16	
DATE: 02/06/2020		DIVISION: Fortress Rail	
ITEM #:	FILE NAME/PART #:		REV:
	AL13 HOME PV 40 X 6		
	FLA I		



intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294.01-119-16

Date 7/13/20 Tech AJS

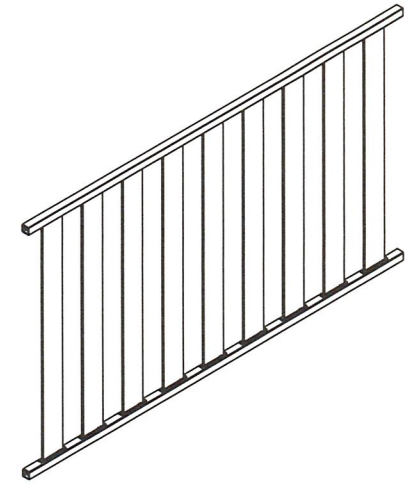
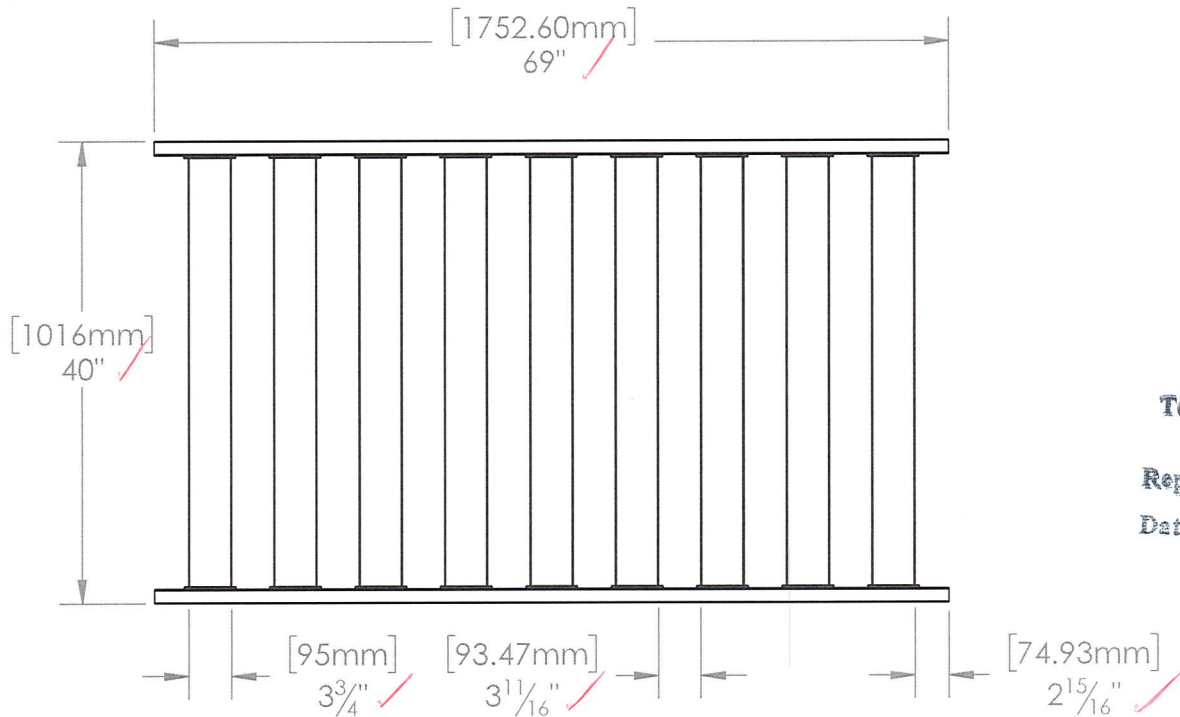
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

02/06/20	TF	Initial Drawing	
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL 13 Home PV 40" X 6' PANEL			
DRAWN BY: TylerF		SCALE: 1:16	
DATE: 02/05/2016		DIVISION: Fortress Rail	
ITEM #:	FILE NAME/PART #:		REV:
	AL13 HOME PV 40 X 6		
	ROUND		



intertek

Test sample complies with these details.
 Deviations are noted.

Report # L0794.01-119-16

Date 7/13/20 Tech AJS

This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
 1720 N 1st Street
 Garland, Tx 75040

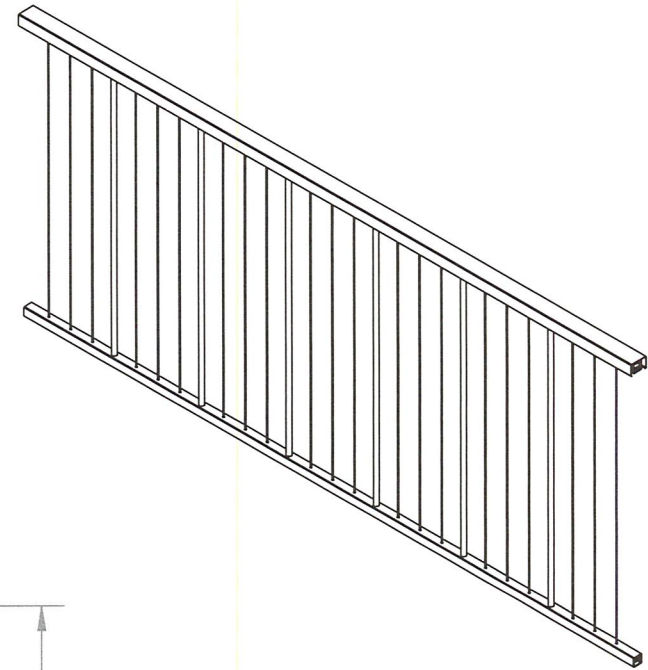
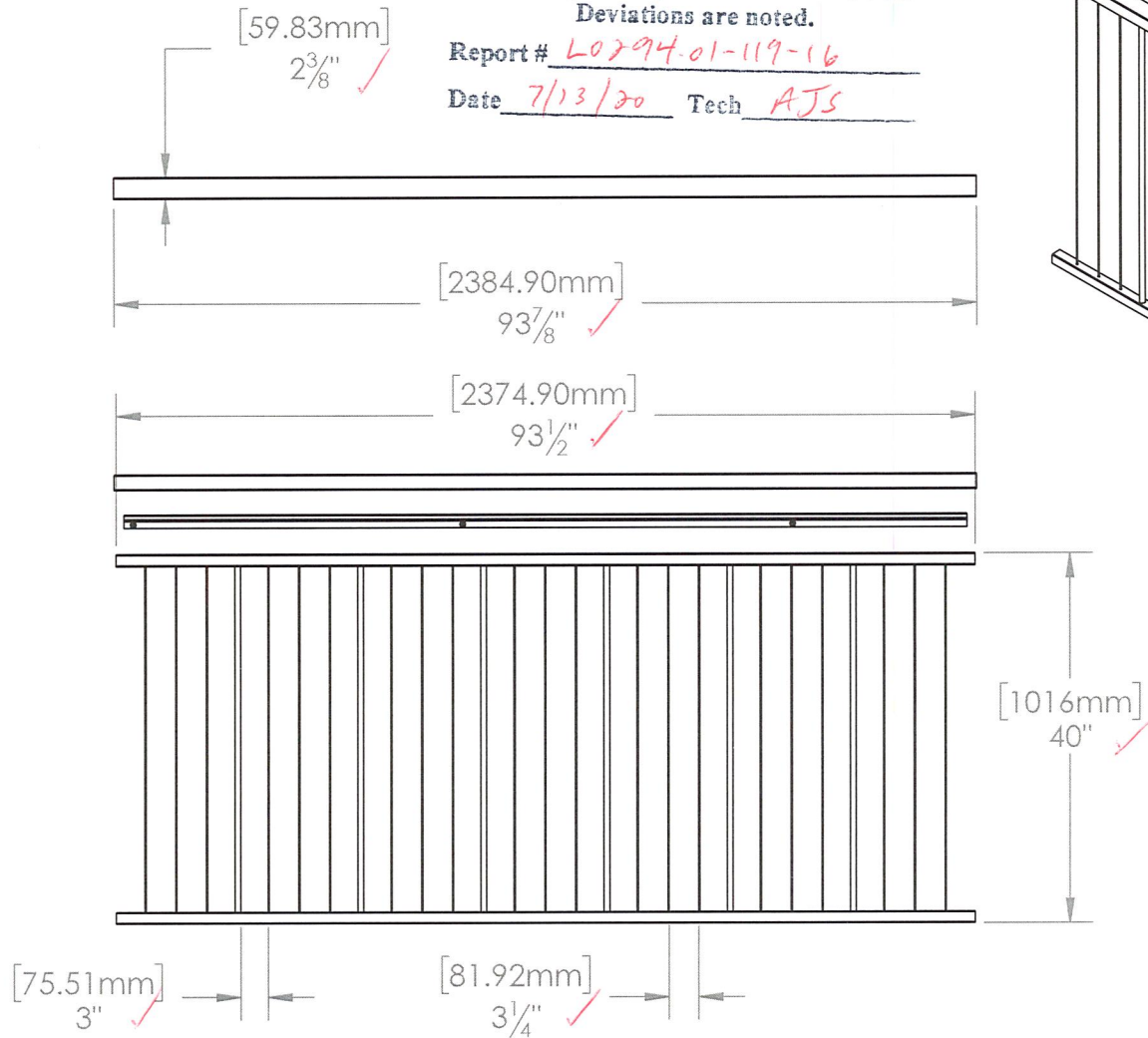
Sheet: 1 OF 1

04/28/2020	TF	Initial Drawing
REV	DATE	BY
		DESCRIPTION
DESCRIPTION:		
AL13 HOME PV 40" x 6' TRADITIONAL		
DRAWN BY:	TylerF	SCALE:
DATE:	04/28/2020	DIVISION: RAILING
		AS SHOWN
ITEM #:	FILE NAME/PART #:	REV:
	AL13 HOME PV 40 X 6	
	Traditional	

intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294-01-119-16
Date 7/13/20 Tech AJS



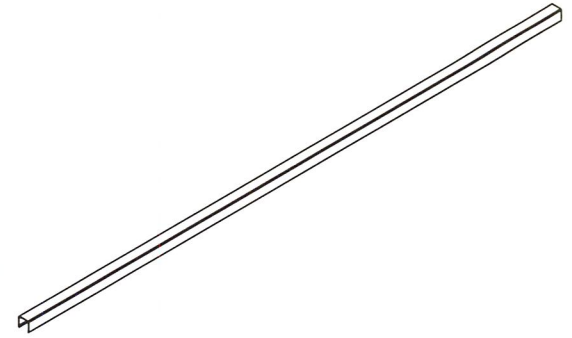
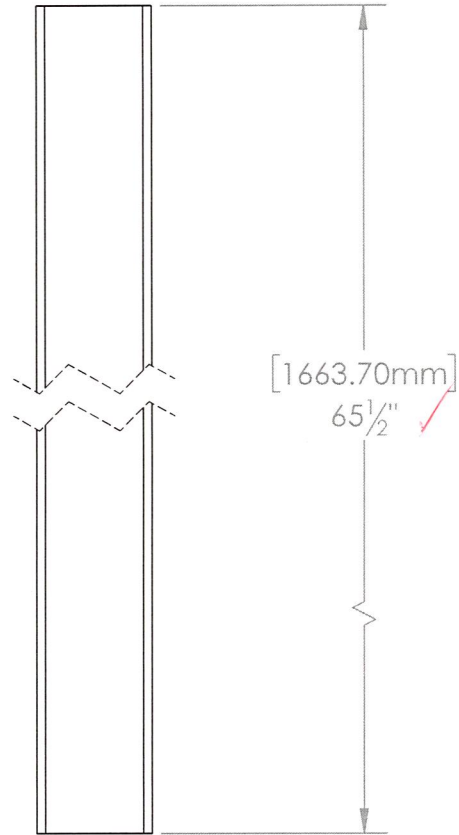
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, TX 75040

Sheet: 1 OF 1

6	02/06/20	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION:			AL13 HOME VERTICAL CABLE TRADITIONAL 40" X 8'
DRAWN BY: TylerF		SCALE: 1:20	
DATE: 02/06/2020		DIVISION: Fortress Rail	
ITEM #:	FILE NAME/PART #:	REV:	
5974093X	AL13 HOME VERTICAL CABLE FLA I	6	

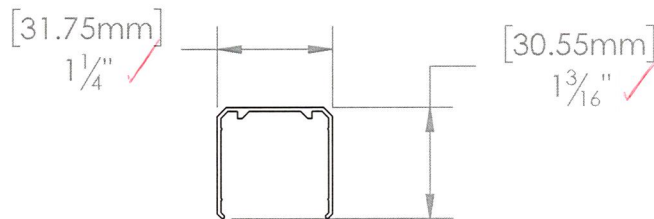


intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294.01-119-16

Date 7/13/20 Tech AJS



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

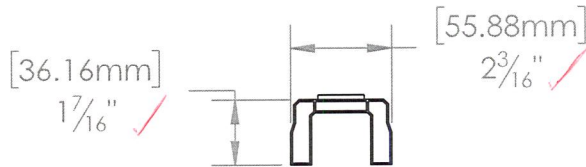
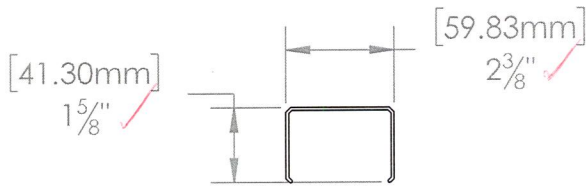
D	07/10/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION:			
AL13 HOME TOP CAP			
DRAWN BY: KevinF		SCALE:	
DATE: 07/10/2020		AS SHOWN	
DIVISION: Fortress Railing		ITEM #:	
FILE NAME/PART #:		REV:	
R3931-06236A		D	

intertek

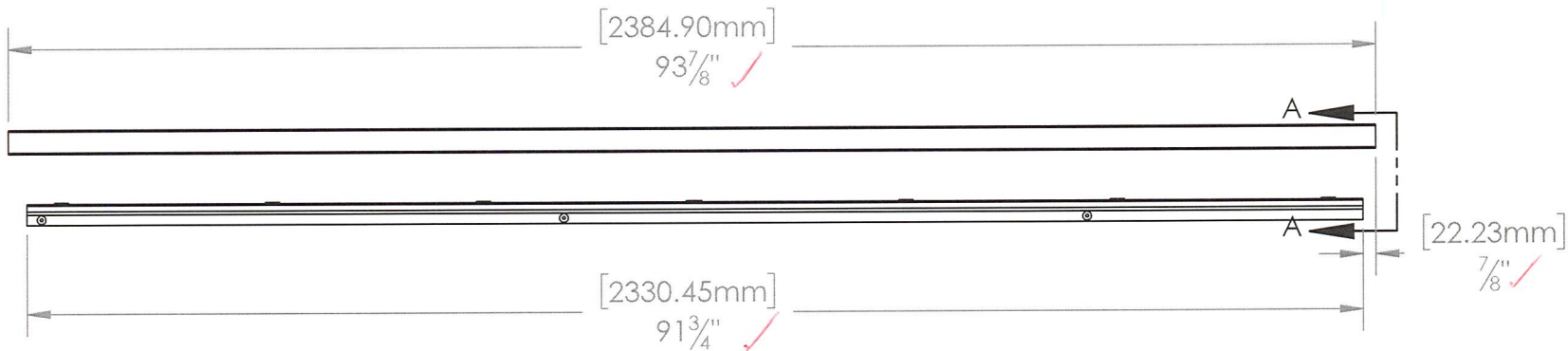
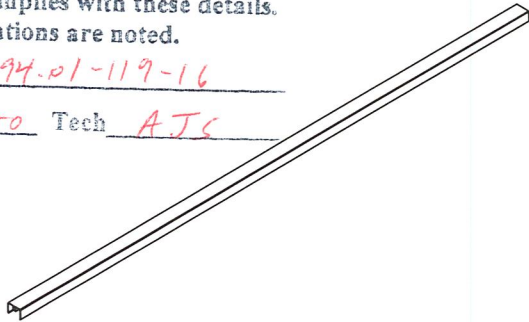
Test sample complies with these details.
Deviations are noted.

Report # L0794.01-119-16

Date 7/13/20 Tech AJS



SECTION A-A
SCALE 1 : 4



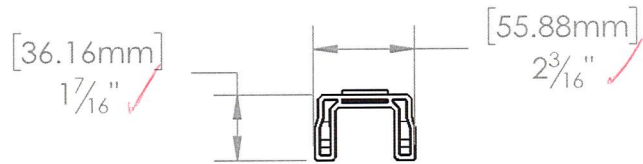
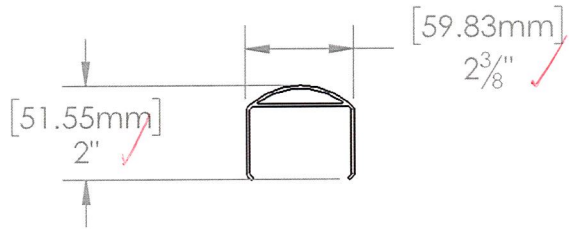
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



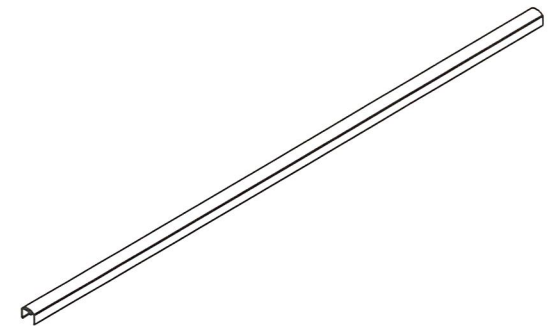
Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

REV	DATE	BY	DESCRIPTION	SCALE:
A	02/06/20	TF	Initial Drawing	1:12
DESCRIPTION:				
A113 HOME 93.89" - 8' FLAT ATR KIT				
DRAWN BY: TylerF		DIVISION: Fortress Rail		SCALE: 1:12
DATE: 02/06/2020		DIVISION: Fortress Rail		REV: A
ITEM #:	FILE NAME/PART #:			REV:
	FLAT ATR KIT WITH FULL LENGTH SPACER			A



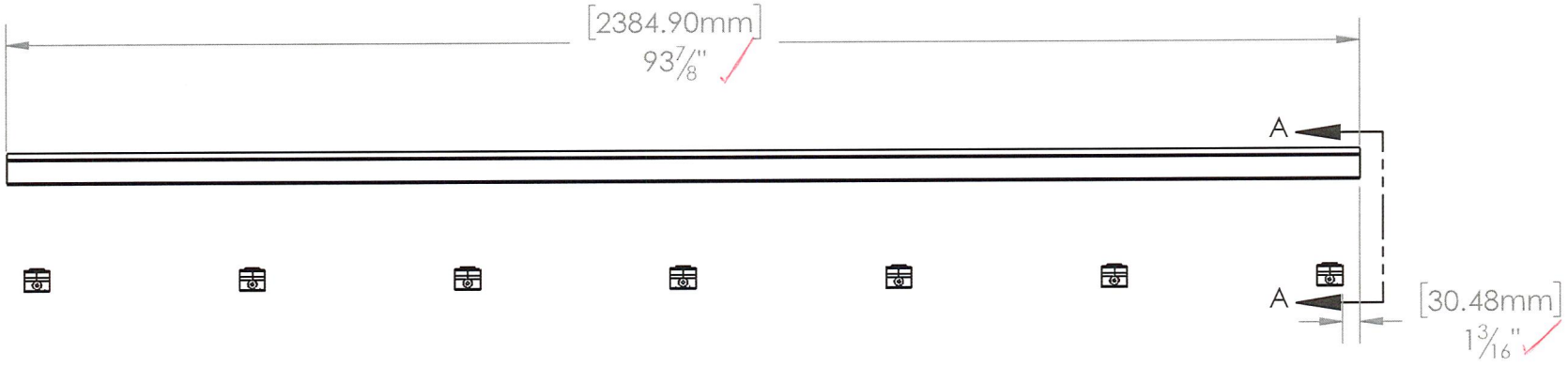
SECTION A-A
SCALE 1 : 4



intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294.0)-119-16
Date 7/13/20 Tech AJS



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

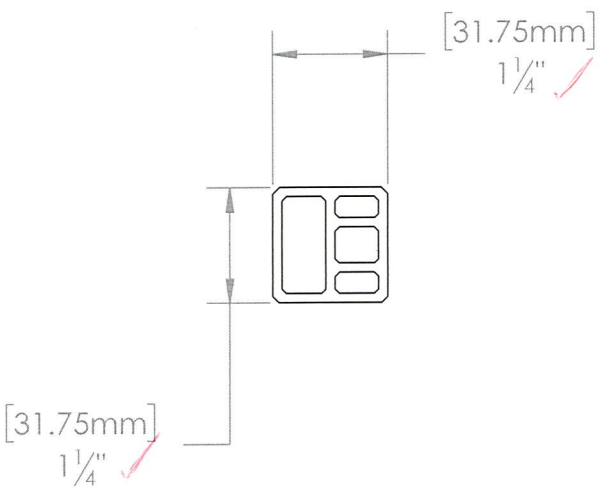
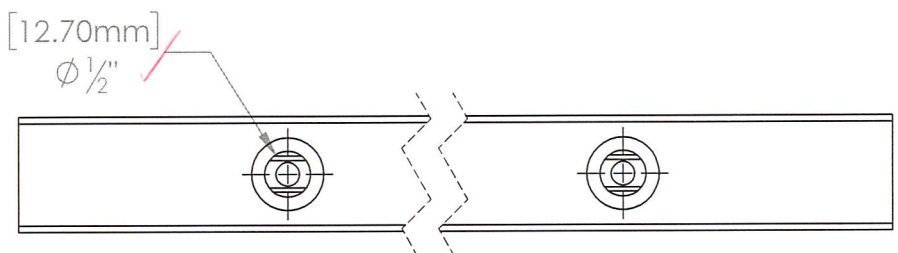
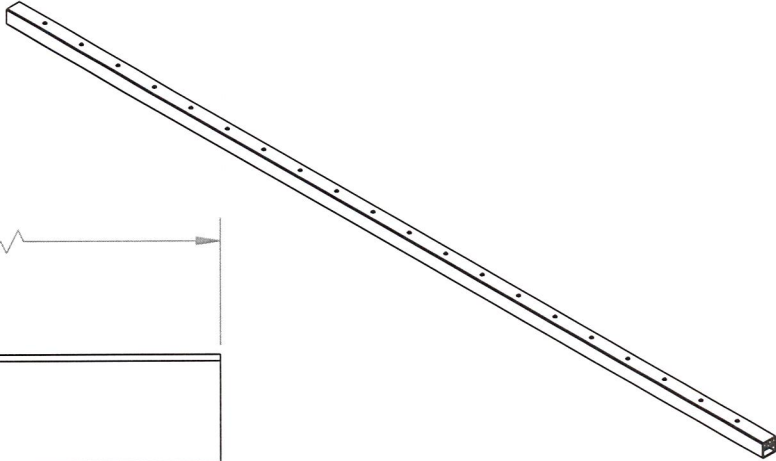
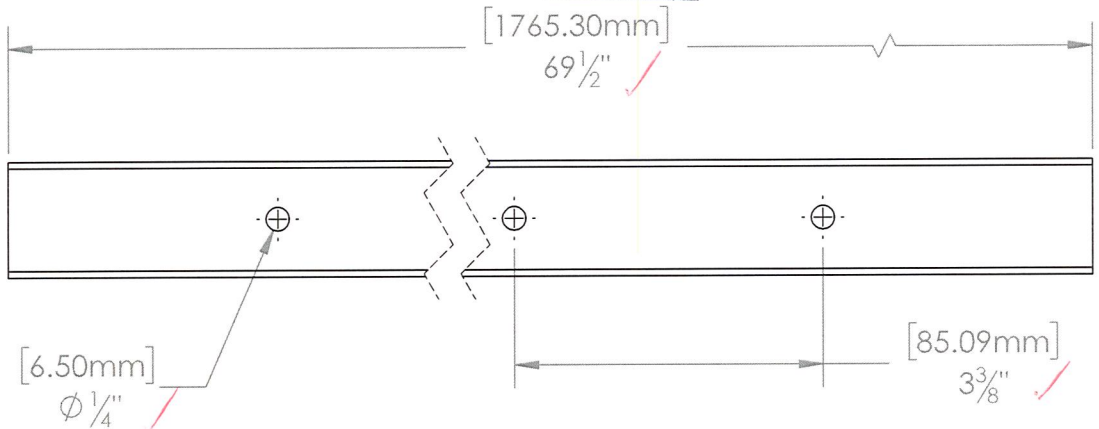
Sheet: 1 OF 1

REV	DATE	BY	DESCRIPTION	SCALE:
A	02/06/20	TF	Initial Drawing	1:12
DESCRIPTION:				
A113 HOME 93.89" - 8' ROUND ATR KIT				
DRAWN BY: TylerF		DIVISION: Fortress Rail		SCALE:
DATE: 02/06/2020		DIVISION: Fortress Rail		1:12
ITEM #:	FILE NAME/PART #:			REV:
	ROUND ATR KIT WITH SHORT SPACERS			A

Test sample complies with these details.
Deviations are noted.

Report # 60794.01-119-16

Date 7/13/20 Tech AJS



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

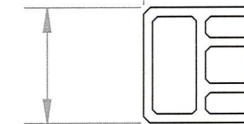
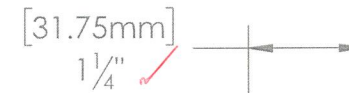
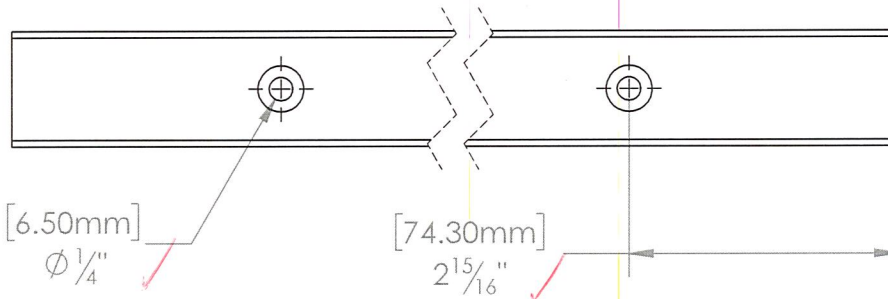
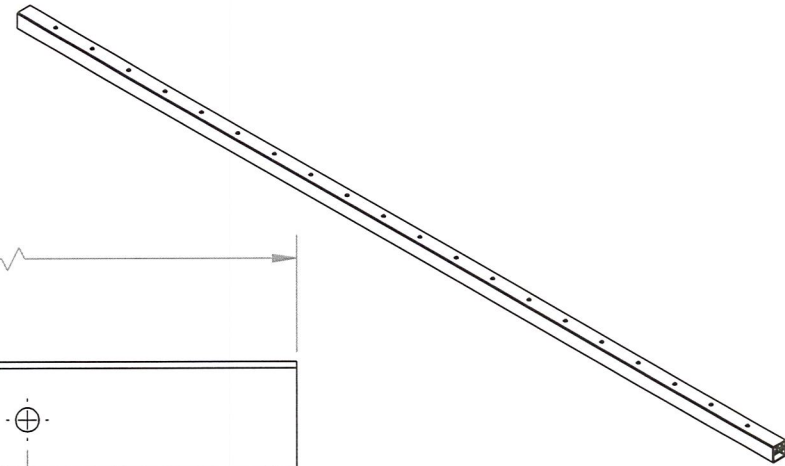
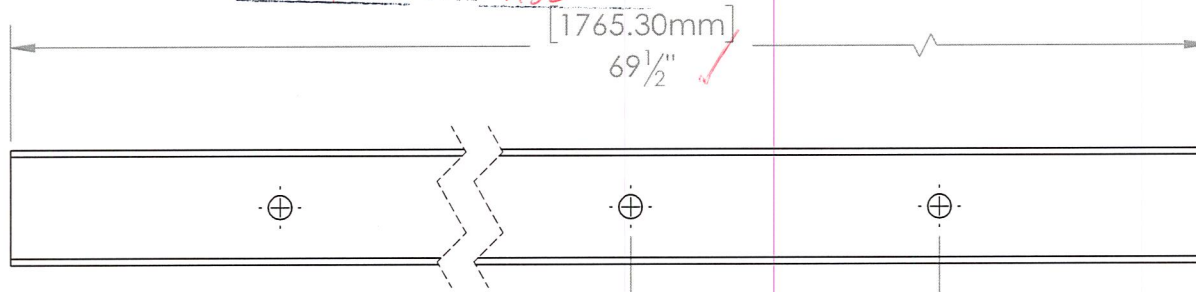
3	07/10/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL13 HOME VERTICAL CABLE TOP RAIL 6'			
DRAWN BY: KevinF		SCALE: AS SHOWN	
DATE: 07/10/2020		DIVISION: Fortress Rail	
ITEM #:	FILE NAME/PART #:		REV:
	R3931-10331A		3

intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294.01-119-16

Date 7/13/20 Test AJS



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

4	07/10/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION

DESCRIPTION:
AL13 HOME VERTICAL CABLE BOTTOM RAIL 6'

DRAWN BY: KevinF
DATE: 07/10/2020 DIVISION: Fortress Rail

SCALE:
AS SHOWN

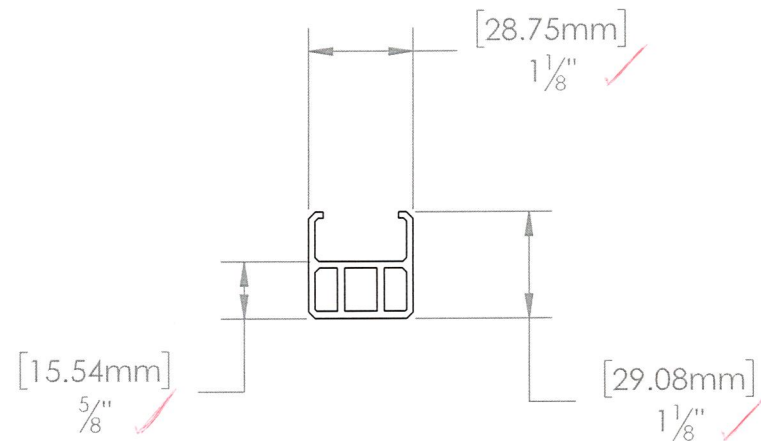
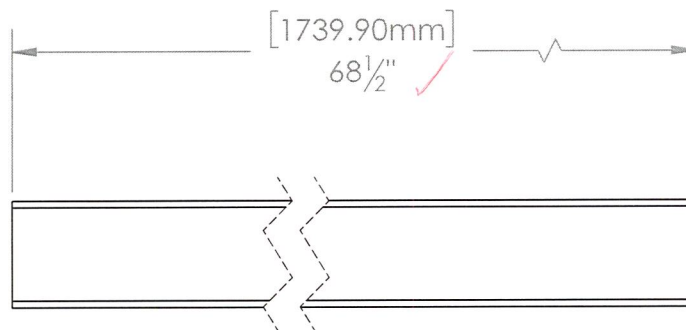
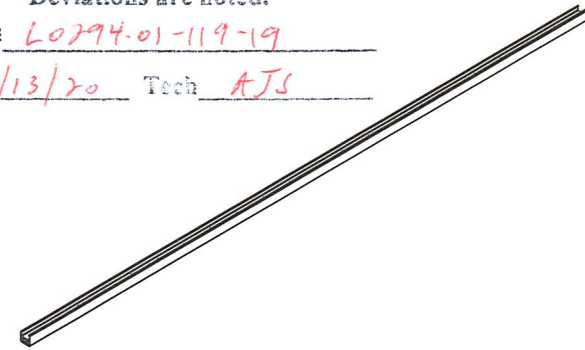
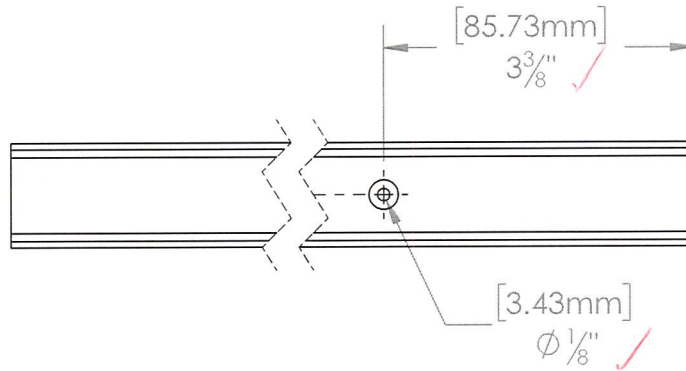
ITEM #: FILE NAME/PART #:
R3931-10332A

REV:
4

Test sample complies with these details.
Deviations are noted.

Report # L0294-01-119-19

Date 7/13/20 Tech AJS



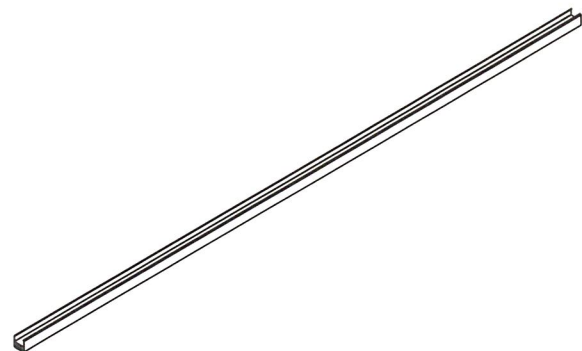
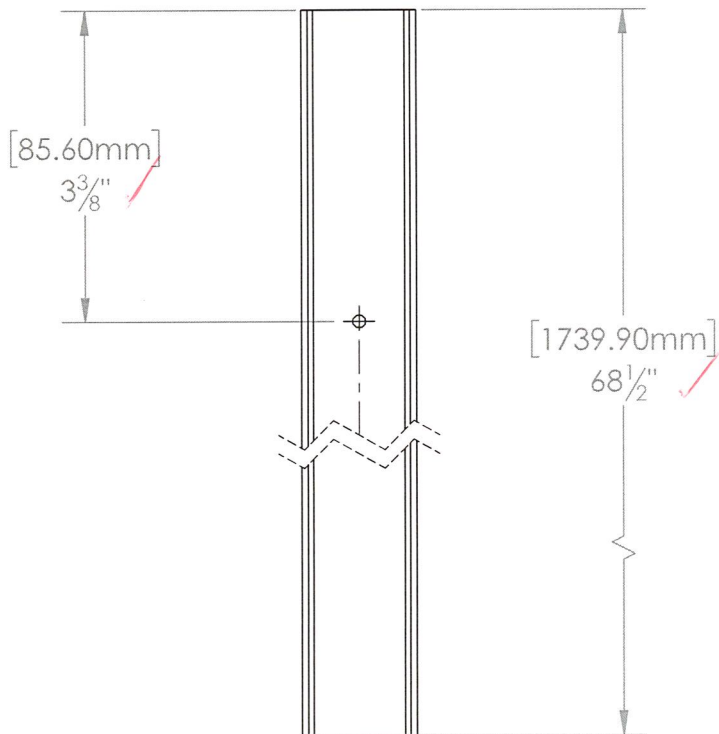
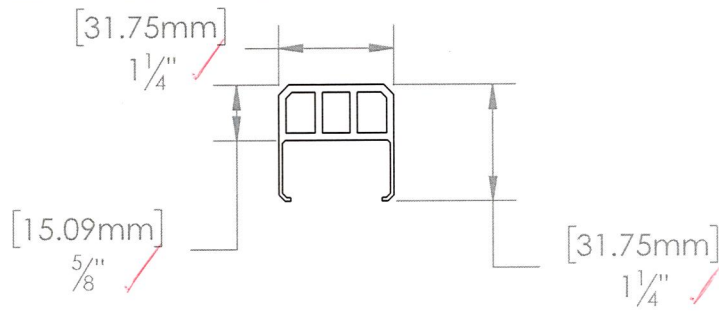
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

1	7/10/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL13 HOME CABLE INFILL PANEL TOP RAIL			
DRAWN BY: TylerF		SCALE: AS SHOWN	
DATE: 07/10/2020		DIVISION:	
ITEM #:	FILE NAME/PART #:	REV:	
	R3931-07875A	1	



intertek

Test sample complies with these details.
Deviations are noted.

Report # L0794.01-119-16
Date 7/13/20 Tech AJS

This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

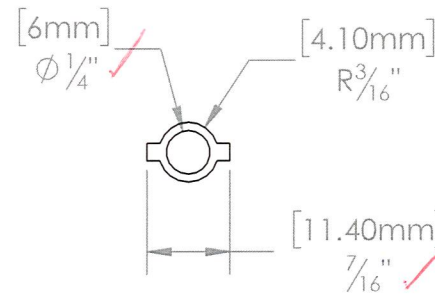
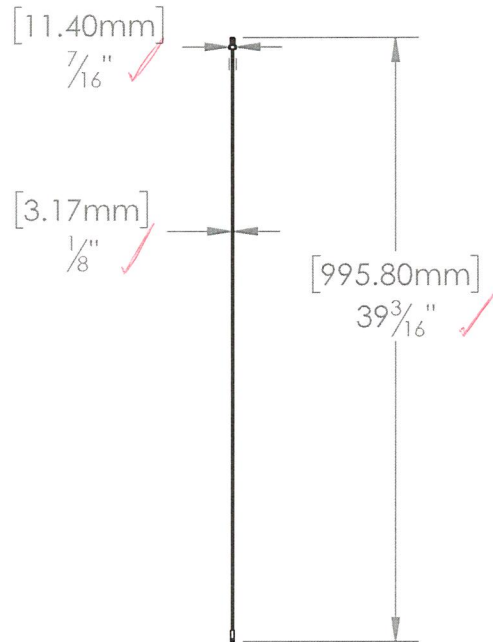
Sheet: 1 OF 1

1	7/10/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL13 HOME CABLE INFILL PANEL BOTTOM RAIL			
DRAWN BY: TylerF		SCALE: AS SHOWN	
DATE: 07/10/2020		DIVISION:	
ITEM #:	FILE NAME/PART #:		REV:
	R3931-07876A		1

intertek

Test sample complies with these details.
Deviations are noted.

Report # 20294-01-119-16
Date 7/13/20 Tech AJS



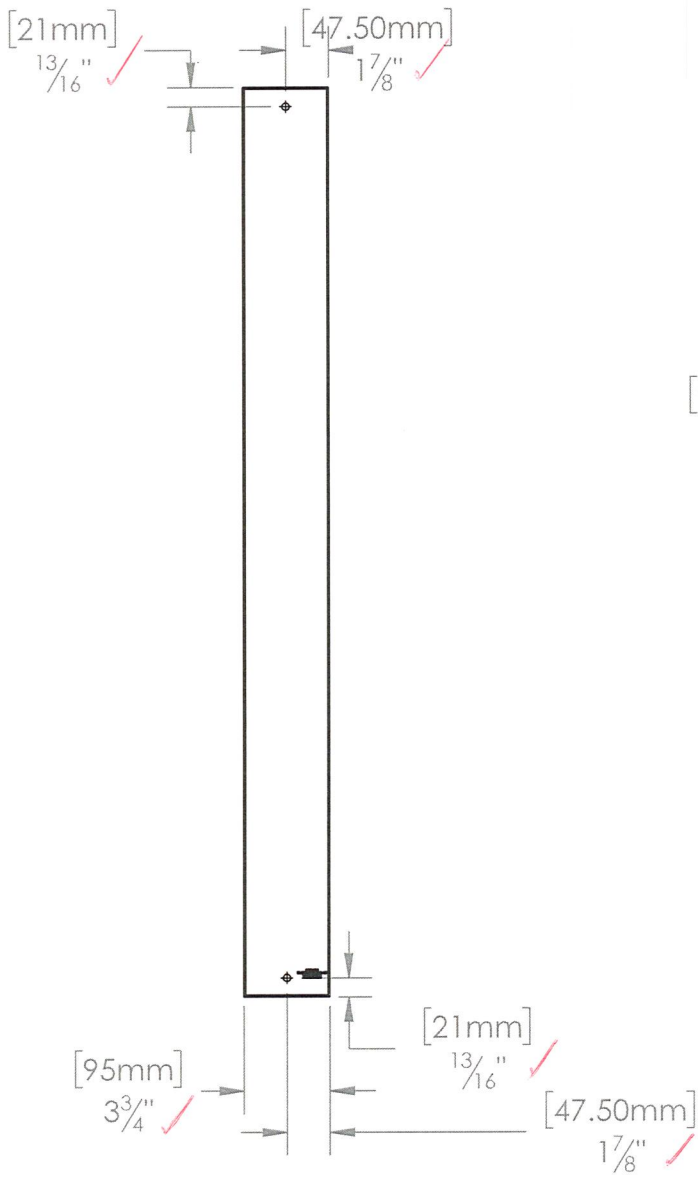
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

5	04/28/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL13 HOME VERTICAL CABLE SWAGE ASSEMBLY 40"			
DRAWN BY: TylerF		SCALE: AS SHOWN	
DATE: 04/28/2020		DIVISION: Fortress Rail	
ITEM #:	FILE NAME/PART #:	REV:	
	AL13 HOME Vertical Cable 40in	5	



intertek

Test sample complies with these details.
 Deviations are noted.
 Report # LO294-01-119-16
 Date 7/13/20 Tech AJS

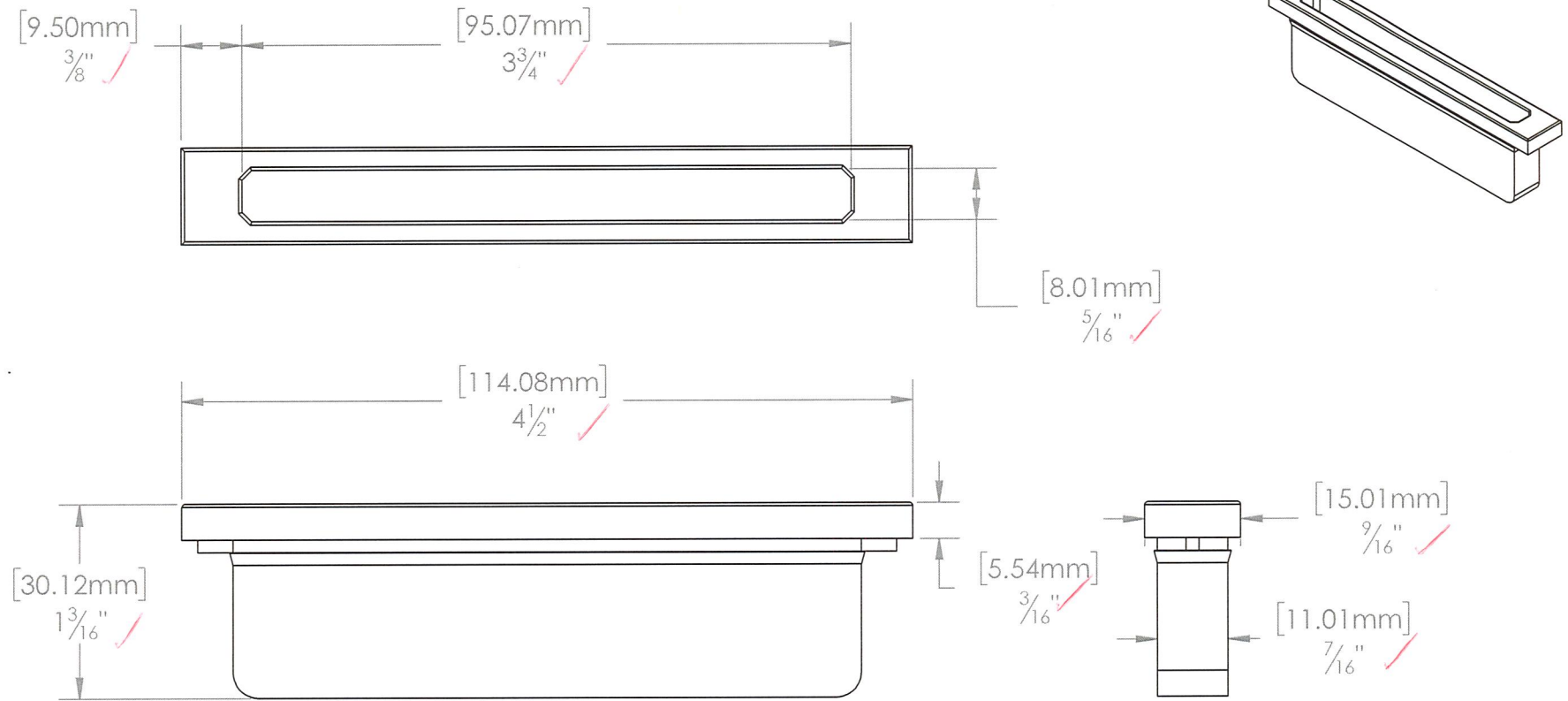
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
 1720 N 1st Street
 Garland, Tx 75040

Sheet: 1 OF 1

REV	DATE	BY	DESCRIPTION	SCALE:
A	04/28/2020	TF	Initial Drawing	AS SHOWN
DESCRIPTION:				
PV-PLA-39.35"				
DRAWN BY: TylerF		DIVISION: Fortress Railing		
DATE: 04/28/2020		FILE NAME/PART #:		
		PV Baluster 39.35in		REV: A



intertek

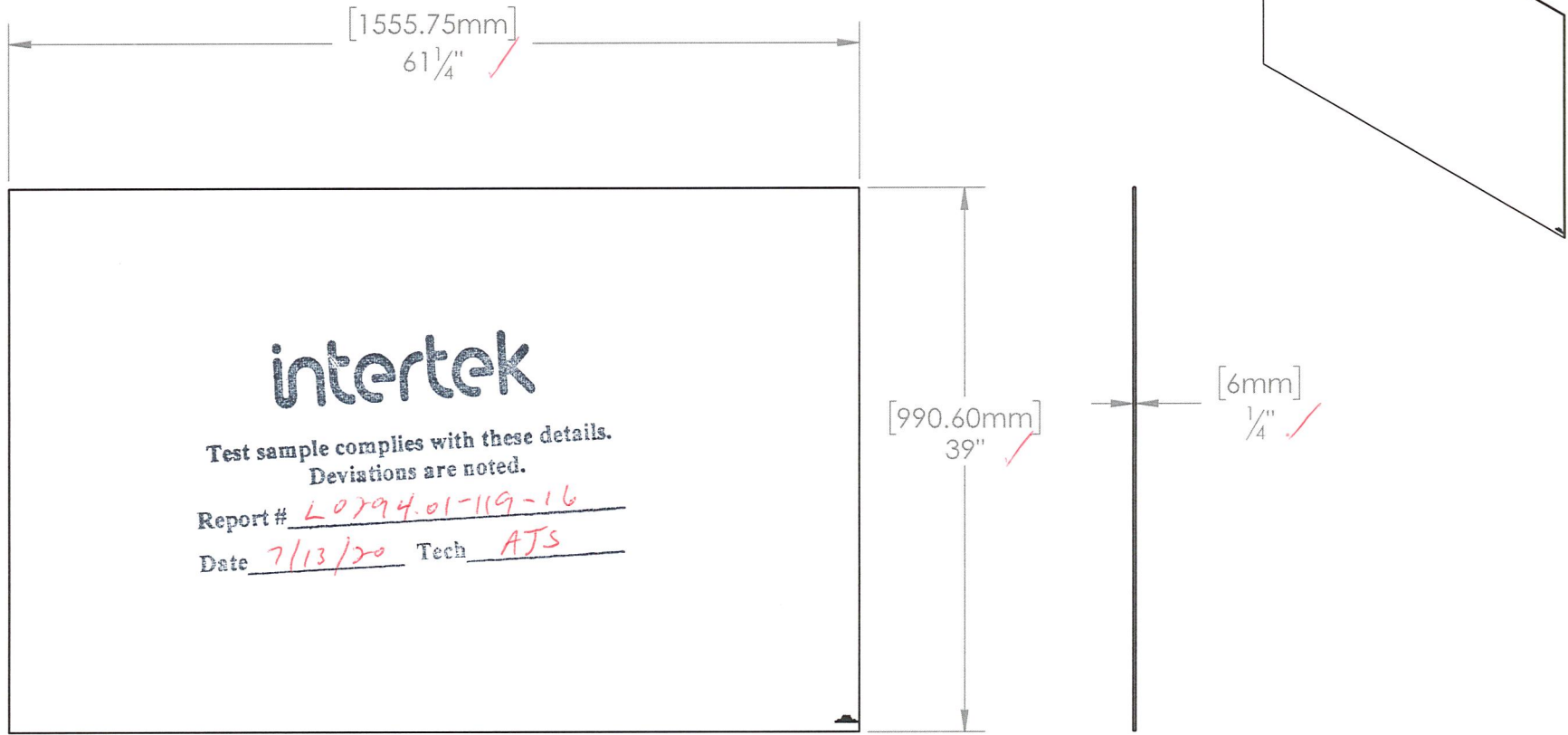
**Test sample complies with these details.
Deviations are noted.**

Report # L0294.01-119-16
Date 7/13/20 Tech AJS

This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



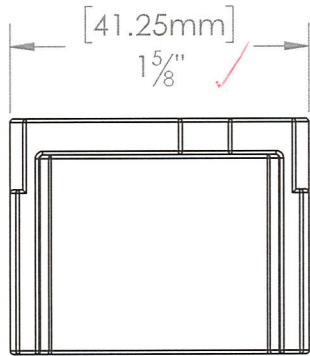
3	04/28/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: PV AL13 HOME GROMMET STRAIGHT			
DRAWN BY: TylerF		SCALE: AS SHOWN	
DATE: 04/28/2020		DIVISION: Fortress Railing	
ITEM #:	FILE NAME/PART #:	REV:	
Sheet: 1 OF 1	PV A113 HOME GROMMET STRAIGHT	3	



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



C	04/28/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: PV-FGP 39" X 61.25"			
DRAWN BY: TylerF		SCALE: AS SHOWN	
DATE: 04/28/2020		DIVISION:	
ITEM #:	FILE NAME/PART #:	REV:	
Sheet: 1 OF 1	PV Full Glass Pane 39in x 61.25in	C	

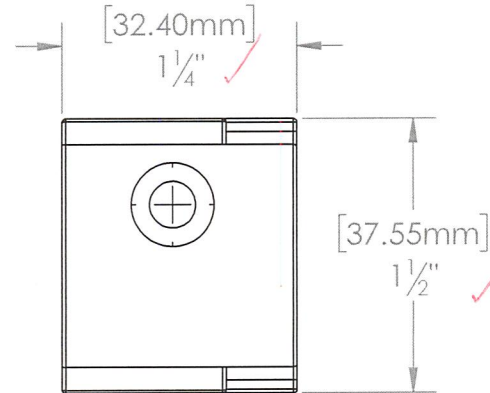
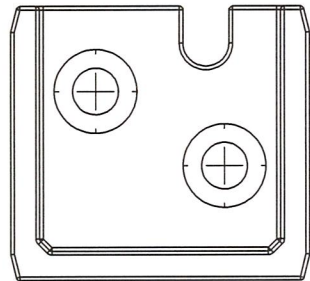
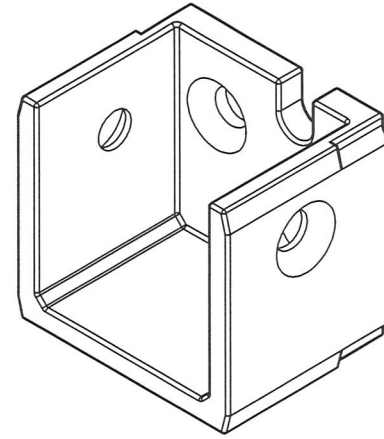


intertek

Test sample complies with these details.
Deviations are noted.

Report # L0794.01-119-16

Date 7/13/20 Tech AJS



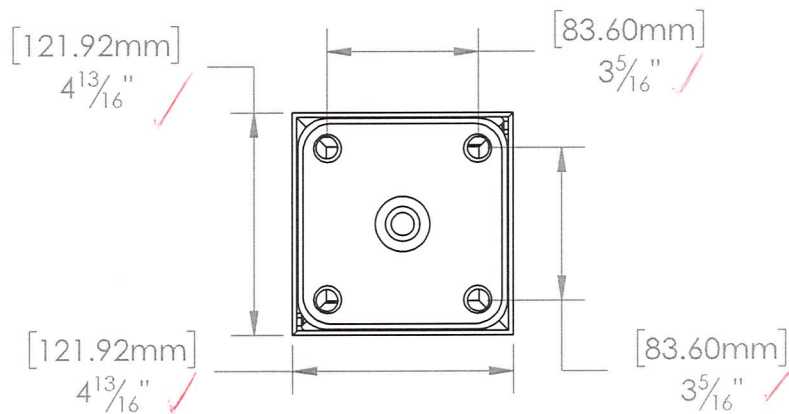
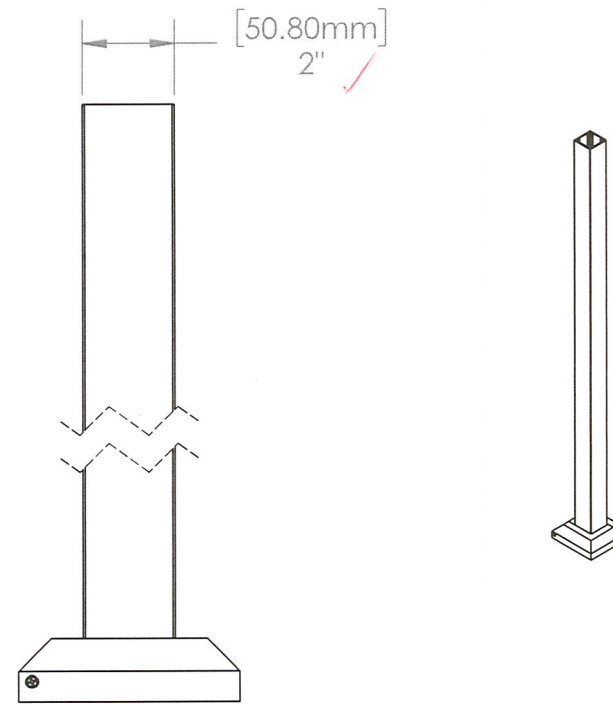
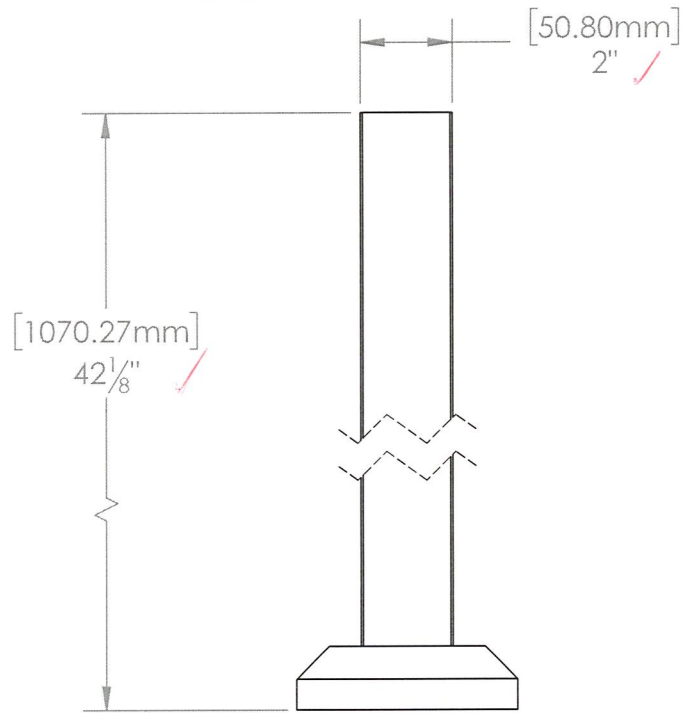
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

DB	1/3/19	GL	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION:			
AL13 HOME BRACKET CUP			
DRAWN BY:	KevinF	SCALE:	1:1
DATE:	01/03/2019	DIVISION:	RAILING
ITEM #:	FILE NAME/PART #:	REV:	D
	R3934-03618A		



intertek

Test sample complies with these details.
Deviations are noted.

Report # 20294-01-119-16
Date 7/13/20 Tech AJS

This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

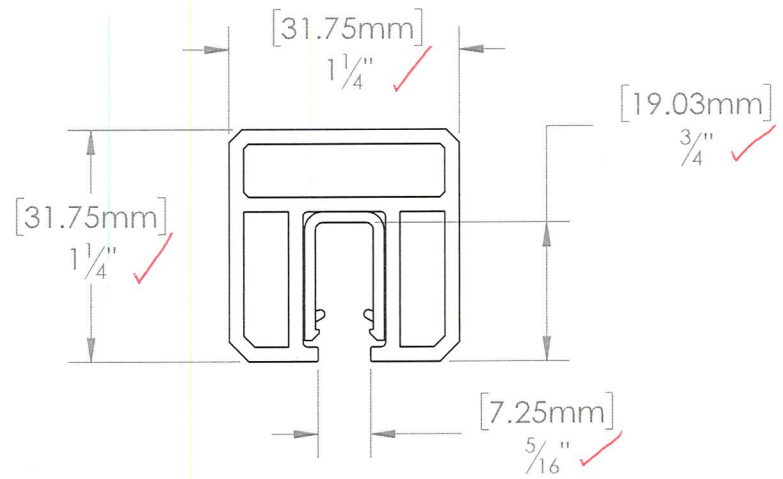
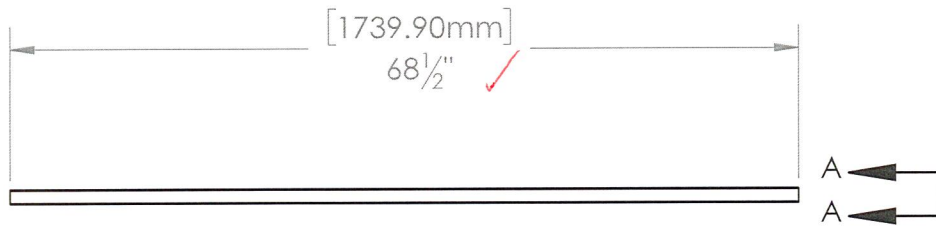
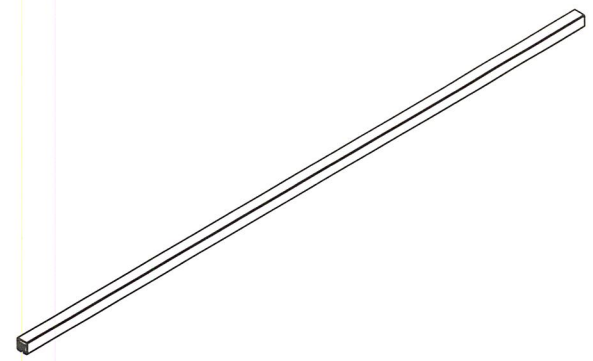
B	07/10/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL13 HOME POST 2" X 42" BLANK w/ BASE CVR			
DRAWN BY: KevinF		SCALE: AS SHOWN	
DATE: 07/10/2020		DIVISION: Fortress Railing	
ITEM #:	FILE NAME/PART #:	REV:	
5934202X	R3935-06292A	B	

intertek

Test sample complies with these details.
Deviations are noted.

Report # L0794.01-119-19

Date 9/9/20 Tech AJS



SECTION A-A
SCALE 1 : 1

This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.

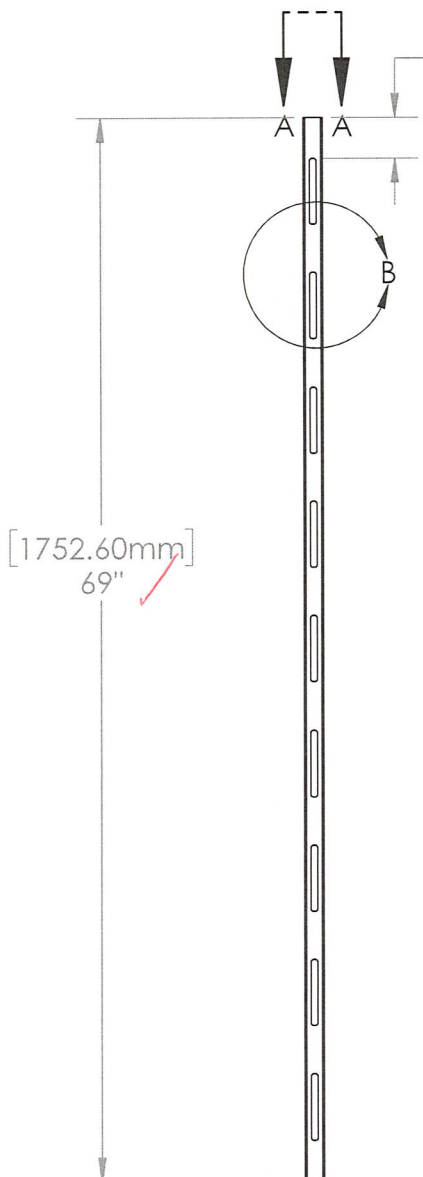


Fortress Railing

1720 N 1st Street
Garland, Tx 75040

Sheet: 1 OF 1

1	09/08/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION: AL13 HOME FGP RAIL-6'			
DRAWN BY: TylerF		SCALE: AS SHOWN	
DATE:	DIVISION: Fortress Railing		REV: 1
ITEM #:	FILE NAME/PART #: R3931-10484A		



[67.89mm]
2 1/16" ✓

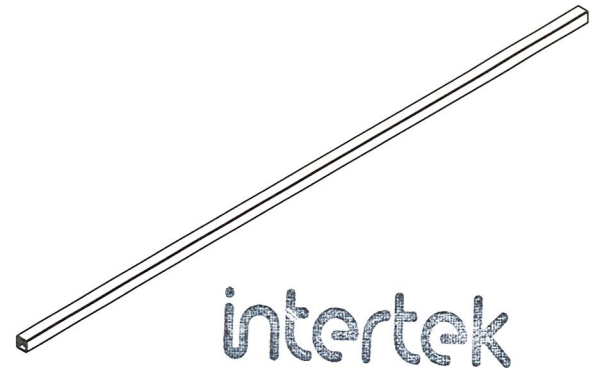
[11mm] 7/16" ✓

[10.38mm] 7/16" ✓

[109.07mm] 4 5/16" ✓

[79.39mm] 3 1/8" ✓

DETAIL B
SCALE 1 : 6

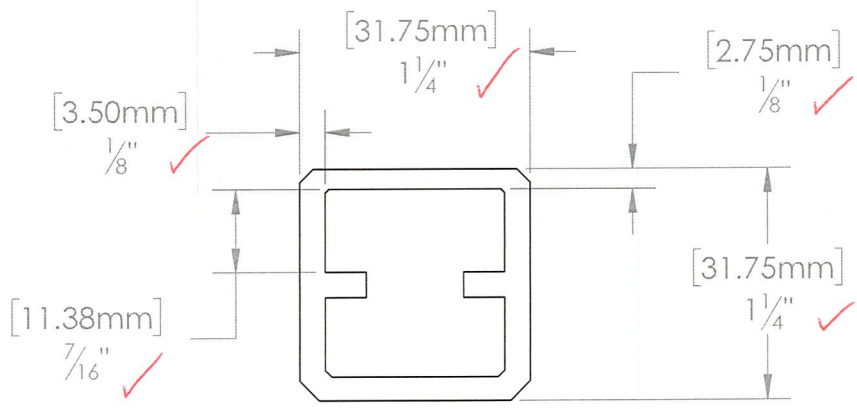


intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294-01-119-19

Date 9/9/20 Tech AJS



SECTION A-A
SCALE 1 : 1

This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

A	09/08/2020	TF	Initial Drawing
REV	DATE	BY	DESCRIPTION

DESCRIPTION:
AL13 HOME PV RAIL

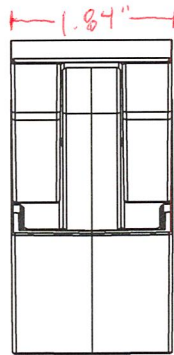
DRAWN BY: TylerF
DATE: 09/08/2020 DIVISION: Fortress Railing

SCALE:
AS SHOWN

ITEM #: FILE NAME/PART #:
R3931-09839A

REV:
A

Sheet: 1 OF 1

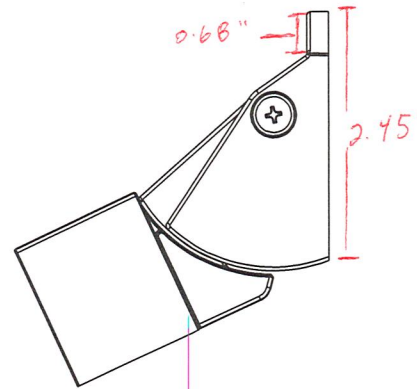
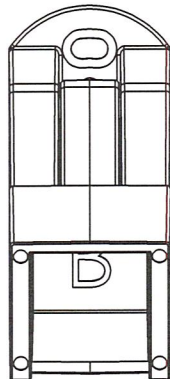
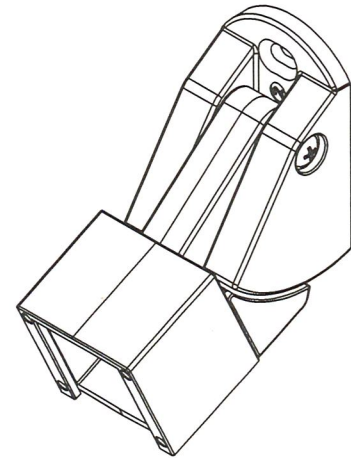


intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294.01-119-19

Date 9/9/20 Tech AJS



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.

6	1/14/19	GL	Initial Drawing	
REV	DATE	BY	DESCRIPTION	
DESCRIPTION:				
SIMPLIFIED STAIR BRACKET SSB-05				
DRAWN BY: KevinF		DIVISION: Fortress Railing		SCALE: 1:2
DATE: 01/14/2019		FILE NAME/PART #: R3734-05746A		REV: 6

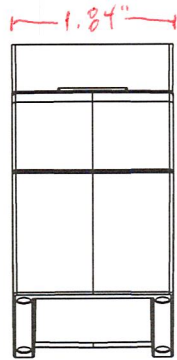


Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 4 OF 4

ITEM #: 5350506X

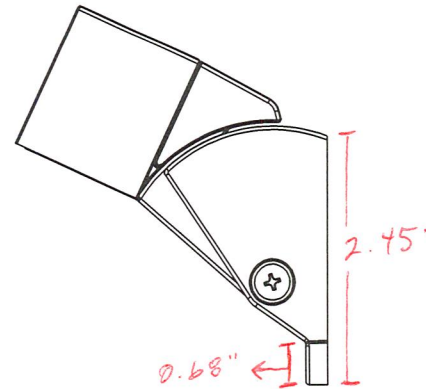
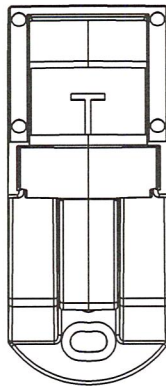
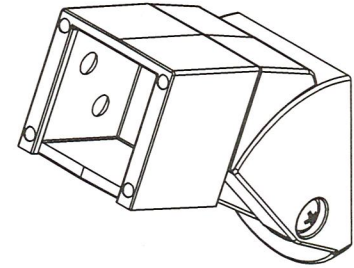
FILE NAME/PART #: R3734-05746A



intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294.01-119-19
Date 9/9/20 Tech AJS



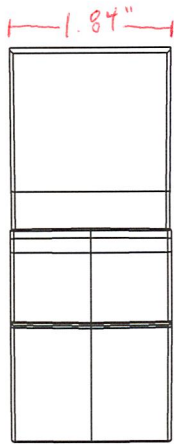
This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 2 OF 4

6	1/14/19	GL	Initial Drawing
REV	DATE	BY	DESCRIPTION
DESCRIPTION:			
SIMPLIFIED STAIR BRACKET SSB-05			
DRAWN BY: KevinF		SCALE: 1:2	
DATE: 01/14/2019		DIVISION: Fortress Railing	
ITEM #:	FILE NAME/PART #:	REV:	
5350506X	R3734-05746A	6	

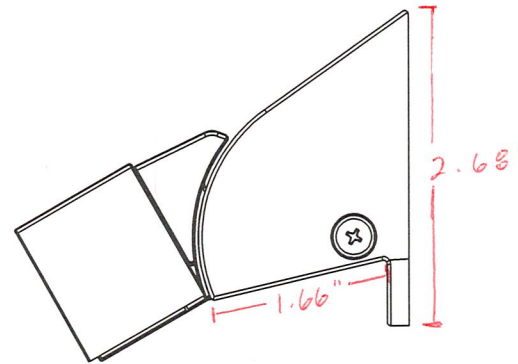
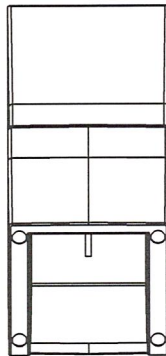
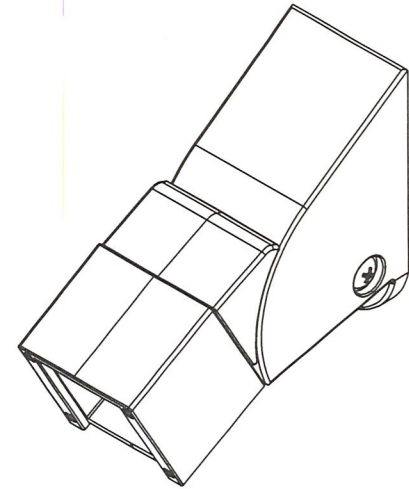


intertek

Test sample complies with these details.
Deviations are noted.

Report # LO294-01-119-19

Date 9/9/20 Tech AJS

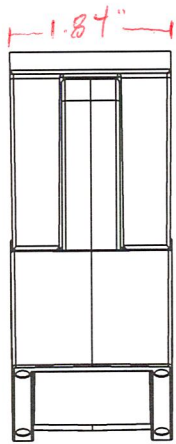


This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

6	1/14/19	GL	Initial Drawing	
REV	DATE	BY	DESCRIPTION	
DESCRIPTION:				
SIMPLIFIED STAIR BRACKET SSB-05				
DRAWN BY: KevinF		DIVISION: Fortress Railing		SCALE: 1:2
DATE: 01/14/2019		FILE NAME/PART #: R3734-05746A		REV: 6
Sheet: 1 OF 4		ITEM #: 5350506X		

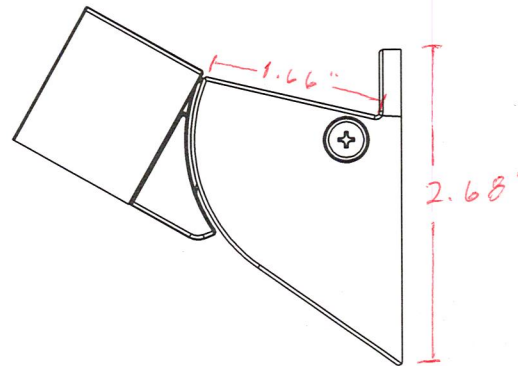
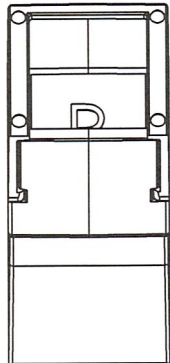
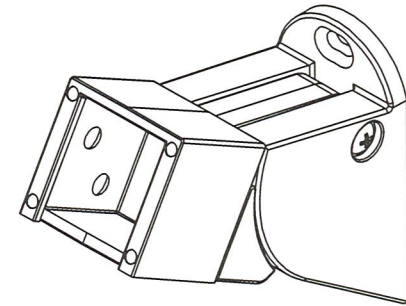


intertek

Test sample complies with these details.
Deviations are noted.

Report # L0294-01-119-19

Date 9/9/20 Tech AJS



This drawing and the information contained on this drawing are the property of Fortress Iron, LP, Garland, TX, USA, and is not to be copied electronically or manually, or reproduced in any manner, or divulged to other sources, without the expressed written permission of an authorized representative of Fortress Iron, LP.



Fortress Railing
1720 N 1st Street
Garland, Tx 75040

Sheet: 3 OF 4

6	1/14/19	GL	Initial Drawing	
REV	DATE	BY	DESCRIPTION	
DESCRIPTION:				
SIMPLIFIED STAIR BRACKET SSB-05				
DRAWN BY: KevinF				SCALE:
DATE: 01/14/2019		DIVISION: Fortress Railing		1:2
ITEM #:	FILE NAME/PART #:		REV:	
5350506X	R3734-05746A		6	



Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR FORTRESS BUILDING PRODUCTS

Report No.: L0294.01-119-19 R1

Date: 09/17/20

SECTION 13

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	09/17/20	N/A	Original Report Issue
1	09/25/20	2, 27	Changed <i>AL13</i> Post to <i>AL13 Home</i> Post