Architectural Testing

TEST REPORT

Rendered to:

BARRETTE OUTDOOR LIVING, INC.

For:

***VersaRail* Aluminum Guardrail Assembly**

Report No: C3866.01-119-19
Report Date: 01/04/13

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129
www.archtest.com

Architectural Testing

TEST REPORT

C3866.01-119-19
January 4, 2013

TABLE OF CONTENTS

Architectural Testing

TEST REPORT

Rendered to:

BARRETTE OUTDOOR LIVING, INC.
740 North Main Street
Bulls Gap, Tennessee 37711

Report No: C3866.01-119-19
Test Date: 11/20/12
Report Date: 01/04/13

1.0 General Information

1.1 Product

Aluminum Guardrail System - *VersaRail*

1.2 Project Description

Architectural Testing was contracted by Barrette Outdoor Living to perform structural testing on their 8 ft by 42 in *VersaRail* aluminum level guardrail (railing) system. The purpose of the testing is code compliance evaluation in accordance with the following criteria:

2010 *National Building Code of Canada (NBC)*

Testing is limited to test loads equal to 1.67 times the design load for all components.

According to Table 9.8.8.2 of the 2010 *NBC,* the following tests are required for guards within dwelling units and exterior guards serving not more than 2 dwelling units:

- Horizontal in-fill load test on balusters / 112 lb applied over a 11.75 in by 11.75 in area [1]
- Vertical uniform load test on top of guard / 103 plf
- Horizontal concentrated load test applied at any location / 225 lb [1]

[1] *Testing is required in both the inward or outward direction. The VersaRail guardrail assembly tested herein was symmetrical; therefore, the load direction was insignificant.*

1.3 Limitations

All tests performed were to evaluate structural performance of the level railing assembly to carry and transfer imposed loads to the supports (posts). The test specimen evaluated included the pickets, rails, rail brackets, attachment of the rail brackets to the support posts and the support posts and there attachment to the support structure (simulated mock wood deck).

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1.4 Qualifications

Architectural Testing has demonstrated compliance with ANS/ISO/IEC Standard 17025 and is consequently accredited as a Testing Laboratory (TL-144) by International Accreditation Service, Inc.

1.5 Witnessing

There were no witnesses from Barrette Outdoor Living present for testing conducted and reported herein.

1.6 Conditions of Testing

Unless otherwise indicated, all testing reported herein was conducted in a laboratory set to maintain temperature in the range of 68 ± 4ºF and humidity in the range of 50 ± 5% RH. All test specimen materials provided by Barrette Outdoor Living were stored in the laboratory environment for no less than 40 hours prior to testing.

1.7 Product Description

Barrette Outdoor Living provided the partially-assembled test specimens with details as listed below. All extruded parts were 6005-T5, 6063-T5 or 6063-T6 alloy aluminum, and all cast parts were AA380.0-F aluminum. See drawings in Appendix A and photographs in Appendix B for additional details.

Top Rail Cap: 2-1/8 in high by 1-3/4 in wide contoured aluminum extrusion with 0.07 in wall

Top Sub-rail and Bottom Rail: 1-3/16 in wide by 1 in deep **U**-shaped aluminum extrusion with 0.07 in wall

Balusters: 3/4 in square, hollow aluminum extrusion with 0.04 in wall

Baluster Locking Strip: 3/4 in wide by 0.07 in thick polypropylene extrusion located in bottom and top sub-rail

Rail Brackets: Cast aluminum socket brackets contoured to shape of rails

Fasteners: #8 x 3/4 in (18-TPI, 0.162 in major dia., 0.118 in minor dia.) pan head, square drive, self-starting, sheet metal screw (four in top bracket / post and two in bottom bracket / post); #8 x 1-1/2 in (18-TPI, 0.165 in major dia., 0.118 in minor dia.) pan head, square drive, self-starting, sheet metal screw (two in top bracket / rail)

Support Blocks: Extruded aluminum support leg; four spaced equally along the length of the rail.

1.7 Product Description (Continued)

Posts: 2-1/2 in square by 0.08 in thick extruded aluminum tube attached to a 5-1/4 in square by 0.25 in thick AISI 1010 steel base plate with four 1/4 in by 2-1/2 in flat head, phillips drive, steel screws driven through raceway channels in aluminum tube; a 5-1/4 in by 3/16 in thick steel plate was included for wood deck installation.

Wood Deck: 32 in by 35 in screwed construction of 2x8 by 32 in preservative-treated No. 2 KD Southern Pine framing with two 5/4x6 by 32 in preservative-treated Southern Pine deck boards over one 2x8 by 14-1/2 in preservative-treated No. 2 KD Southern Pine horizontal blocking; #9 x 3 in deck screws for 2x8's and decking. Refer to photographs in Appendix B for further construction details.

2.0 Structural Performance Testing of Assembled Railing Systems

2.1 Test Equipment

The guardrail was 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 an electric winch mounted to a rigid steel test frame. 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 displacement transducers were used to measure deflections.

2.2 Test Setup

The 8 ft by 42 in *VersaRail* aluminum level guardrail assembly was installed and tested as a single railing section by directly securing the posts into a simulated mock wood deck with four 5/16 in by 3-1/2 in long bolts with washers and nuts. Additional wood blocking was added to the simulated wood deck per the manufacturer's instructions. See blocking instructions in Appendix C for additional information. 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 Appendix B for individual test setups.

2.3 Test Procedure

The 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. One specimen was used for all load tests which were performed in the order reported. Each design load test was performed using the following procedure:

1. Zeroed transducers and load cell at zero load; and
2. Increased load to specified test load in no less than ten seconds.

The testing time was continually recorded from the application of initial test load until the ultimate test load was reached.

2.4 Test Results

The following tests were performed on the guardrail assemblies for the design load requirements of the referenced code. 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.

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.

96 in by 42 in *VersaRail* Aluminum Level Guardrail Installed in Mock Wood Deck

Test No. 1 – Test Date: 11/07/12 Design Load: 112 lb / 1 Square ft of Infill at Center of Three Balusters			
Load Level	**Test Load (lb)**	**E.T. (min:sec)**	**Result**
187 lb (1.67 x D.L.)	189	01:07	Withstood load equal to or greater than 187 lb without failure

2.4 Test Results (Continued)

Test No. 2 – Test Date: 11/07/12 Design Load: 112 lb / 1 Square ft of Infill at Bottom of Three Pickets			
Load Level	**Test Load (lb)**	**E.T. (min:sec)**	**Result**
187 lb (1.67 x D.L.)	187	00:54	Withstood load equal to or greater than 187 lb without failure

Test No. 3 – Test Date: 11/07/12 Design Load: 103 plf x (96 in ÷ 12 in/ft) = 824 lb Vertical Uniform Load on Top Rail			
Load Level	**Test Load (lb)**	**E.T. (min:sec)**	**Result**
1376 lb (1.67 x D.L.)	1379	01:59	Withstood load equal to or greater than 1376 lb without failure

Test No. 4 – Test Date: 11/07/12 Design Load: 225 lb Concentrated Load at Midspan of Top Rail						
Load Level	**Test Load (lb)**	**E.T. (min:sec)**	**Displacement (inches)**			
			End	**Mid**	**End**	**Net** [1]
225 lb (D.L.)	227	01:03	1.01	2.19	0.63	1.37
376 lb (1.67 x D.L.)	377	01:27	**Result:** Withstood load equal to or greater than 376 lb without failure			

[1] *Each end displacement was measured at the center of the support. Net displacement was the rail displacement relative to the supports.*

2.4 Test Results (Continued)

Test No. 5 – Test Date: 11/20/12 Design Load: 34.3 plf x (93-1/2 in Rail Length + 2-1/2 in Post Width ÷ 12 in/ft) = 274 lb Concentrated Load on Top of a Single Post Located on Right Side			
Load Level	**Test Load (lb)**	**E.T. (min:sec)**	**Displacement (inches)**
274 lb (D.L.)	275	00:37	2.42
458 lb (1.67 x D.L.)	458	01:25	**Result**: Withstood load equal to or greater than 458 lb without failure

Test No. 6 – Test Date: 11/20/12 Design Load: 34.3 plf x (93-1/2 in Rail Length + 2-1/2 in Post Width ÷ 12 in/ft) = 274 lb Concentrated Load on Top of a Single Post Located on Left Side			
Load Level	**Test Load (lb)**	**E.T. (min:sec)**	**Displacement (inches)**
274 lb (D.L.)	275	00:48	1.92
458 lb (1.67 x D.L.)	459	01:31	**Result**: Withstood load equal to or greater than 458 lb without failure

2.5 Summary and Conclusions

The 8 ft by 42 in *VersaRail* aluminum level guardrail (railing) system reported herein met the design load requirements (as specified in Table 9.8.8.2 of the 2010 *NBC* for guards within dwelling units and exterior guards serving not more than 2 dwelling units) and safety factors of the 2010 *NBC* as installed between the support posts and guardrail details as described above.

3.0 Closing Statement

Architectural Testing will service this report for the entire test record retention period. The report retention will be four years from the report date. Test records that are retained such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation will be retained by Architectural Testing, Inc. for the entire test record retention period. Results obtained are tested values and were secured using the designated test methods. This report neither constitutes certification of this product nor expresses an opinion or endorsement by this laboratory; it is the exclusive property of the client so named herein and relates only to the tested specimens. This report may not be reproduced, except in full, without the written approval of Architectural Testing.

For ARCHITECTURAL TESTING:

Digitally Signed by: Adam J. Schrum

Adam J. Schrum
Technician I
Structural Systems Testing

Digitally Signed by: Travis Hoover

Travis A. Hoover
Program Manager
Structural Systems Testing

AJS:ajs/tah

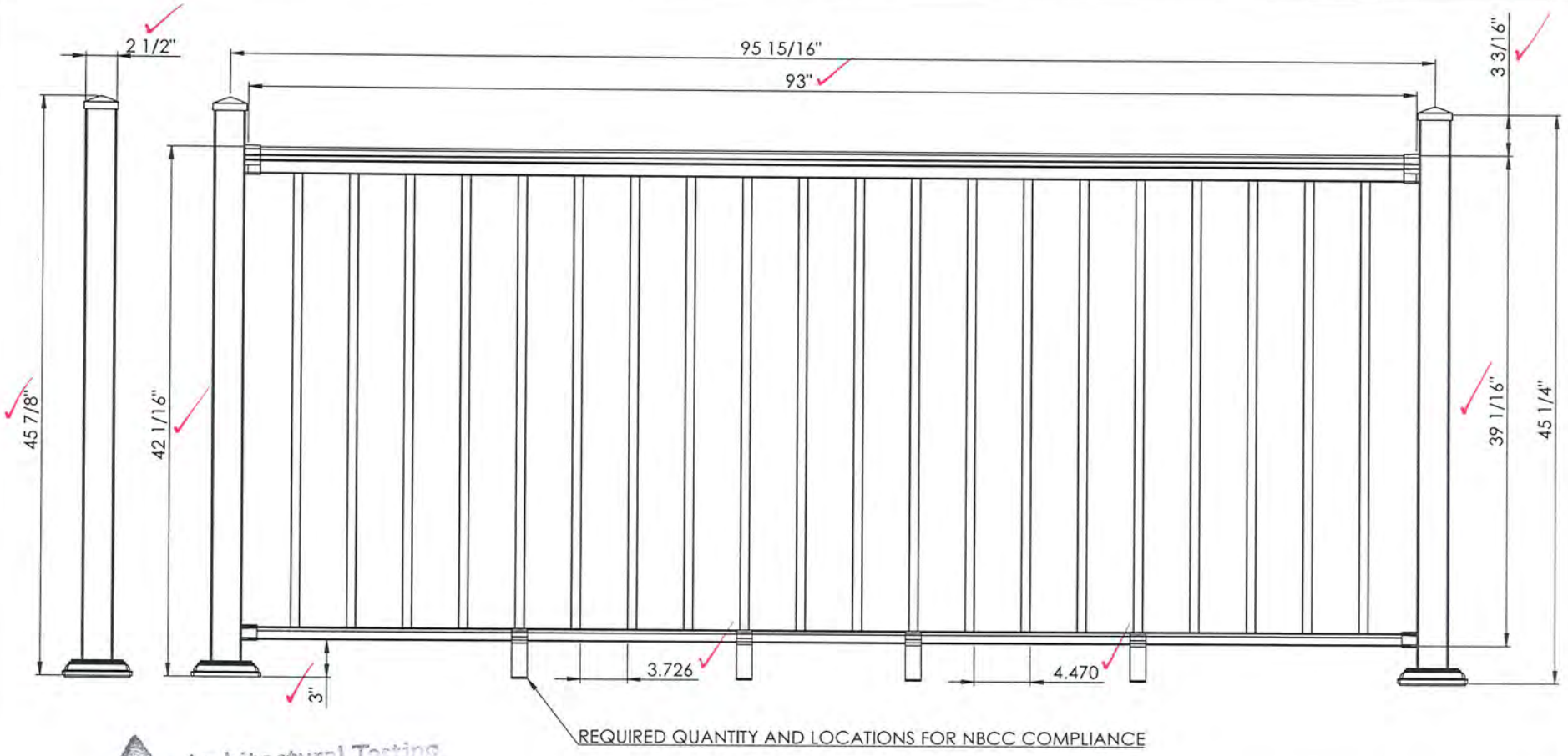
Attachments (pages): This report is complete only when all attachments listed are included.
Appendix A – Drawings / Installation Instructions (14)
Appendix B - Photographs (5)

Revision Log

Rev. #	Date	Page(s)	Revision(s)
0	01/04/13	N/A	Original report issue

APPENDIX A

Drawings / Installation Instructions



Architectural Testing

Test sample complies with these drawings.
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS

Weight = 31.69 lbs
Material = Aluminum Alloys & Steel Base Plates

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (µ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
REVISION			

BUILT BY
Barrette Outdoor Living
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY:	DATE	SCALE
Ray Clark	1/2/2013	1:8

TITLE: VERSARAIL 42" H X 8 FT w/BALUSTERS

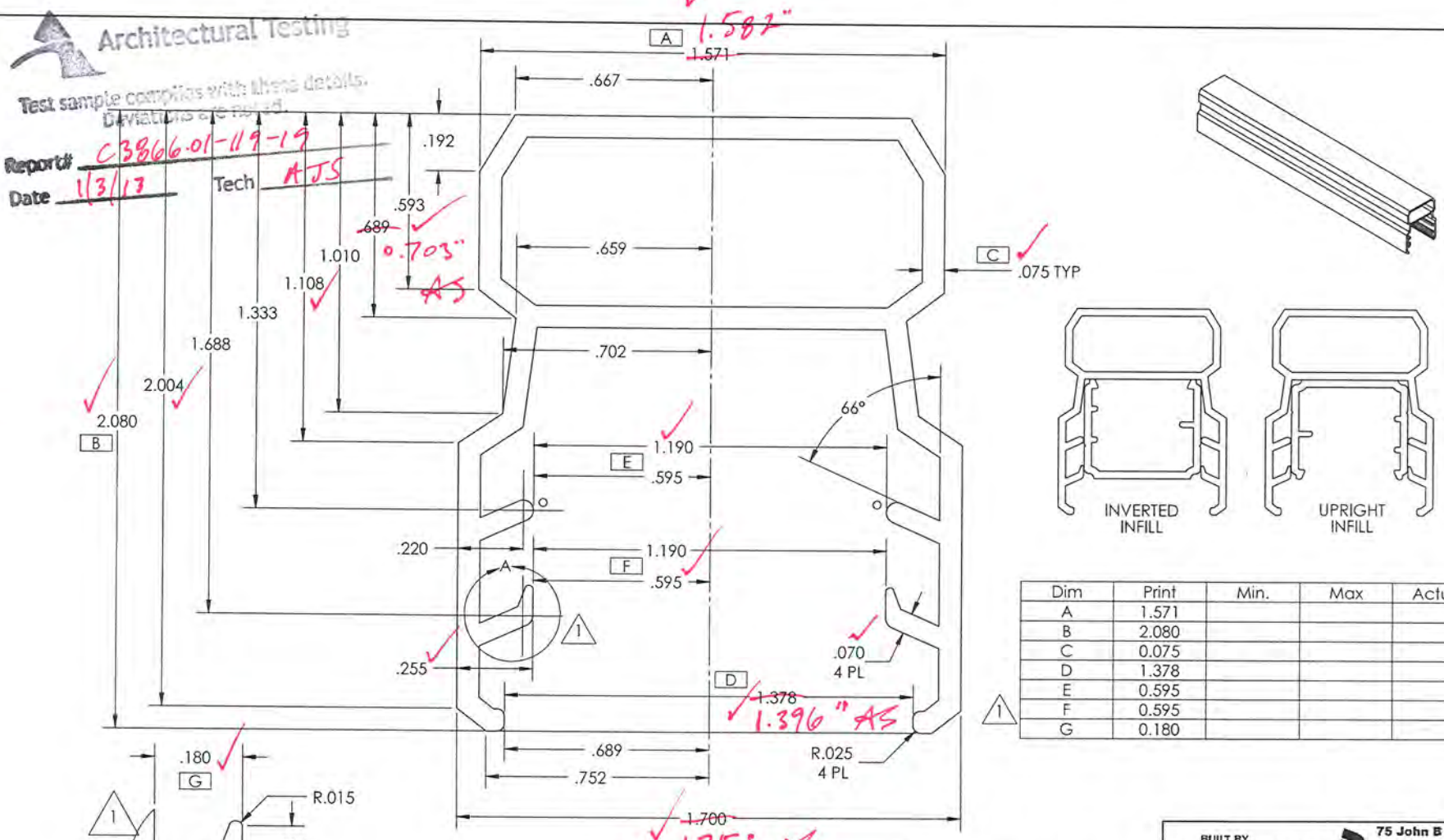
EQUIPMENT No:	SECTION:	REVISION	DRAWING No:
REFERENCE No:	5 of 5	0	42 X 8' NBCC

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS



DETAIL A
SCALE 5 : 1

Dim	Print	Min.	Max	Actual
A	1.571			
B	2.080			
C	0.075			
D	1.378			
E	0.595			
F	0.595			
G	0.180			

Weight = 0.68 lbs
Material = 6063-T5 Aluminum

NOTES:
(o) DENOTES FULL R 2 PL
BREAK SHARP CORNERS .015 R

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (μ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
1	JD	08.10.11	Revision to shape of feature in Detail "A"

REVISION

BUILT BY
Barrette Outdoor Living
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY: Ray Clark | DATE: 10/25/2012 | SCALE: 3:1

TITLE: VERSARAIL HANDRAIL

EQUIPMENT No: | SECTION: | REVISION: 1 | DRAWING No: Sheet1

REFERENCE No: | 1 of 1

PRINT APPROVAL

PLEASE INDICATE EXPOSED SURFACES
PLEASE INDICATE WHERE INTEX I.D. GOES

COMPANY _____

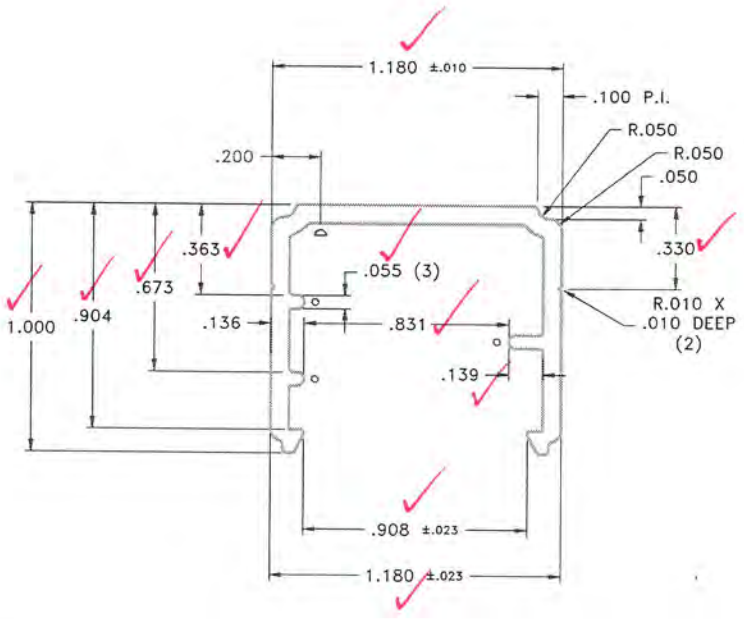
SIGNATURE _____

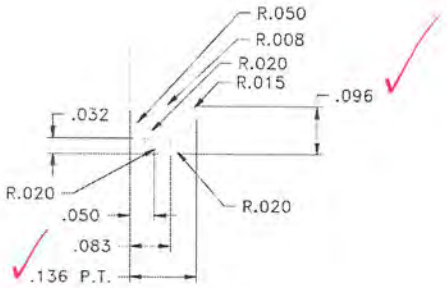
DATE _____

YOUR SIGNATURE INDICATES NO CHANGES TO DIMENSIONS OR TOLERANCES AS SHOWN ON THIS DRAWING. THIS IS NOT AN INTERNATIONAL EXTRUSIONS DESIGN, IT IS AN INTERPRETATION OF THE CUSTOMER'S DRAWING. NO WARRANTY OF FITNESS OR APPLICATION OF USE IS IMPLIED. ALL DIMENSIONAL CHECKS WILL BE DONE USING THIS PRINT ONLY.

KE-10509

VERSION TWO DRAWING





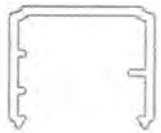
Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS

NO EXPOSED SURFACES



Material = 6063-T5

(⌓) R.01 X .01 DEEP I.D. MARK
(o) DENOTES FULL R (3)
TYPICAL UNMARKED WALL .075
BREAK SHARP CORNERS .015 R

International Extrusions

ALUMINUM ASSOCIATES STANDARD EXTRUSION TOLERANCES WILL APPLY UNLESS OTHERWISE NOTED ON PRINT

DIMENSIONS CHKD BY				
EST. AREA	.237	DESCRIPTION	DR. BY ECP	DATE 6-22-2011
EST. WT. FT.	.285	INFILL PROFILE	SLS 97	SCALE 2X
EST. PER.	6.562		FILE PLUTO	DIE NO.
FIN. PER.			DWG# 11B173B2	
CLASS	SOLID			
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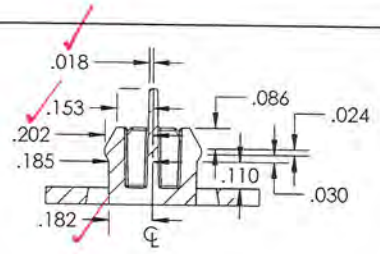
CUST. REV. LEV.	NONE	BARRETTE OUTDOOR PRODUCTS		NONE



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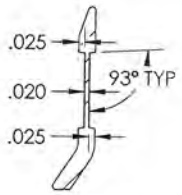

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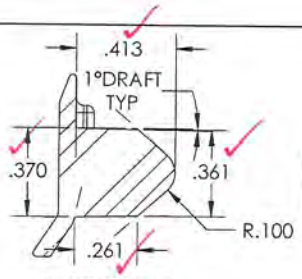

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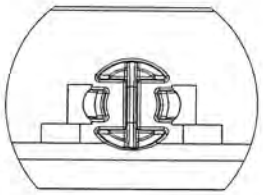

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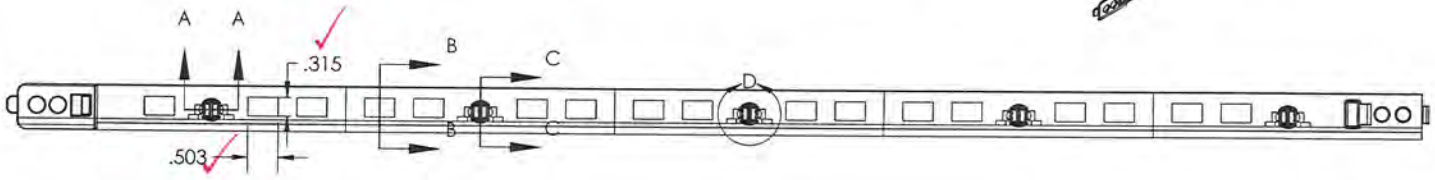

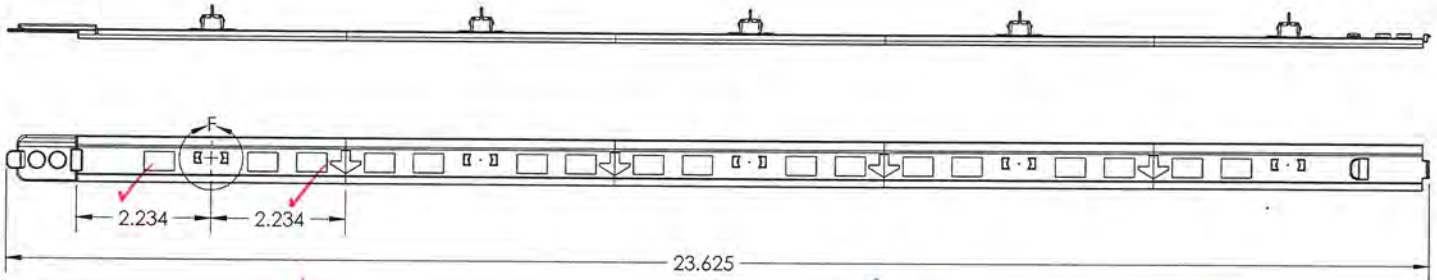

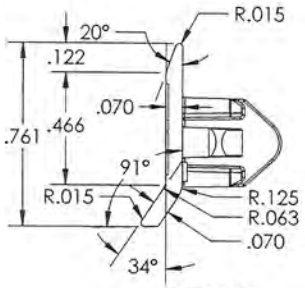

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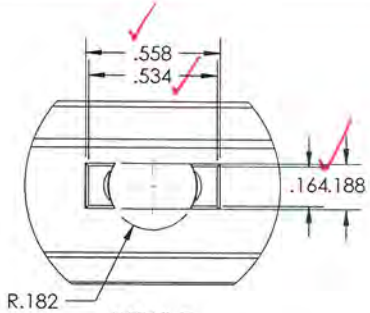


DETAIL F
SCALE 2 : 1

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-49-19

Date 1/3/13 Tech AJS

Weight = 0.05 lbs
Material = PP/Glass 30%

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (u')	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION

REVISION

BUILT BY
Barrette Outdoor Living

75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY	DATE	SCALE
Ray Clark	11/15/2011	1:2

TITLE
CORIGIN STRIP WITH ENDS

PART No	SECTION	REVISION	DRAWING No
61104553	2 of 2	0	61104553

REFERENCE No

PRINT APPROVAL

PLEASE INDICATE EXPOSED SURFACE

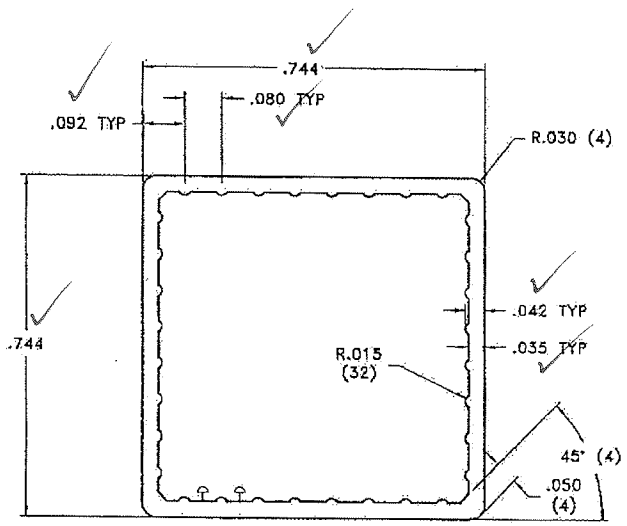
PLEASE INDICATE FINISH SIDE I.D. SIDE

COMPANY Satellite Mfg. Inc.

SIGNATURE

DATE 4/20/11

YOUR SIGNATURE INDICATES NO CHANGES TO DIMENSIONS OR TOLERANCES AS SHOWN ON THIS DRAWING. THIS IS NOT AN INTERNATIONAL EXTRUSIONS DESIGN. IT IS AN INTERPRETATION OF THE CUSTOMER'S DRAWING. NO WARRANTY OF FITNESS OR APPLICATION OF USE IS IMPLIED. ALL DIMENSIONAL CHECKS WILL BE DONE USING THIS PRINT ONLY.



EXTERIOR PERIMETER EXPOSED

ACTUAL SIZE

PRELIMINARY DRAWING

Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-13

Date 11/3/13 Tech AJS

Material = 6063-T5

(a) R.01 X .01 Hi I.D. MARK

BREAK SHARP CORNERS .010 R

International Extrusions

5800 Venoy Rd. - Garden City MI 48135

ALUMINUM ASSOCIATES STANDARD EXTRUSION TOLERANCES WILL APPLY UNLESS OTHERWISE NOTED ON PRINT

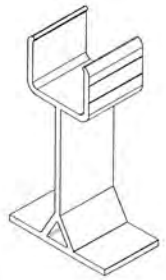
DIMENSIONS CHKD BY				
EST. AREA	.103	DESCRIPTION	DR. BY EGP	DATE 4-20-2011
EST. WT. FT.	.124	NEW 3/4" SQUARE COMMERTIAL PICKET	SLS 97	SCALE 4X
EST. PER.	2.924		FILE PLUTO	DIE NO.
FIN. PER.	2.924		DWG# 11S11082	
CLASS	HOLLOW			
CIRCLE SIZE	1.250	CUSTOMER		PART NO.
CUST REV LEV	NONE	BARRETTE OUTDOOR PRODUCTS		RND7504O

Architectural Testing

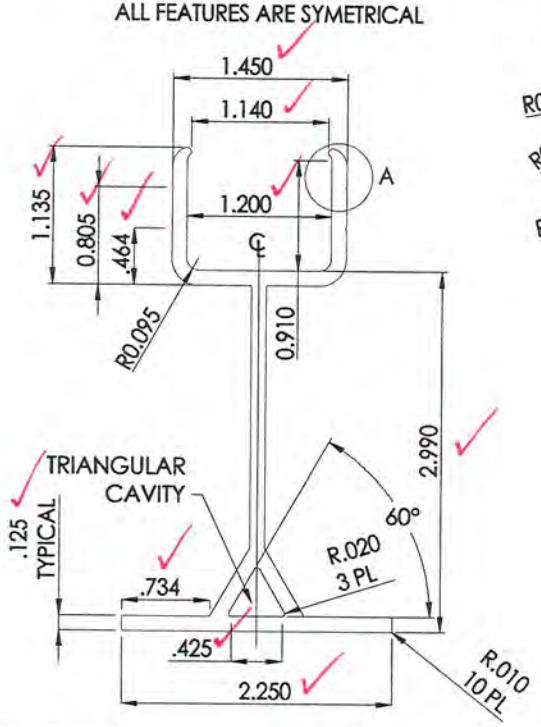
Test sample complies with these details.
Deviations are noted.

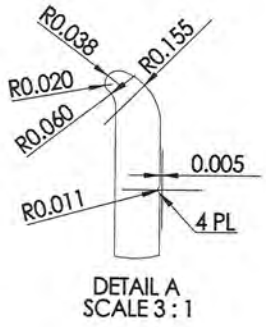
Report# C3866.01-119-19

Date 1/3/13 Tech AJS



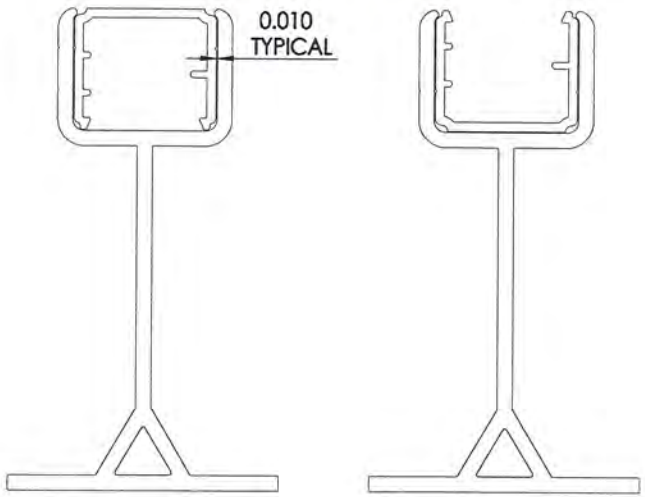
ALL FEATURES ARE SYMETRICAL





DETAIL A
SCALE 3 : 1

ORIENTATION AND RELATIONSHIP TO OUR
EXISTING PART #KE10590 -YOUR DWG #11B17382



REVISION 03
EQUILATERAL TRIANGULAR CAVITY
REVISION 02
TRIANGULAR CAVITY ADDED
AS AID TO PAINTING

Weight = 0.1362 lbs/linear ft
Material = 6063-T5

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (√)	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
			REVISION

BUILT BY Barrette Outdoor Living

75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY: Ray Clark | DATE: 1/10/2012 | SCALE: 1:1

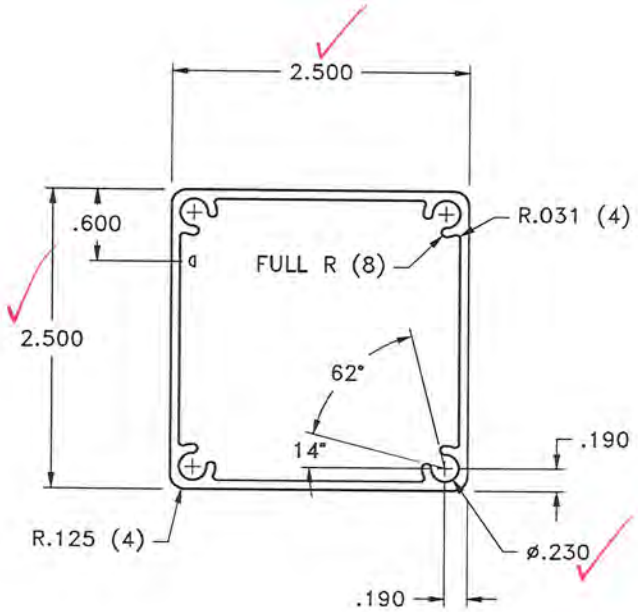
TITLE: P:\Engineering 2011\Research and Development\RND75044\Apt\

CRUSH BLOCK 03

EQUIPMENT No: | SECTION: | REVISION: 0 | DRAWING No:

REFERENCE No: | 1 of 1

KE9582



Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS

Material = 6005-T5

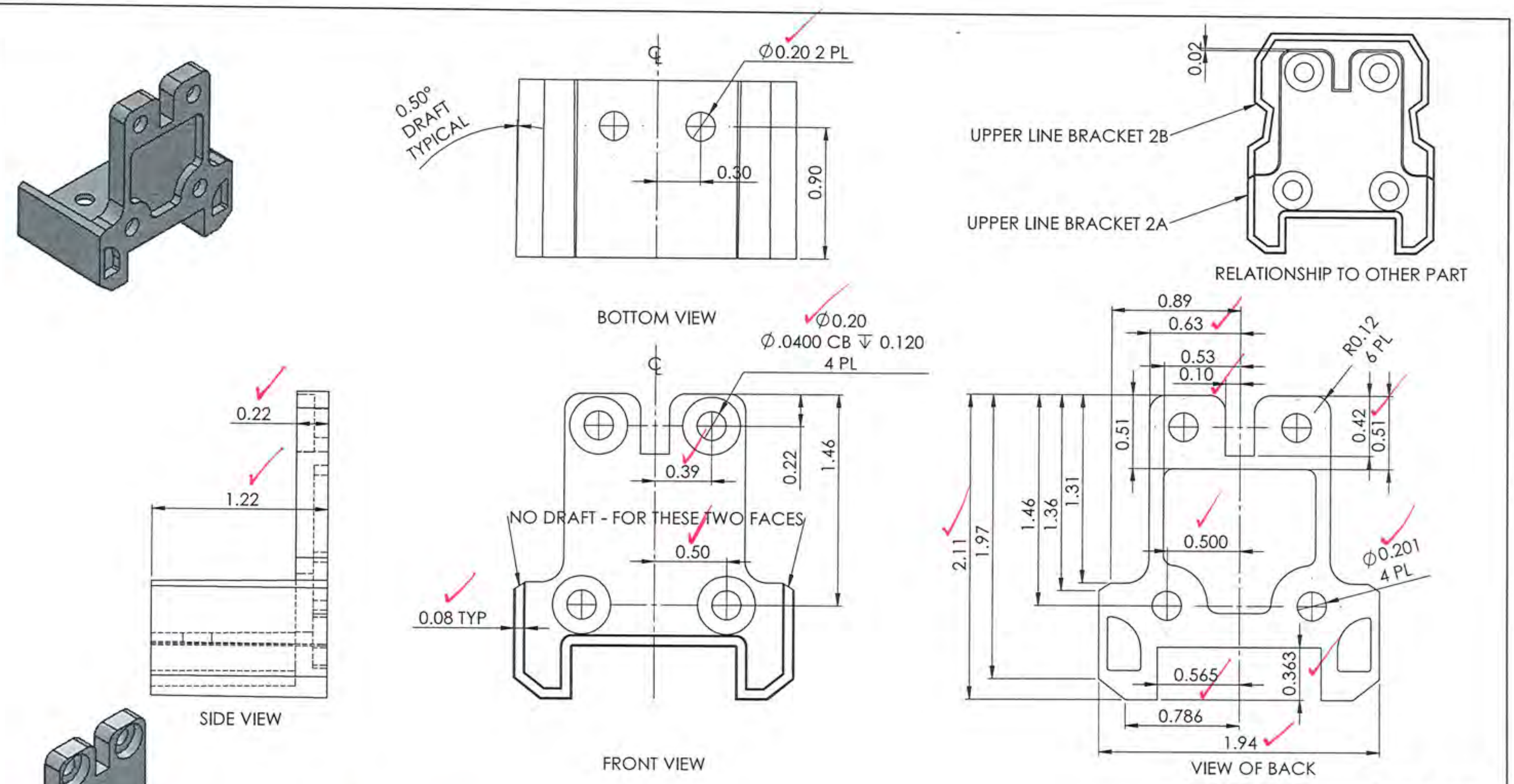
EXTERIOR PERIMETER EXPOSED

(a) R.01 X .01 HI I.D. MARK
TYPICAL UNMARKED WALL .075
BREAK SHARP CORNERS .015 R

International Extrusions
5800 Venoy Rd. - Garden City MI 48135

ALUMINUM ASSOCIATES STANDARD EXTRUSION TOLERANCES WILL APPLY UNLESS OTHERWISE NOTED ON PRINT

DIMENSIONS CHKD BY				
EST. AREA	.828	DESCRIPTION	DR. BY ECP	DATE 7-16-2008
EST. WT. FT.	.994	2-1/2" POST	SLS 97	SCALE FULL
EST. PER.	9.785		FILE PLUTO	DIE NO. KE9582
FIN. PER.	9.785		DWG# 08S198B1	
CLASS	HOLLOW			
CIRCLE SIZE	3.500	CUSTOMER		PART NO.
CUST REV LEV	NONE	BARRETTE OUTDOOR PRODUCTS		NONE



Architectural Testing

Test sample complies with these details
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 ATS

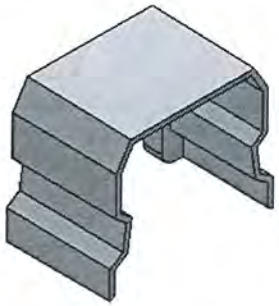
Weight = 0.0663 lbs
Material = AA380.0-F die Aluminum

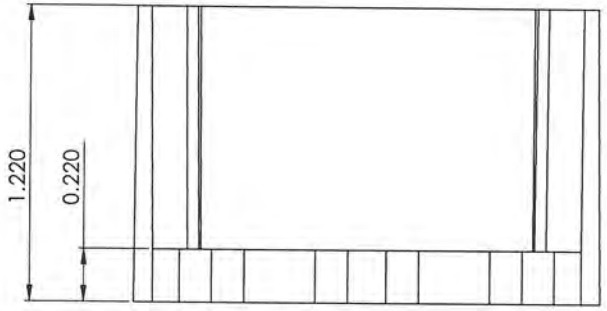
TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (µ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
REVISION			

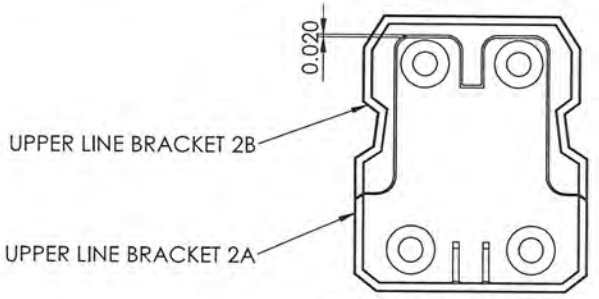
BUILT BY
Barrette Outdoor Living
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY: Ray Clark	DATE: 1/3/2013	SCALE: 1.5:1	
TITLE: UPPER LINE BRACKET 2A			
EQUIPMENT No.:	SECTION:	REVISION: 0	DRAWING No: Sheet1
REFERENCE No:	1 of 1		

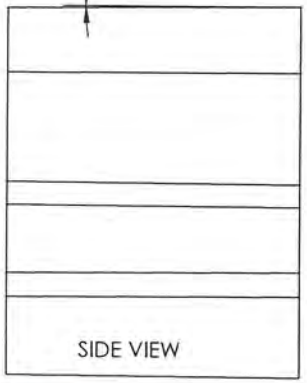


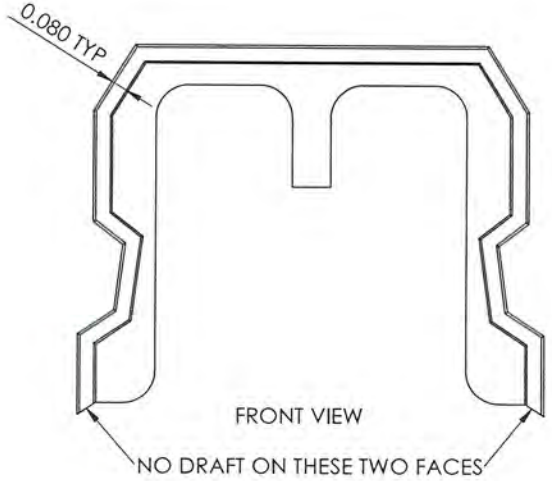


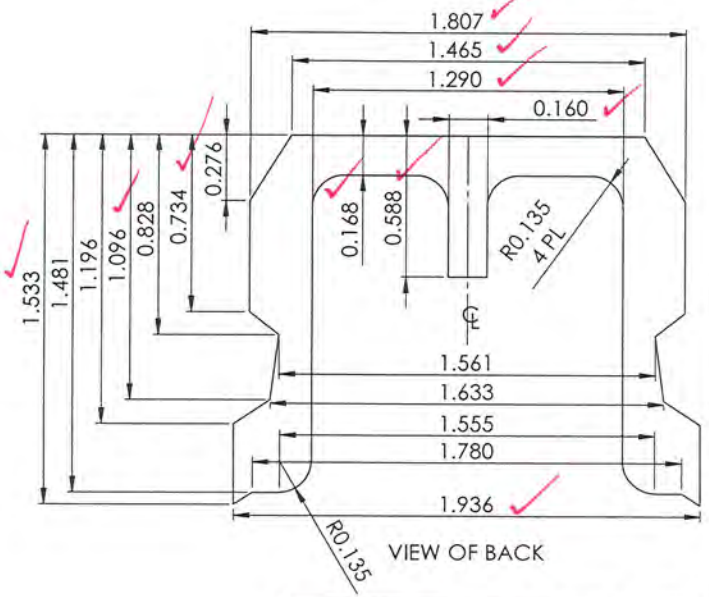
BOTTOM VIEW

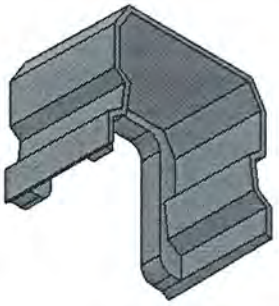


RELATIONSHIP TO OTHER PART









Architectural Testing

Test sample complies with these details. Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tester AJS

Weight = 0.0532 lbs
Material = AA380.0-F die Aluminum

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (µ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

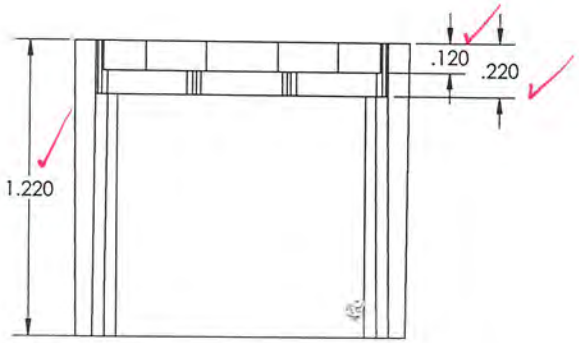
No.	NAME	DATE	DESCRIPTION
REVISION			

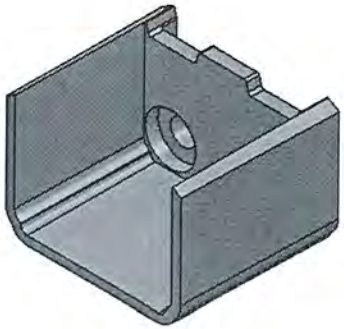
BUILT BY
Barrette Outdoor Living
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

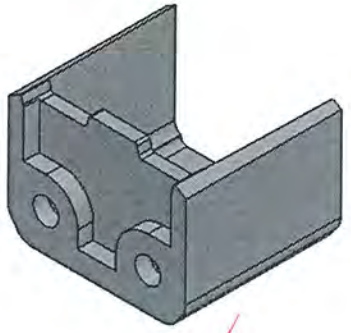
DRAWN BY:	DATE	SCALE
Ray Clark	1/17/2012	2:1

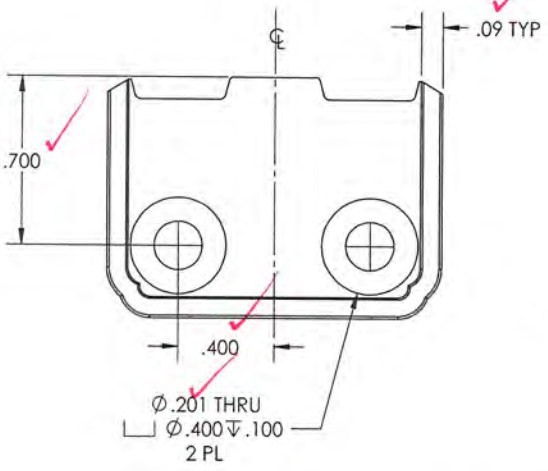
TITLE: UPPER LINE BRACKET 2B

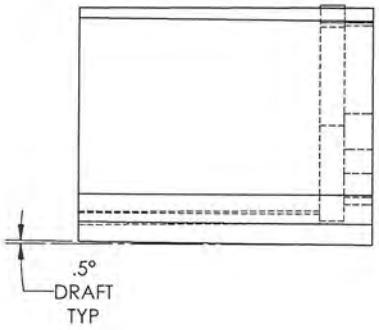
EQUIPMENT No:	SECTION:	REVISION	DRAWING No:
REFERENCE No:	1 of 1	0	Sheet1

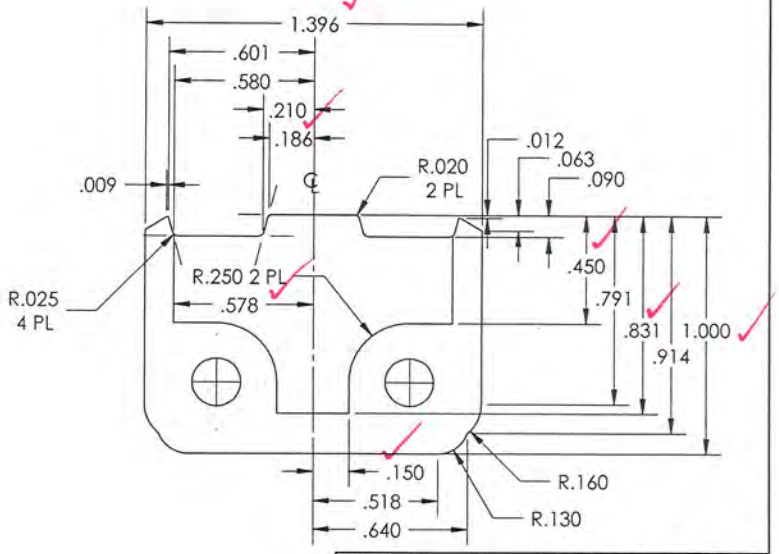












Weight = 0.0413 lbs
Material = AA380.0-F die Aluminum

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (μ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
			REVISION

BUILT BY
Barrette
Outdoor Living
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY:	DATE	SCALE:
Ray Clark	1/17/2012	2:1

TITLE: LOWER LINE BRACKET - BOTTOM

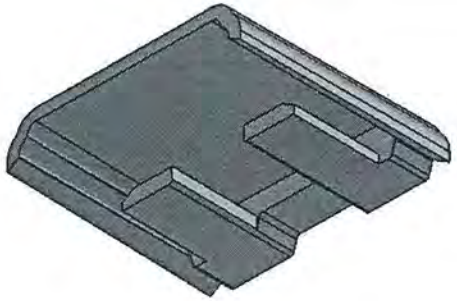
EQUIPMENT No:	SECTION:	REVISION	DRAWING No:
REFERENCE No:	1 of 2	0	PART A

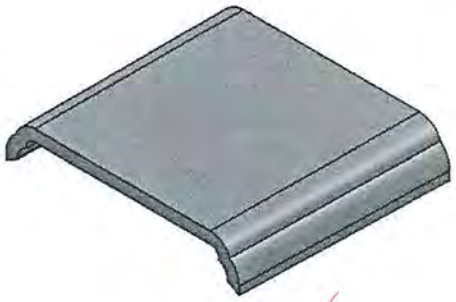
Architectural Testing

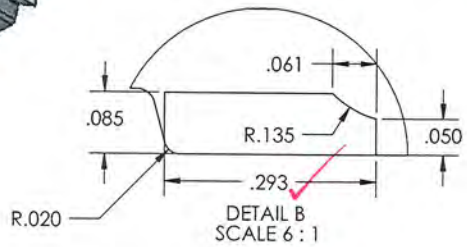
Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-19

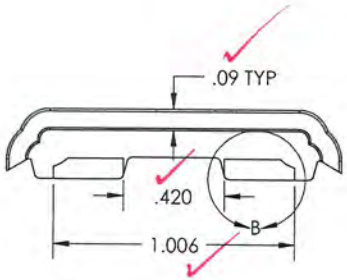
Date 1/3/13 Tech AJS

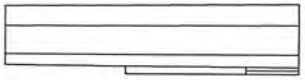


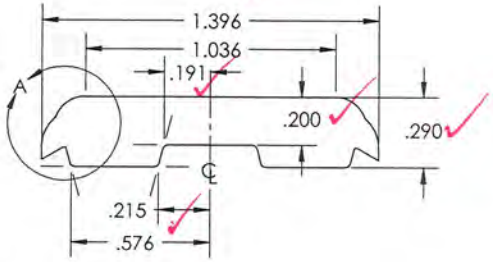


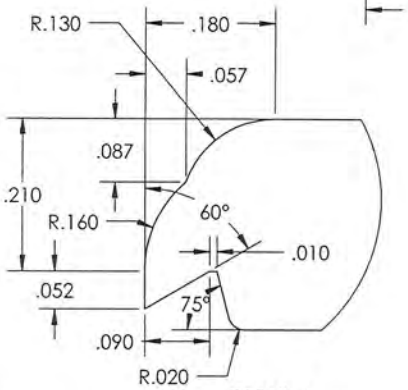


DETAIL B
SCALE 6 : 1

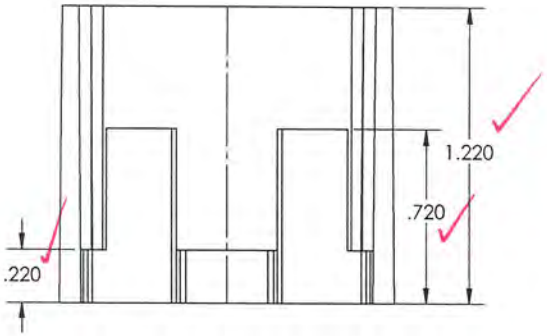








DETAIL A
SCALE 6 : 1



Weight = 0.0216 lbs
Material = AA380.0-F die Aluminum

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (µ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
REVISION			

BUILT BY
Barrette Outdoor Living

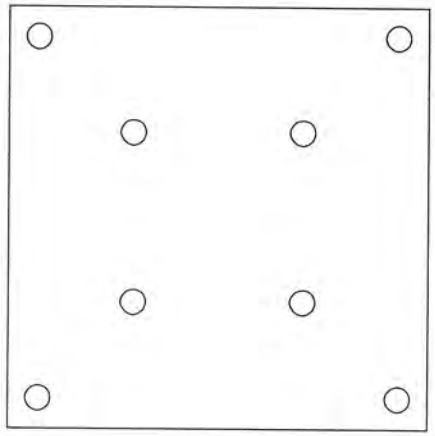
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

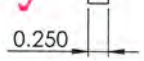
DRAWN BY:	DATE	SCALE:
Ray Clark	1/17/2012	2:1

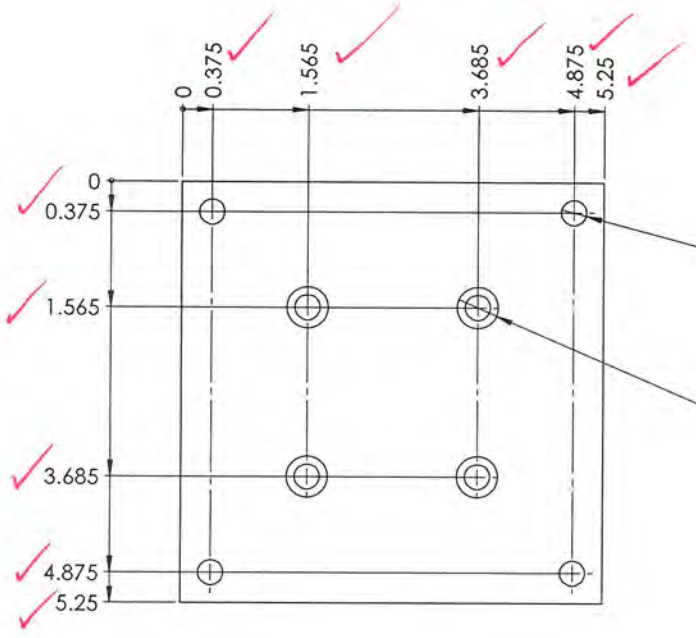
TITLE: LOWER LINE BRACKET - TOP

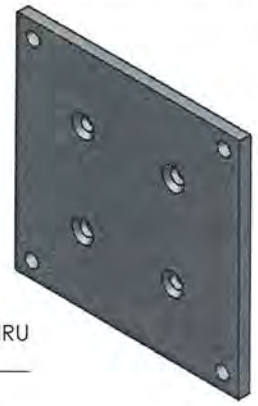
EQUIPMENT No:	SECTION:	REVISION	DRAWING No:
REFERENCE No:	2 of 2	0	PART B

ITEM NO.	DESCRIPTION	LENGTH	QTY.
1	5.25" Base for 2.5" Hand Rail Post	5.25"	1









Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS

Weight = 1.91 lbs
Material = AISI 1010 Steel, hot rolled bar

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (µ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
REVISION			

BUILT BY Barrette Outdoor Living
75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

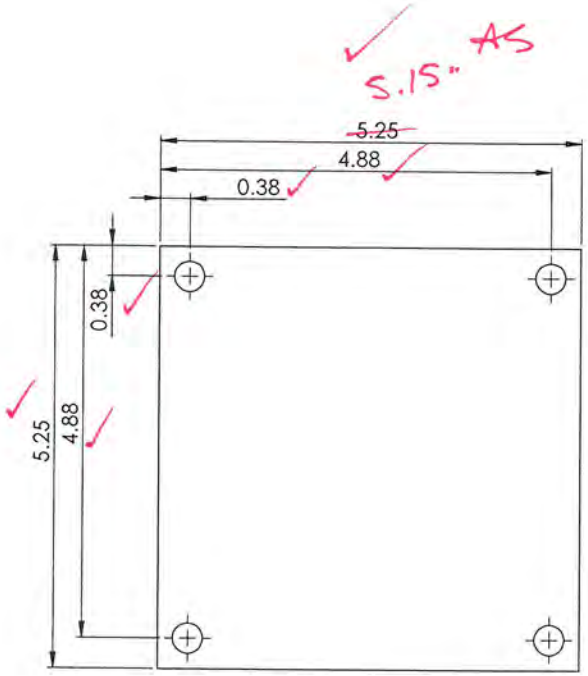
DRAWN BY: Ray Clark | DATE: 10/18/2012 | SCALE: 1:1.5

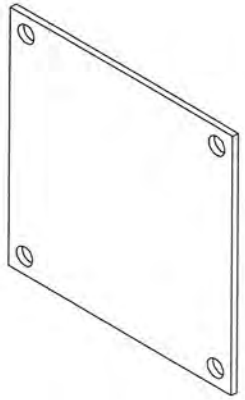
TITLE: P:\Engineering 2011\Research and Development\RND75044\April\Drawings for Testing Docs\

5.25" Base for 2.5" Hand Rail Post

EQUIPMENT No: | SECTION: | REVISION: 0 | DRAWING No:

REFERENCE No: | 1 of 1





Architectural Testing

Test sample complies with these details.
Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS

Weight = 1.00 lbs
Material = AISI 1010 Steel, hot rolled bar

TOLERANCES	
FRACTION	± 1/64"
XX	± 0.010"
XXX	± 0.005"
ANGLE	± 1°
UNSPECIFIED FINISH (µ")	125 RMS
UNLESS OTHERWISE SPECIFIED	

No	NAME	DATE	DESCRIPTION
REVISION			

BUILT BY Barrette Outdoor Living

75 John B Brooks Rd
Pendergrass, Ga
30567
706-693-4062
706-693-4064 fax

DRAWN BY	DATE	SCALE
Ray Clark	10/18/2012	1:1.5

TITLE: 5.25" BACKUP PLATE - 4 HOLE

EQUIPMENT No.	SECTION	REVISION	DRAWING No.
REFERENCE No.	1 of 1	0	Sheet1

Aluminum Rail Post

Installation Instructions

PLEASE READ INSTRUCTIONS COMPLETELY BEFORE INSTALLING POSTS.

2 PERSON INSTALLATION RECOMMENDED

Models
73013157 / 73013158 / 73013159 73013160 / 73013174 / 73013175 73003797
Version
1.0

Architectural Testing

Test sample complies with these details. Deviations are noted.

Report# C3866.01-119-19

Date 1/3/13 Tech AJS

Tools Needed:

- Level
- Drill & bits
- 5/16" bolts and nuts (for wood application)
- 5/16" masonry anchors (for concrete application)
- 3" deck screws (for wood application)
- 5/16" wrench

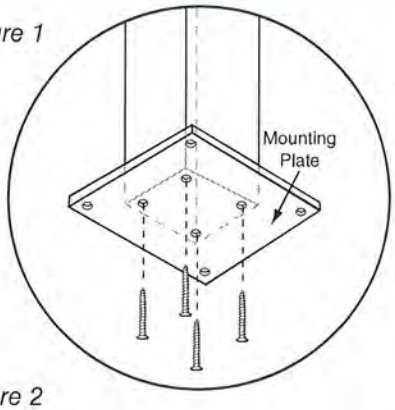
Deck/Wood Surface

1.) Attach mounting plate to post with provided ¼" x 2½" phillips head screws *Figure 1*.

2.) Cut a 2x8 wood spacer block (not included) *Figure 2* and attach underneath the deck surface to substructure joists directly under the post location with 3" deck screws (not included). Length of the spacer block should be the distance between the existing deck joists.

3.) Cut one 2x8 joist (same length as spacer block cut in Step 2) (not included) *Figure 2*. Box in the spacer block with this newly cut joist with 3" deck screws (not included).

Figure 1



Install Posts to Deck

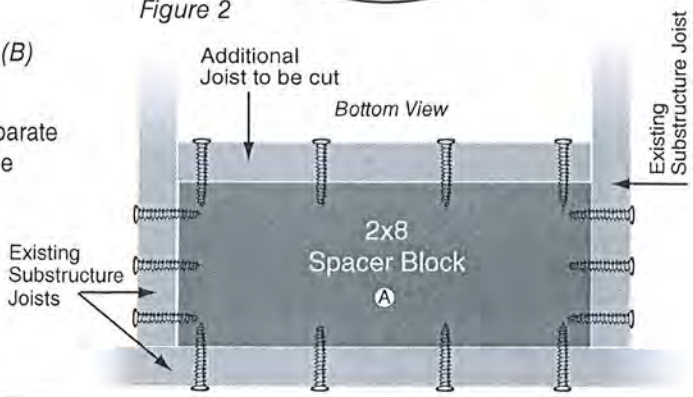
4.) Mark holes with a pencil through bottom of installation plate *Figure 3 (B)* onto deck surface. Drill ⅜" holes in all four locations.

5.) Push 5/16" bolts (not included) through installation plate and attach separate bottom plate *Figure 3 (C)* from underneath deck surface (posts can be leveled as needed by using steel washers as shims).

- Purchase 5/16" bolts with nuts approximately 1" longer than the distance between plates (minimum 3⅞" long).

6.) Install base trim *Figure 3 (D)* around deck post at deck surface before installing rail.

Figure 2



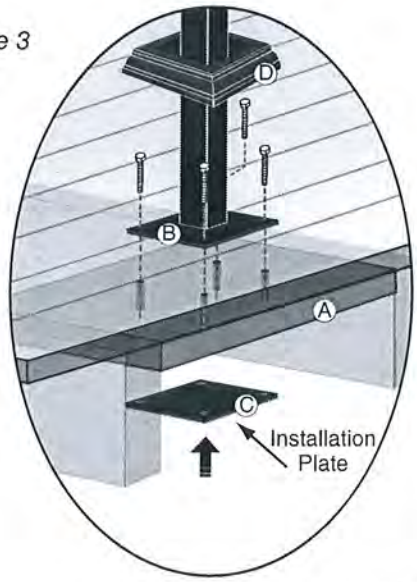
Concrete Surface

1.) Purchase four 5/16" masonry anchors according to local building codes.

2.) Mark holes through mounting plate onto concrete surface and follow anchor installation instructions.

3.) Install base trim *Figure 3* (D) around deck post at deck surface before installing rail.

Figure 3



Concrete Core

If core drilling into concrete, longer length posts are available.

Installing Remainder of Deck Posts

1.) Measure the length of your rail section. This is the distance between posts for Elite/Versarail. For Somerset/New Castle railing add ¾" plus measurement for brackets and expansion clearance.

2.) Follow installation instructions from above.

APPENDIX B

Photographs

Photo No. 1
Horizontal Infill Test at Center of Three Balusters

Photo No. 2
Horizontal Infill Test at Bottom of Three Balusters

Photo No. 3
Vertical Uniform Load Test

Photo No. 4
Horizontal Concentrated Load at Midspan of Top Rail

Photo No. 5
Horizontal Concentrated Load Test on Single Post

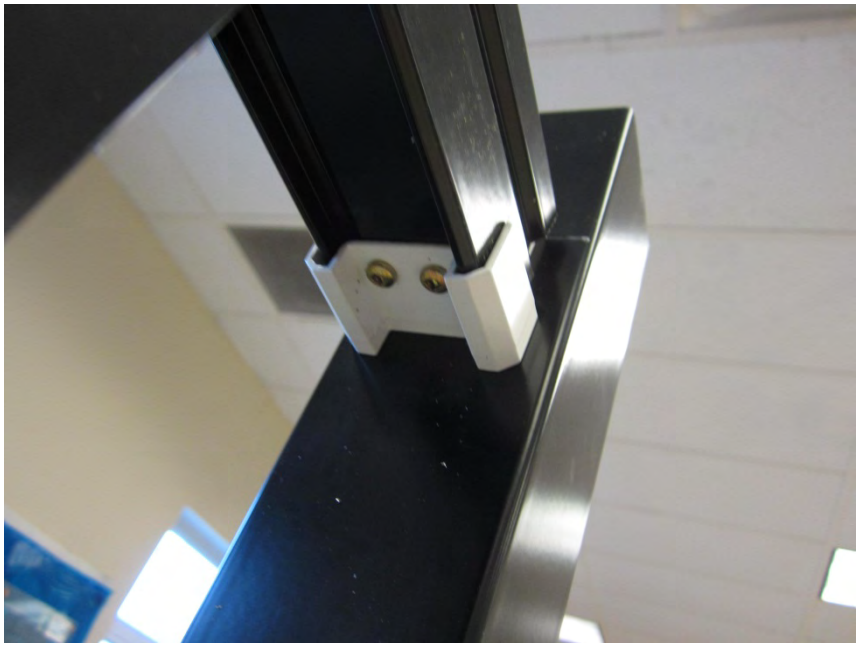


Photo No. 6
Installed Top Rail Bracket

Photo No. 7
Installed Bottom Rail Bracket

Photo No. 8
Location of Support Blocks Along the Length of the Rail

Photo No. 9
3/16 in Thick Mounting Plate
Attached to the Underside of the Horizontal Wood Blocking of the Mock Wood Deck