

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

NORWOOD 3070 SLIDING GLASS/POCKET DOORS

	Results		
Title of Test	Specimens 1, 2, 3 144.00 x 144.00 - OXX	Specimen 4 144.00 x 144.00 - XXX	
Impact	Pass	Pass	
Fatigue Load Cycling	+60.0/- 60.0 psf	+60.0/- 60.0 psf	

Reference should be made to Report No. TEL 01991011 for complete test specimen description and data. For corresponding data regarding AAMA/WDMA/CSA 101/I.S./2/A440-08 (A440S1-09) reference should be made to Report No. TEL 01991010.

For Testing Evaluation Laboratories, Inc.

Vivian K. Wright,

President



Testing Evaluation Laboratories, Inc.

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

TEST RESULTS

Report No:

TEL 01991011

Test Dates: January 16. 2014

Report Date: March 21, 2014

through February 6, 2014

Issued to:

Fleetwood Windows and Doors **One Fleetwood Way** Corona, CA 92879

Project Summary: Testing Evaluation Laboratories, Inc. (TEL) was contracted by Fleetwood Windows and Doors to perform tests on the Norwood 3070 Sliding Glass/Pocket Door at TEL's Plant City, FL test facility.

Test specimen descriptions and results are reported herein.

IAS Laboratory Certification No. - TL-299

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:

Norwood 3070 Sliding Glass/Pocket Door

Type:

Aluminum Sliding Glass Doors

Overall Size:

144.00" x 144.00" - All Specimens

Daylight Opening:

43.50" x 135.50" – All Specimens (End Panels)

43.38" x 135.50" – All Specimens (Center Panels)

Glazing Detail:

Laminated Monolithic Glass - (All Specimens)

(See attached drawing for 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 #L-7110 and #L-7111.

Specimen 1 – 144.0" x 144.0" Aluminum Sliding Glass Door (OXX)

ASTM E1886-05/1996-06 - Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp	Missile	Missile	Missile	Muzzle Distance
Of Specimen	Level	Weight	Length	From Specimen
75°F	D	9.0 lbs, 3 oz	8'-0"	17'0"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	133.0"	9.0"	49.8 fps
2	Pass	118.0"	72.0"	49.8 fps
3	Pass	95.0"	72.0"	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 E1886-05/1996-06- Fatigue Load Cycling

Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	1.97
0% to 60%	0.0 to 36.0	300	2.52
50% to 80%	30.0 to 48.0	600	1.36
30% to 100%*	18.0 to 60.0	100	3.00

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	18.0 to 60.0	50	2.87
50% to 80%	30.0 to 48.0	1050	2.03
0% to 60%	0.0 to 36.0	50	2.92
20% to 50%	12.0 to 30.0	3350	1.50

*Panel deflected 3.75" from original plane at 100% Positive load and 4.00" 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 Zammitt

Specimen 2 – 144.0" x 144.0" Aluminum Sliding Glass Door (OXX)

ASTM E1886-05/1996-06 - Large Missile Impact (2 x 4 Southern Yellow Pine)

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

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	133.25"	8.75"	50.1 fps
2	Pass	118.25"	71.75"	50.2 fps
3	Pass	94.75"	72.0"	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 E1886-05/1996-06- Fatigue Load Cycling

Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	2.58
0% to 60%	0.0 to 36.0	300	2.86
50% to 80%	30.0 to 48.0	600	2.01
30% to 100%*	18.0 to 60.0	100	2.75

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)	
30% to 100%*	18.0 to 60.0	50	2.98	
50% to 80%	30.0 to 48.0	1050	1.48	
0% to 60%	0.0 to 36.0	50	2.51	
20% to 50%	12.0 to 30.0	3350	1.96	

^{*}Panel deflected 4.00" from original plane at 100% Positive load and 4.50" 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 Zammitt

Specimen 3 - 144.0" x 144.0" Aluminum Sliding Glass Door (OXX)

ASTM E1886-05/1996-06 - Large Missile Impact (2 x 4 Southern Yellow Pine)

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

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	27.0"	72.0"	50.2 fps
2	Pass	12.0"	131.0"	49.9 fps
3	Pass	117.0"	131.0"	50.0 fps
4	Pass	132.0"	73.0"	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 E1886-05/1996-06- Fatigue Load Cycling

Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	1.89
0% to 60%	0.0 to 36.0	300	2.52
50% to 80%	30.0 to 48.0	600	2.92
30% to 100%*	18.0 to 60.0	100	3.00

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	18.0 to 60.0	50	3.00
50% to 80%	30.0 to 48.0	1050	1.57
0% to 60%	0.0 to 36.0	50	2.81
20% to 50%	12.0 to 30.0	3350	1.93

^{*}Panel deflected 3.38" from original plane at 100% Positive load and 4.25" 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 Zammitt

Specimen 4 – 144.0" x 144.0" Aluminum Sliding Glass Door (XXX) (Tested with Pocket Interlocker)

ASTM E1886-05/1996-06 - Large Missile Impact (2 x 4 Southern Yellow Pine)

Cond. Temp	Missile	Missile	Missile	Muzzle Distance
Of Specimen	Level	Weight	Length	From Specimen
75°F	D	9.0 lbs, 3 oz	8'-0"	17'0"

Impact Location	Results	X - Measurement	Y - Measurement	Speed
1	Pass	95.0"	72.0"	50.0 fps
2	Pass	133.0"	11.0"	49.8 fps
3	Pass	117.0"	72.0"	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 E1886-05/1996-06- Fatigue Load Cycling

Design Pressure +60.0 psf / -60.0 psf

Positive % of Test Load	Positive Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
20% to 50%	12.0 to 30.0	3500	2.17
0% to 60%	0.0 to 36.0	300	2.01
50% to 80%	30.0 to 48.0	600	2.89
30% to 100%*	18.0 to 60.0	100	2.32

Negative % of Test Load	Negative Pressure Range (psf)	Number Of Cycles	Average Cycle Time (Sec)
30% to 100%*	18.0 to 60.0	50	2.04
50% to 80%	30.0 to 48.0	1050	2.14
0% to 60%	0.0 to 36.0	50	2.42
20% to 50%	12.0 to 30.0	3350	2.01

^{*}Panel deflected 2.63" from original plane at 100% Positive load and 3.25" 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 Zammitt

Conditions, Terms, and General Notes Regarding These Tests

The product tested <u>Has Been</u> 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 <u>"Are Equivalent".</u> 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.

K. Whight

Vivian K. Wright,

President

Revision Log

Rev No.	Date	Page(s)	Revision(s)
0	3/21/2014	NA	Original Report Issue

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5	Frame anchoring	
6	Components	
7	Bill of materials and glazing detail	

Testing Evaluation Laboratories Inc.
Specimen Complies with Drawing
Deviations Noted. TEL # 010910

FLEETWOOD Norwood 3070 (OXX) TABLE OF CONTENTS PART OR ASSEMBLY: PRODUCT: BY REVISIONS DATE NO. RW BUILDING CONSULTANTS, INC. 813.659.9197

DATE: 1/21/14

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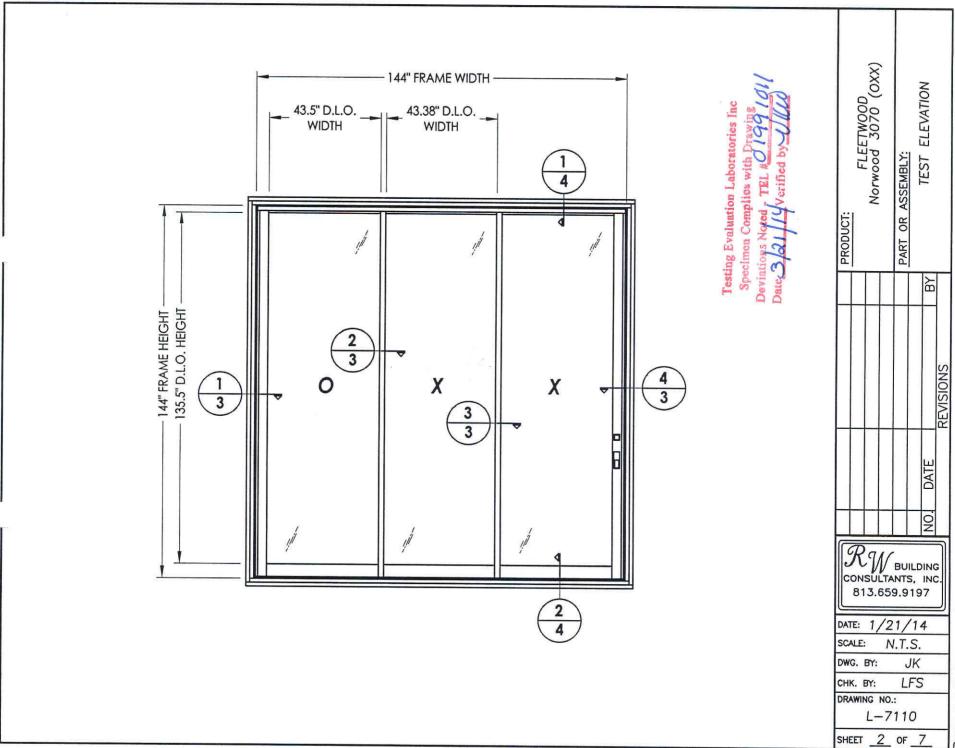
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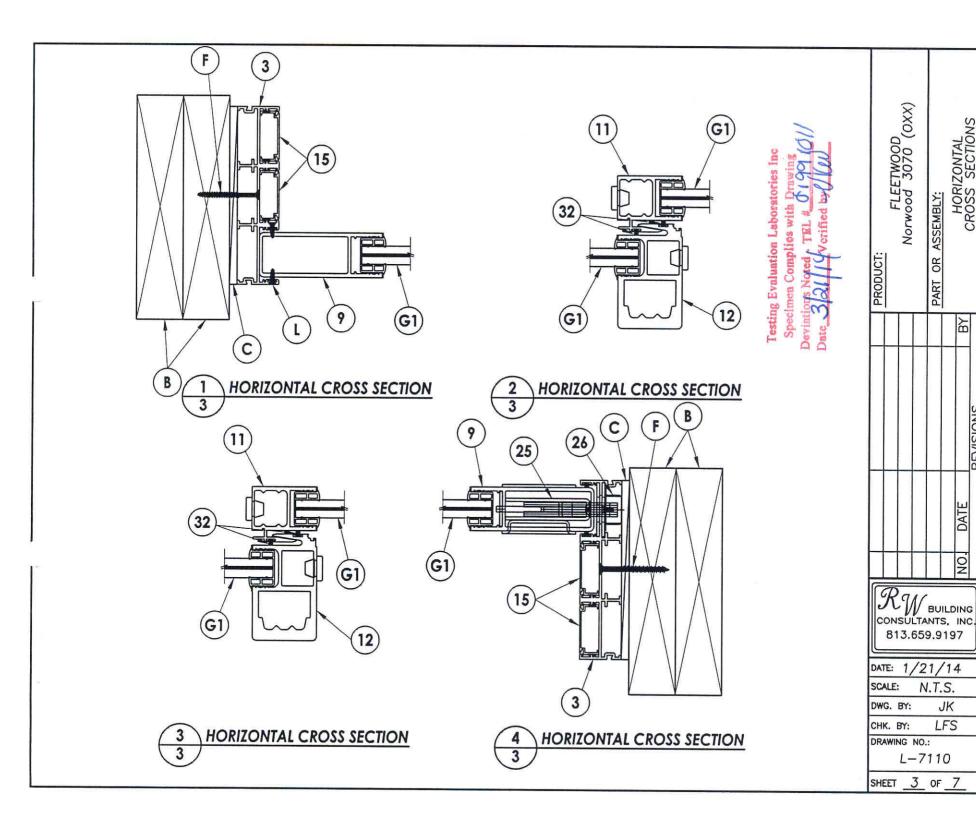
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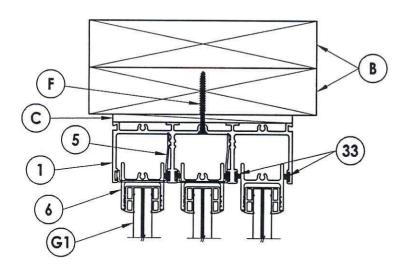
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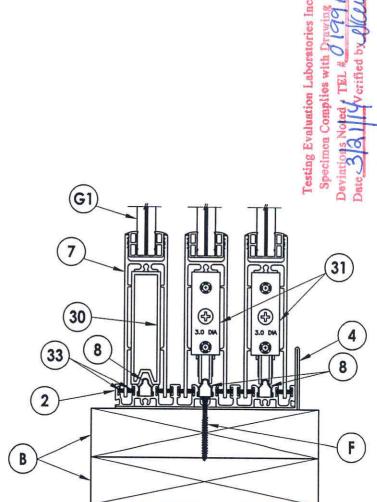
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HORIZONTAL CROSS SECTIONS



1 VERTICAL CROSS SECTION



2 VERTICAL CROSS SECTION

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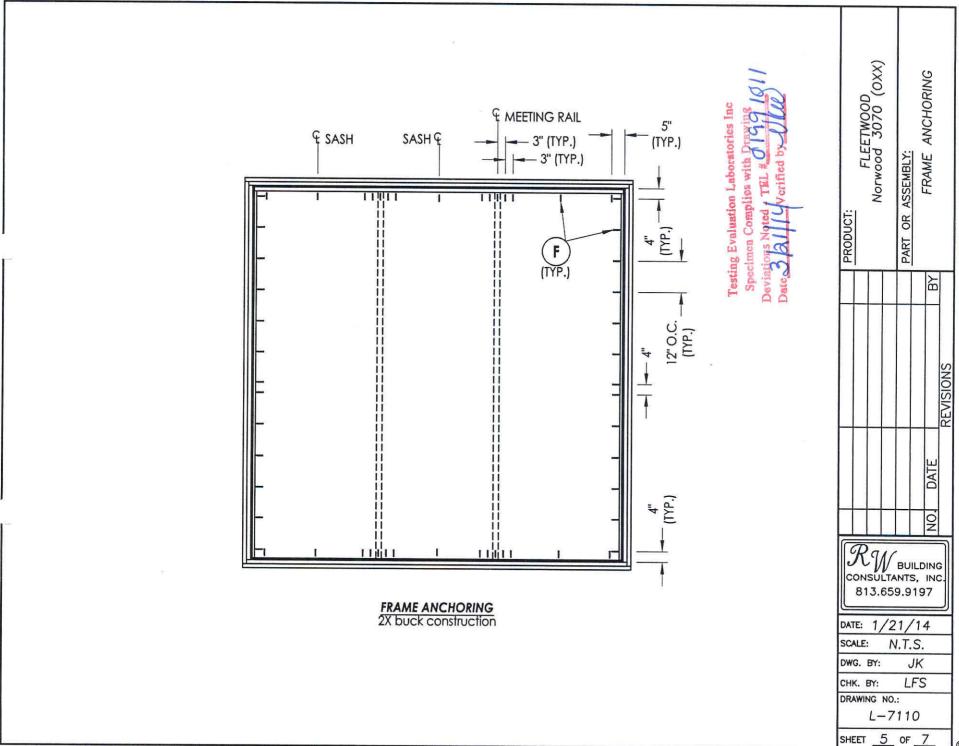
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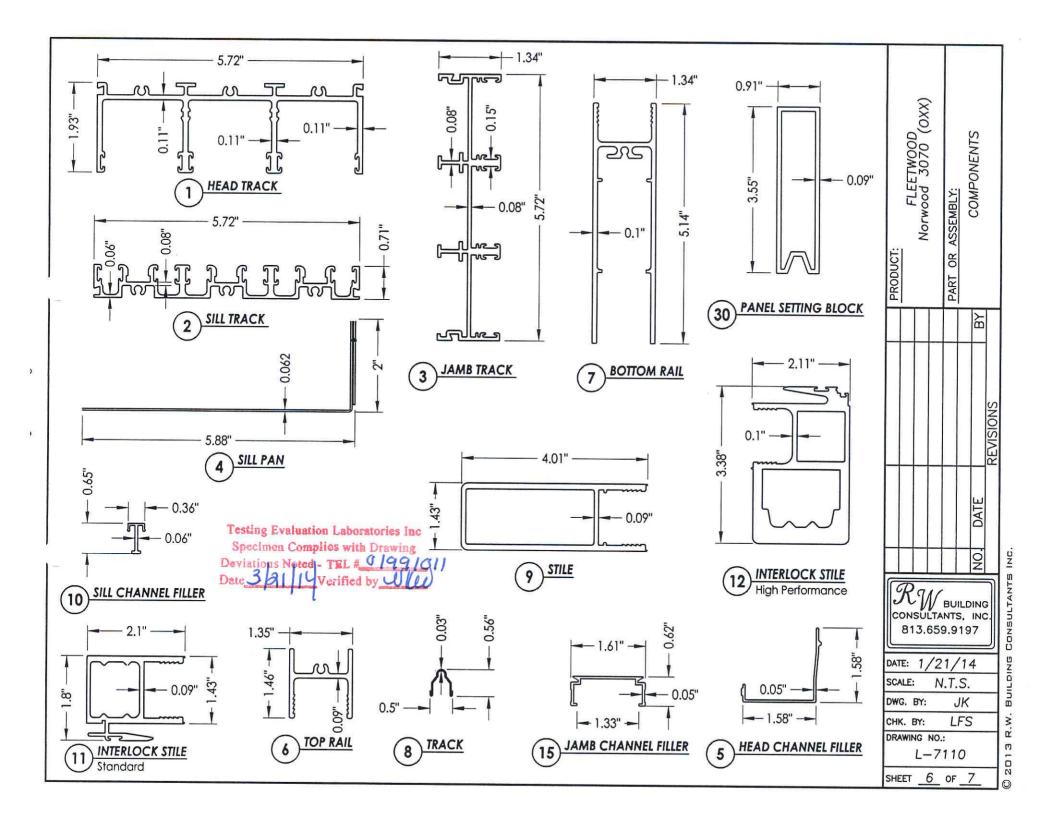
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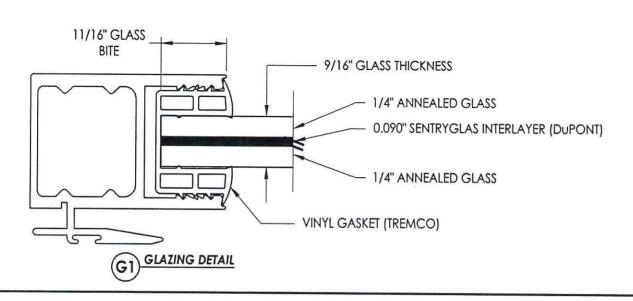
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BILL OF MATERIALS				
ПЕМ#	DESCRIPTION	MATERIAL		
В	2X BUCK SG >= 0.55	WOOD		
С	1/4" MAX. SHIM SPACE	-		
F	#10 X 2" PFH SMS	STEEL		
L	#8 X 1/2" PFH SMS	STEEL		
1	HEAD TRACK (3 RUNS)	6063-T6 ALUM		
2	SILL TRACK (3 RUNS)	6063-T6 ALUM		
3	JAMB TRACK (3 RUNS)	6063-T6 ALUM		
4	SILL PAN (TRIPLE RUN)	5052 -ALUM		
5	HEAD CHANNEL FILLER	6063-T6 ALUM		
6	TOP RAIL	6063-T6 ALUM		
7	BOTTOM RAIL	6063-T6 ALUM		
8	TRACK	S.S.		
9	STILE	6063-T6 ALUM		
10	SILL CHANNEL FILLER	6063-T6 ALUM		
11	STANDARD INTERLOCK STILE	6063-T6 ALUM		
12	HIGH PERFORMANCE INTERLOCK STILE	6063-T6 ALUM		
15	JAMB CHANNEL FILLER	6063-T6 ALUM		
25	LATCH ASSY.(JAMB)	-		
26	STRIKE PLATE ASSY.(JAMB)	1.0		
30	PANEL SETTING BLOCK	6063-T6 ALUM		
31	MAMMOTH ROLLER ASSEMBLY			
32	CENTER-FIN WEATHERSEAL .290" HIGH PILE (AMESBURY 43629-270)			
33	HEAVY DENSITY WEATHERSEAL .300" HIGH PILE (AMESBURY 413330-270)	-		

Testing Evaluation Laboratories Inc Specimen Complies with Dra Deviations Noted - TEL # 010 Date 3 31110 Verified by



PART OR ASSEMBLY: BY REVISIONS DATE NO. RW BUILDING CONSULTANTS, INC. 813.659.9197 DATE: 1/21/14 SCALE: N.T.S. JK DWG. BY: LFS CHK. BY: DRAWING NO .: L-7110

SHEET _7_ OF _7

FLEETWOOD Norwood 3070 (OXX)

PRODUCT

BILL OF MATERIALS AND GLAZING DETAIL

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Testing Evaluation Laboratories Inc.
Specimen Complies with Drawing
Deviations Noted - TEL # 0199101

FLEETWOOD Norwood 3070 (XXX) TABLE OF CONTENTS PART OR ASSEMBLY: PRODUCT: ВУ REVISIONS DATE Š. RW BUILDING CONSULTANTS, INC. 813.659.9197

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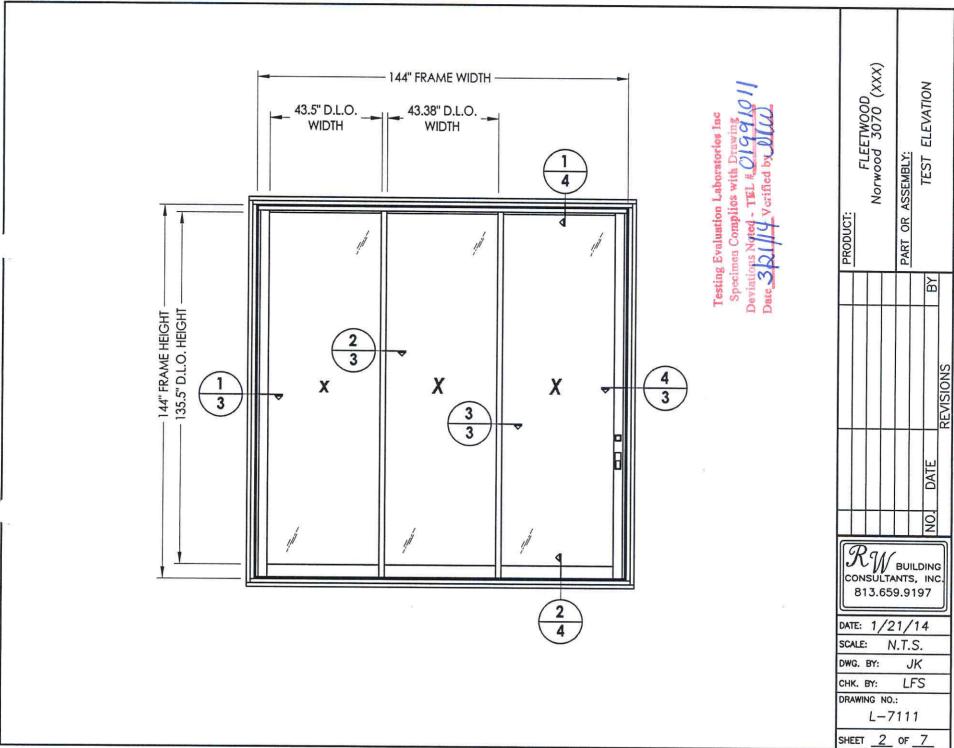
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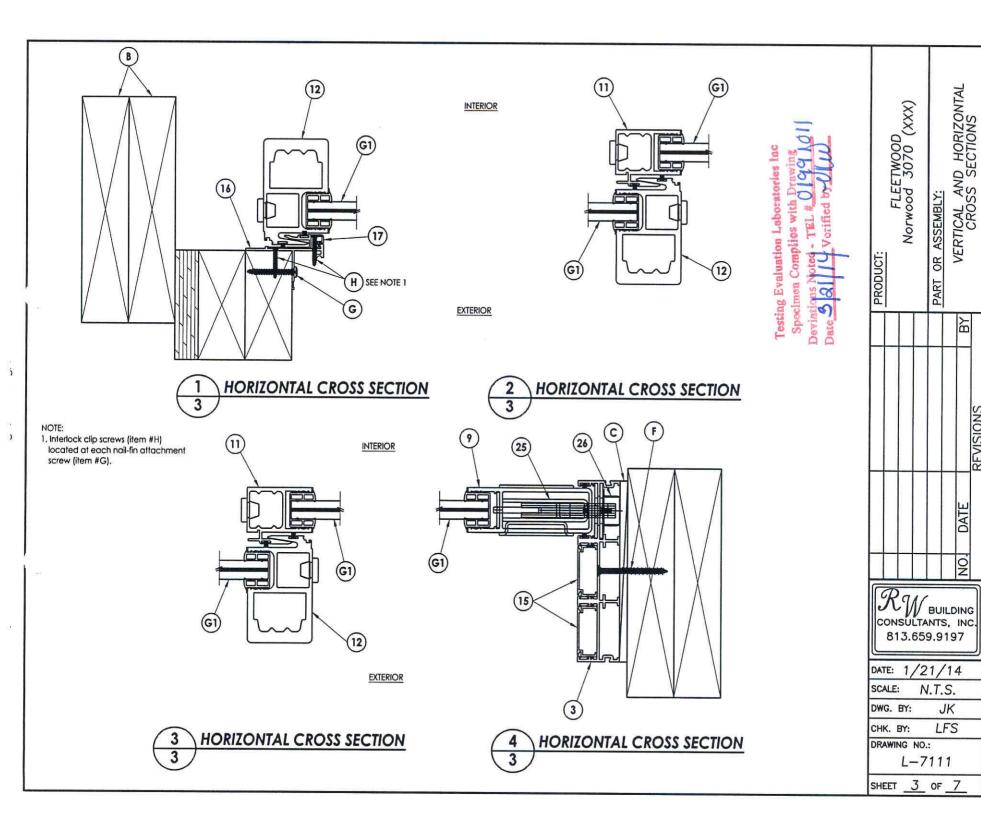
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L-7111 SHEET <u>1</u> OF <u>7</u>

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R.W. BUILDING CONSULTANTS 2014

VERTICAL AND HORIZONTAL CROSS SECTIONS

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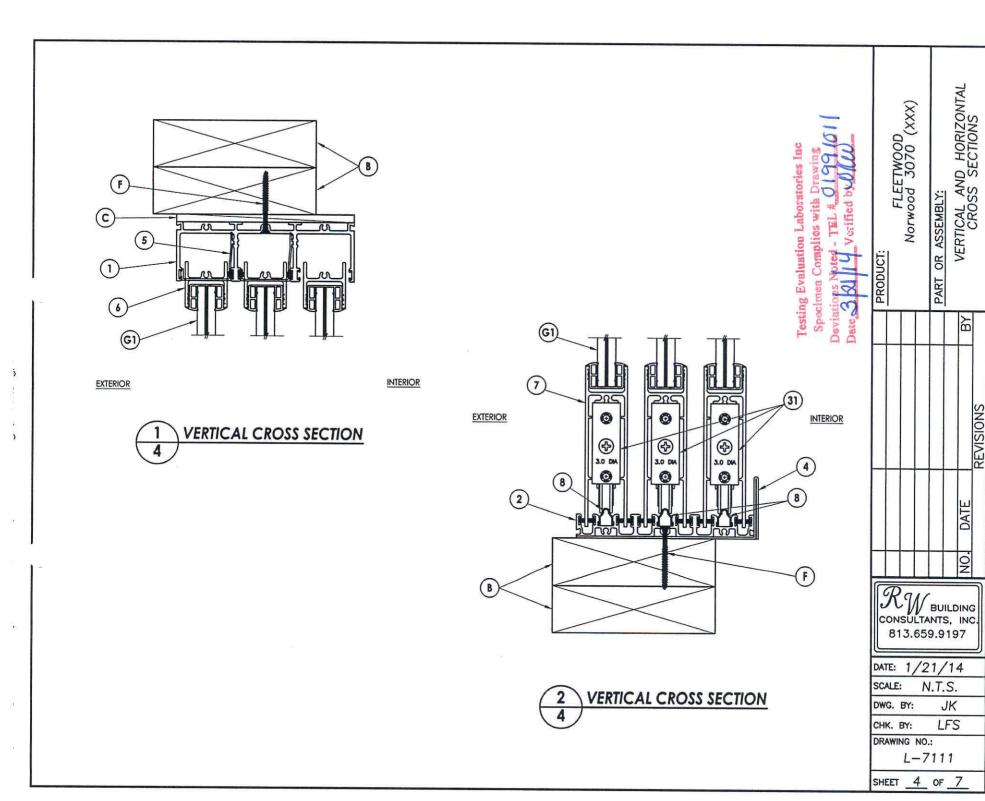
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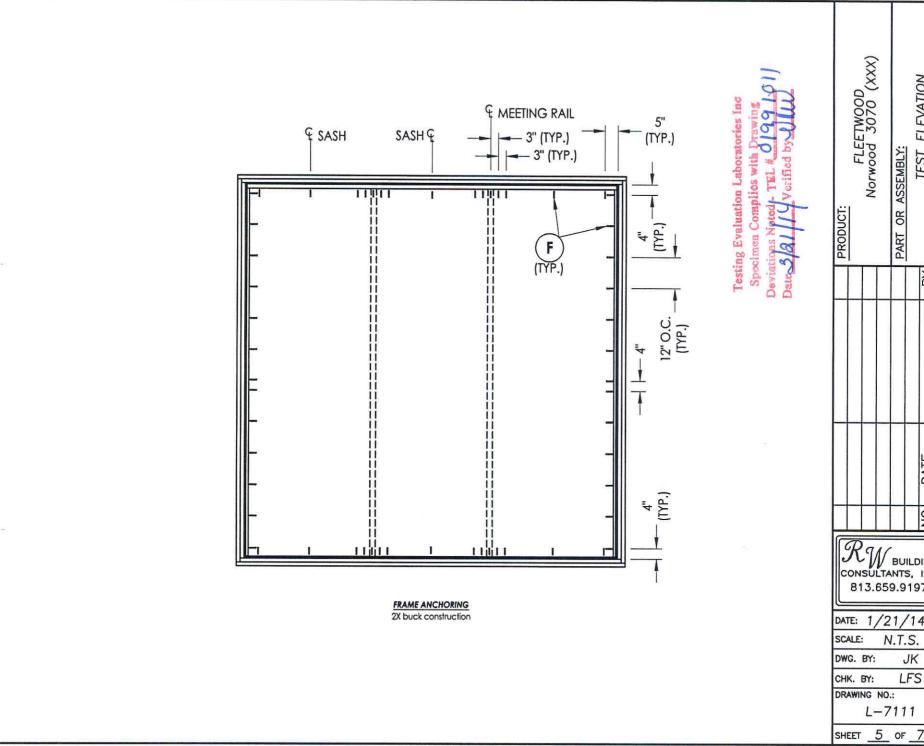
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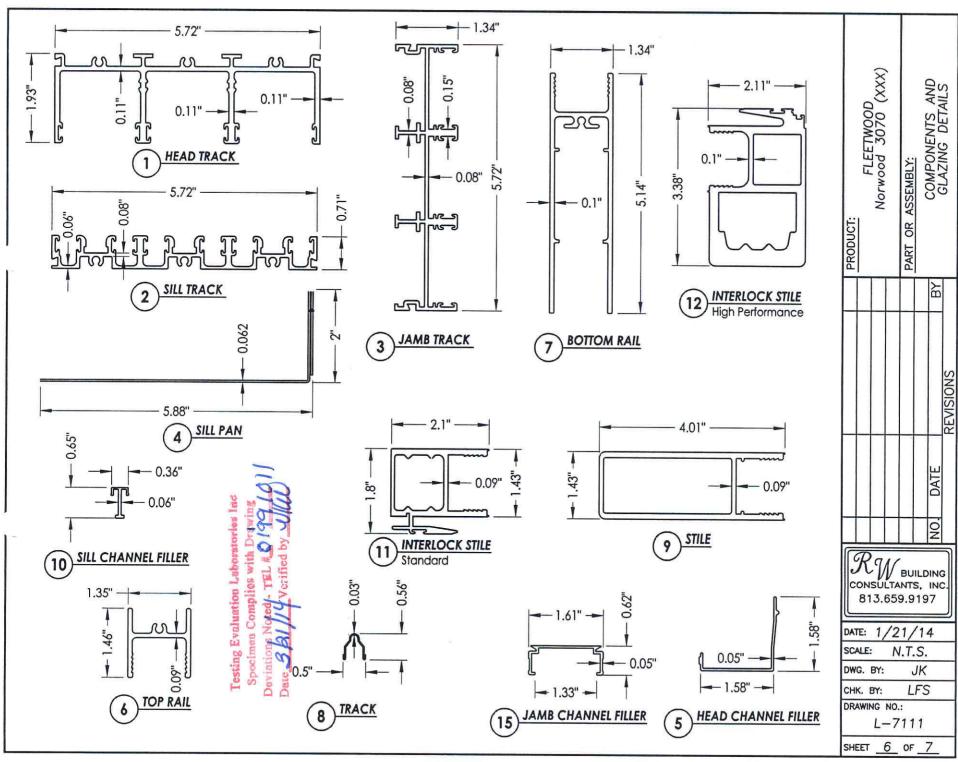
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DATE: 1/21/14 N.T.S. JK

SHEET <u>5</u> OF <u>7</u>

BUILDING CONSULTANTS INC. R.W. 02014



	BILL OF MATERIALS				
ПЕМ#	DESCRIPTION	MATERIAL			
В	2X BUCK SG >= 0.55	WOOD			
С	1/4" MAX, SHIM SPACE	-			
F	#10 X 2" PFH SMS	STEEL			
L	#8 X 1/2" PFH SMS	STEEL			
1	HEAD TRACK (3 RUNS)	6063-T6 ALUM			
2	SILL TRACK (3 RUNS)	6063-T6 ALUM			
3	JAMB TRACK (3 RUNS)	6063-T6 ALUM			
4	SILL PAN (TRIPLE RUN)	5052 -ALUM			
5	HEAD CHANNEL FILLER	6063-T6 ALUM			
6	TOP RAIL	6063-T6 ALUM			
7	BOTTOM RAIL	6063-T6 ALUM			
8	TRACK	S.S.			
9	STILE	6063-T6 ALUM			
10	SILL CHANNEL FILLER	6063-T6 ALUM			
11	STANDARD INTERLOCK STILE	6063-T6 ALUM			
12	HIGH PERFORMANCE INTERLOCK STILE	6063-T6 ALUM			
15	JAMB CHANNEL FILLER	6063-T6 ALUM			
16	POST INTERLOCKER NAIL FIN	6063-T6 ALUM			
17	POST INTERLOCKER CLIP	6063-T6 ALUM			
25	LATCH ASSY.(JAMB)	-			
26	STRIKE PLATE ASSY.(JAMB)	-			
31	MAMMOTH ROLLER ASSEMBLY	-			
32	CENTER-FIN WEATHERSEAL .290 HIGH PILE (AMESBURY 43629-270)				
33	HEAVY DENSITY WEATHERSEAL .300 HIGH PILE (AMESBURY 413330-270)	-			

Festing Evaluation Laboratories Inc. Specimen Complies with D FLEETWOOD Norwood 3070 (XXX)

PRODUCT:

BILL OF MATERIALS AND GLAZING DETAIL

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11/16" GLASS BITE 9/16" GLASS THICKNESS 1/4" ANNEALED GLASS 0.090" SENTRYGLAS PLUS INTERLAYER (DUPONT) 1/4" ANNEALED GLASS VINYL GASKET (TREMCO) GLAZING DETAIL

DATE S S RW BUILDING CONSULTANTS, INC. 813.659.9197 1/21/14 N.T.S. JK LFS DRAWING NO .: L-7111

SCALE: DWG. BY:

CHK. BY:

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