

Testing Evaluation Laboratories, Inc.

2002 Wood Court Suite 1 – Plant City, FL 33563
 Phone: 813-754-9887

ASTM E 1886-05 / ASTM E 1996-06
 Missile Level “D” (Includes Wind Zone 4)

TEST REPORT SUMMARY

Test Report Issued To:

Fleetwood Windows and Doors
 1 Fleetwood Way
 Corona, CA 92879

Kona 3800 Casement and Awning Windows

Title of Test	Results			
	Specimen 1A 42.00 x 84.00	Specimen 1B 42.00 x 84.00	Specimen 1C 42.0 x 84.00	Specimen 2A 42.0 x 84.00
Impact	Pass	Pass	Pass	Pass
Fatigue Load Cycling	+65.0/- 65.0 psf	+65.0/- 65.0 psf	+65.0/- 65.0 psf	+65.0/- 70.0 psf

Title of Test	Results			
	Specimen 3A 42.00 x 65.00	Specimen 5A 42.00 x 84.00	Specimen 6A 42.00 x 84.00	Specimen 8A 42.0 x 180.00
Impact	Pass	Pass	Pass	Pass
Fatigue Load Cycling	+65.0/- 65.0 psf	+65.0/- 65.0 psf	+65.0/- 65.0 psf	+65.0/- 65.0 psf

Title of Test	Results
	Specimen 12A 42.00 x 72.00
Impact	Pass
Fatigue Load Cycling	+65.0/- 65.0 psf

Reference should be made to Report No. TEL 01990818 for complete test specimen description and data. For corresponding data regarding AAMA/WDMA/CSA 101/I.S./2/A440-08 reference should be made to Report No. TEL 01990817.

For Testing Evaluation Laboratories, Inc.

Vivian K. Wright
 Vivian K. Wright,
 President



Testing Evaluation Laboratories, Inc.

2002 Wood Court Suite 1 – Plant City, FL 33563
Phone: 813-754-9887

TEST RESULTS

IAS Laboratory Certification No: TL-299

Report No: TEL 01990818
Test Dates: September 23-27, 2013
Report Date: October 31, 2013

Issued to:

Fleetwood Windows and Doors
1 Fleetwood Way
Corona, CA 92879

Project Summary: Testing Evaluation Laboratories, Inc. (TEL) was contracted by Fleetwood Windows and Doors to perform tests on the Kona 3800 Casement and Awning Windows at TEL's Plant City, FL test facility.

Test specimen descriptions and results are reported herein.

Test Specifications: The test specimens were evaluated in accordance with the following:

ASTM E 1886-05 / ASTM E 1996-06
Missile Level "D" (Includes Wind Zone 4)

Test Specimen Description:

Series / Model:	Kona 3800 Casement and Awning Windows
Type:	Aluminum Casement and Awning Windows
Overall Size:	42.00" x 84.00 – Specimens 1a, 1b, 1c, 2a, 5a and 6a – (X) 42.00" x 65.00" – Specimens 3a – (X) 42.00" x 180.00" – Specimen 8a - (O/X/O) 42.00" x 72.00" – Specimen 12a – (X)
Daylight Opening:	33.063" x 75.13" – Specimens 1a, 1b, 1c, 2a, 5a and 6a – (X) 33.625" x 56.50" – Specimen 3a – (X) 39.062" x 9.312" – Specimen 8a - Top Fixed Panel (O) 33.13" x 76.062" – Specimen 8a - Center Active Panel (X) 39.062" x 81.625" – Specimen 8a - Bottom Fixed Panel (O) 32.88" x 56.06" – Specimen 12a – (X)
Glazing Detail:	See attached drawings for glazing details.
Frame Material:	Aluminum
Finish:	Mill Finish

For Tested Elevation, Vertical Cross Sections, Horizontal Cross Sections, Components, Frame Anchoring, Glazing Detail and Bill of Materials See Attached Drawing numbers L-7031, L-7032, L-7032A and L-7033.

IMPACT AND CYCLING TESTS

Specimen 1A – 42.0” x 84.0” Aluminum Casement Window – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
77°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	21.0"	42.0"	49.9 fps
2	Pass	31.0"	11.0"	49.7 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.54
0% to 60%	0.0 to 39.0	300	2.49
50% to 80%	32.5 to 52.0	600	1.69
30% to 100%*	19.5 to 65.0	100	2.98

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.87
50% to 80%	32.5 to 52.0	1050	1.54
0% to 60%	0.0 to 39.0	50	2.51
20% to 50%	13.0 to 32.5	3350	2.62

*Panel deflected 2.50” from original plane at 100% Positive load and 2.38” from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 1B – 42.0” x 84.0” Aluminum Casement Window – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
77°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	20.75"	42.25"	49.9 fps
2	Pass	30.75"	10.75"	49.9 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.13
0% to 60%	0.0 to 39.0	300	2.83
50% to 80%	32.5 to 52.0	600	1.58
30% to 100%*	19.5 to 65.0	100	2.00

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.29
50% to 80%	32.5 to 52.0	1050	1.58
0% to 60%	0.0 to 39.0	50	1.79
20% to 50%	13.0 to 32.5	3350	1.73
*Panel deflected 2.38" from original plane at 100% Positive load and 2.75" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.			

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 1C – 42.0” x 84.0” Aluminum Casement Window – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
77°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	21.25"	41.75"	49.9 fps
2	Pass	10.50"	75.00"	50.0 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.79
0% to 60%	0.0 to 39.0	300	2.62
50% to 80%	32.5 to 52.0	600	1.70
30% to 100%*	19.5 to 65.0	100	2.95

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.94
50% to 80%	32.5 to 52.0	1050	1.60
0% to 60%	0.0 to 39.0	50	2.71
20% to 50%	13.0 to 32.5	3350	1.82
*Panel deflected 2.25" from original plane at 100% Positive load and 2.00" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.			

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 2A – 42.0” x 84.0” Aluminum Casement Window with Nail Fin – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
77°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	22.00"	43.00"	50.1 fps
2	Pass	32.50"	11.25"	50.0 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -70.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.31
0% to 60%	0.0 to 39.0	300	2.51
50% to 80%	32.5 to 52.0	600	1.98
30% to 100%*	19.5 to 65.0	100	2.88

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	21.0 to 70.0	50	2.91
50% to 80%	35.0 to 55.0	1050	2.03
0% to 60%	0.0 to 42.0	50	2.32
20% to 50%	14.0 to 35.0	3350	1.82
*Panel deflected 1.75" from original plane at 100% Positive load and 1.88" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.			

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 3A – 42.0” x 65.0” Aluminum Casement Window – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
76°F	D	9.0 lbs, 3 oz	8'-0"	17'0"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	21.00"	33.00"	49.8 fps
2	Pass	11.00"	11.00"	49.9 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	1.50
0% to 60%	0.0 to 39.0	300	2.25
50% to 80%	32.5 to 52.0	600	1.25
30% to 100%*	19.5 to 65.0	100	2.07

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.27
50% to 80%	32.5 to 52.0	1050	1.63
0% to 60%	0.0 to 39.0	50	1.70
20% to 50%	13.0 to 32.5	3350	1.36

*Panel deflected 1.75” from original plane at 100% Positive load and 2.00” from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 5A – 42.0” x 84.0” Aluminum Casement Window with Nail Fin – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
76°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	21.00"	42.00"	49.7 fps
2	Pass	11.00"	75.00"	50.0 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.08
0% to 60%	0.0 to 39.0	300	1.83
50% to 80%	32.5 to 52.0	600	1.72
30% to 100%*	19.5 to 65.0	100	2.31

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.89
50% to 80%	32.5 to 52.0	1050	2.27
0% to 60%	0.0 to 39.0	50	2.68
20% to 50%	13.0 to 32.5	3350	2.00

*Panel deflected 1.50" from original plane at 100% Positive load and 1.50" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 6A – 42.0" x 84.0" Aluminum Casement Window –Direct Mount – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
76°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	20.75"	42.00"	49.9 fps
2	Pass	11.25"	74.75"	50.0 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.41
0% to 60%	0.0 to 39.0	300	2.79
50% to 80%	32.5 to 52.0	600	2.05
30% to 100%*	19.5 to 65.0	100	2.26

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.95
50% to 80%	32.5 to 52.0	1050	1.55
0% to 60%	0.0 to 39.0	50	2.09
20% to 50%	13.0 to 32.5	3350	1.68

*Panel deflected 2.50" from original plane at 100% Positive load and 2.88" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 8A – 42.0" x 180.0" Aluminum Stacked Fixed/Awning/Fixed Window – (O/X/O)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
76°F	D	9.0 lbs, 3 oz	8'-0"	17'0"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	32.00"	11.00"	49.9 fps
2	Pass	21.00"	43.00"	49.7 fps
3	Pass	21.00"	84.00"	49.9 fps
4	Pass	32.00"	94.00"	50.0 fps
5	Pass	21.00"	126.00"	49.8 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.93
0% to 60%	0.0 to 39.0	300	2.81
50% to 80%	32.5 to 52.0	600	1.75
30% to 100%*	19.5 to 65.0	100	2.65

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.81
50% to 80%	32.5 to 52.0	1050	1.65
0% to 60%	0.0 to 39.0	50	2.10
20% to 50%	13.0 to 32.5	3350	2.28
*Panel deflected 2.25" from original plane at 100% Positive load and 2.75" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.			

Jarrett Wright and James Hayhurst, Test Technicians

Mfg Observers – Joe Zammit

IMPACT AND CYCLING TESTS

Specimen 12A – 42.0" x 72.0" Aluminum Casement Window – (X)

ASTM E1886-05/ASTM E1996-06 – Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp Of Specimen	Missile Level	Missile Weight	Missile Length	Muzzle Distance From Specimen
76°F	D	9.0 lbs, 2 oz	8'-1/4"	17'1"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	21.00"	36.00"	49.8 fps
2	Pass	9.00"	9.50"	50.1 fps
Orientation of Missile at Impact was within +/-5° of horizontal. None of the impacts penetrated the specimens. "X" measurement is from the left edge of test specimen. "Y" measurement is from the bottom edge of test specimen.				

ASTM E1886-05/ASTM E1996-06– Fatigue Load Cycling Design Pressure +65.0 psf / -65.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	13.0 to 32.5	3500	2.12
0% to 60%	0.0 to 39.0	300	1.71
50% to 80%	32.5 to 52.0	600	1.65
30% to 100%*	19.5 to 65.0	100	2.26

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	19.5 to 65.0	50	2.17
50% to 80%	32.5 to 52.0	1050	1.37
0% to 60%	0.0 to 39.0	50	1.93
20% to 50%	13.0 to 32.5	3350	2.69

*Panel deflected 1.75" from original plane at 100% Positive load and 1.75" from original plane at 100% Negative load. At the completion of cycles the door panel was operable. There were no tears in the film. In our opinion, the tape and film used to seal for air leakage did not influence the results of the test.

Conditions, Terms, and General Notes Regarding These Tests

The product tested Has Been compared to the detailed drawing, bill of materials and fabrication information supplied by the client so named herein. Our analysis, which includes dimensional and component description comparisons, indicate the tested product and engineering information supplied by the client "Are Equivalent". The report and representative samples will be retained for four years from the date of initial test.

These test results were obtained by employing all requirements of the designated test methods with no Deviations unless explicitly noted in test report. The test results and specimen supplied for testing are in compliance with the reference.

The test results are specific to the product tested by this laboratory and of the sample supplied by the client named herein, and they relate to no other product either manufactured by the client, a fabricator of the client or of the client or of installed field performance.

This test report does not constitute certification of this product, but only that the above test results were obtained using the designated test methods and they indicate compliance with the performance requirements (paragraphs as listed) of the above referenced specifications.

Testing Evaluation Laboratories, Inc. makes no opinions or endorsements regarding this product and its performance. This report may not be reproduced or quoted in partial form without the expressed written approval of Testing Evaluation Laboratories, Inc.

Testing Evaluation Laboratories, Inc.'s letter, reports, its name or insignia or mark are for the exclusive use of the client so named herein and any other use is strictly prohibited. The report, letters and the name of Testing Evaluation Laboratories, Inc., its seal or mark shall not be used in any circumstance to the general public or in any advertising.

Limitation of liability: Due diligence was used in performing the tests and reporting the results. By acceptance of this report, this client agrees to hold harmless and indemnify Testing Evaluation Laboratories, Inc., its employees, sub-contractors, officers and owners against all claims and demands of any kind whatsoever, which arise out of or in any manner connected with the performance of work referred to herein.

Testing Evaluation Laboratories, Inc.



Vivian K. Wright,
President

Revision Log

Rev No.	Date	Page(s)	Revision(s)
0	10/21/2013	NA	Original Report Issue

TABLE OF CONTENTS

SHEET #	DESCRIPTION
1	Table of contents
2	Test elevation
3	Test elevation
4	Horizontal and vertical cross sections
5	Horizontal and vertical cross sections
6	Horizontal cross sections
7	Horizontal and vertical cross sections
8	Frame anchoring
9	Frame anchoring
10	Frame anchoring
11	Components
12	Glazing details
13	Bill of materials

Testing Evaluation Laboratories in
 Specimen Complies with Drawing
 Deviations Noted - TEL # 21920918
 Date 10-31-13 Verified by *gao*

PRODUCT:

**FLEETWOOD
 KONA 3800
 CASEMENT WINDOW**

PART OR ASSEMBLY:

TABLE OF CONTENTS

NO.	DATE	BY

REVISIONS



DATE: 9/25/13

SCALE: N.T.S.

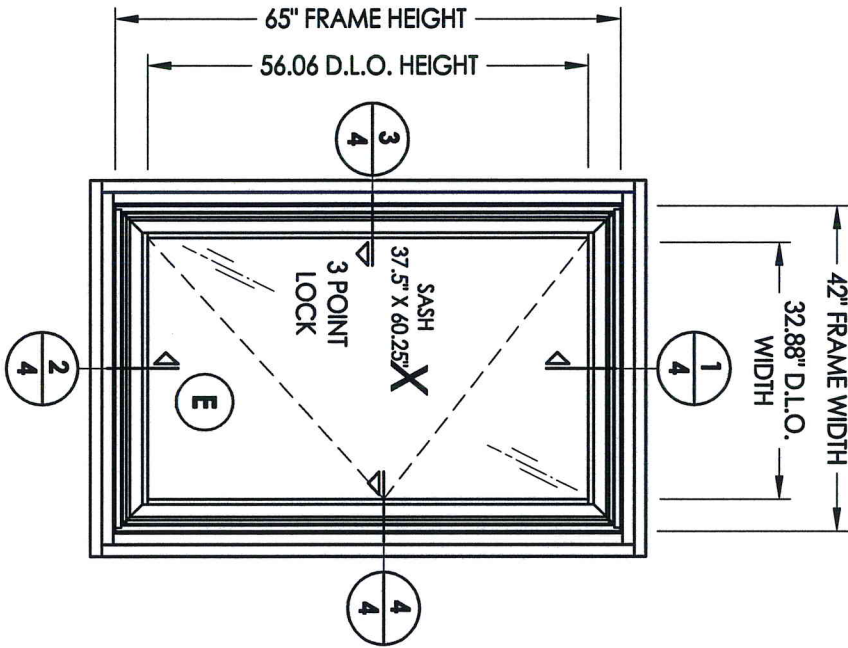
DWG. BY: JK

CHK. BY: LFS

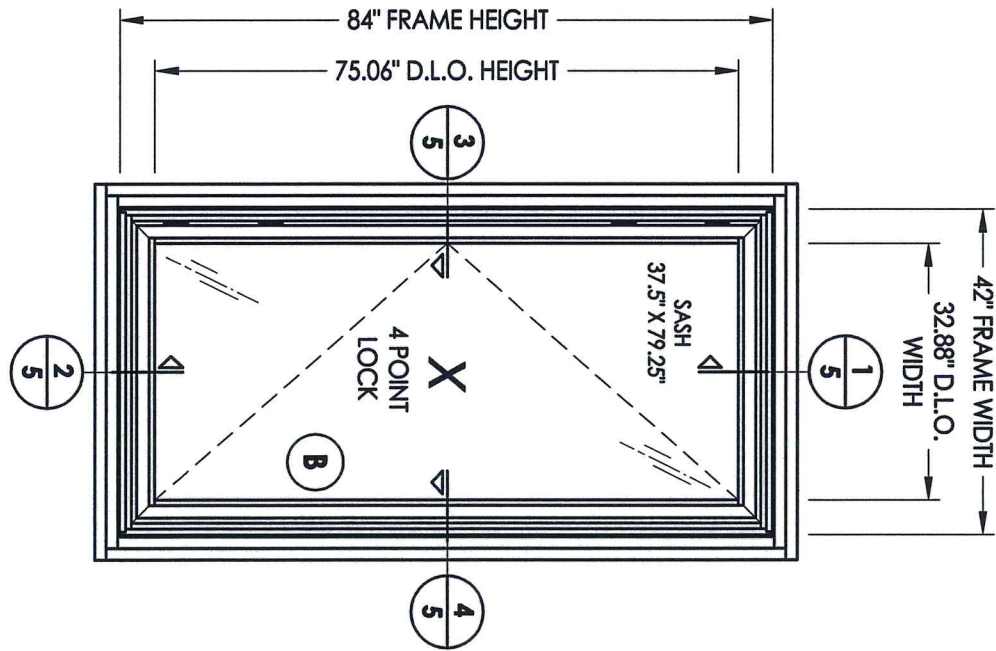
DRAWING NO.:

L-7031

SHEET 1 OF 13



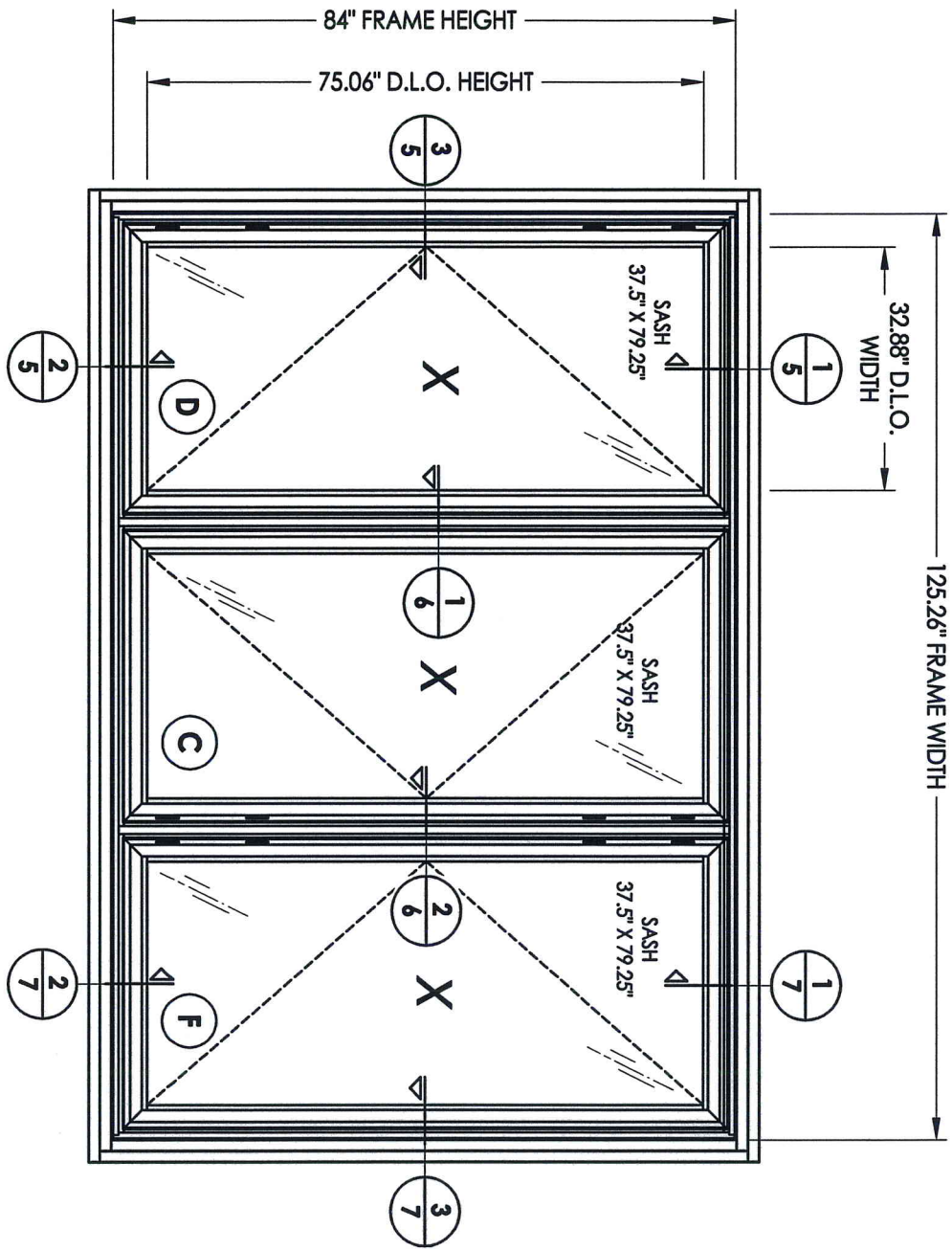
SPEC. #3, 3A



SPEC. #1, 1A, 1B, 1C


Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gpa*

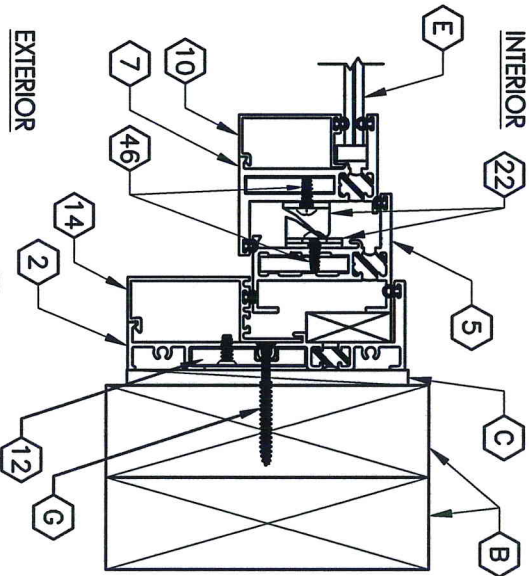
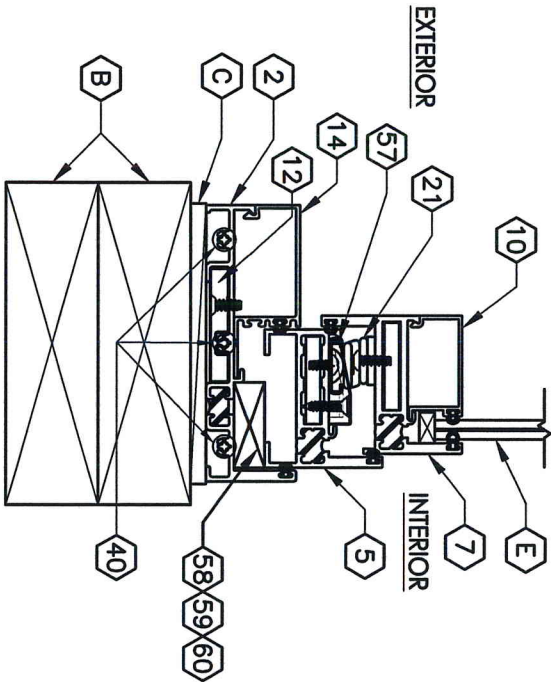
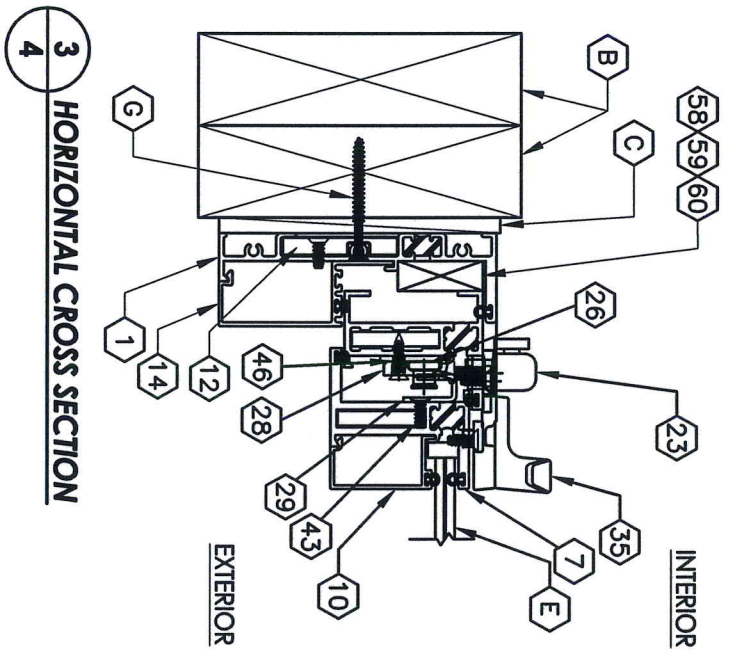
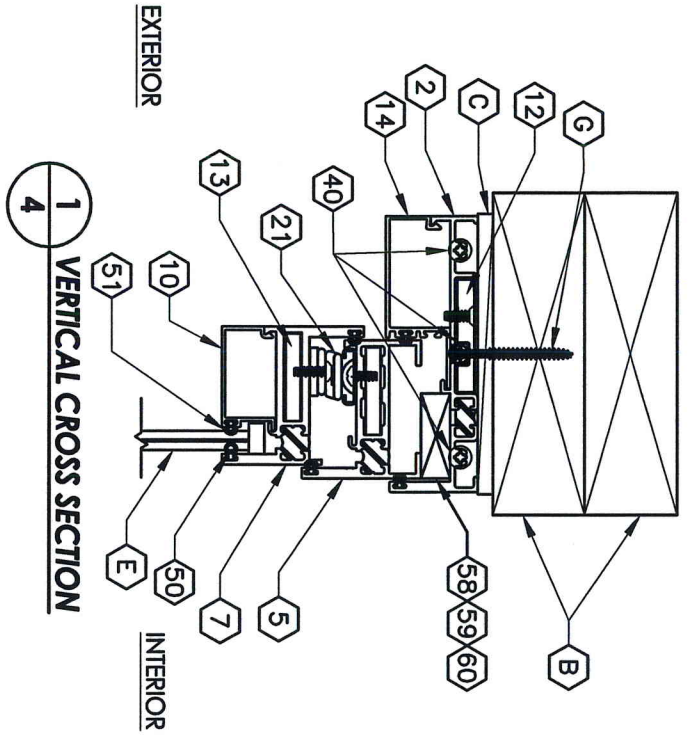
R ² W BUILDING CONSULTANTS, INC. 813.659.9197	DATE: 9/25/13	SCALE: N.T.S.	DWG. BY: JK	CHK. BY: LFS	DRAWING NO.: L-7031	SHEET 2 OF 13
	PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW PART OR ASSEMBLY: TEST ELEVATION					
NO.		DATE		BY		REVISIONS



SPEC. #4, 4A

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gjd*

DATE: 9/25/13		SCALE: N.T.S.		DWC. BY: JK		CHK. BY: LFS		DRAWING NO.: L-7031		SHEET 3 OF 13	
 RWB BUILDING CONSULTANTS, INC. 813.659.9197		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW		PART OR ASSEMBLY: TEST ELEVATION		NO.		DATE		BY	
REVISIONS											



2
4
VERTICAL CROSS SECTION

1
4
VERTICAL CROSS SECTION

3
4
HORIZONTAL CROSS SECTION

4
4
HORIZONTAL CROSS SECTION

Testing Evaluation Laboratories Inc

Specimen Complies with Drawing

Deviations Noted - TEL # 01990818

Date: 10-21-12 verified by: gao

PRODUCT:

FLEETWOOD
KONA 3800
CASEMENT WINDOW

PART OR ASSEMBLY:

HORIZONTAL AND VERTICAL
CROSS SECTIONS

NO.	DATE	REVISIONS	BY

RW BUILDING
CONSULTANTS, INC.
813.659.9197

DATE: 9/25/13

SCALE: N.T.S.

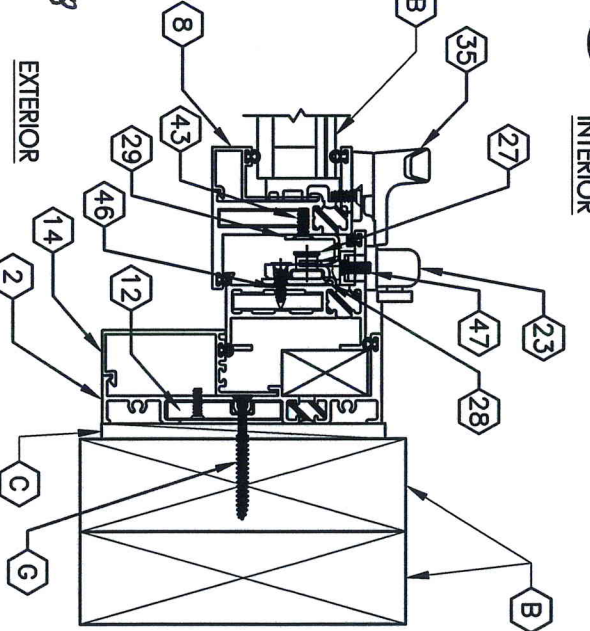
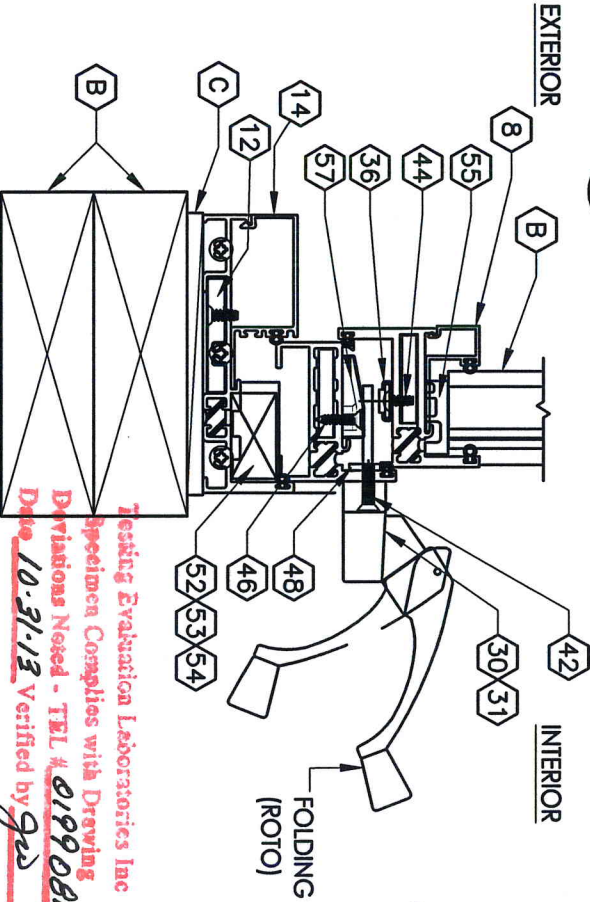
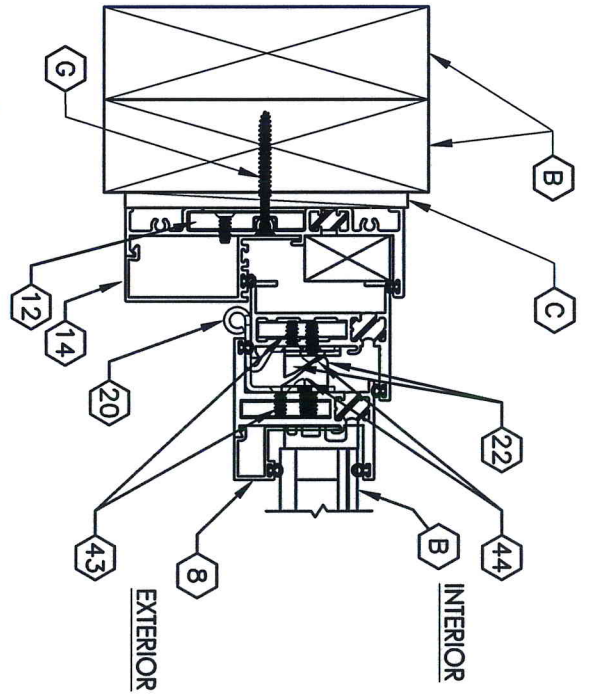
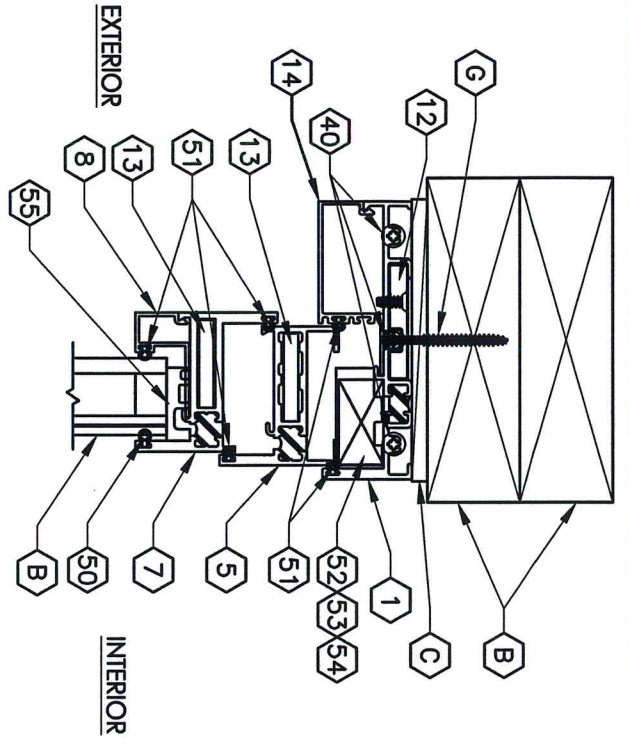
DWG. BY: JK

CHK. BY: LFS

DRAWING NO.:

L-7031

SHEET 4 OF 13

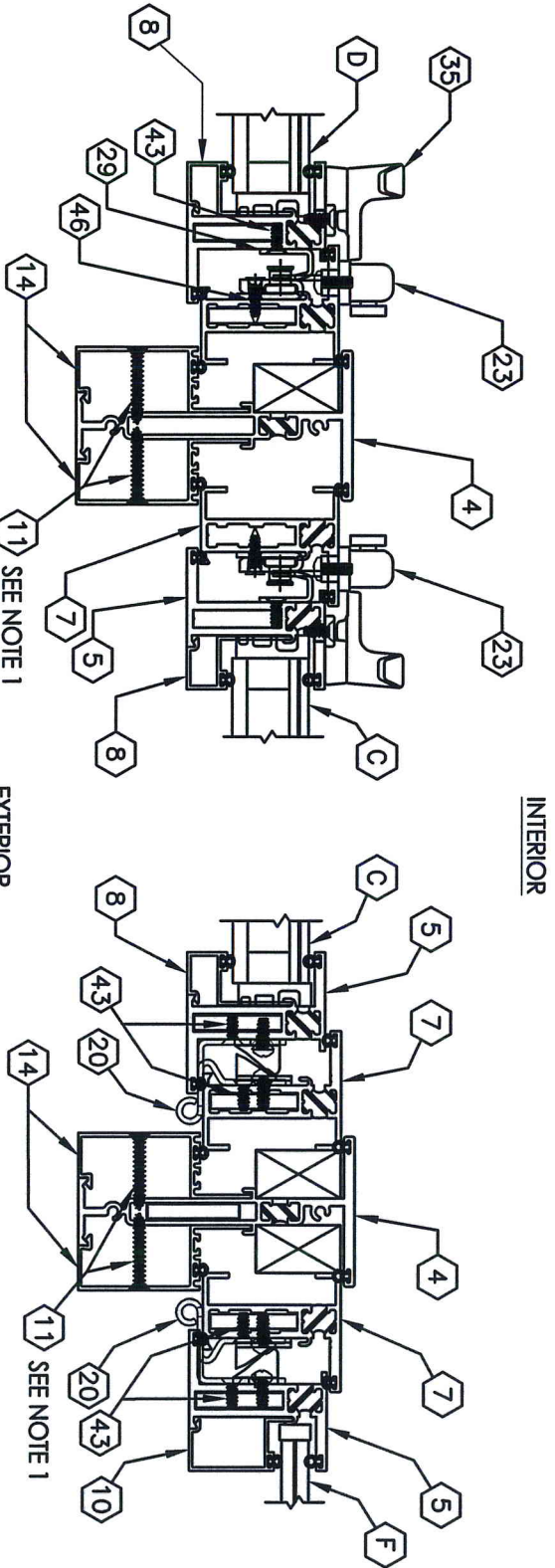


Testing Evaluation Laboratories Inc
 Specimens Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by gjs

PRODUCT:		FLEETWOOD KONA 3800 CASEMENT WINDOW	
PART OR ASSEMBLY:		HORIZONTAL AND VERTICAL CROSS SECTIONS	

NO.	DATE	REVISIONS	BY

BUILDING CONSULTANTS, INC. 813.659.9197	
DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7031
SHEET	5 OF 13



1 HORIZONTAL CROSS SECTION
6

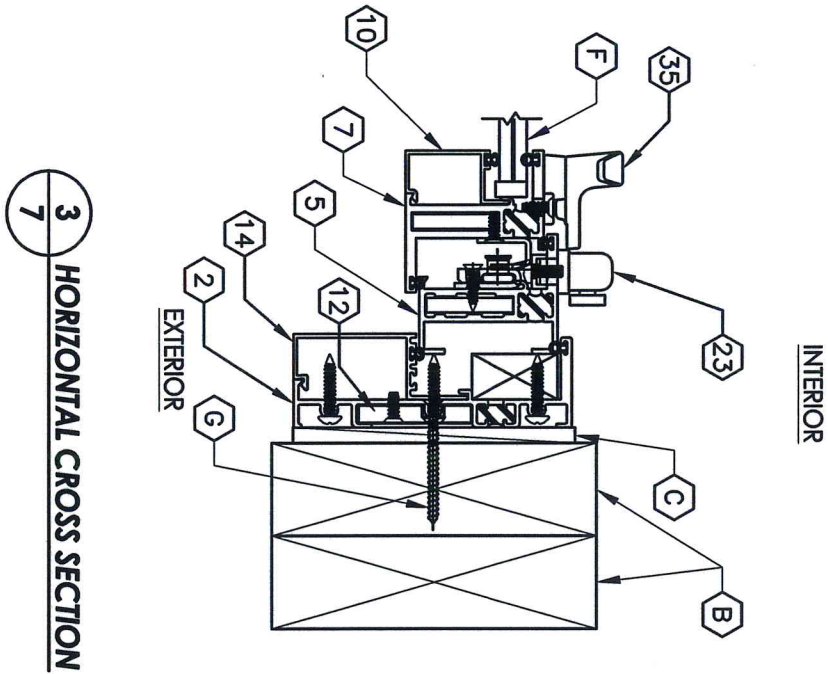
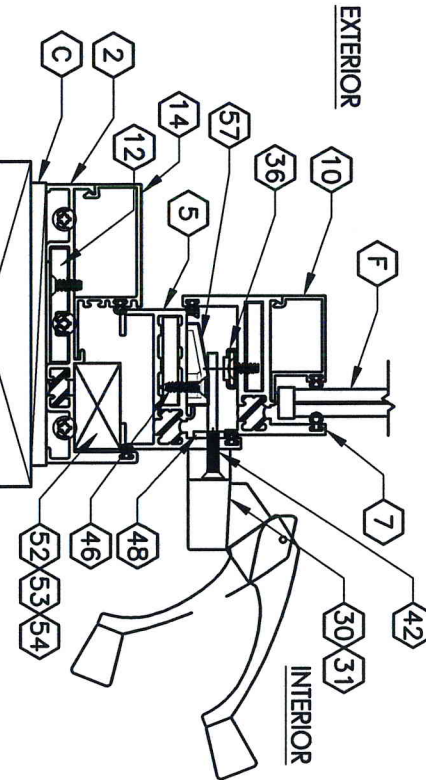
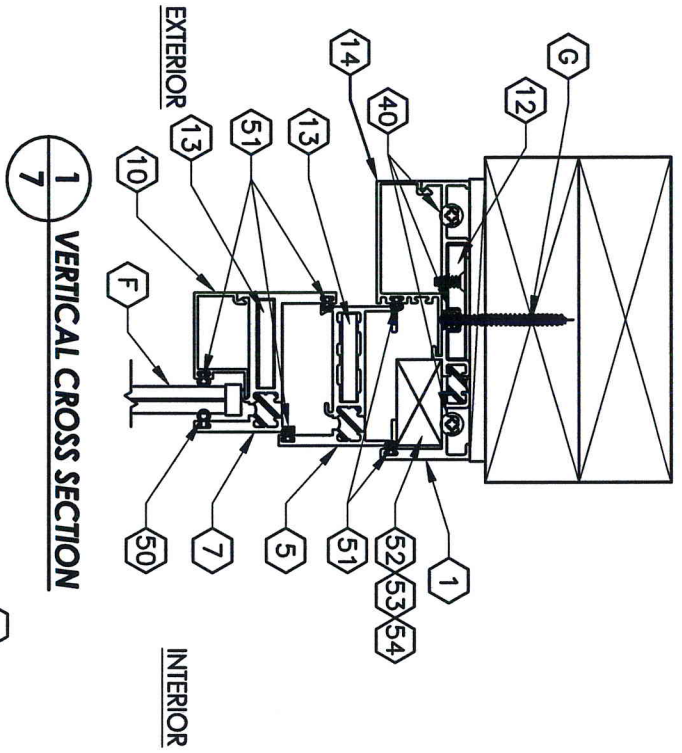
2 HORIZONTAL CROSS SECTION
6

NOTE:
1. Item #11 located 4" from each end then 12" on center for (8) total.

Testing Evaluation Laboratories Inc
Specimen Complies with Drawing
Deviations Noted - TEL # 01990818
Date 10.31.13 Verified by jzw

DATE: 9/25/13		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
SCALE: N.T.S.		PART OR ASSEMBLY: HORIZONTAL CROSS SECTIONS	
DWG. BY: JK		BY	
CHK. BY: LFS		NO.	
DRAWING NO.: L-7031		DATE	
SHEET 6 OF 13		REVISIONS	

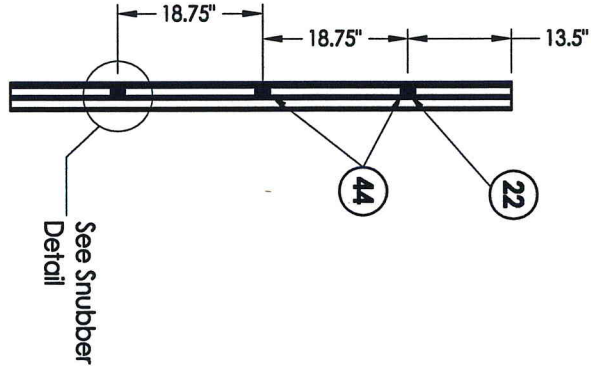
RW BUILDING CONSULTANTS, INC.
813.659.9197



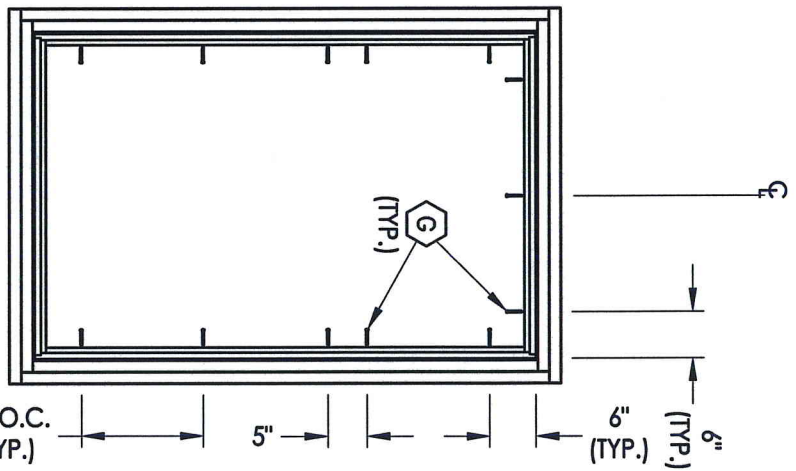
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TBL # 01990818
 Date 10-31-13 Verified by *gms*

DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7031 SHEET 7 OF 13		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
PART OR ASSEMBLY: HORIZONTAL AND VERTICAL CROSS SECTIONS		NO. DATE BY	
REVISIONS			

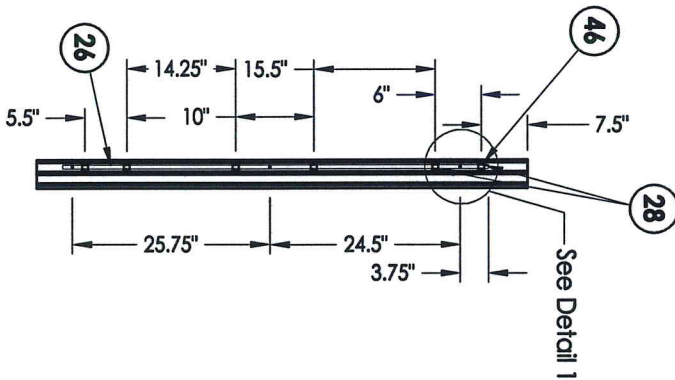
RWB BUILDING
 CONSULTANTS, INC.
 813.659.9197



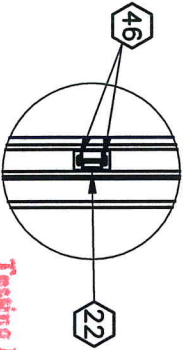
SNUBBERS JAMB



FRAME ANCHORING
2X buck construction

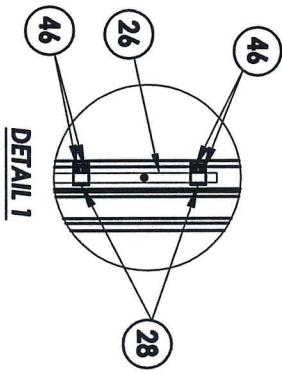


LOCK JAMB
Locking Points (3)



SNUBBER DETAIL

Testing Evaluation Laboratories Inc
Specimen Complies with Drawing
Deviations Noted - TEL # 01990818
Date 10-31-13 Verified by JLD



DETAIL 1

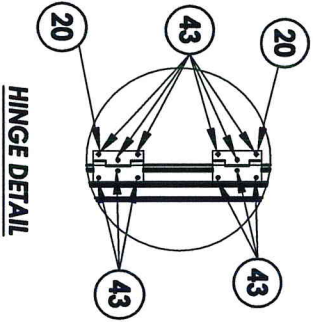
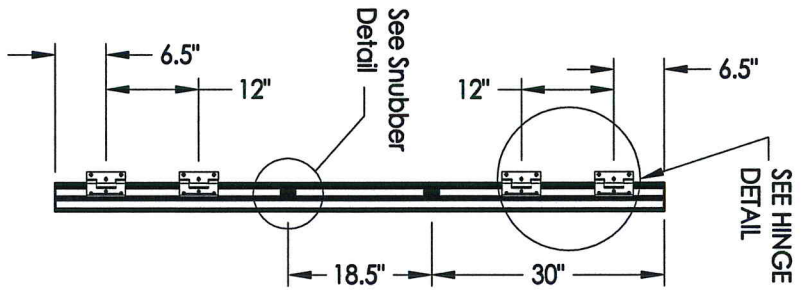
PRODUCT:
**FLEETWOOD
KONA 3800
CASEMENT WINDOW**

PART OR ASSEMBLY:
FRAME ANCHORING

NO.	DATE	REVISIONS	BY

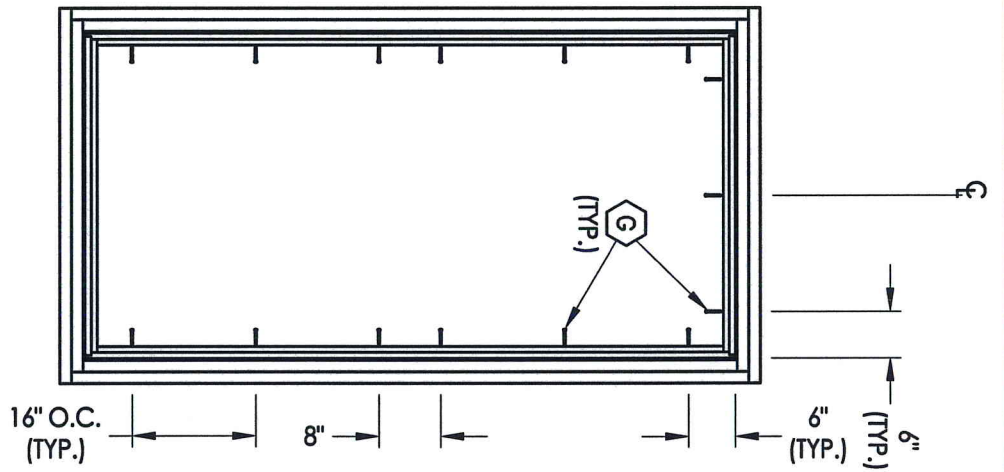
RW BUILDING CONSULTANTS, INC.
813.659.9197

DATE: 9/25/13
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: L-7031
SHEET 8 OF 13



HINGE JAMB

HINGE DETAIL



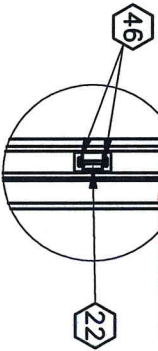
FRAME ANCHORING

2X buck construction Laboratories Inc

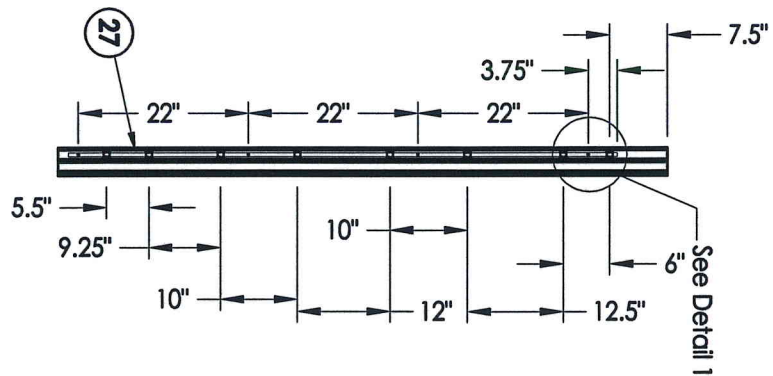
Specimen Complies with Drawing

Deviations Noted - TEL. # 01992818

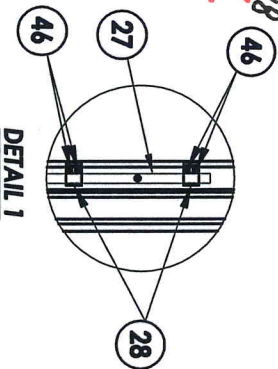
10-31-13 Verified by *gms*



SNUBBER DETAIL



LOCK JAMB
Locking Points (4)



DETAIL 1

PRODUCT:

**FLEETWOOD
KONA 3800
CASEMENT WINDOW**

PART OR ASSEMBLY:

FRAME ANCHORING

NO.	DATE	BY	REVISIONS

R^gM BUILDING CONSULTANTS, INC.
813.659.9197

DATE: 9/25/13

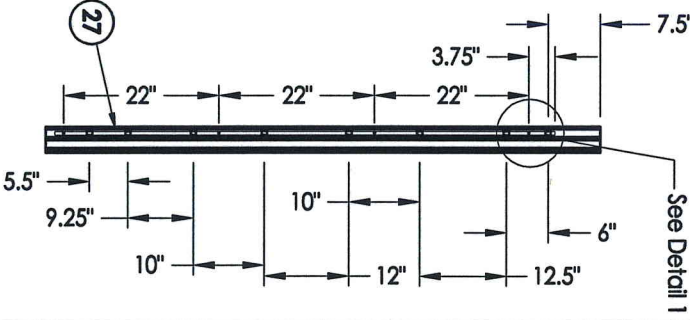
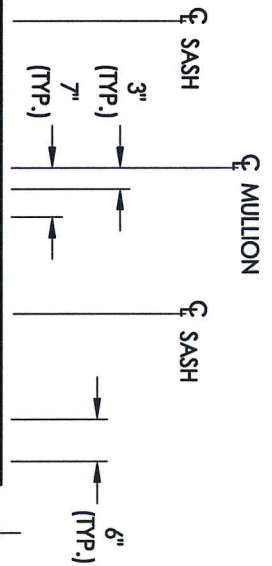
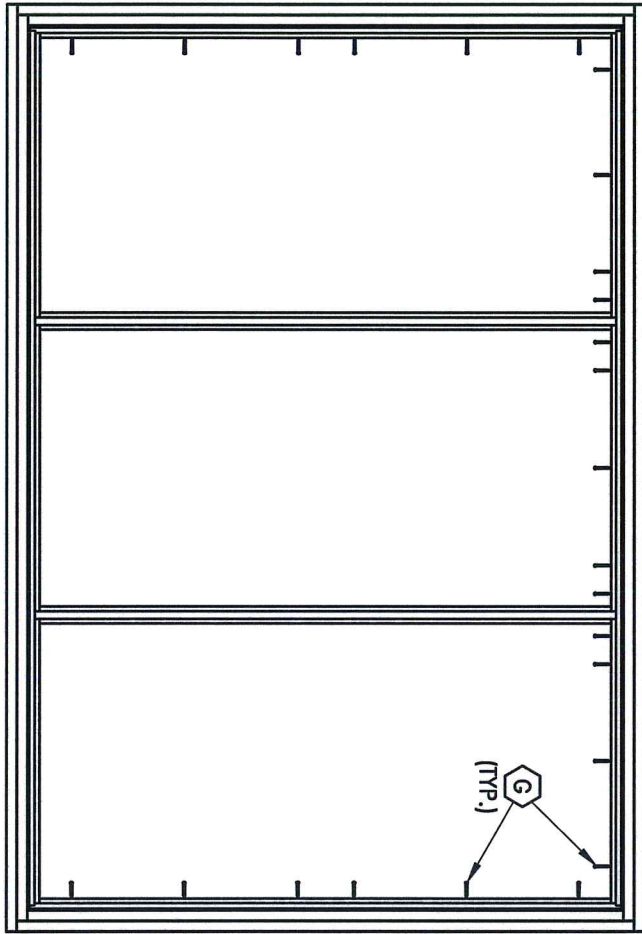
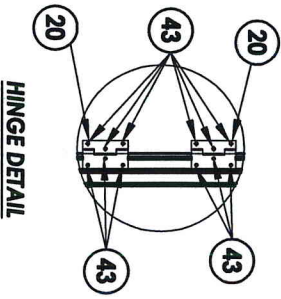
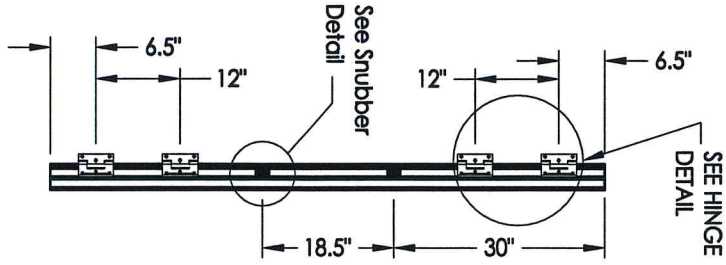
SCALE: N.T.S.

DWG. BY: JK

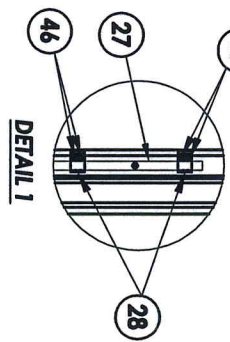
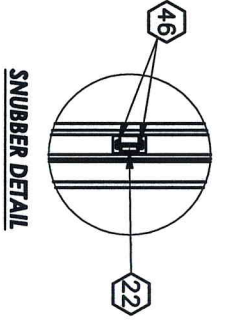
CHK. BY: LFS

DRAWING NO.: L-7031

SHEET 9 OF 13



Testing Evaluation Laboratories Inc.
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 10-31-13 Verified by *gju*
 FRAME ANCHORING
 2X buck construction

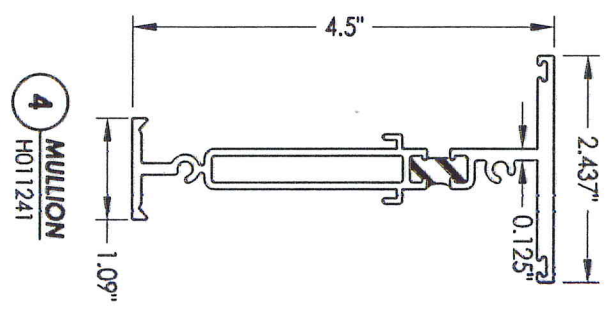
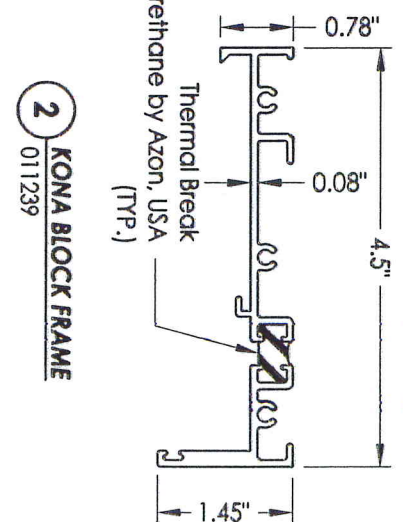
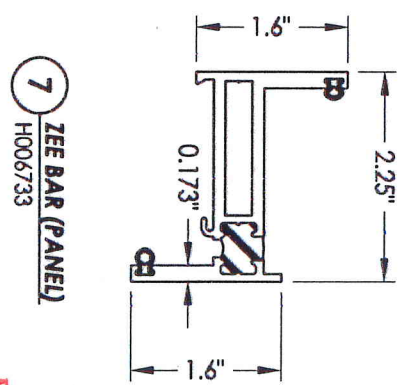
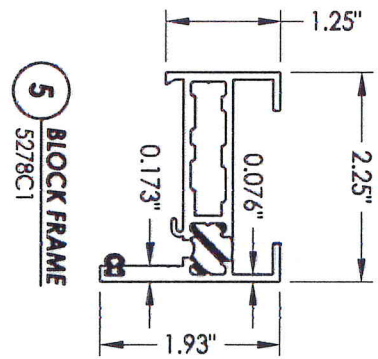
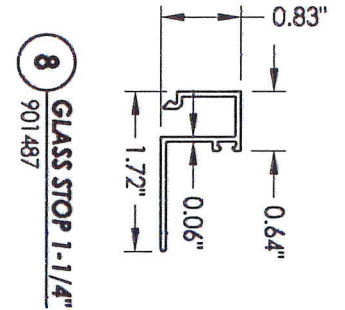
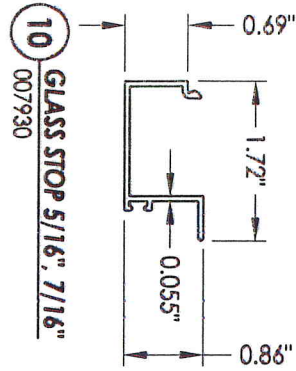
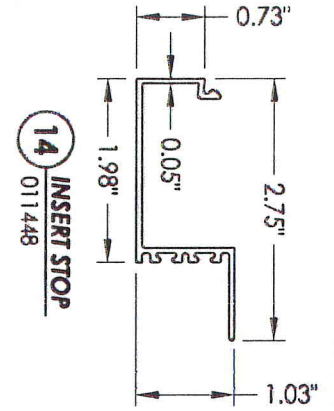


DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7031
 SHEET 10 OF 13

RM BUILDING CONSULTANTS, INC.
 813.659.9197

NO.	DATE	REVISIONS	BY

PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW
 PART OR ASSEMBLY: FRAME ANCHORING



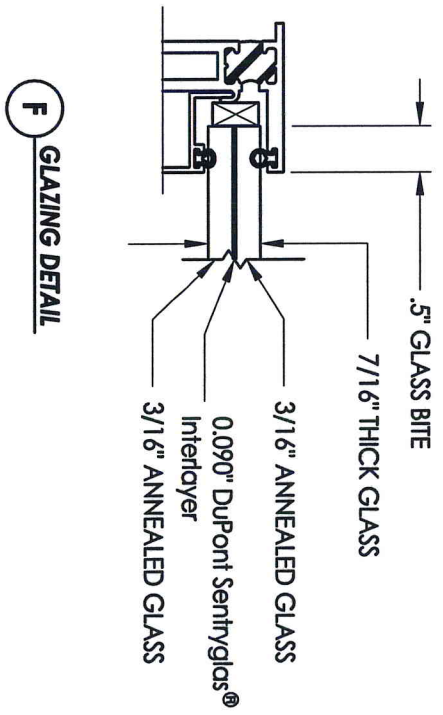
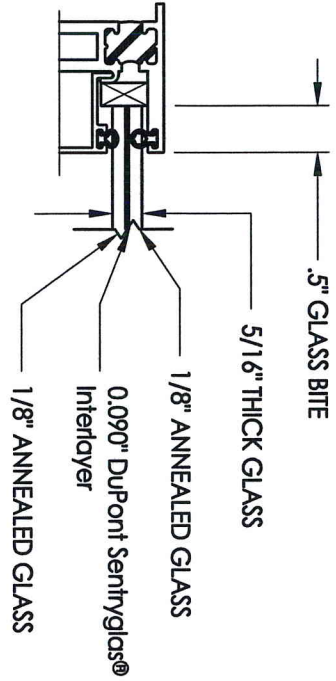
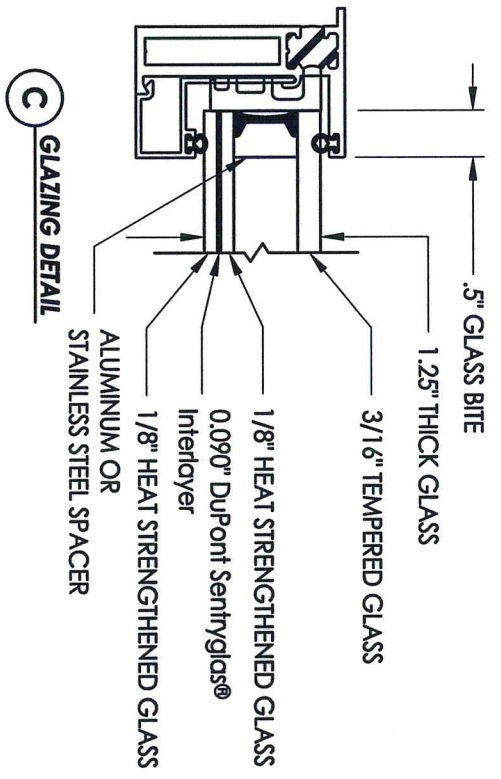
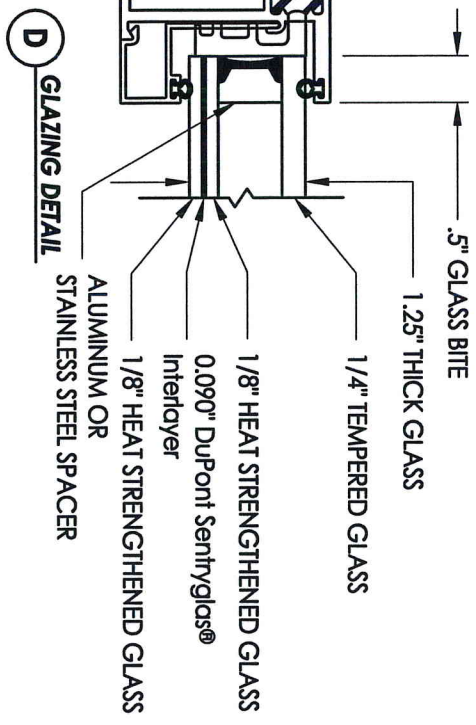
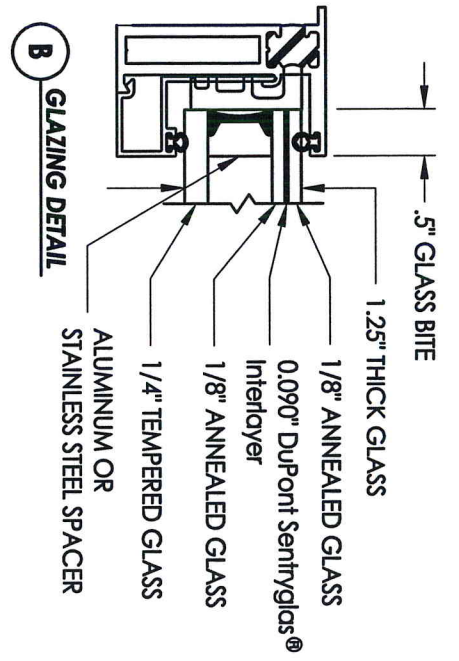
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gsl*

PRODUCT:	FLEETWOOD KONA 3800 CASEMENT WINDOW
PART OR ASSEMBLY:	COMPONENTS

NO.	DATE	REVISIONS	BY

RW BUILDING CONSULTANTS, INC.
 813.659.9197

DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7031
SHEET	11 OF 13



E GLAZING DETAIL

D GLAZING DETAIL

C GLAZING DETAIL

F GLAZING DETAIL

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gru*

PRODUCT:		FLEETWOOD KONA 3800 CASEMENT WINDOW	
PART OR ASSEMBLY:		GLAZING DETAILS	
NO.	DATE	BY	
REVISIONS			

R^{CM} BUILDING
 CONSULTANTS, INC.
 813.659.9197

DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7031
SHEET	12 OF 13

BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL
B	2X BUCK SG >= 0.55	WOOD
C	1/4" MAX. SHIM SPACE	-
G	#10 X 2" PPH WOOD SCREW	STEEL
2	KONA BLOCK FRAME	6063-T6 ALUM
4	MULLION	6063-T6 ALUM
5	WESTWOOD BLOCK FRAME	6063-T6 ALUM
7	WESTWOOD ZEE BAR (PANEL)	6063-T6 ALUM
8	GLASS STOP (1-1/4")	6063-T6 ALUM
9	GLASS STOP (1/4")	6063-T6 ALUM
10	GLASS STOP (5/16", 7/16")	6063-T6 ALUM
11	#8 X 1-1/2" PPH SMS	STEEL
12	SHEAR BLOCK	ALUM
13	CORNER KEY	ALUM
14	INSERT STOP	6063-T6 ALUM
20	SS. BUTT HINGE	SS
21	4 BAR HINGE	SS
22	SNUBBER-COMMERCIAL PULL-IN BLOCK	SS
23	MULTIPOINT LOCK HANDLE	SS
26	3 POINTS LOCKING BAR	SS
27	4 POINTS LOCKING BAR	SS
28	TIE BAR GUIDE	-
29	KEEPER	SS
30	CASEMENT ROTOR GEAR 13.5"	SS
35	CAM HANDLE / STRIKE PLATE	SS

36	CASEMENT SS. TRACK	SS
40	#10 X 1" PPH SMS	STEEL
42	MACHINE SCREW NO 10-32, FHP .75"	STEEL
43	SCREW NO 10, UFHP .5"	STEEL
44	SCREW NO 8, PHP, .50"	STEEL
46	SCREW NO 8, FHP, .750"	STEEL
47	MACHINE SCREW NO 10-32, PHP .5"	STEEL
48	BACK UP NUTS	STEEL
50	BULB VINYL (EPDM 70 DUROMETER)-TREMCO	-
51	MINI BULB VINYL(EPDM 70 DUROMETER)-TREMCO	-
52	WOOD BLOCK .750" X 1.250"	-
53	ALUMINUM BLOCK .750" X 1.250"	-
54	PVC BLOCK .750" X 1.250"	-
55	SETTING BLOCK	-
56	SETTING BLOCK 4" x 1/4" x 1"	-
57	PIVOT SHIM	-
58	WOOD BLOCK .50" X 1.250"	-
59	ALUMINUM BLOCK .50" X 1.250"	-
60	PVC BLOCK .50" X 1.250"	-
61	SETTING BLOCK 4" x 1/8" x 1"	-

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gms*

PRODUCT:

FLEETWOOD
 KONA 3800
 CASEMENT WINDOW

PART OR ASSEMBLY:

BILL OF MATERIALS

NO.	DATE	BY

REVISIONS



RW BUILDING
 CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13

SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

DRAWING NO.:

L-7031

SHEET 13 OF 13

TABLE OF CONTENTS

SHEET #	DESCRIPTION
1	Table of contents
2	Test elevation
3	Vertical cross sections
4	Horizontal cross sections
5	Horizontal cross sections
6	Horizontal cross sections
7	Vertical cross sections
8	Frame anchoring
9	Frame anchoring
10	Components
11	Glazing details
12	Bill of materials

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by gws

PRODUCT:
 FLEETWOOD
 KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
 TABLE OF CONTENTS

NO.	DATE	BY

REVISIONS



DATE: 9/25/13

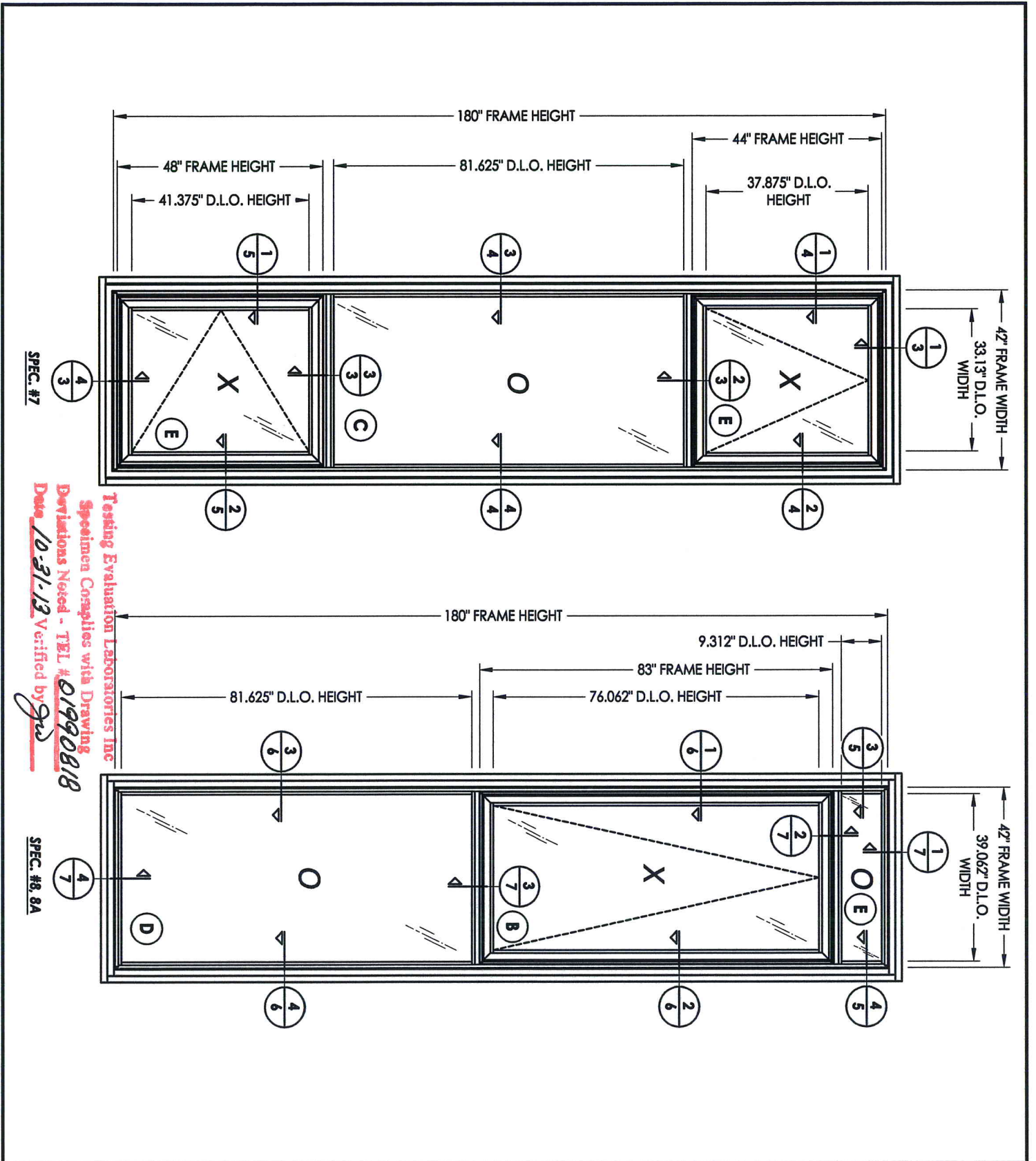
SCALE: N.T.S.

DWG. BY: JK

CHK. BY: LFS

DRAWING NO.: L-7032

SHEET 1 OF 12

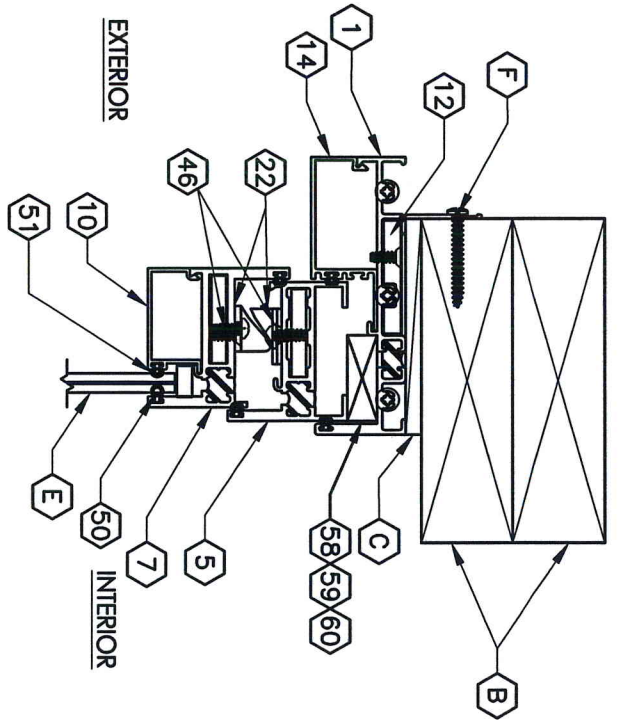


SPEC. #7

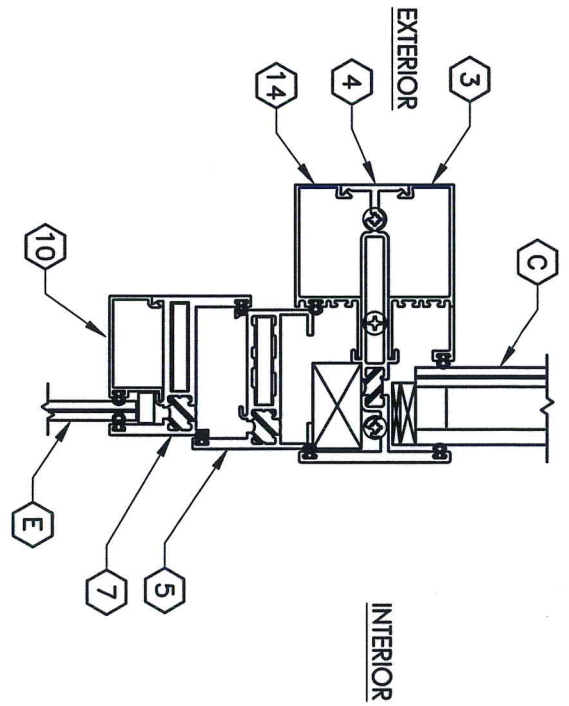
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gjd*

SPEC. #8, 8A

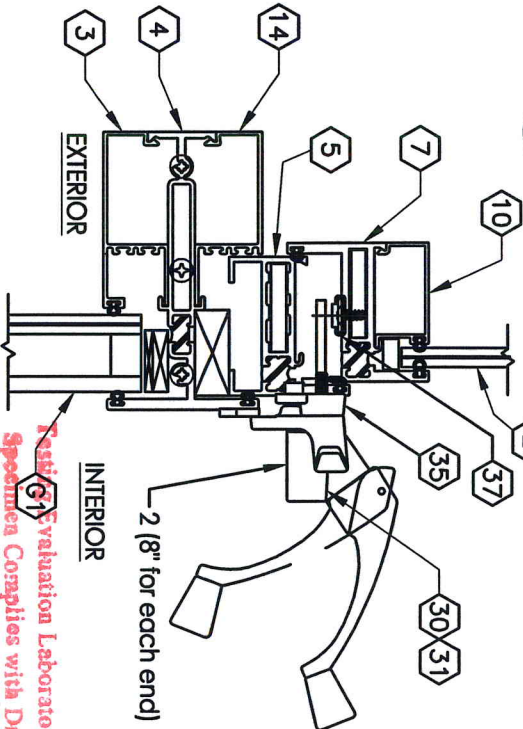
DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7032 SHEET 2 OF 12		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
		PART OR ASSEMBLY: TEST ELEVATION	
NO. DATE REVISIONS BY		NO. DATE REVISIONS BY	



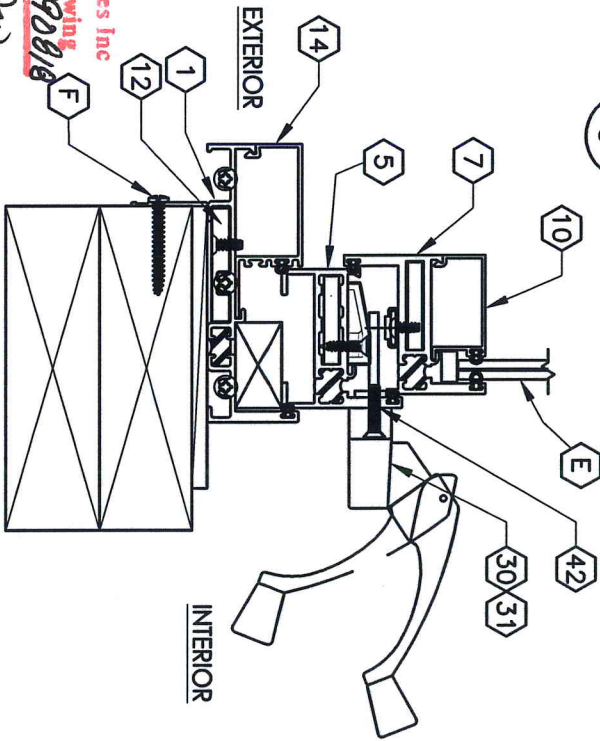
1
3
VERTICAL CROSS SECTION



2
3
VERTICAL CROSS SECTION



3
3
VERTICAL CROSS SECTION



4
3
VERTICAL CROSS SECTION

Test Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gms*

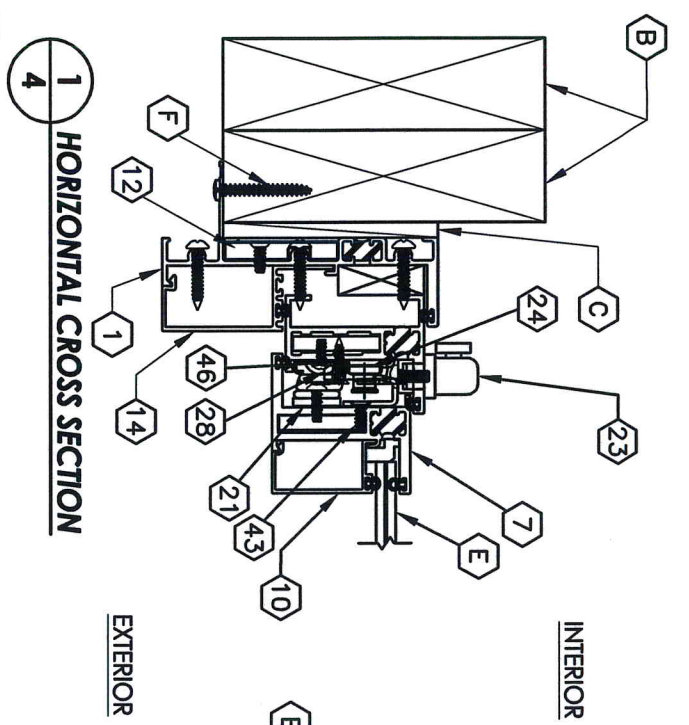
PRODUCT:
 FLEETWOOD
 KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
 VERTICAL
 CROSS SECTIONS

NO.	DATE	REVISIONS	BY

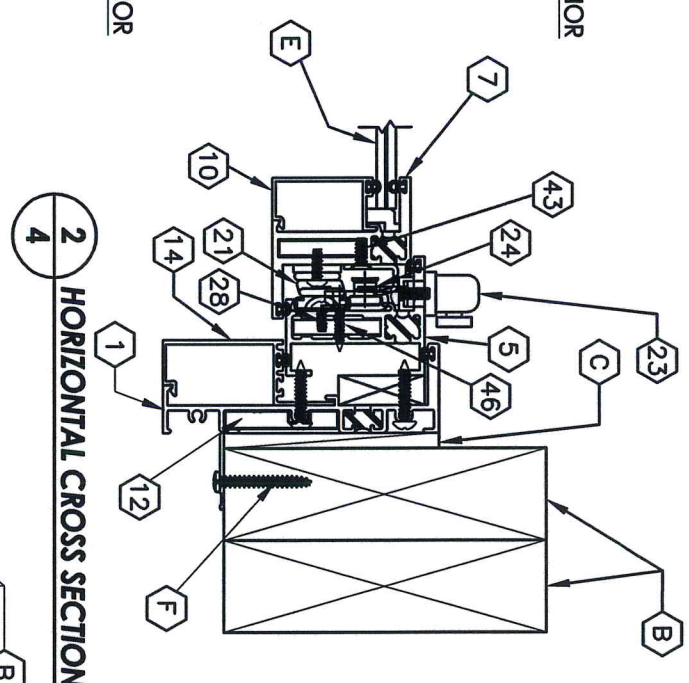
RW BUILDING CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032
 SHEET 3 OF 12



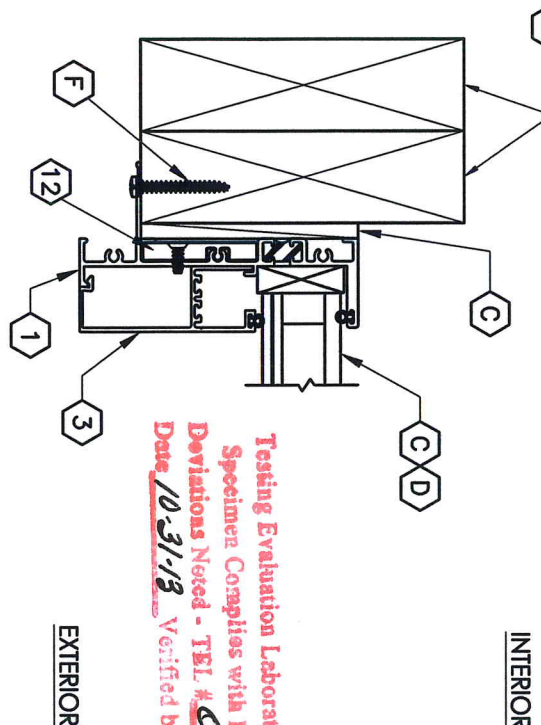
1
4
HORIZONTAL CROSS SECTION

INTERIOR
EXTERIOR



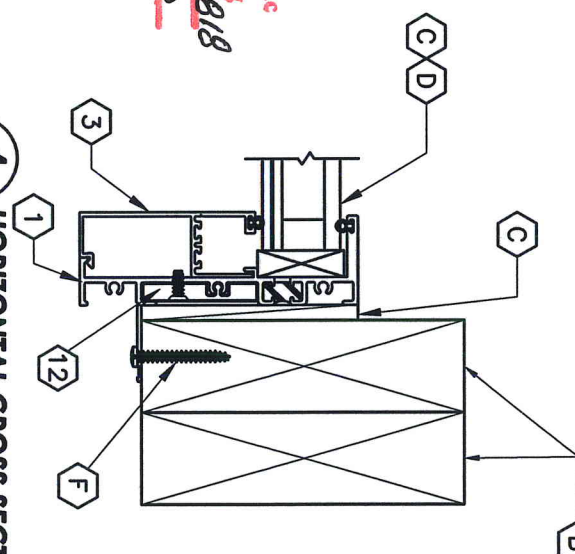
2
4
HORIZONTAL CROSS SECTION

INTERIOR
EXTERIOR



3
4
HORIZONTAL CROSS SECTION

INTERIOR
EXTERIOR



4
4
HORIZONTAL CROSS SECTION

INTERIOR
EXTERIOR

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL. # 01990818
 Date 10-31-13 Verified by *[Signature]*

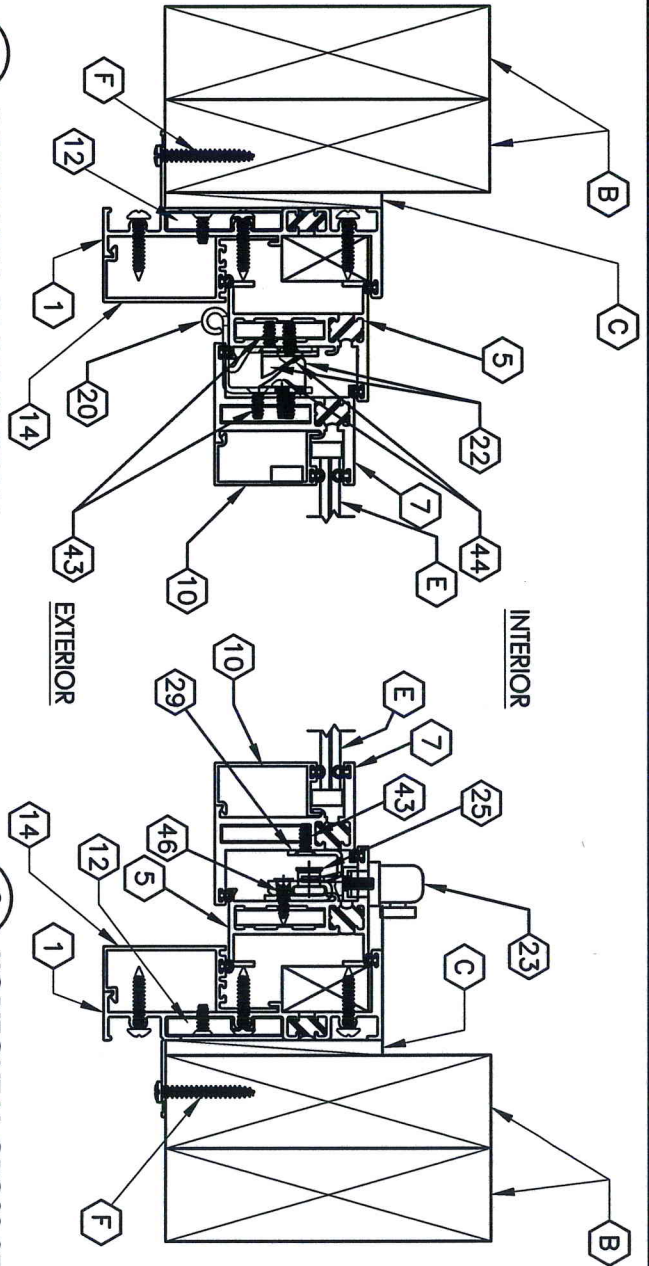
PRODUCT:
**FLEETWOOD
 KONA 3800 CASEMENT WINDOW**

PART OR ASSEMBLY:
**HORIZONTAL
 CROSS SECTIONS**

NO.	DATE	BY	REVISIONS

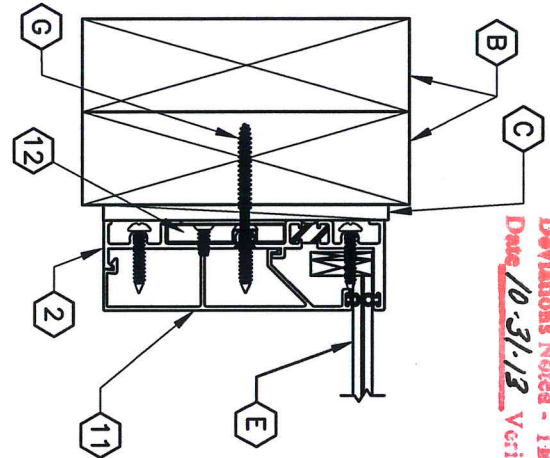
RW BUILDING
 CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032
 SHEET 4 OF 12

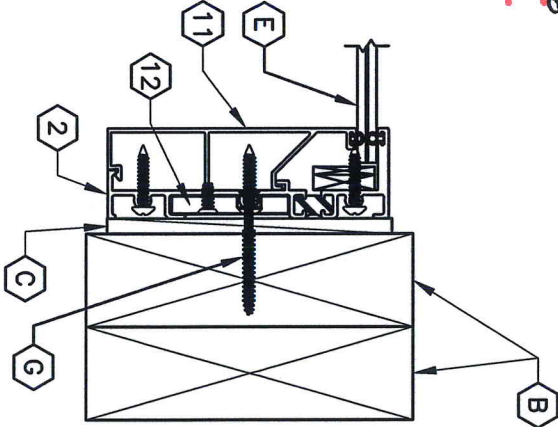


1 HORIZONTAL CROSS SECTION

Evolution Laboratories Inc
 Specimen Correlates with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *[Signature]*



3 HORIZONTAL CROSS SECTION



4 HORIZONTAL CROSS SECTION

2 HORIZONTAL CROSS SECTION

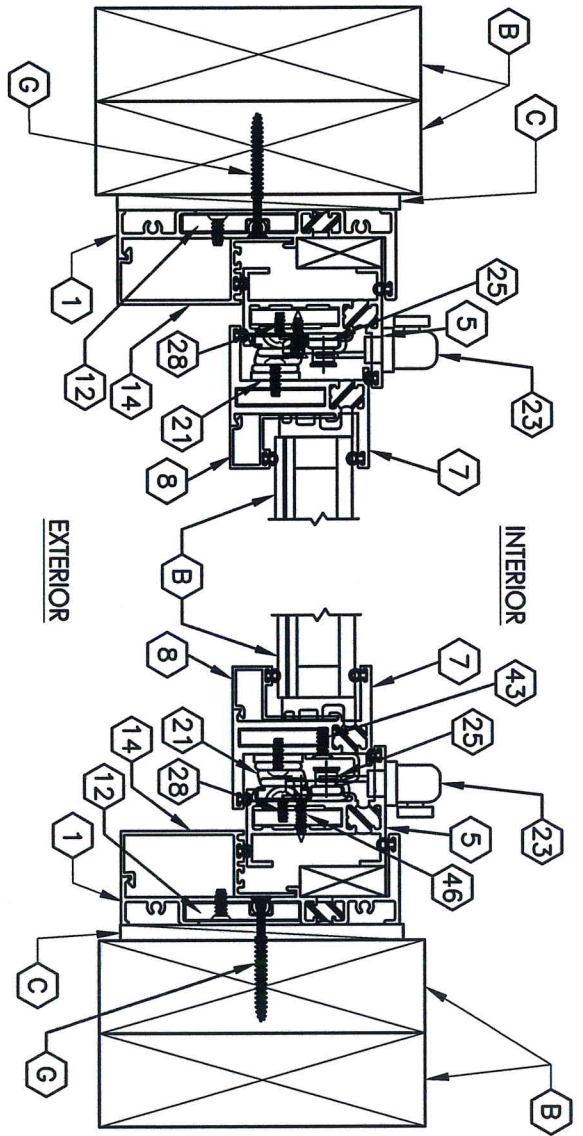
PRODUCT:		FLEETWOOD KONA 3800 CASEMENT WINDOW	
PART OR ASSEMBLY:		HORIZONTAL CROSS SECTIONS	

NO.	DATE	BY	REVISIONS

R_W BUILDING
 CONSULTANTS, INC.
 813.659.9197

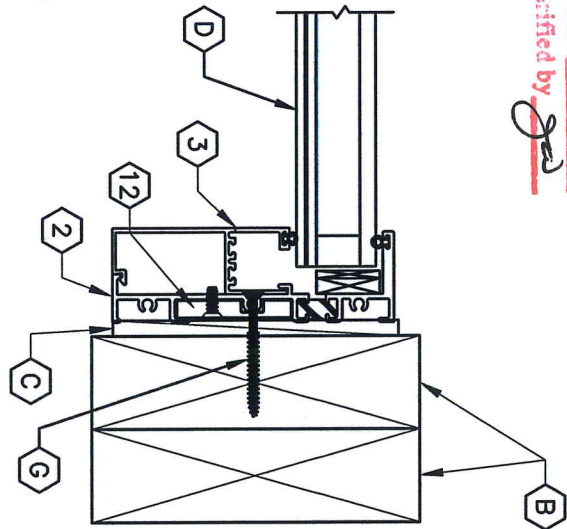
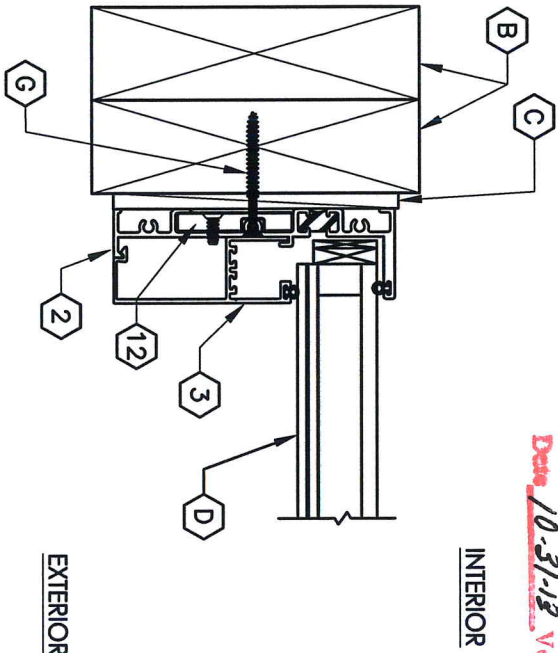
DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7032
SHEET	5 of 12

1
6
HORIZONTAL CROSS SECTION



2
6
HORIZONTAL CROSS SECTION

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *[Signature]*



3
6
HORIZONTAL CROSS SECTION

4
6
HORIZONTAL CROSS SECTION

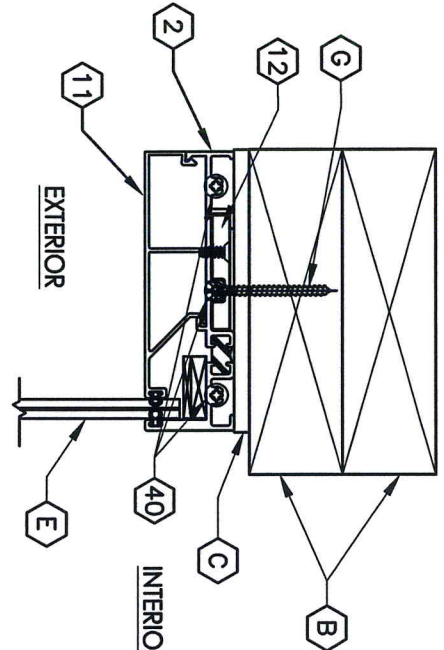
PRODUCT:
 FLEETWOOD
 KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
 HORIZONTAL
 CROSS SECTIONS

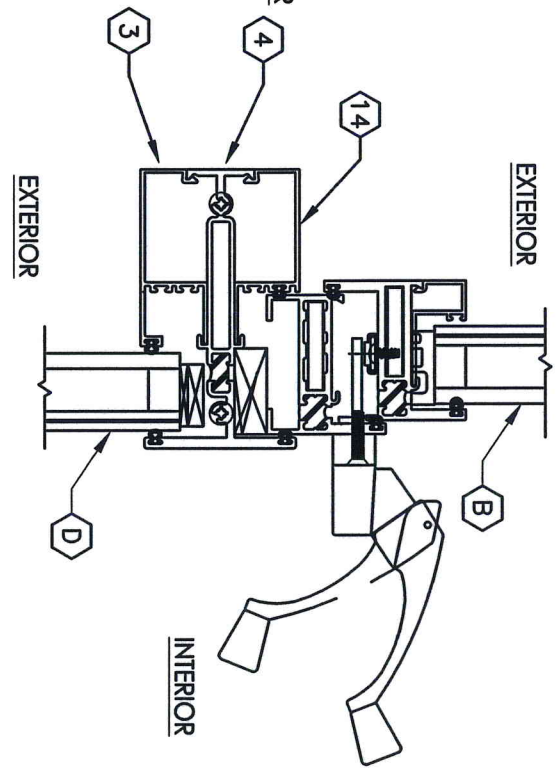
NO.	DATE	REVISIONS	BY

R_M BUILDING
 CONSULTANTS, INC.
 813.659.9197

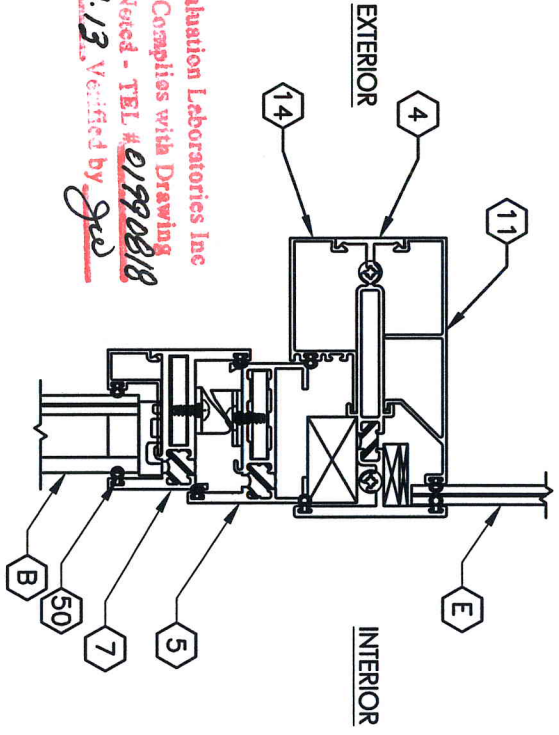
DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032
 SHEET 6 OF 12



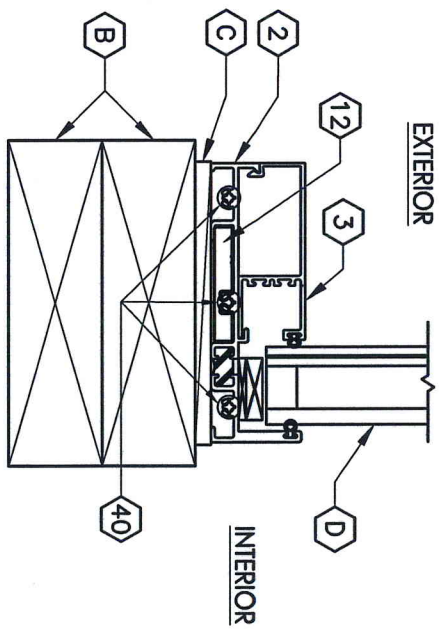
1
7
VERTICAL CROSS SECTION



3
7
VERTICAL CROSS SECTION



2
7
VERTICAL CROSS SECTION



4
7
VERTICAL CROSS SECTION

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10.31.13 Verified by *gpc*

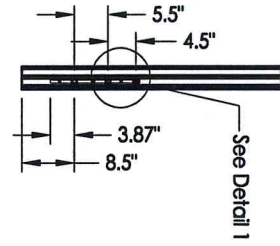
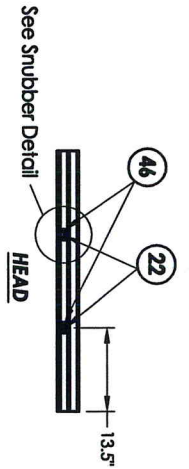
PRODUCT:
 FLEETWOOD
 KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
 VERTICAL
 CROSS SECTIONS

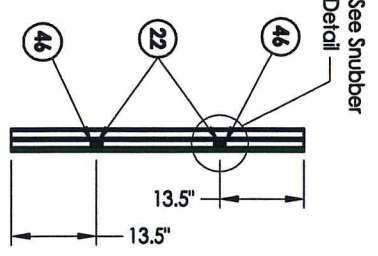
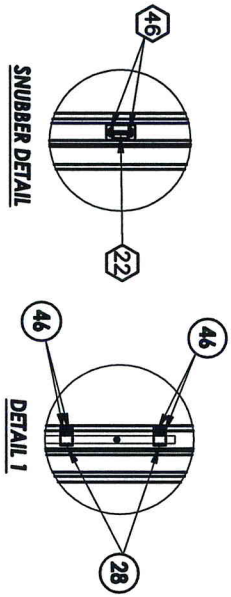
R_{GM} BUILDING
 CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032
 SHEET 7 of 12

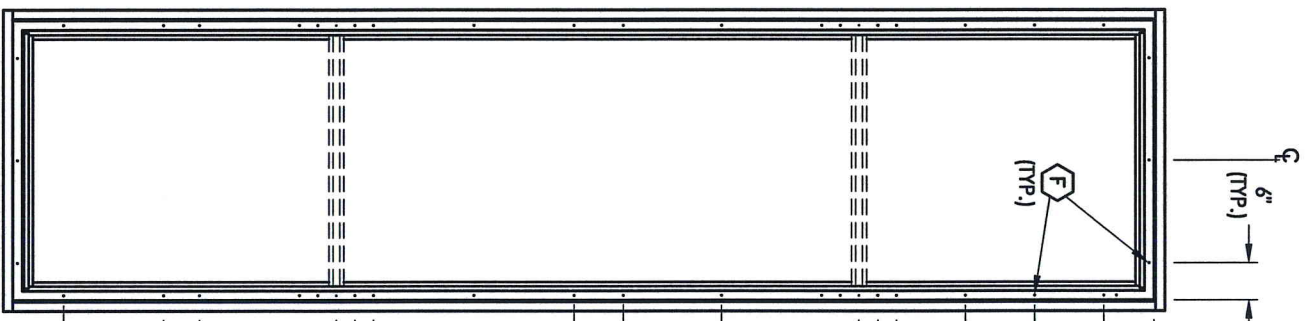
NO.	DATE	REVISIONS	BY



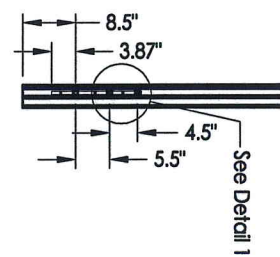
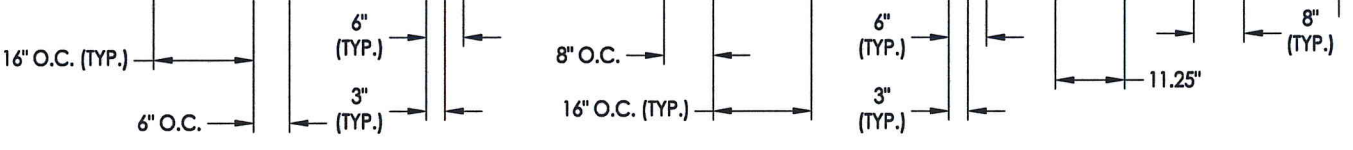
LOCK JAMB
Single Point Lock
(Jamb Slides Horizontal Avring)



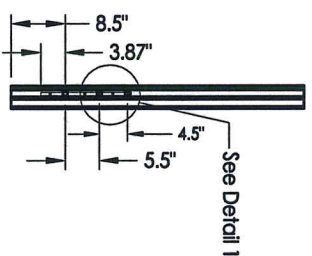
SNUBBER JAMB
(Casement)



FRAME ANCHORING
2X buck construction
w / Nail Fin



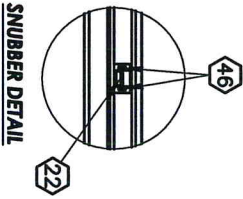
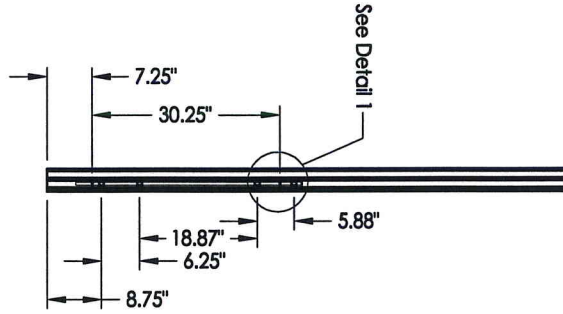
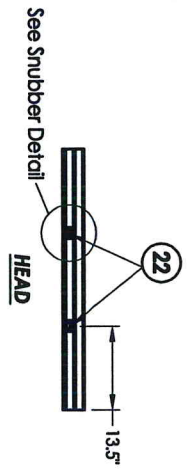
LOCK JAMB
Single Point Lock
(Jamb Slides Horizontal Avring)



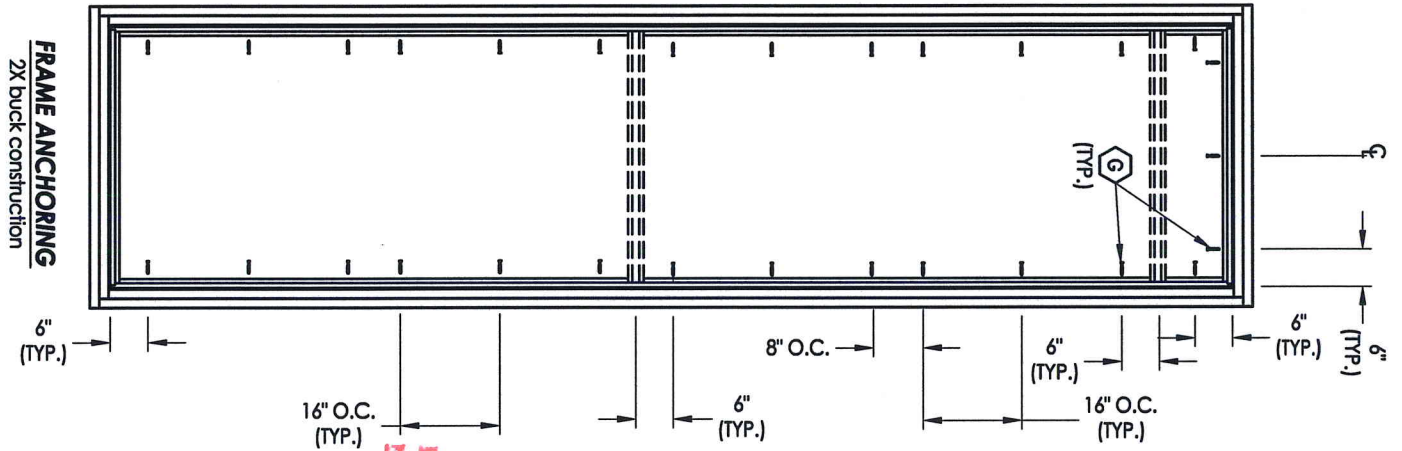
LOCK JAMB
Two Point Lock
(Casement)

Testing Evaluation Laboratories Inc
Specimen Complies with Drawing
Deviations Noted - TEL # 01990818
Date 10-31-13, Verified by *gjd*

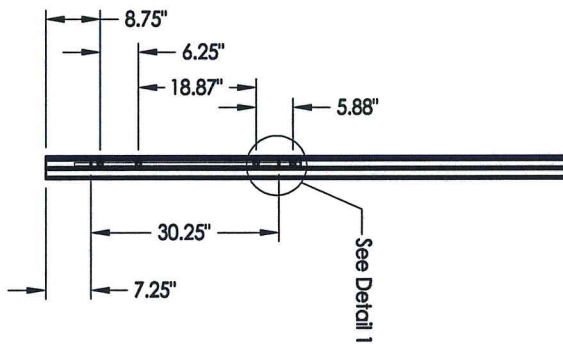
DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7032 SHEET 8 OF 12		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
		PART OR ASSEMBLY: FRAME ANCHORING	
NO.	DATE	BY	REVISIONS



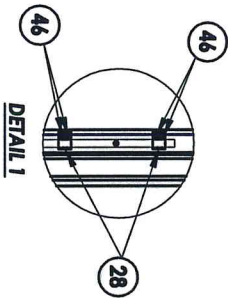
LOCK JAMB
Two Point Lock
(Casement)



FRAME ANCHORING
2x buck construction

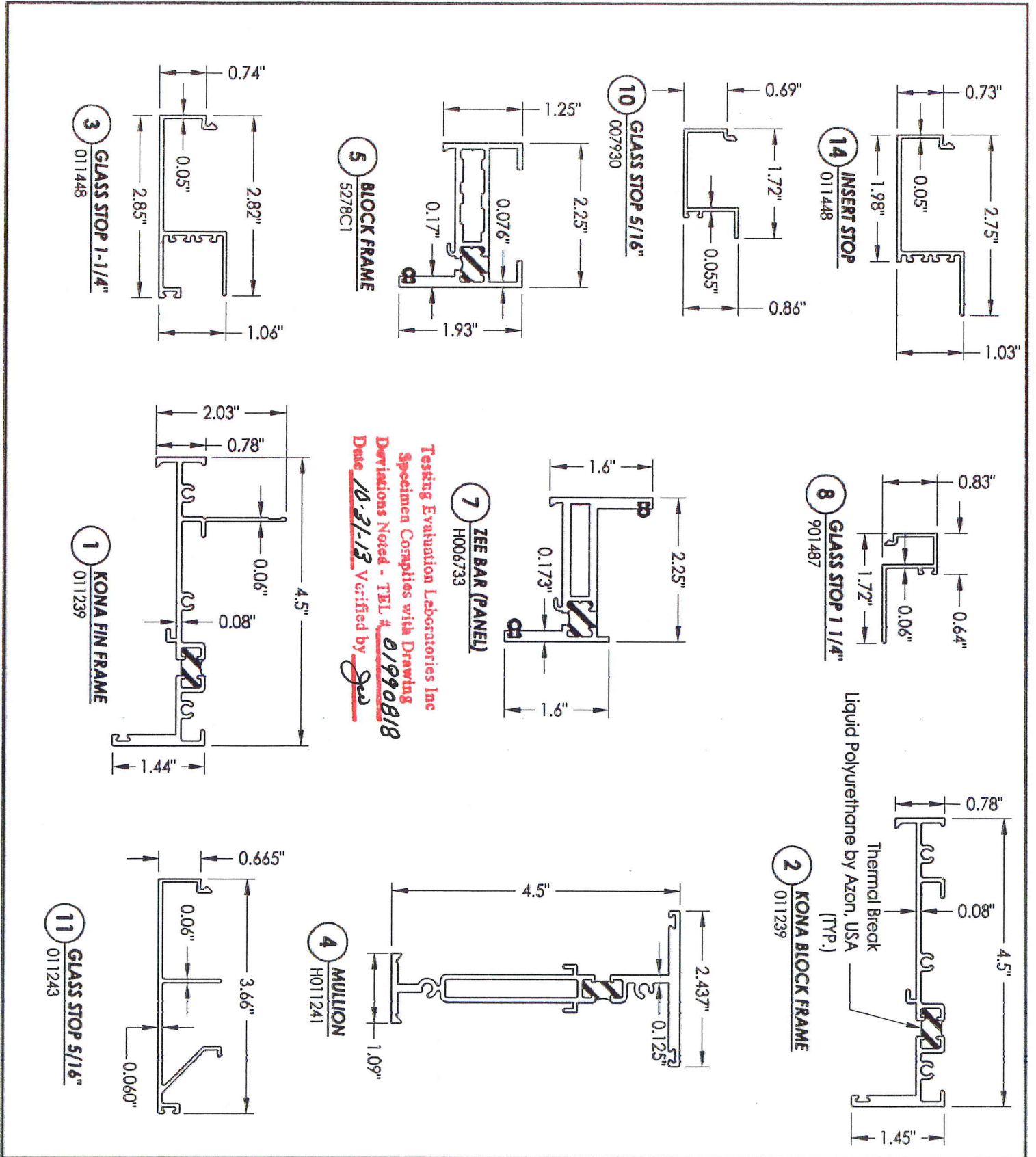


LOCK JAMB
Two Point Lock
(Casement)

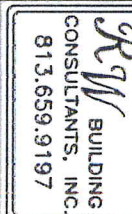


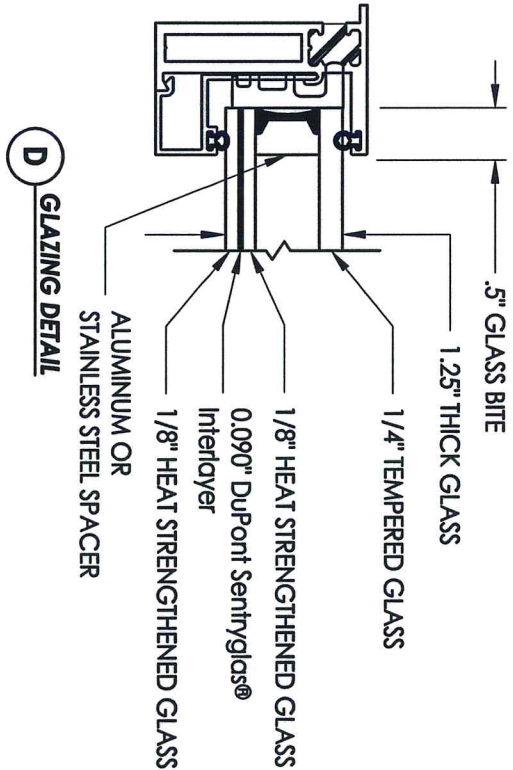
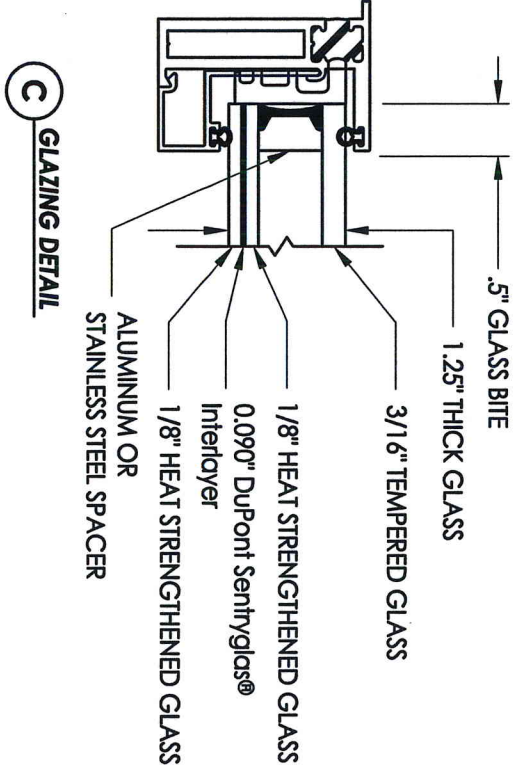
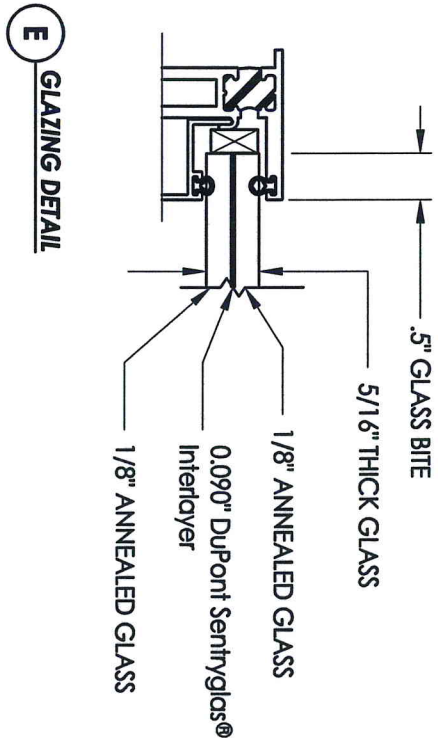
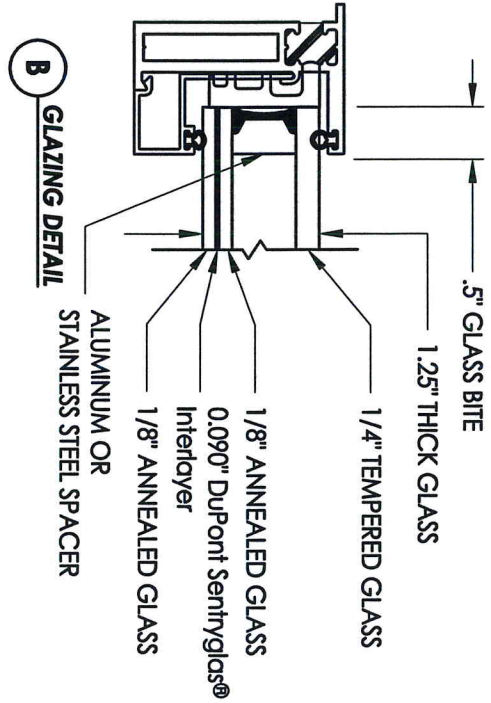
Testing Evaluated by **Resonance Laboratories Inc**
 Specimen Complies with Drawing
 Deviations Noted - T&E # **01990818**
 Date **10-31-13** Verified by *[Signature]*

DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7032 SHEET 9 OF 12		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
		PART OR ASSEMBLY: FRAME ANCHORING	
NO. DATE BY		REVISIONS	



DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7032 SHEET 10 of 12		PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
REVISIONS NO. DATE BY		PART OR ASSEMBLY: COMPONENTS	





Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gms*

PRODUCT:		FLEETWOOD KONA 3800 CASEMENT WINDOW	
PART OR ASSEMBLY:		GLAZING DETAILS	

NO.	DATE	BY	REVISIONS

R⁹W BUILDING CONSULTANTS, INC.
 813.659.9197

DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7032
SHEET	11 of 12

BILL OF MATERIALS		MATERIAL
ITEM #	DESCRIPTION	
B	2X BUCK SG >= 0.55	WOOD
C	1/4" MAX. SHIM SPACE	-
F	#10 x 1-1/2" PFH WOOD SCREW	STEEL
G	#10 x 2" PFH WOOD SCREW	STEEL
1	KONA FIN FRAME	6063-T6 ALUM
2	KONA BLOCK FRAME	6063-T6 ALUM
3	GLASS STOP 1 1/4"	6063-T6 ALUM
4	MULLION	6063-T6 ALUM
5	WESTWOOD BLOCK FRAME	6063-T6 ALUM
7	WESTWOOD ZEE BAR (PANEL)	6063-T6 ALUM
8	GLASS STOP 1 1/4"	6063-T6 ALUM
10	GLASS STOP 1 1/2"	6063-T6 ALUM
11	GLASS STOP 5/8"	6063-T6 ALUM
12	SHEAR BLOCK	ALUM
13	CORNER KEY	ALUM
14	INSERT STOP	ALUM
20	SS. BUTT HINGE	SS
21	4 BAR HINGE	SS
22	SNUBBER-COMMERCIAL PULL-IN BLOCK	ZINC ALLOY
23	MULTIPOINT LOCK HANDLE	SS
24	SINGLE POINT LOCKING BAR	SS
25	2 POINTS LOCKING BAR	SS
28	TIE BAR GUIDE	PLASTIC
29	KEEPER	SS
30	CASEMENT ROTOR GEAR 13.5"	SS
35	CAM HANDLE / STRIKE PLATE	SS
36	CASEMENT SS. TRACK	SS
37	AWNING SS. TRACK	SS
40	#10 X 1" PPH SMS	STEEL
42	MACHINE SCREW NO 10-32, FHP .75"	STEEL
43	SCREW NO 10. UHFP .5"	STEEL
44	SCREW NO 8, PHP, .50"	STEEL

46	SCREW NO 8, PHP, .750"	STEEL
47	MACHINE SCREW NO 10-32, PHP .5"	STEEL
48	BACK UP NUTS	STEEL
50	BULB VINYL (EPDM 70 DUROMETER)-TREMCO	-
51	MINI BULB VINYL(EPDM 70 DUROMETER)-TREMCO	-
52	WOOD BLOCK .750" X 1.250"	-
53	ALUMINUM BLOCK .750" X 1.250"	-
54	PVC BLOCK .750" X 1.250"	-
55	SETTING BLOCK	-
56	SETTING BLOCK 4" x 1" x 1"	-
57	PIVOT SHIM	-
58	WOOD BLOCK .50" X 1.250"	-
59	ALUMINUM BLOCK .50" X 1.250"	-
60	PVC BLOCK .50" X 1.250"	-
61	SETTING BLOCK 4" x 1/8" x 1"	-

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10.31.13 Verified by *gnd*

PRODUCT: FLEETWOOD
 KONA 3800 CASEMENT WINDOW

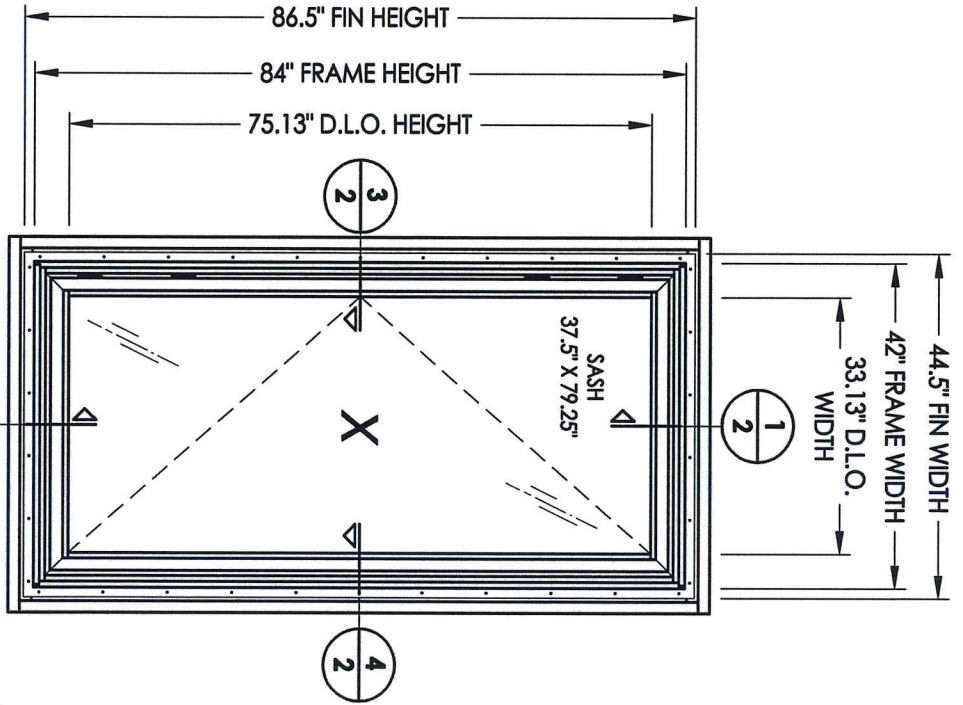
PART OR ASSEMBLY:
 BILL OF MATERIALS

NO.	DATE	BY	REVISIONS



RW BUILDING CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032
 SHEET 12 OF 12



SPEC# 2, 2A GLASS TYPE A
 SPEC# 5, 5A GLASS TYPE C

Testing Evaluation Laboratories Inc
 Specimen Consists with Drawing
 Deviations Noted - TEL # 0199 0018
 Date 10-31-12 Verified by *gws*

TABLE OF CONTENTS

SHEET #	DESCRIPTION
1	Table of contents and test elevation
2	Horizontal and vertical cross sections
3	Frame anchoring
4	Components and glazing details
5	Bill of materials

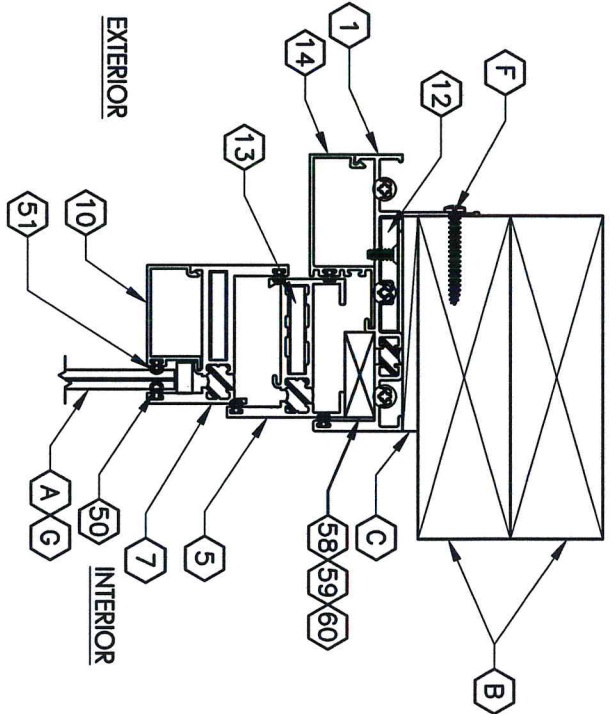
PRODUCT: FLEETWOOD
 KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
 TABLE OF CONTENTS
 AND TEST ELEVATION

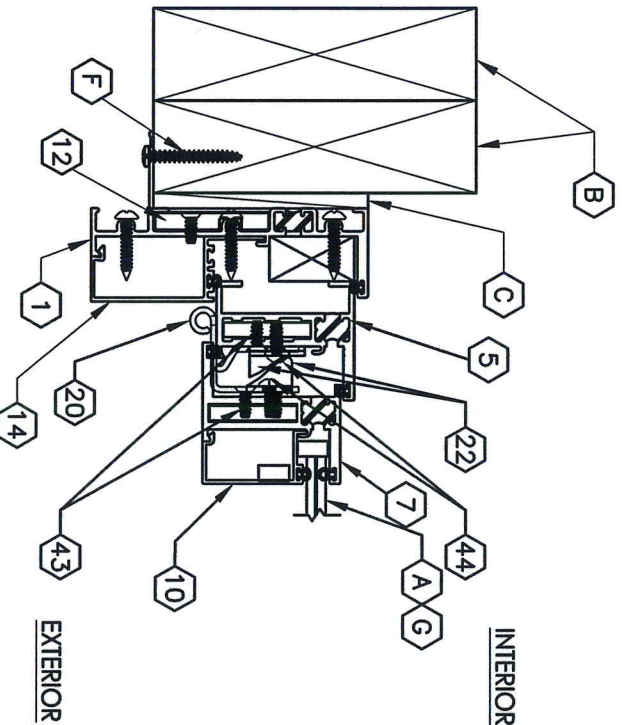
NO.	DATE	BY

RM BUILDING
 CONSULTANTS, INC.
 813.659.9197

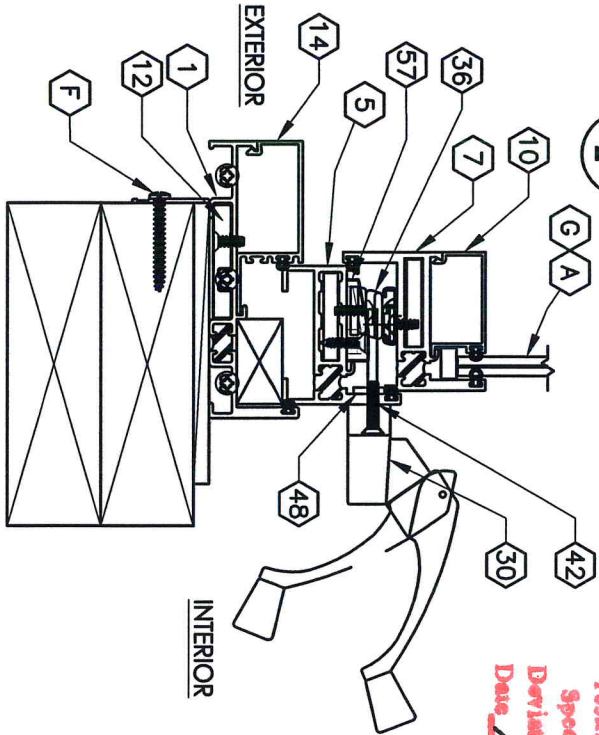
DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032A
 SHEET 1 OF 5



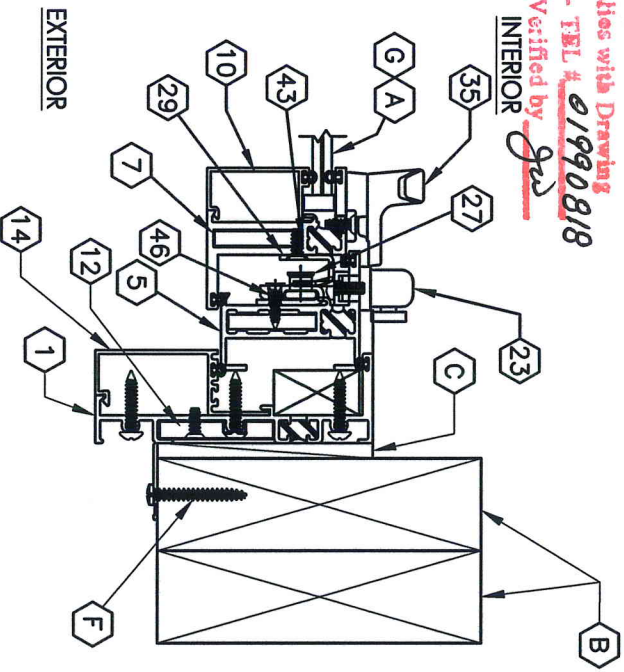
1 VERTICAL CROSS SECTION
2



3 HORIZONTAL CROSS SECTION
2



2 VERTICAL CROSS SECTION
2



4 HORIZONTAL CROSS SECTION
2

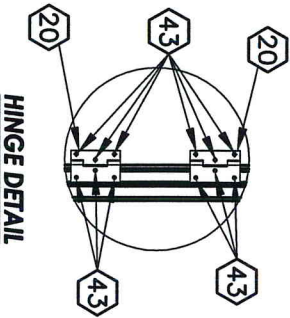
Testing Evaluated by Laboratories Inc
Specimen Complies with Drawing
Deviations Noted - TEL # 01990818
Date 10-31-13 Verified by *gws*

PRODUCT:		FLEETWOOD KONA 3800 CASEMENT WINDOW	
PART OR ASSEMBLY:		HORIZONTAL AND VERTICAL CROSS SECTIONS	

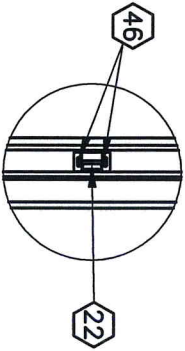
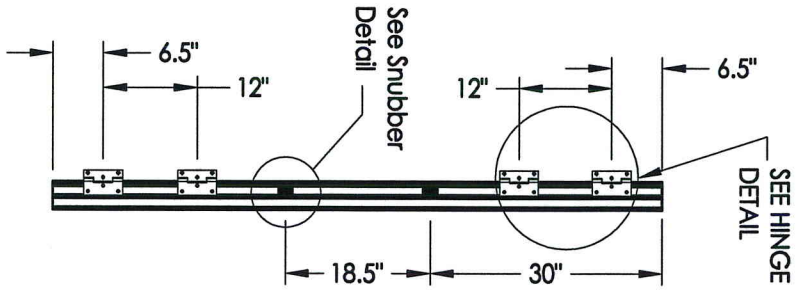
NO.	DATE	REVISIONS	BY

RCW BUILDING
CONSULTANTS, INC.
813.659.9197

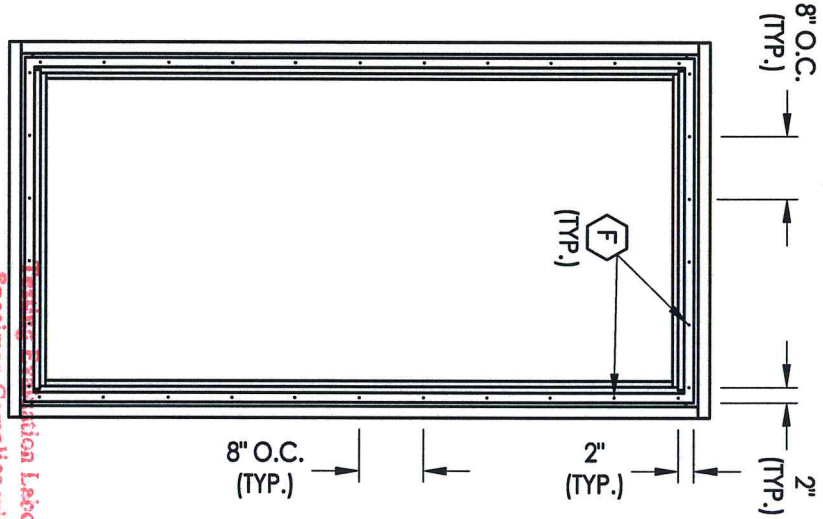
DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7032A
SHEET	2 OF 5



HINGE JAMB

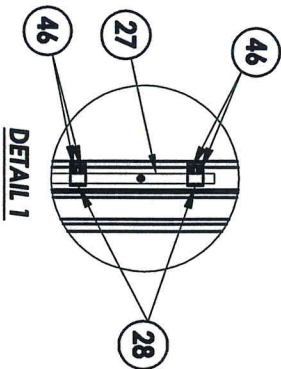


SNUBBER DETAIL

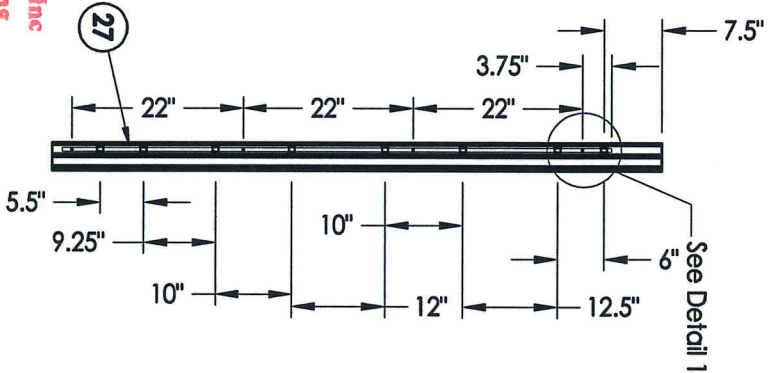


FRAME ANCHORING
2X buck construction

Specimen Complies with Drawing
Deviations Noted - TEL # 01990018
Verified by *[Signature]*



LOCK JAMB
Locking Points (4)



DATE: 9/25/13
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: L-7032A
SHEET 3 OF 5

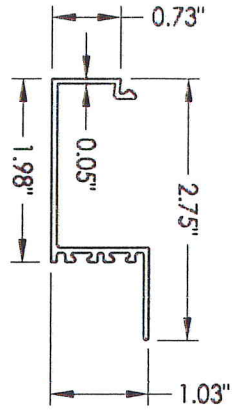
RM BUILDING CONSULTANTS, INC.
813.659.9197

NO.	DATE	REVISIONS	BY

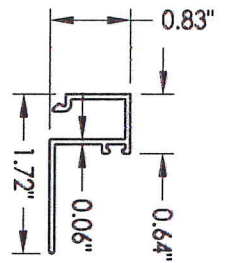
PRODUCT: **FLEETWOOD KONA 3800 CASEMENT WINDOW**

PART OR ASSEMBLY: **FRAME ANCHORING**

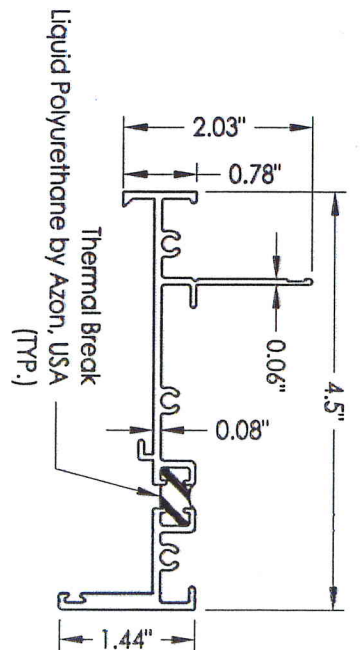
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gms*



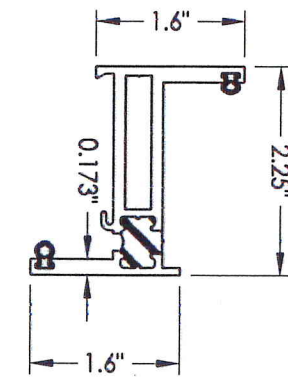
14 INSERT STOP
0111448



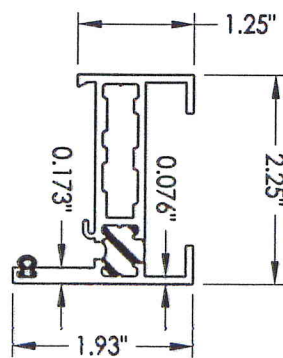
8 GLASS STOP 1-1/4"
901487



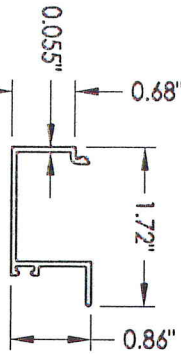
1 KONA FIN FRAME
011239



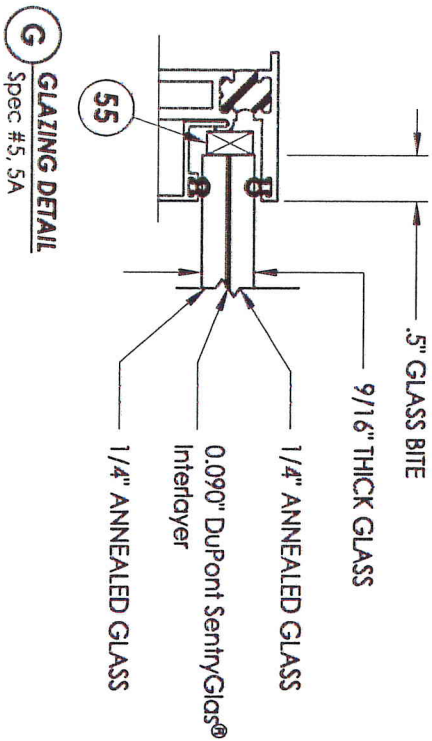
7 ZEE BAR (PANEL)
H006733



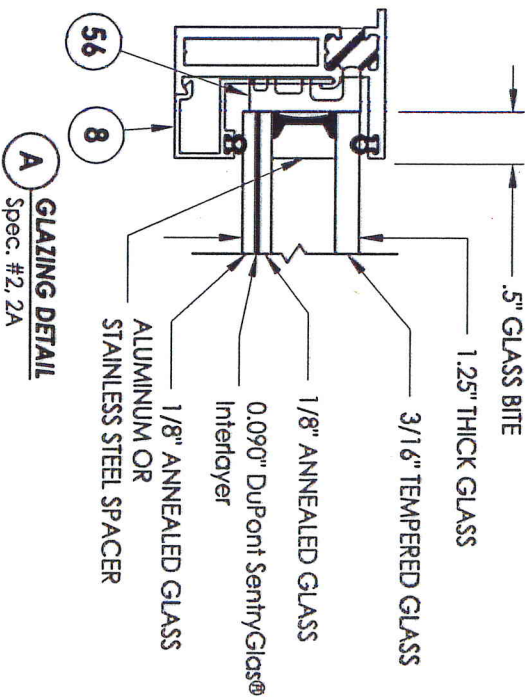
5 BLOCK FRAME
5278C1



10 GLASS STOP 9/16"
007930



G GLAZING DETAIL
Spec #5, 5A



A GLAZING DETAIL
Spec. #2, 2A

PRODUCT:
FLEETWOOD
KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
COMPONENTS AND
GLAZING DETAILS

NO.	DATE	REVISIONS	BY

RW BUILDING CONSULTANTS, INC.
813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032A
 SHEET 4 OF 5

BILL OF MATERIALS		
ITEM #	DESCRIPTION	MATERIAL
B	2X BUCK SG >= 0.55	WOOD
C	1/4" MAX. SHIM SPACE	-
F	#10 X 1-1/2" PPH WOOD SCREW	STEEL
G	#10 X 2" PPH WOOD SCREW	STEEL
1	KONA FIN FRAME	6063-T6 ALUM
5	WESTWOOD BLOCK FRAME	6063-T6 ALUM
7	WESTWOOD ZEE BAR (PANEL)	6063-T6 ALUM
8	GLASS STOP 1 1/4"	6063-T6 ALUM
10	GLASS STOP 1/2"	6063-T6 ALUM
12	SHEAR BLOCK	ALUM
13	CORNER KEY	ALUM
14	INSERT STOP	ALUM
20	SS. BUTT HINGE	SS
22	SNUBBER-COMMERCIAL PULL-IN BLOCK	SS
23	MULTIPOINT LOCK HANDLE	SS
27	4 POINTS LOCKING BAR	SS
28	TIE BAR GUIDE	PLASTIC
29	KEEPER	SS
30	CASEMENT ROTOR GEAR 13.5"	SS
35	CAM HANDLE / STRIKE PLATE	SS
36	CASEMENT SS. TRACK	SS
42	MACHINE SCREW NO 10-32, FHP .75"	STEEL
43	SCREW NO 10, UFHP .5"	STEEL
44	SCREW NO 8, PHP .50"	STEEL
46	SCREW NO 8, FHP .750"	STEEL
48	BACK UP NUTS	STEEL
50	BULB VINYL (EPDM 70 DUROMETER)-TREMCO	-
51	MINI BULB VINYL(EPDM 70 DUROMETER)-TREMCO	-
55	SETTING BLOCK	-

56	SETTING BLOCK 4" x 1/4" x 1"	-
57	PIVOT SHIM	-
58	WOOD BLOCK .50" X 1.250"	-
59	ALUMINUM BLOCK .50" X 1.250"	-
60	PVC BLOCK .50" X 1.250"	-

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gjd*

PRODUCT:
 FLEETWOOD
 KONA 3800 CASEMENT WINDOW

PART OR ASSEMBLY:
 BILL OF MATERIALS

NO.	DATE	BY

R&W BUILDING
 CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7032A
 SHEET 5 OF 5

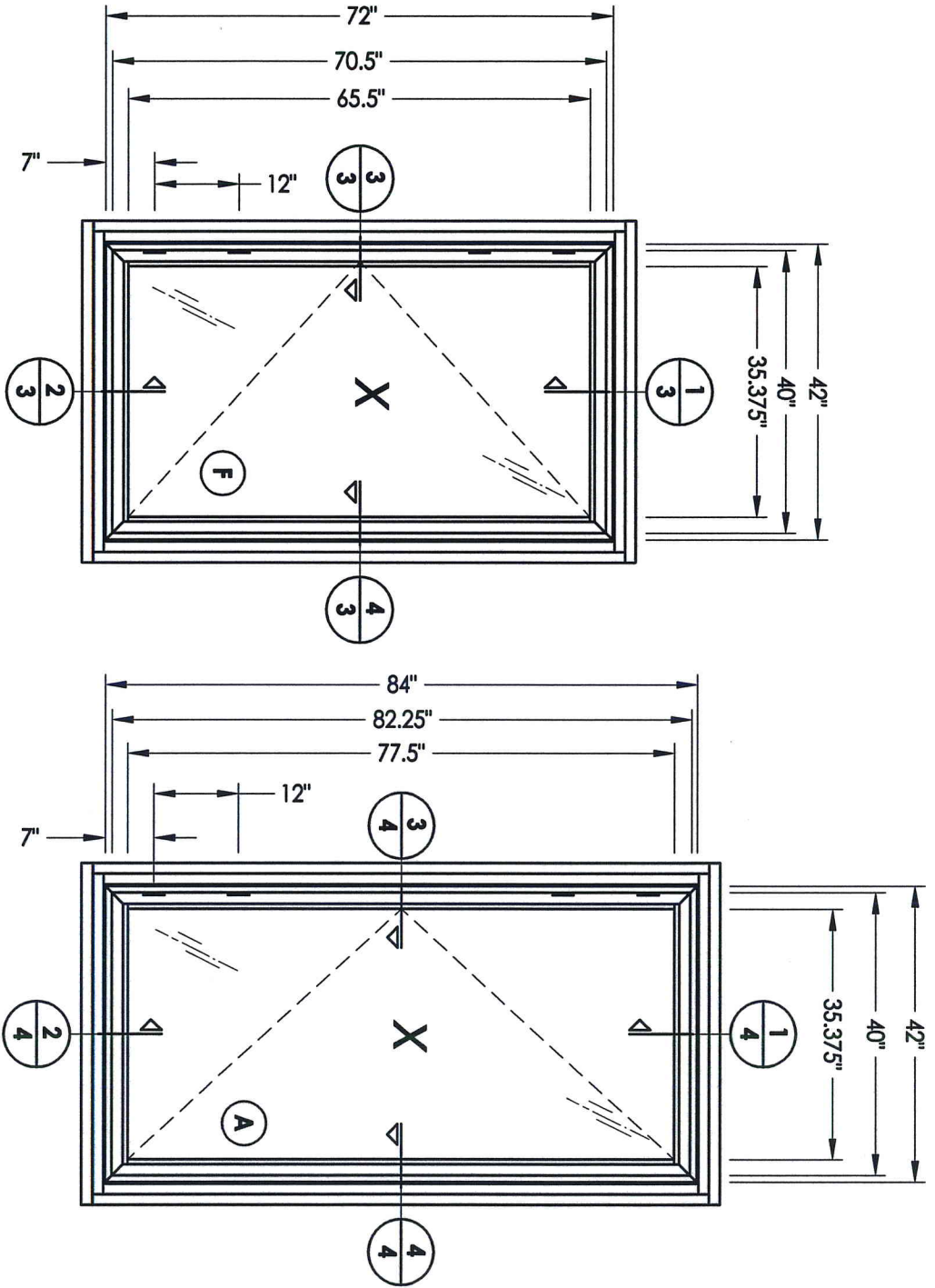
TABLE OF CONTENTS	
SHEET #	DESCRIPTION
1	Table of contents
2	Test elevation
3	Horizontal and vertical cross sections
4	Horizontal and vertical cross sections
5	Frame anchoring
6	Frame anchoring
7	Components
8	Glazing details
9	Bill of materials

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by: *JW*

PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW		
PART OR ASSEMBLY: TABLE OF CONTENTS		
NO.	DATE	BY
REVISIONS		




DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7033
 SHEET 1 OF 9

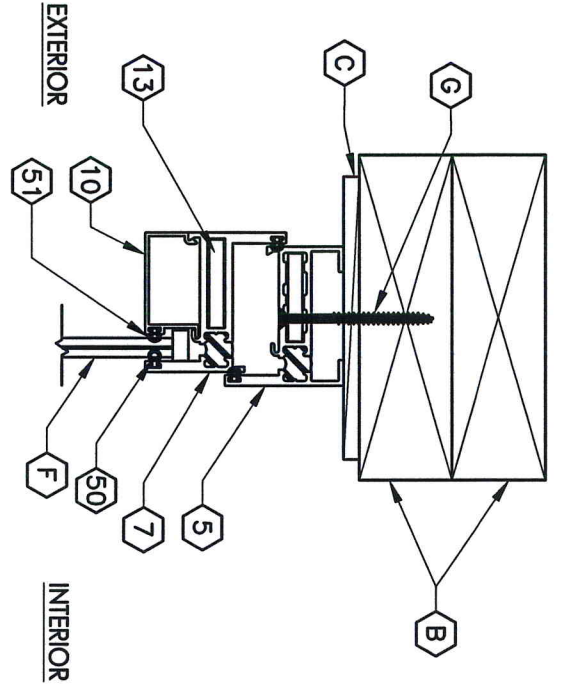


SPEC# 12, 12A

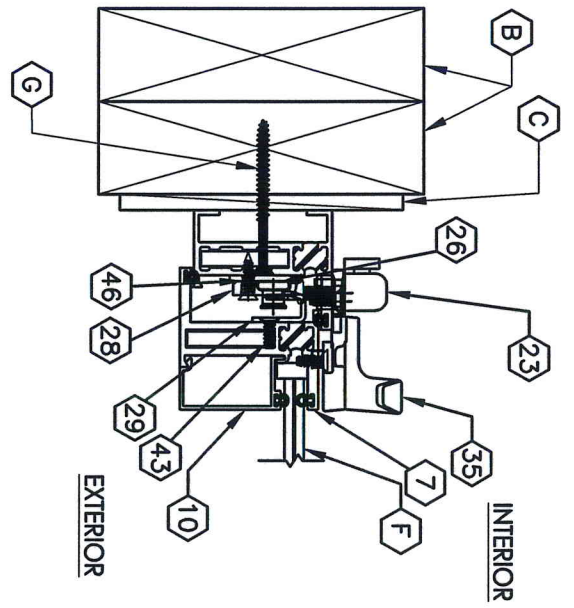
SPEC# 6, 6A

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10.31.13 Verified by *[Signature]*

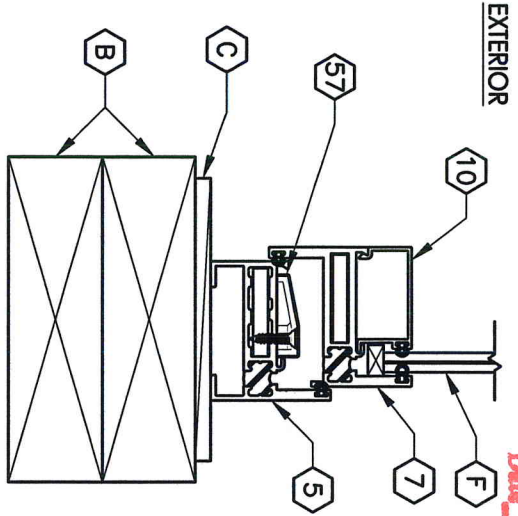
DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7033 SHEET 2 OF 9	 RWB BUILDING CONSULTANTS, INC. 813.659.9197	PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW	
		PART OR ASSEMBLY: TEST ELEVATION	
NO. DATE BY		REVISIONS	



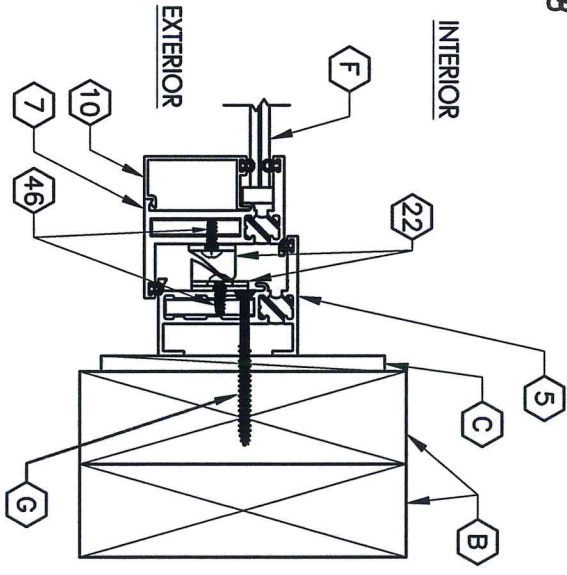
1 VERTICAL CROSS SECTION
3



3 HORIZONTAL CROSS SECTION
3



2 VERTICAL CROSS SECTION
3

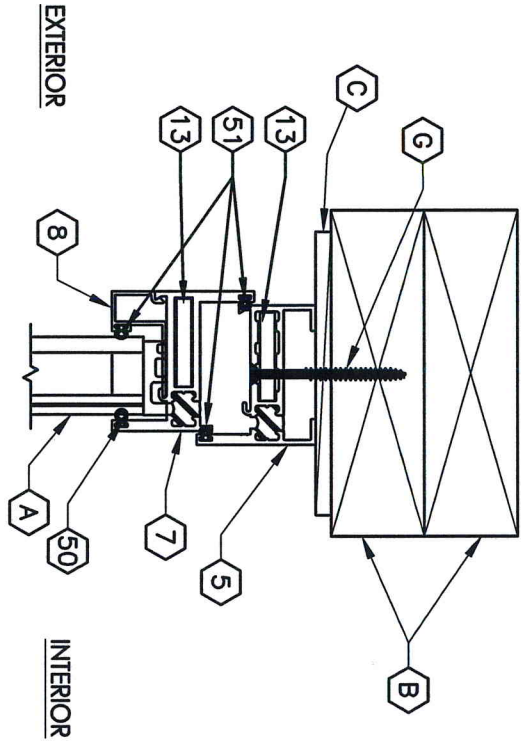


4 HORIZONTAL CROSS SECTION
3

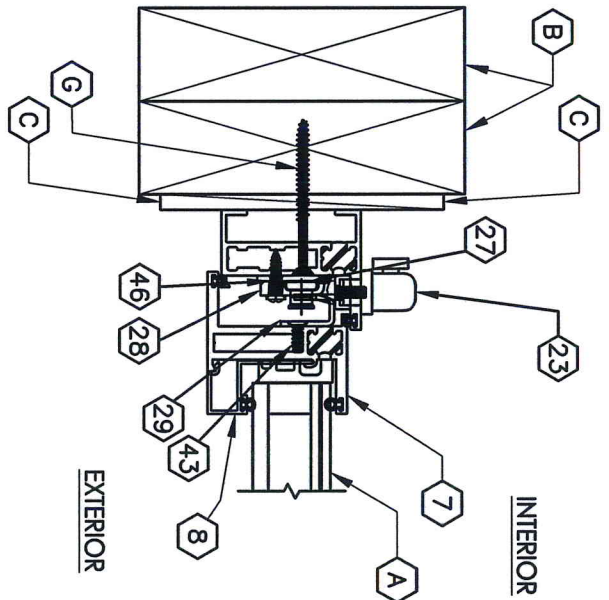
1. Calibration Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *SPD*

PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW		
PART OR ASSEMBLY: HORIZONTAL AND VERTICAL CROSS SECTIONS		
NO.	DATE	BY
REVISIONS		
R ^g M BUILDING CONSULTANTS, INC. 813.659.9197		
DATE:	9/25/13	
SCALE:	N.T.S.	
DWG. BY:	JK	
CHK. BY:	LFS	
DRAWING NO.:	L-7033	
SHEET	3 OF 9	

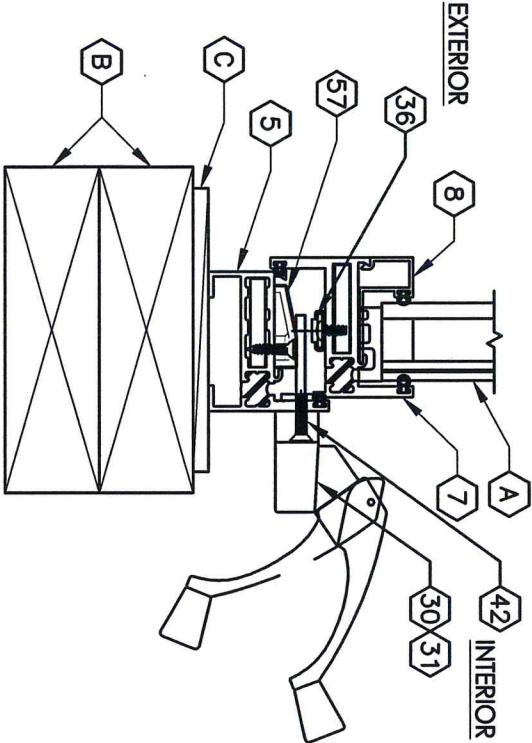
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *[Signature]*



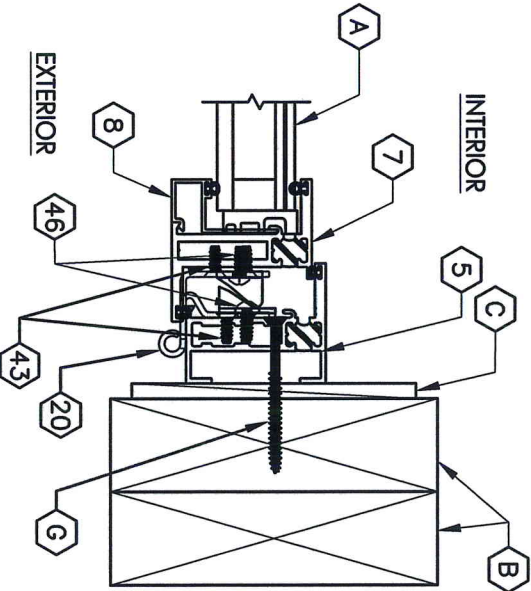
1
4
VERTICAL CROSS SECTION



3
4
HORIZONTAL CROSS SECTION



2
4
VERTICAL CROSS SECTION



4
4
HORIZONTAL CROSS SECTION

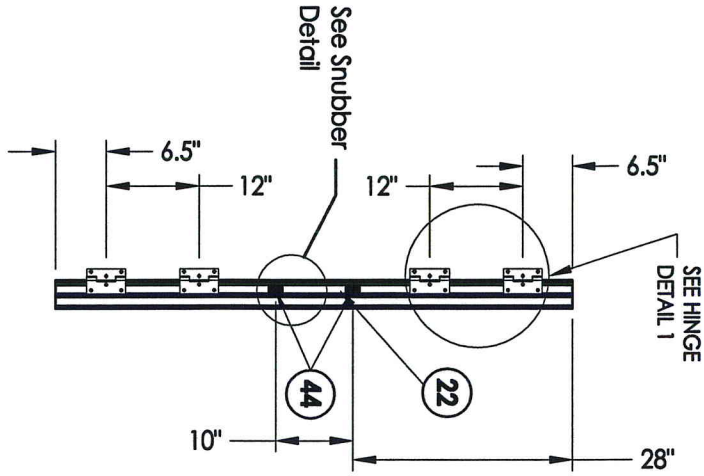
PRODUCT:		FLEETWOOD KONA 3800 CASEMENT WINDOW
PART OR ASSEMBLY:		HORIZONTAL AND VERTICAL CROSS SECTIONS

NO.	DATE	BY	REVISIONS

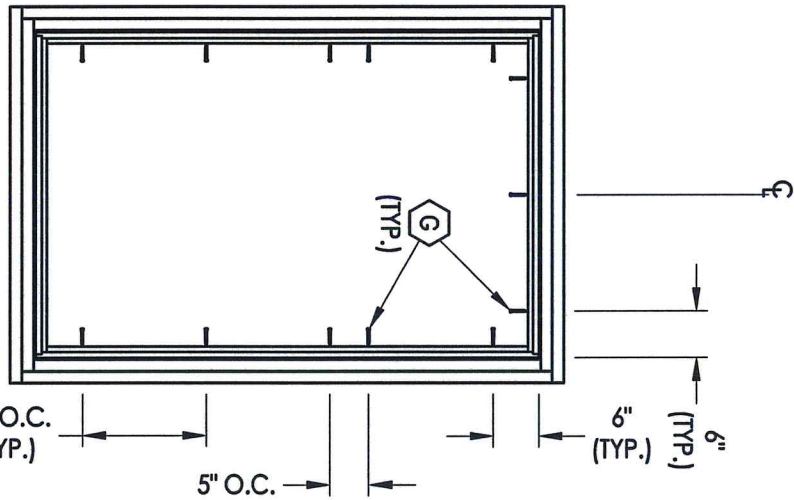
R_W BUILDING
 CONSULTANTS, INC.
 813.659.9197

DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7033
 SHEET 4 OF 9

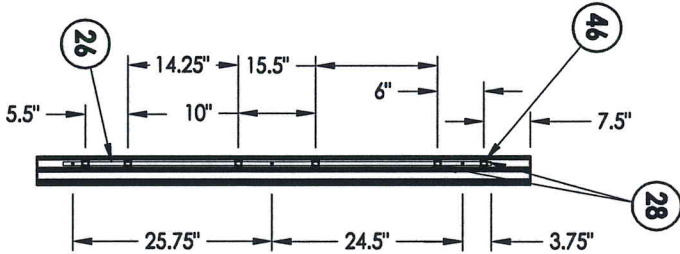
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gms*



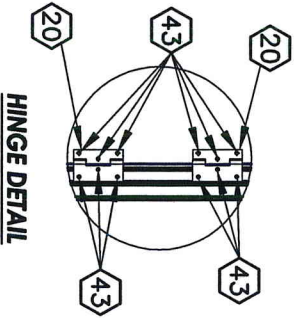
SNUBBER JAMB



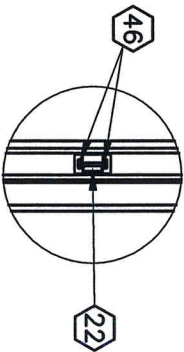
FRAME ANCHORING
2x buck construction



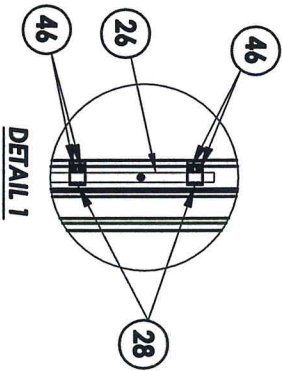
LOCK JAMB
Locking Points (3)



HINGE DETAIL



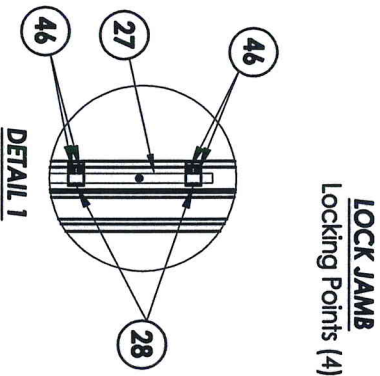
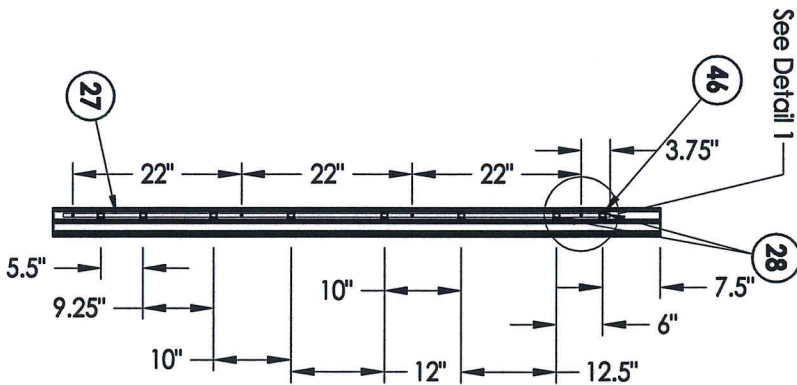
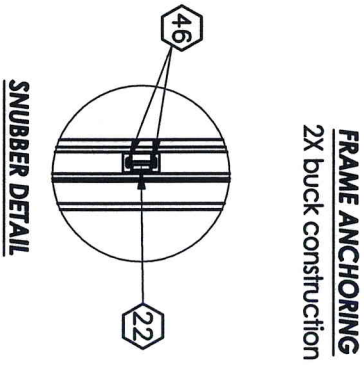
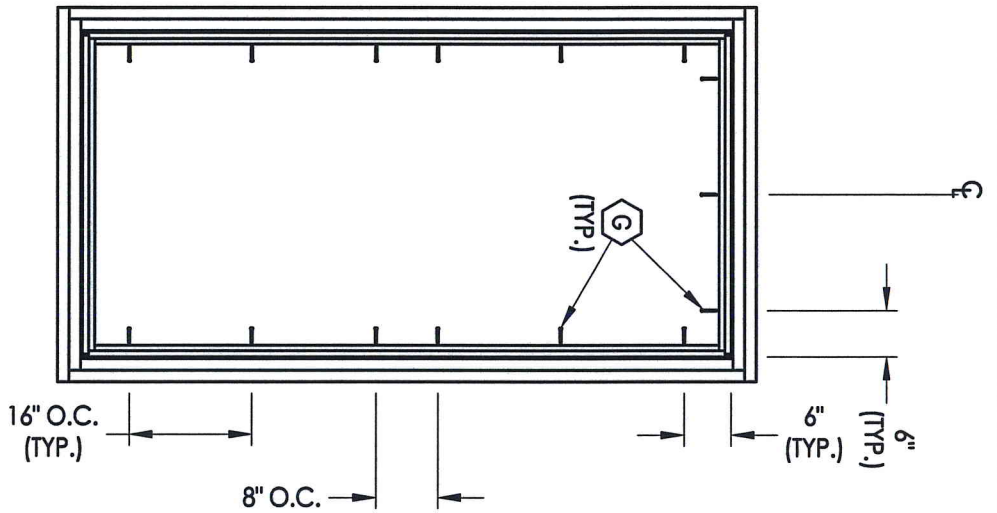
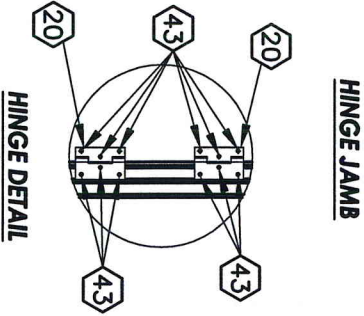
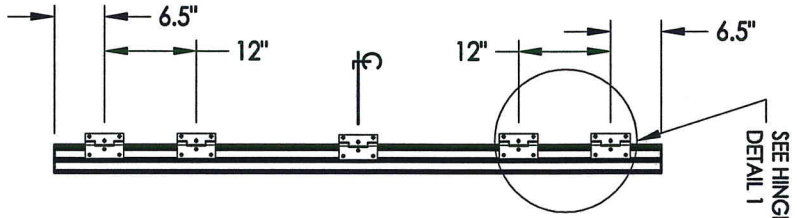
SNUBBER DETAIL



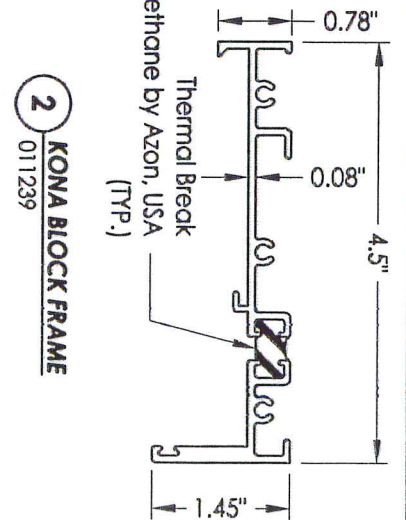
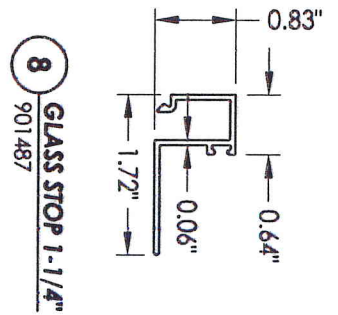
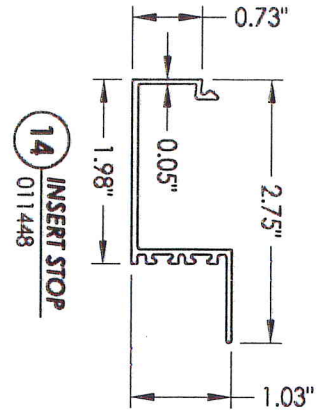
DETAIL 1

DATE: 9/25/13 SCALE: N.T.S. DWG. BY: JK CHK. BY: LFS DRAWING NO.: L-7033 SHEET 5 OF 9	 R ^W M BUILDING CONSULTANTS, INC. 813.659.9197	PRODUCT: FLEETWOOD KONA 3800 CASEMENT WINDOW
		PART OR ASSEMBLY: FRAME ANCHORING
NO. DATE BY		REVISIONS

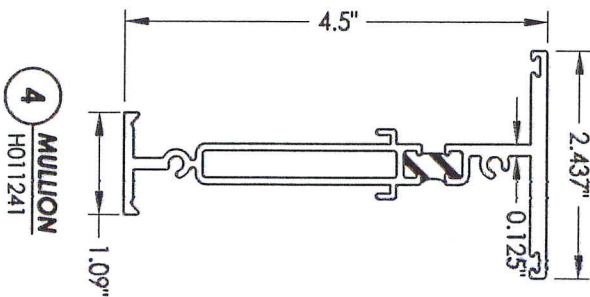
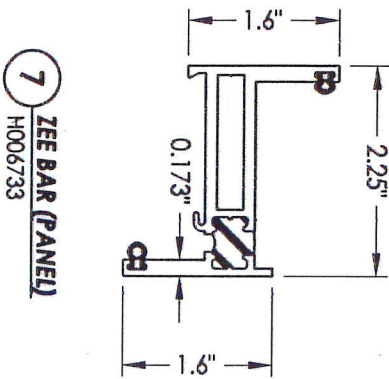
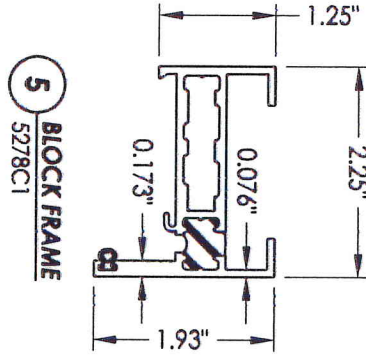
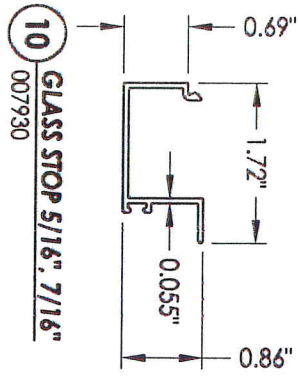
Testing Evaluation Laboratories Inc
 Specimen Correlates with Drawing
 Deviations Noted - TEL # 01950818
 Date 10.31.13 Verified by *[Signature]*



 RW BUILDING CONSULTANTS, INC. 813.659.9197	DATE: 9/25/13	PRODUCT:	FLEETWOOD KONA 3800 CASEMENT WINDOW
	SCALE: N.T.S.	DWG. BY: JK	PART OR ASSEMBLY:
CHK. BY: LFS	DRAWING NO.: L-7033	NO. DATE BY REVISIONS	
SHEET 6 OF 9			



Testing Evaluation Laboratories Inc
Specimen Complies with Drawing
Deviations Noted - TEL # 01990818
Date 10-31-13 Verified by *[Signature]*



PRODUCT:
FLEETWOOD
KONA 3800 CASEMENT WINDOW

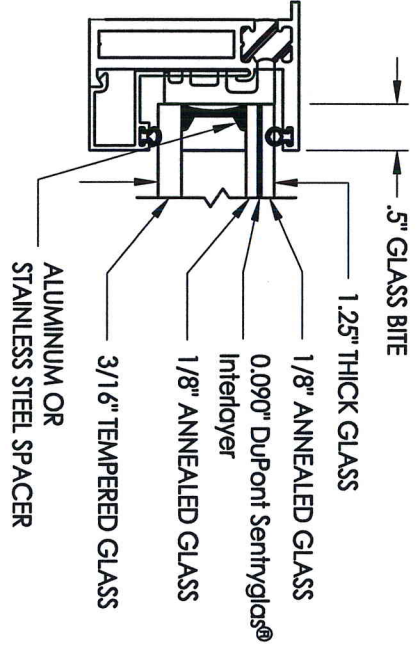
PART OR ASSEMBLY:
COMPONENTS

NO.	DATE	REVISIONS	BY

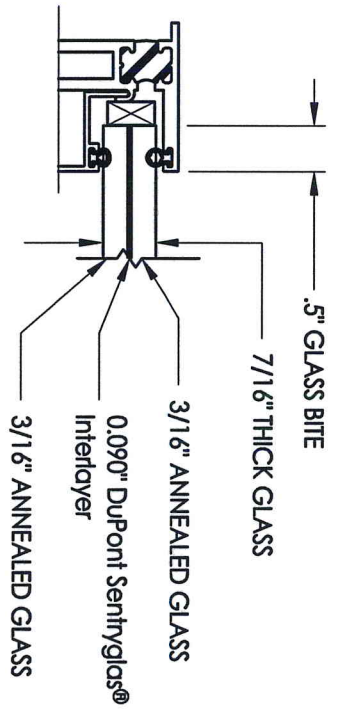
RW BUILDING CONSULTANTS, INC.
813.659.9197

DATE: 9/25/13
SCALE: N.T.S.
DWG. BY: JK
CHK. BY: LFS
DRAWING NO.: L-7033
SHEET 7 OF 9

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 019908/18
 Date 10-31-13, Verified by *gpa*



A GLAZING DETAIL



F GLAZING DETAIL

PRODUCT:	FLEETWOOD KONA 3800 CASEMENT WINDOW
PART OR ASSEMBLY:	COMPONENTS AND GLAZING DETAILS

NO.	DATE	REVISIONS	BY

R^W BUILDING CONSULTANTS, INC.
 813.659.9197

DATE:	9/25/13
SCALE:	N.T.S.
DWG. BY:	JK
CHK. BY:	LFS
DRAWING NO.:	L-7033
SHEET	8 OF 9

BILL OF MATERIALS		MATERIAL
ITEM #	DESCRIPTION	
B	2X BUCK SG >= 0.55	WOOD
C	1/4" MAX. SHIM SPACE	-
G	#10 x 2" PFH WOOD SCREW	STEEL
2	KONA BLOCK FRAME	6063-T6 ALUM
4	MULLION	6063-T6 ALUM
5	WESTWOOD BLOCK FRAME	6063-T6 ALUM
7	WESTWOOD ZEE BAR (PANEL)	6063-T6 ALUM
8	GLASS STOP (1-1/4")	6063-T6 ALUM
10	GLASS STOP (7/16")	6063-T6 ALUM
13	CORNER KEY	ALUM
14	INSERT STOP	ALUM
20	SS. BUTT HINGE	SS
21	4 BAR HINGE	SS
22	SNUBBER	ZINC ALLOY
23	MULTIPOINT LOCK HANDLE	SS
26	3 POINTS LOCKING BAR	SS
27	4 POINTS LOCKING BAR	SS
28	TIE BAR GUIDE	PLASTIC
29	KEEPER	SS
30	CASEMENT ROTOR GEAR 13.5"	SS
35	CAM HANDLE / STRIKE PLATE	SS
36	CASEMENT SS. TRACK	SS
40	#10 X 1" PPH SMS	STEEL
42	MACHINE SCREW NO 10-32, FHP .75"	STEEL
43	SCREW NO 10, UFHP .5"	STEEL
44	SCREW NO 8, PHP .50"	STEEL
46	SCREW NO 8, FHP .750"	STEEL
47	MACHINE SCREW NO 10-32, PHP .5"	STEEL
48	BACK UP NUTS	STEEL
50	BULB VINYL (EPDM 70 DUROMETER)-TREMCO	-

51	MINI BULB VINYL(EPDM 70 DUROMETER)-TREMCO	-
52	WOOD BLOCK .750" X 1.250"	-
53	ALUMINUM BLOCK .750" X 1.250"	-
54	PVC BLOCK .750" X 1.250"	-
55	SETTING BLOCK	-
56	SETTING BLOCK 4" x 1/4" x 1"	-
57	PIVOT SHIM	-
58	WOOD BLOCK .50" X 1.250"	-
59	ALUMINUM BLOCK .50" X 1.250"	-
60	PVC BLOCK .50" X 1.250"	-
61	SETTING BLOCK 4" x 1/8" x 1"	-

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990819
 Date 10.31.13 Verified by *gwl*

PRODUCT:
**FLEETWOOD
 KONA 3800 CASEMENT WINDOW**

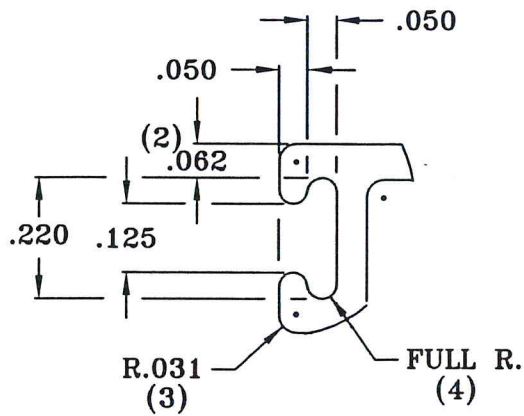
PART OR ASSEMBLY:
BILL OF MATERIALS

NO.	DATE	BY

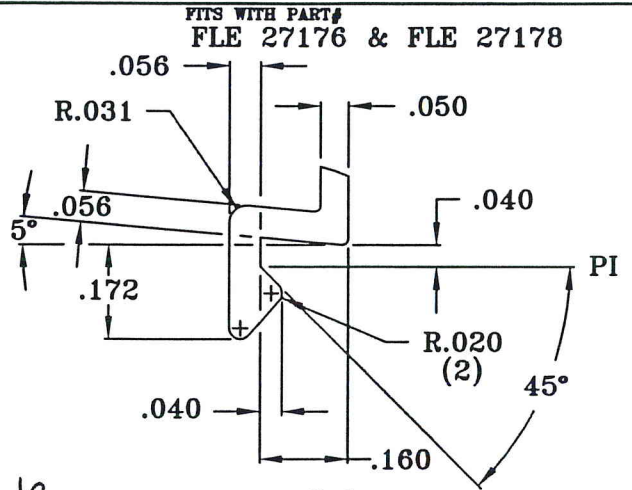


**RWB BUILDING
 CONSULTANTS, INC.**
 813.6559.9197

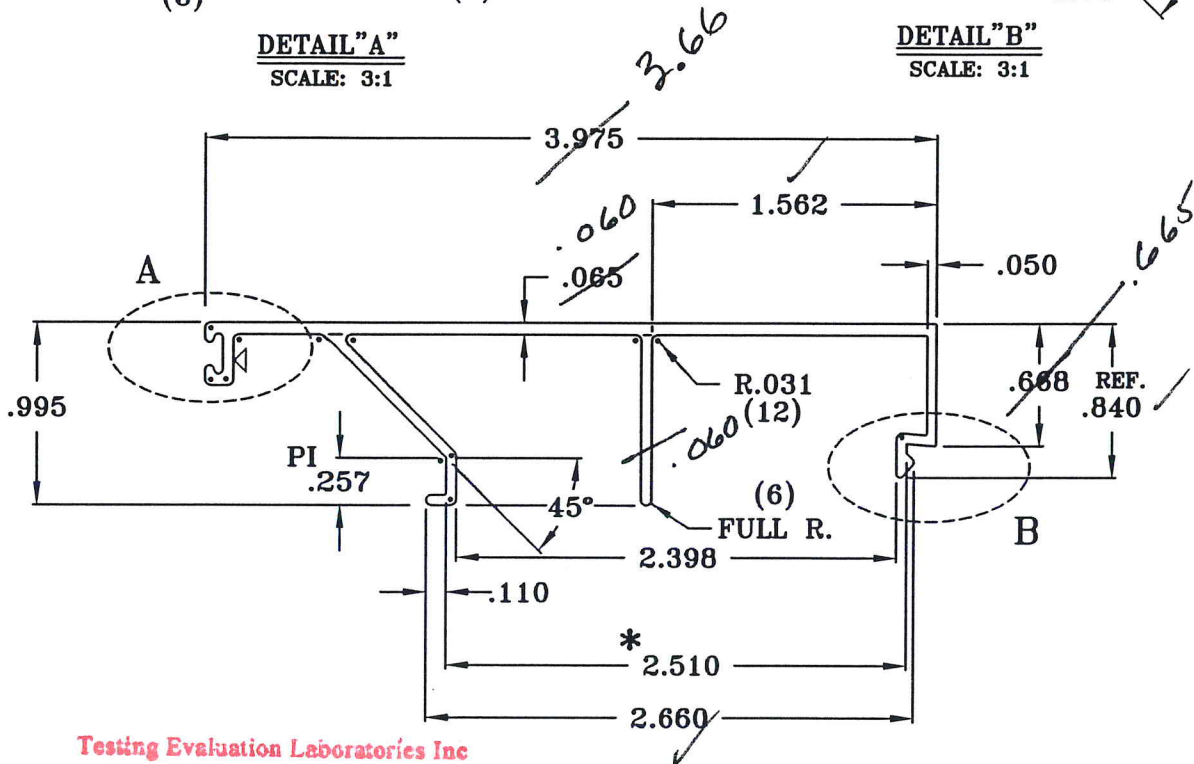
DATE: 9/25/13
 SCALE: N.T.S.
 DWG. BY: JK
 CHK. BY: LFS
 DRAWING NO.: L-7033
 SHEET 9 OF 9



DETAIL "A"
SCALE: 3:1



DETAIL "B"
SCALE: 3:1

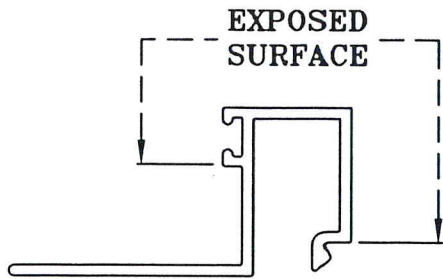


Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990918
 Date 10-31-13 Verified by *JW*

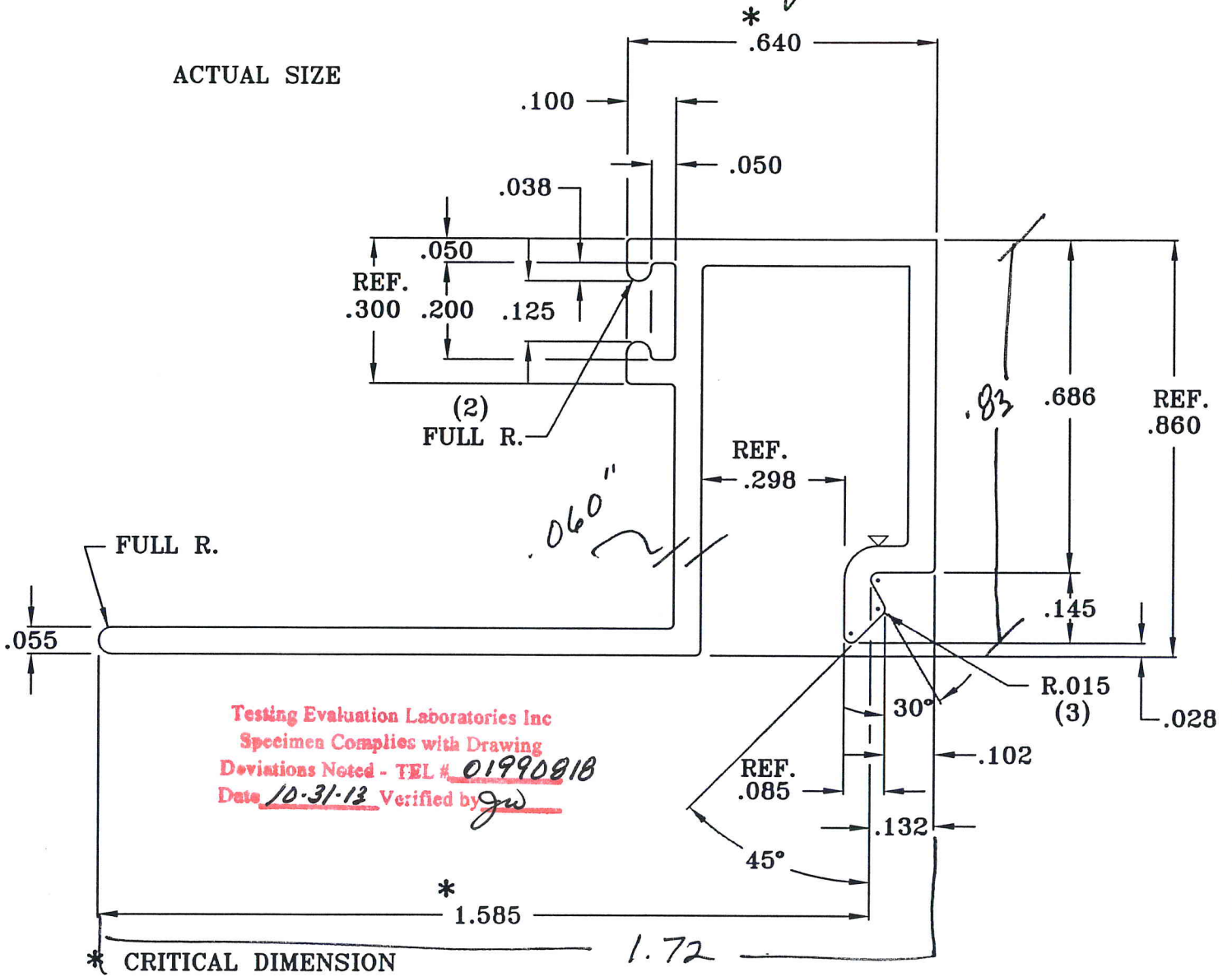
▷.010 R. X .010DEEPI.D. MARK

NOTE: .056 TYP. WALL EXCEPT AS NOTED
 UNMARKED CORNERS .010 R.

CONTAINER	7/8	DIE RING	5	SPACER RING	2					
AREA	.462	PORTS	2	BKR	11242					
WT/FT	.554	W/P	POCKET	BOLSTER	2-8					
PERL.	15.063	FLE	27180	DIE SIZE	9X2					
DWN. BY	KEN	DATE	7/11/01	MAT'L	6063-T6					
CHKD. BY		DATE		STANDARD TOLERANCES UNLESS OTHERWISE NOTED		LET.	REVISION	BY	DATE	
 SIERRA ALUMINUM COMPANY 2345 Fleetwood Drive Riverside, California 92509 (909)781-7800 FAX (909)781-7864				CUSTOMER			SCALE		PART NO.	
				FLEETWOOD ALUMINUM			1:1			
				PART NAME			DIE NO.			
				GLAZING BEAD (1/4" GLASS)			011243			




ACTUAL SIZE

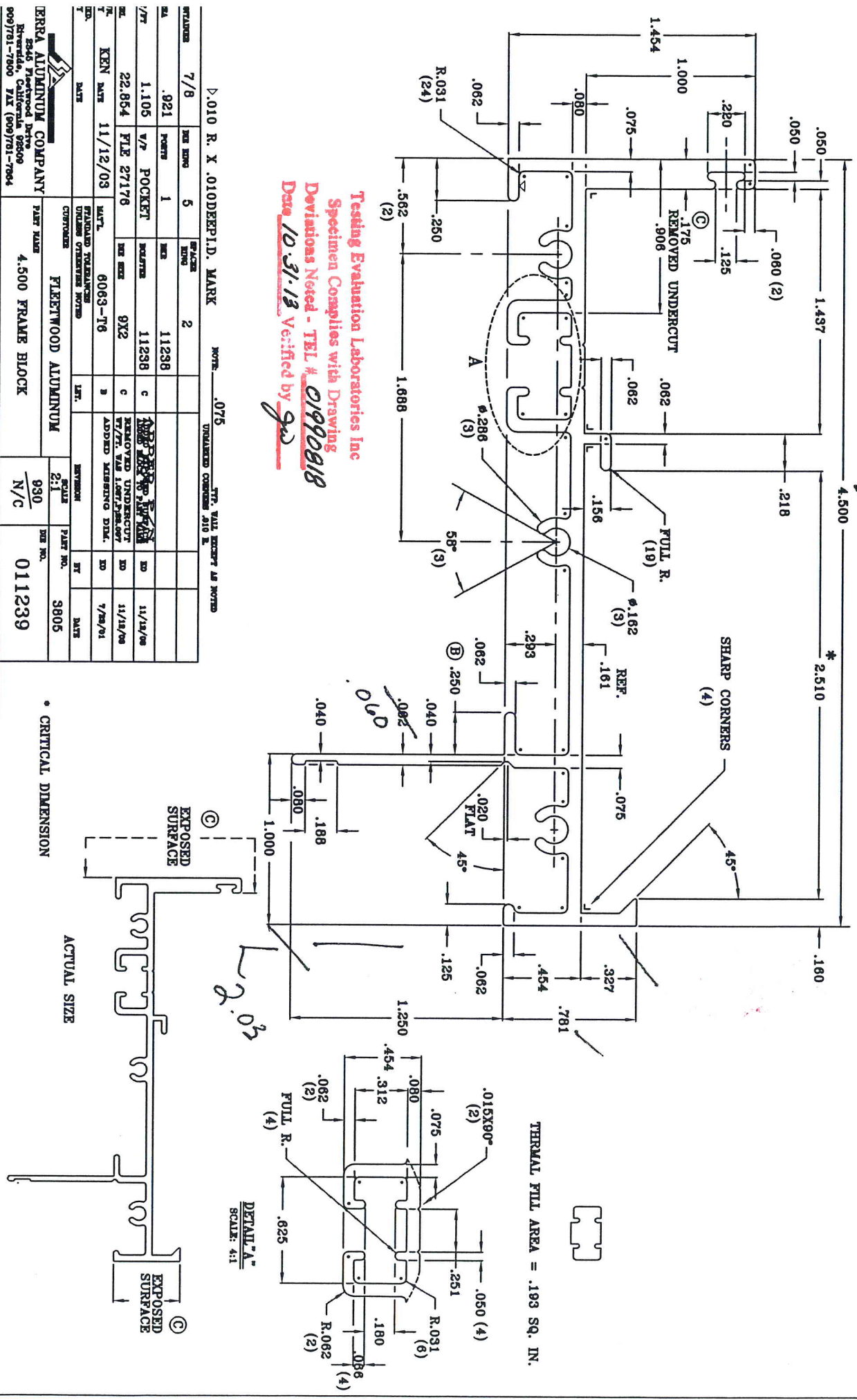


Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by gw

▷.010 R. X .010DEEPI.D. MARK

NOTE: .055 TYP. WALL EXCEPT AS NOTED
 UNMARKED CORNERS .010 R.

CONTAINER	7	DIE RING	5	SPACER RING	2				
AREA	.202	PORTS	4	BKR	901487				
WT/FT	.242	W/P	POCKET	BOLSTER	STD-4				
PERL.	7.360	FLE33161		DIE SIZE	9X2				
DWN. BY	KEN	DATE	3/12/04	MAT'L.	6063-T6				
CHKD. BY		DATE		STANDARD TOLERANCES UNLESS OTHERWISE NOTED		LET.	REVISION	BY	DATE
 SIERRA ALUMINUM COMPANY 2345 Fleetwood Drive Riverside, California 92509 (909)781-7800 FAX (909)781-7864				CUSTOMER		SCALE		PART NO.	
				FLEETWOOD WINDOWS & DOORS		2:1		05P12	
				PART NAME		N/C		DIE NO.	
				GLASS STOP, 1-1/4"				901487	



Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10.31.13 Verified by *gpd*

D.010 R. X .010DEEPI.D. MARK

QUANTITY	7/8	PER INCH	5	2	NOTE	REF. WALL HEIGHT AS NOTED	UNWEAWEED CORNERS 310 IN.
RA	.921	POCKET	1	11238			
WT	1.105	V/P POCKET		11238			
DL	22.854	FILE 27176		9X2			
KT	KEN DATE	11/12/03		6063-T6			
Y							
TD							

ERRA ALUMINUM COMPANY
 2346 Fleetwood Drive
 Riverside, California 92506
 909/781-7800 FAX 909/781-7804

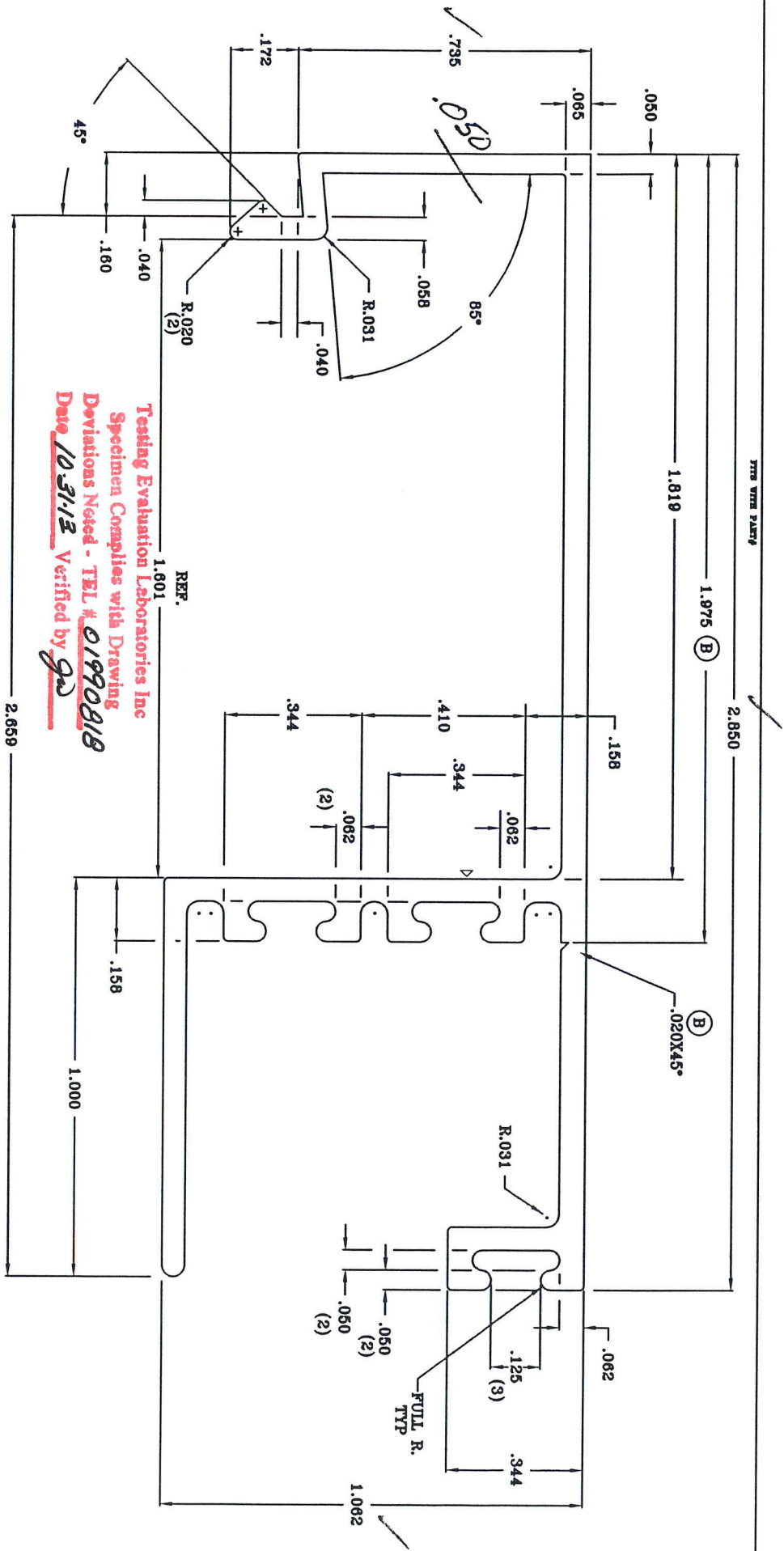
ERRA ALUMINUM COMPANY
 FLEETWOOD ALUMINUM
 PART NAME 4.500 FRAME BLOCK
 SCALE 2:1
 PART NO. 3805
 REF. NO. N/C
 011239

CRITICAL DIMENSION

ACTUAL SIZE

DETAIL "A"
 SCALE: 4:1

THERMAL FILL AREA = .193 SQ. IN.



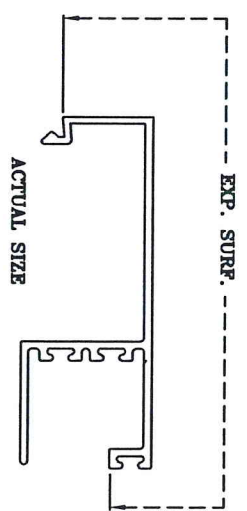
Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by *gao*

D.010 R. X .010DEP. ID. MARK NOTE: .058 TYP. WALL THICKNESS AS NOTED
 UNQUALIFIED DIMENSIONS .010 IN.

SYMBOL	SIZE	QUANTITY	DESCRIPTION	MARKING	DATE
2A	.415	POCKETS	3	011448	
1/P	.498	POCKET	3-6		
1E	13.469	FILE	28807	9X2	
1K	KEN	MATL.	4/24/02	6063-T6	B
1D		FINISHED TOLERANCES			
1C		UNLESS OTHERWISE NOTED			
1B		CUSTOMER			
1A		PART NAME			
		SCALE	4:1		
		PART NO.	3811		
		DATE			
		REV. NO.			
		DATE			

ERRA ALUMINUM COMPANY
 2345 Fleetwood Drive
 Riverside, California 92506
 909/781-7900 FAX 909/781-7964

PART NAME: FLEETWOOD ALUMINUM
 GLASS STOP



ITEM: FLEETWOOD ALUMINUM PART NAME: 5000 INSIDE GLAZE PERIM. (NAIL-ON)
PART NUMBER: 05P88

REVISIONS

BY	DATE
CD	3.11.03
CD	2.13.09
CD	3.31.09
CD	4.8.09

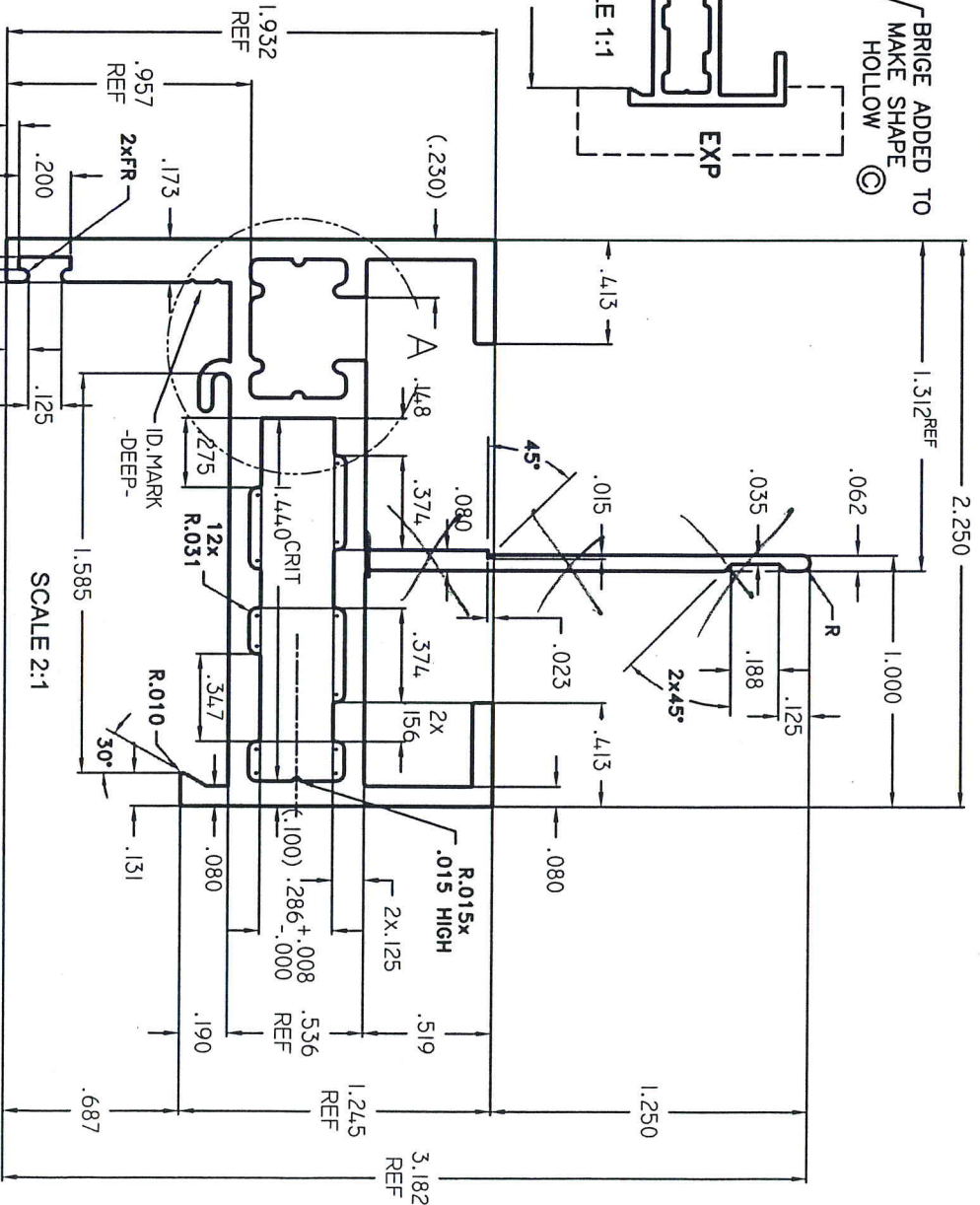
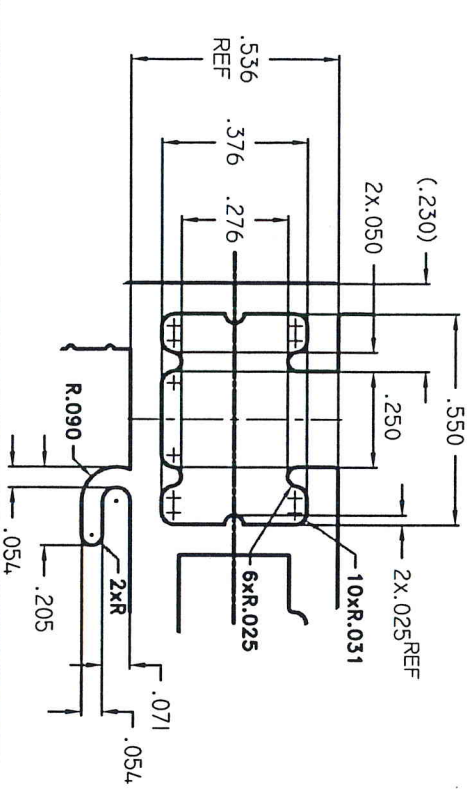
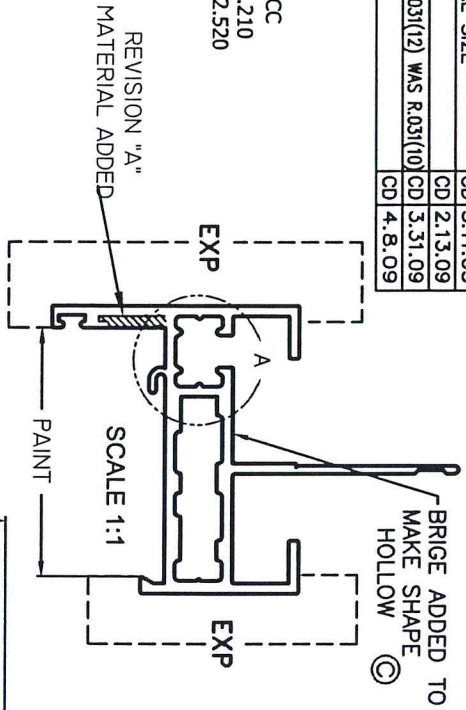
MATERIAL ADDED-SEE ACTUAL SIZE

SEE BELOW

NOW A HOLLOW DIE/413 WAS .625/R.031(2) WAS R.031(10)

REBRAM

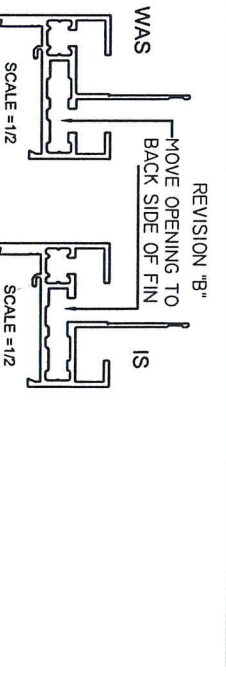
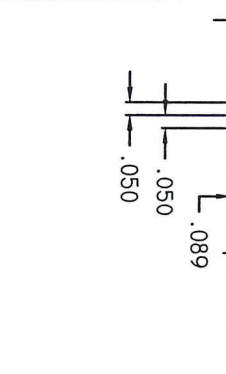
TB CAVITY TYPE CC
AREA SQ" .210
VOLUME CUBIC/FT. 2.520



MARKED WALLS: .080 UNMARKED R.010 UNMARKED R.010
S OTHERWISE SPECIFIED, STANDARD ALUMINUM ASSOCIATION TOLERANCES APPLY • FRONTIER ID. MARK TWO .010 R x .100 APART
CORNERS: UNMARKED R.010 UNMARKED R.010
BILLETS: UNMARKED R.010

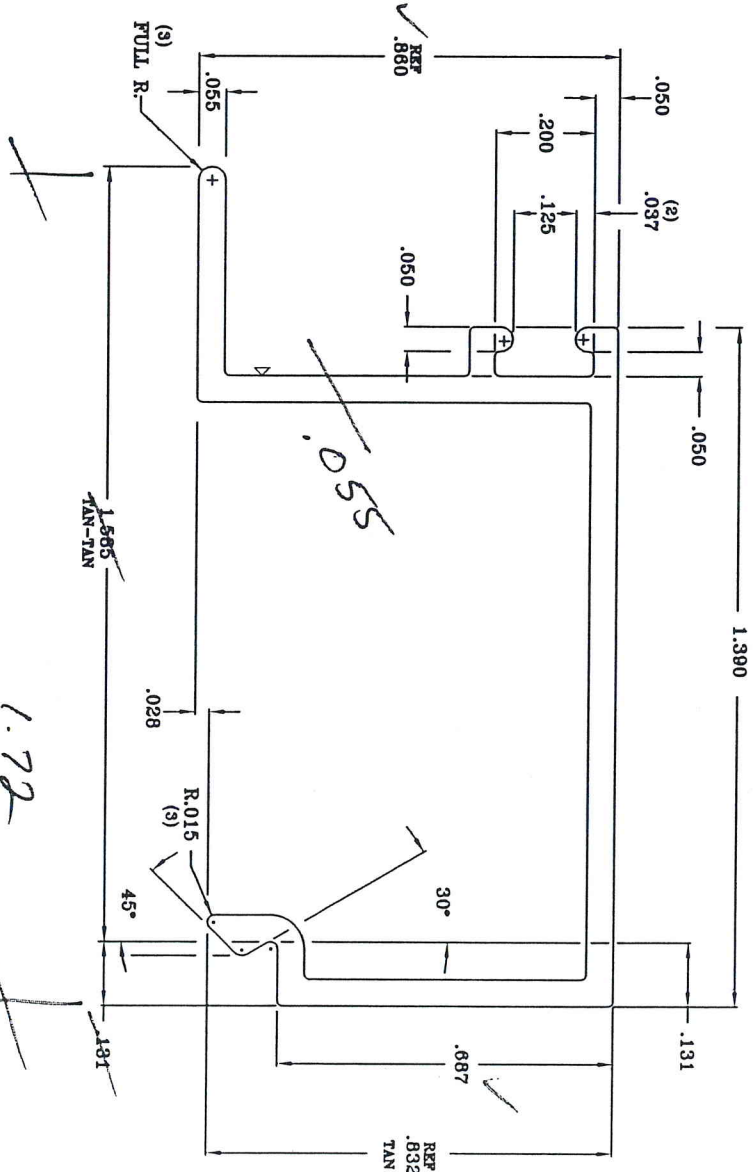
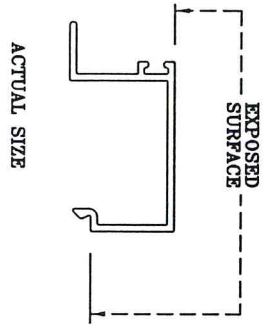
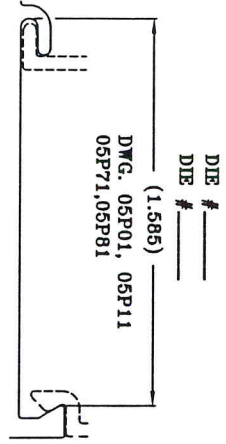
	PRESS 4	DOWN CD	DATE 4.17.2014
T 1.113	PORTS 11X7-2H		
21.012	W/P HOLLOW	D	5278
OR 19	BKR. HOLLOW	CLASS HOLLOW	
3.57	BOL STD-2	MUDY & TEMPER	6063-T6
0201/92	RATIO: PRESS 1:	DIE NO.	5278
	PRESS 2:	REV.	C1
	PRESS 3:		

FRONTIER ALUMINUM CORP.
2480 Rollroad St. Corona, Ca
Ph: (951) 735-1770 Fax: 735-1885
http://www.frontier-aluminum.com



Testing Evaluation Laboratories Inc
Specimen Compiles with Drawing 01990818
Deviations Noted - TEL # 01990818
Date 10-31-13 Verified by

THIS WITH PART



D.010 R. X .010HIGH/D. MARK NOTE: .055 UNMARRKED CORNERS .010 R

QTY	REV	DATE	BY	CHKD	DATE	REVISION	SCALE	PART NO.	BY	DATE
7	1						4:1	05P08		
2A	.202	POINTS	4	REV	2372					
2B	.242	W/P	-	BOULDER	4-9					
2C	7.337	FLE8686	REV	REV	9x1					
2D	HILDA	DATE	6/03/94	MATL.	6063-T6					
2E										
2F										
2G										
2H										
2I										
2J										
2K										
2L										
2M										
2N										
2O										
2P										
2Q										
2R										
2S										
2T										
2U										
2V										
2W										
2X										
2Y										
2Z										

ERRA ALUMINUM COMPANY
 2346 Fleetwood Drive
 Riverside, California 92509
 909/781-7800 FAX (909)781-7864

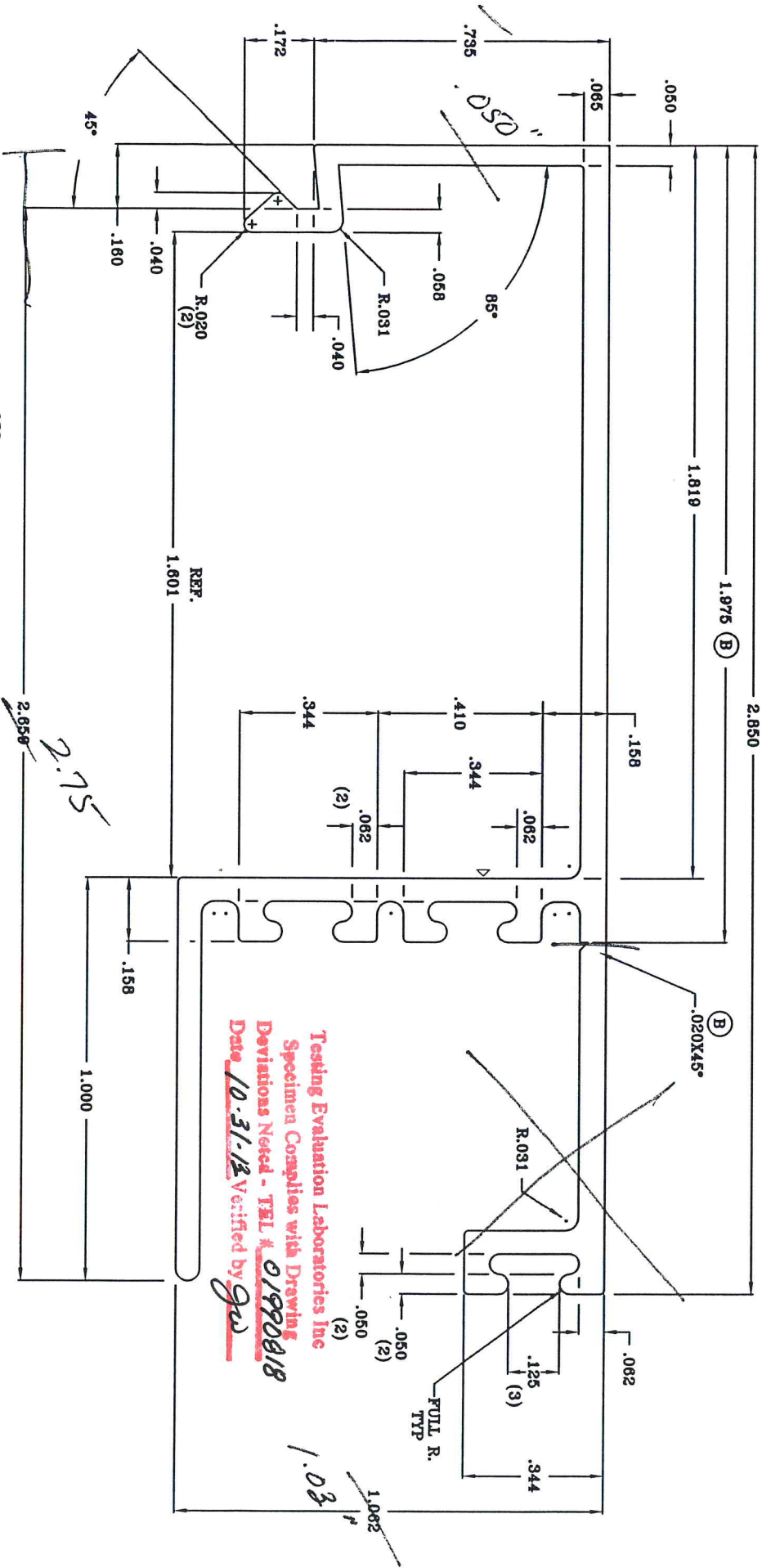
FLEETWOOD ALUMINUM PRODUCTS
 PART NAME
 GLASS STOP 1/2" ...5000

SCALE
 4:1
 PART NO.
 05P08
 BY
 DATE
 007930

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01992018
 Date 10-31-13 V certified by [Signature]

1.72

TYPE VIEW PARTS



Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-12 Verified by gzw

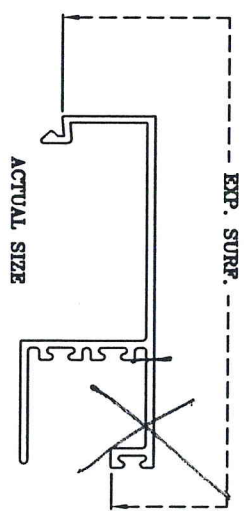
△.010 R. X .010DEPRID. MARK NOTE: .058 TYP. WILL EXCEPT AS NOTED
 UNFINISHED CONFORM .010 R.

REV	8	REV DATE	5	REV DATE	2
BY	.415	POCKET	3	BY	011448
DATE	13.489	FILE	28807	DATE	3-6
BY	KEN	DATE	4/24/02	BY	6083-T6
DATE		REV DATE		REV DATE	

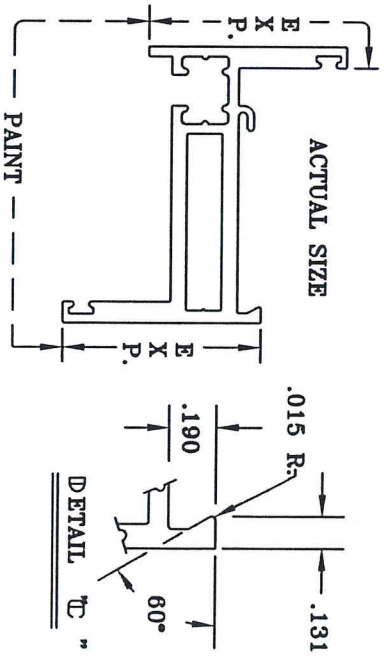
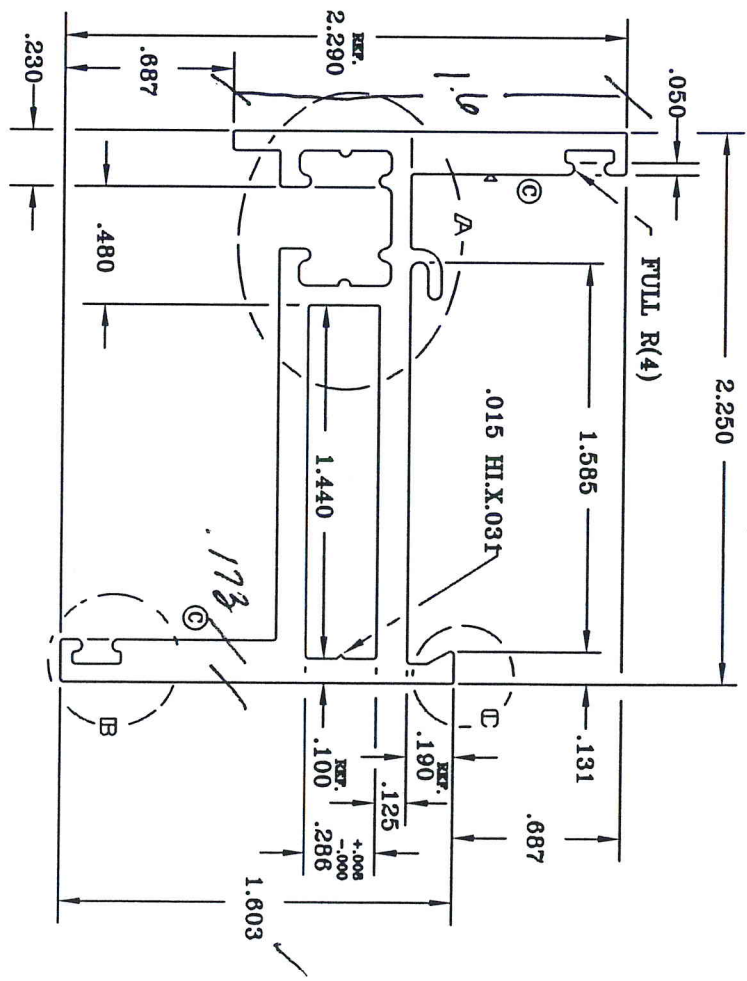
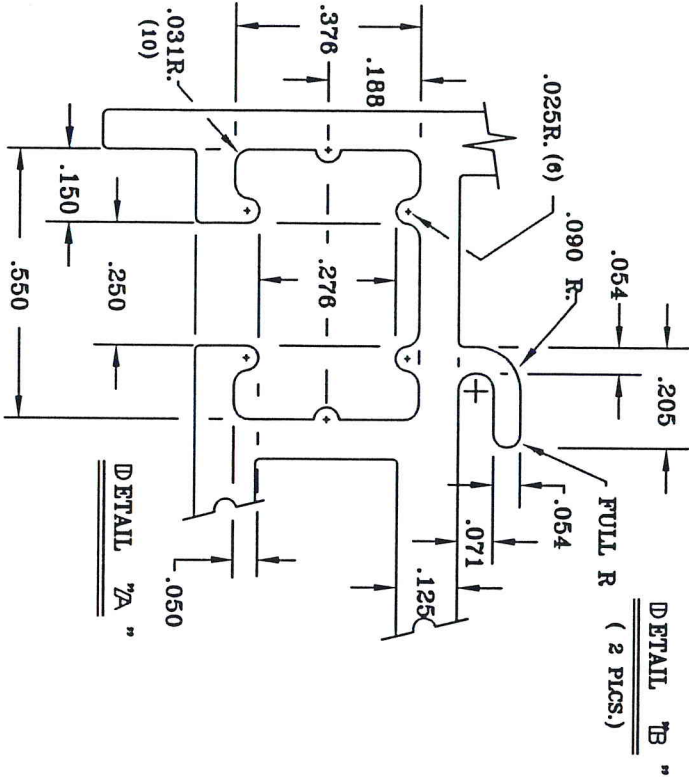
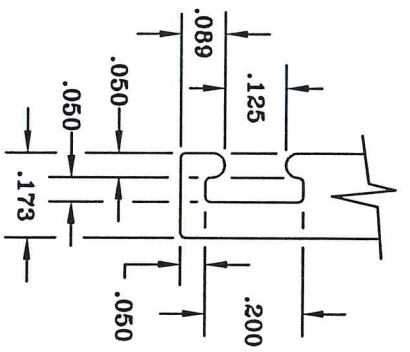
ERRA ALUMINUM COMPANY
 2346 Pinewood Drive
 Riverside, California 92506
 909/781-7800 FAX (909)781-7864

PART NAME: FLEETWOOD ALUMINUM
 PART NAME: GLASS STOP

SCALE: 4:1
 PART NO.: N/C
 REV NO.: 011448



①
THERMAL BREAK AREA .211



Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by gzu

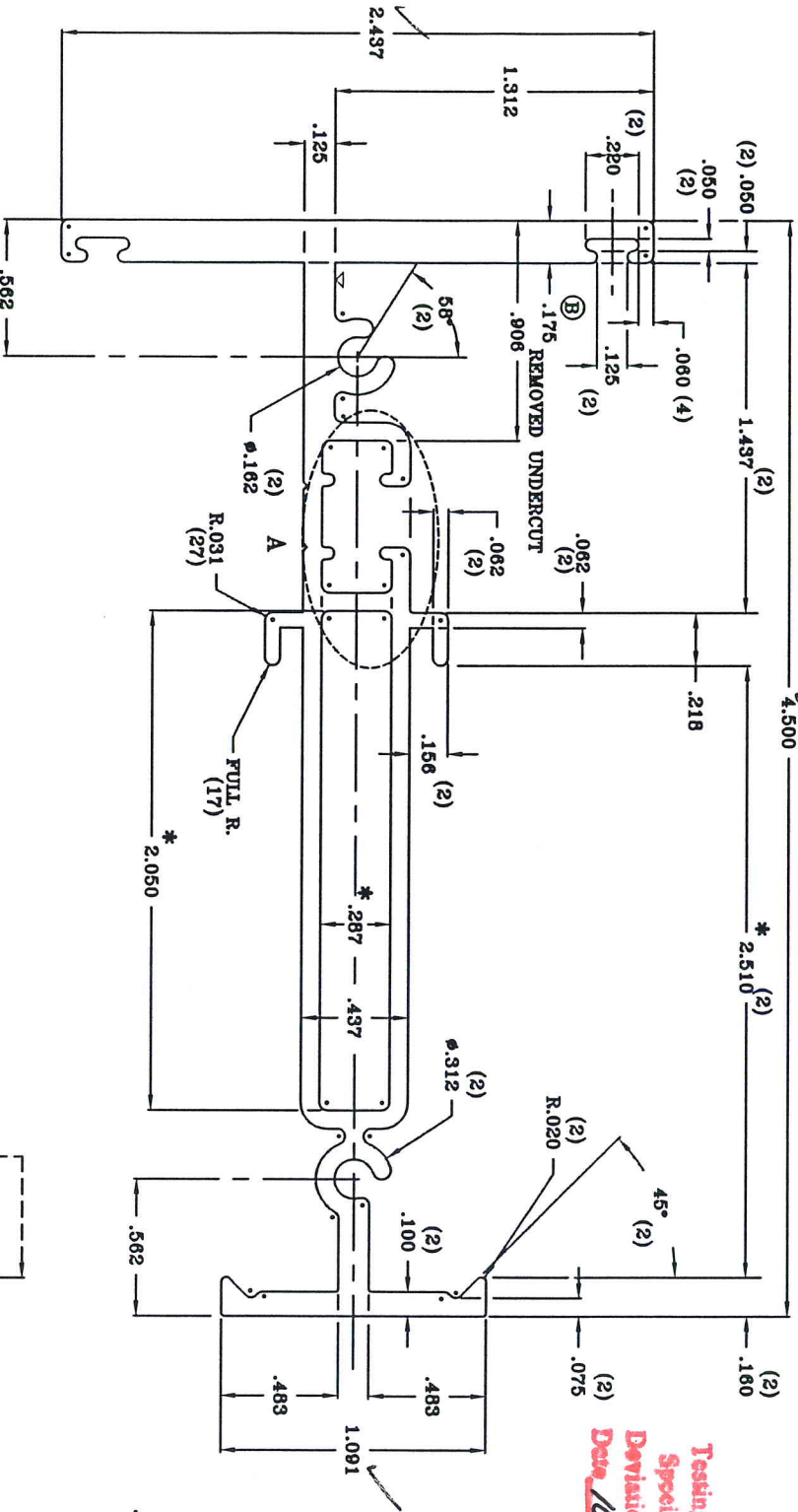
1.010 R. X .010DEEPI.D. MARK .080
 TYP. VALS. EXCEPT AS NOTED
 UNFINISHED SURFACE .218 R.

CONTAINER	SEE DRAWING	REPLACE	REVISION	DATE	BY	REASON
AREA	.897	1				
WT/TT	1.076	V/P	1-2	B		ADD THERMAL BREAK AREA
PANEL	16.076	FILE#6042	9X5	C		REMOVED UNDERCUTS WT/TT. VALS. .978/.18488
DATE	3/14/03	3/14/03		B		REMOVED 1ST STEP WT/TT. VALS. 1.008/.18418
CHG.	DATE	DATE				

SIERRA ALUMINUM COMPANY
 18000 180th Ave SW
 Everett, WA 98203
 (800)731-7000 FAX (800)731-7064

SIERRA ALUMINUM PRODUCTS, INC.
 ZEE BAR
 PART NO. 05P11
 H-006733

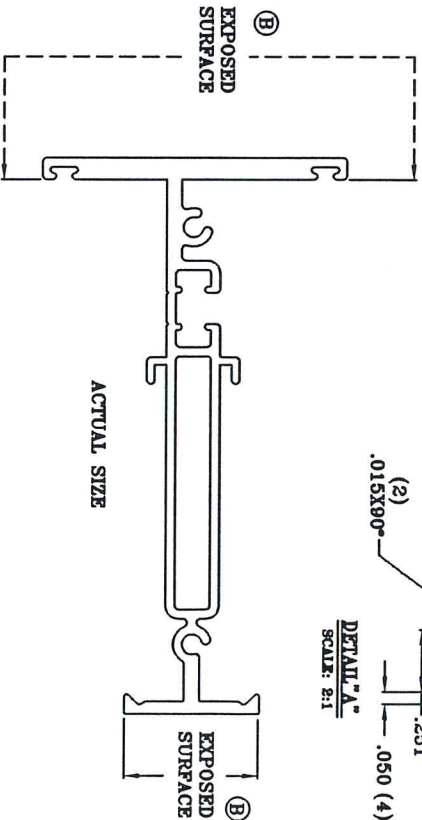
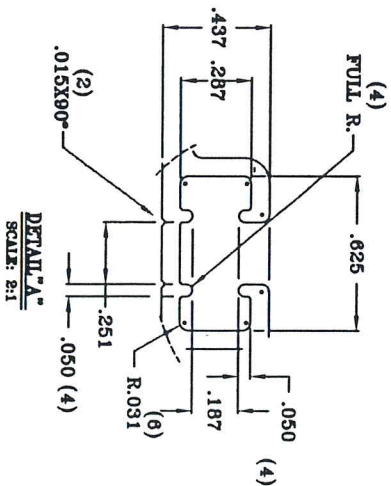
FROM OTHER PATENT FILE 27177, FILE 27179, & FILE 27180



* CRITICAL DIMENSION

Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by: gms

THERMAL FILL AREA = .181 SQ. IN.

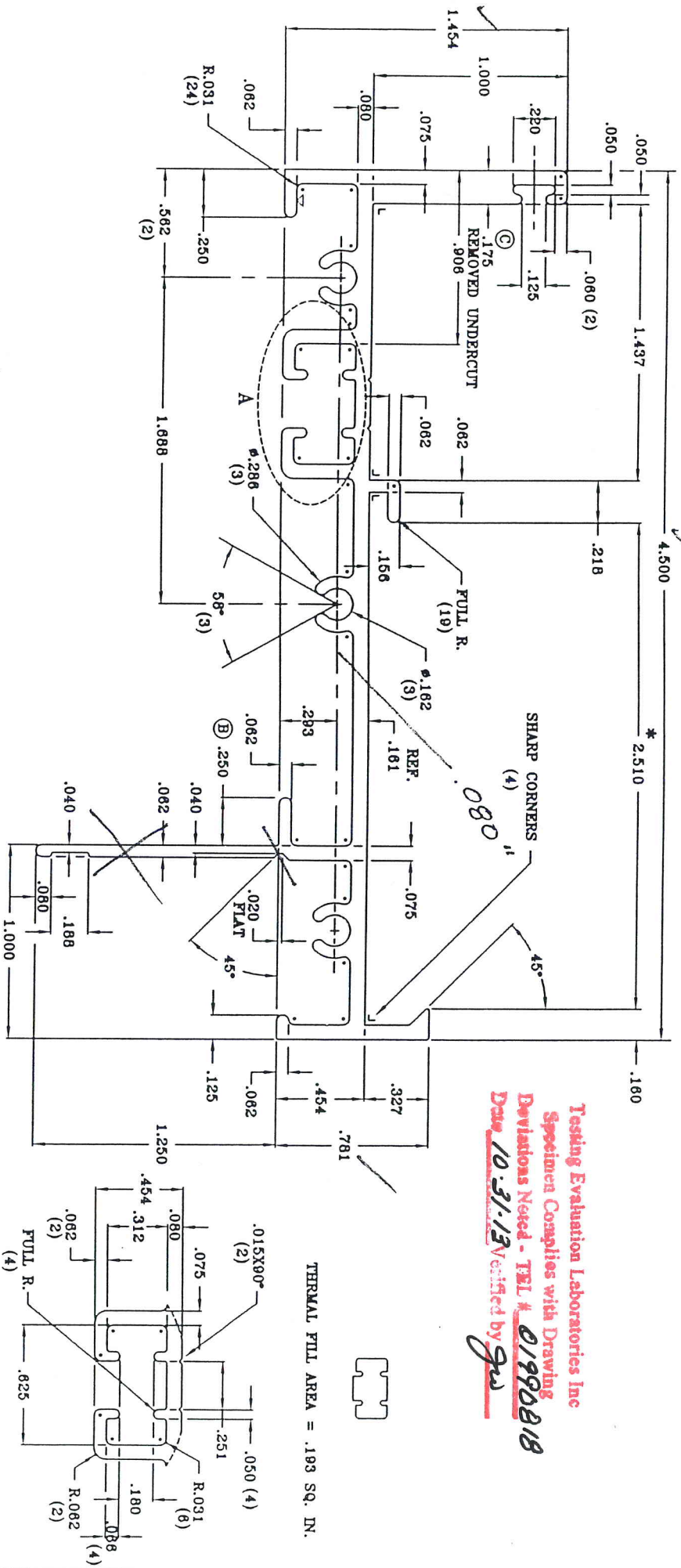


D.010 R. X. 010DEP.D. MARK .075 UNFINISHED CONDITION .010 IN. TYP. WALL THICKNESS AS NOTED

SYMBOL	DES. DIM.	QUANTITY	SPACES	NOTES
EA	1.232	POUNTS	1	
ET	1.478	Ø/Ø		11298
EL	25.766	FILE 27178		
EN	KEN DATE 11/12/03	MAT'L	6063-T6	3
EO		FINISHED TOLERANCES UNLESS OTHERWISE NOTED		
EP		CUSTOMER	FLEETWOOD ALUMINUM	
EQ		SCALE	2:1	
ER		PART NO.	3806	
ES		DES. NO.	H-011241	
ET		DATE		

ERRA ALUMINUM COMPANY
 5345 Fremont Drive
 Riverside, California 92509
 909/781-7900 FAX 909/781-7964

FROM OTHER PARTS FILE 271777, FILE 27179, & FILE 27180



Testing Evaluation Laboratories Inc
 Specimen Complies with Drawing
 Deviations Noted - TEL # 01990818
 Date 10-31-13 Verified by gsu

D.010 R. X .010DEP.D. MARK .075 TYP. VILL HEIGHT AS NOTED
 UNFINISHED CONDITION A19 II

REV	DATE	BY	CHK	DESCRIPTION
7/8				
1	11/12/03	KEN		REMOVED UNDERCUT
2	11/14/06			REMOVED UNDERCUT
3	11/14/06			REMOVED UNDERCUT
4	11/14/06			REMOVED UNDERCUT
5	11/14/06			REMOVED UNDERCUT
6	11/14/06			REMOVED UNDERCUT
7	11/14/06			REMOVED UNDERCUT
8	11/14/06			REMOVED UNDERCUT
9	11/14/06			REMOVED UNDERCUT
10	11/14/06			REMOVED UNDERCUT
11	11/14/06			REMOVED UNDERCUT
12	11/14/06			REMOVED UNDERCUT
13	11/14/06			REMOVED UNDERCUT
14	11/14/06			REMOVED UNDERCUT
15	11/14/06			REMOVED UNDERCUT
16	11/14/06			REMOVED UNDERCUT
17	11/14/06			REMOVED UNDERCUT
18	11/14/06			REMOVED UNDERCUT
19	11/14/06			REMOVED UNDERCUT
20	11/14/06			REMOVED UNDERCUT
21	11/14/06			REMOVED UNDERCUT
22	11/14/06			REMOVED UNDERCUT
23	11/14/06			REMOVED UNDERCUT
24	11/14/06			REMOVED UNDERCUT
25	11/14/06			REMOVED UNDERCUT
26	11/14/06			REMOVED UNDERCUT
27	11/14/06			REMOVED UNDERCUT
28	11/14/06			REMOVED UNDERCUT
29	11/14/06			REMOVED UNDERCUT
30	11/14/06			REMOVED UNDERCUT
31	11/14/06			REMOVED UNDERCUT
32	11/14/06			REMOVED UNDERCUT
33	11/14/06			REMOVED UNDERCUT
34	11/14/06			REMOVED UNDERCUT
35	11/14/06			REMOVED UNDERCUT
36	11/14/06			REMOVED UNDERCUT
37	11/14/06			REMOVED UNDERCUT
38	11/14/06			REMOVED UNDERCUT
39	11/14/06			REMOVED UNDERCUT
40	11/14/06			REMOVED UNDERCUT
41	11/14/06			REMOVED UNDERCUT
42	11/14/06			REMOVED UNDERCUT
43	11/14/06			REMOVED UNDERCUT
44	11/14/06			REMOVED UNDERCUT
45	11/14/06			REMOVED UNDERCUT
46	11/14/06			REMOVED UNDERCUT
47	11/14/06			REMOVED UNDERCUT
48	11/14/06			REMOVED UNDERCUT
49	11/14/06			REMOVED UNDERCUT
50	11/14/06			REMOVED UNDERCUT
51	11/14/06			REMOVED UNDERCUT
52	11/14/06			REMOVED UNDERCUT
53	11/14/06			REMOVED UNDERCUT
54	11/14/06			REMOVED UNDERCUT
55	11/14/06			REMOVED UNDERCUT
56	11/14/06			REMOVED UNDERCUT
57	11/14/06			REMOVED UNDERCUT
58	11/14/06			REMOVED UNDERCUT
59	11/14/06			REMOVED UNDERCUT
60	11/14/06			REMOVED UNDERCUT
61	11/14/06			REMOVED UNDERCUT
62	11/14/06			REMOVED UNDERCUT
63	11/14/06			REMOVED UNDERCUT
64	11/14/06			REMOVED UNDERCUT
65	11/14/06			REMOVED UNDERCUT
66	11/14/06			REMOVED UNDERCUT
67	11/14/06			REMOVED UNDERCUT
68	11/14/06			REMOVED UNDERCUT
69	11/14/06			REMOVED UNDERCUT
70	11/14/06			REMOVED UNDERCUT
71	11/14/06			REMOVED UNDERCUT
72	11/14/06			REMOVED UNDERCUT
73	11/14/06			REMOVED UNDERCUT
74	11/14/06			REMOVED UNDERCUT
75	11/14/06			REMOVED UNDERCUT
76	11/14/06			REMOVED UNDERCUT
77	11/14/06			REMOVED UNDERCUT
78	11/14/06			REMOVED UNDERCUT
79	11/14/06			REMOVED UNDERCUT
80	11/14/06			REMOVED UNDERCUT
81	11/14/06			REMOVED UNDERCUT
82	11/14/06			REMOVED UNDERCUT
83	11/14/06			REMOVED UNDERCUT
84	11/14/06			REMOVED UNDERCUT
85	11/14/06			REMOVED UNDERCUT
86	11/14/06			REMOVED UNDERCUT
87	11/14/06			REMOVED UNDERCUT
88	11/14/06			REMOVED UNDERCUT
89	11/14/06			REMOVED UNDERCUT
90	11/14/06			REMOVED UNDERCUT

ERRA ALUMINUM COMPANY
 3805 FLEETWOOD ALUMINUM
 4500 FRAME BLOCK
 SCALE 2:1
 PART NO. 3805
 N/C
 011239

CRITICAL DIMENSION

ACTUAL SIZE

EXPOSED SURFACE

EXPOSED SURFACE

EXPOSED SURFACE

REMOVED