

**MIAMI-DADE COUNTY
PERFORMANCE TEST REPORT**

Rendered to:

FLEETWOOD WINDOWS & DOORS

**SERIES/MODEL: Norwood 3070-HI
PRODUCT TYPE: 90° Outside Corner Sliding Glass Pocket Door**

This report contains in its entirety:

**Cover Page: 1 page
Report Body: 10 pages
Sketches: 2 pages
Drawings: 4 pages**

**Report No.: 78673.01-301-18
Test Dates: 12/12/07
And: 12/13/07
Report Date: 02/25/08
Expiration Date: 12/13/17
Miami-Dade County Notification No.: ATI CA 07010**

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FLEETWOOD WINDOWS & DOORS
395 Smitty Way
Corona, California 92879

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Project Summary: Architectural Testing, Inc. was contracted by Fleetwood Windows & Doors to perform testing per Florida Building Code, Test Protocols for High Velocity Hurricane Zone, Protocols TAS 201-94, TAS 202-94 and TAS 203-94 on a Series/Model Norwood 3070-HI, 90° outside corner pocket door. The sample tested met the performance requirements set forth in the protocols for a +55.0 / -60.0 psf *Design Pressure* rating. Test specimen description and results are reported herein. The sample was provided by the client.

Test Procedures: The test specimen was evaluated in accordance with the following:

TAS 201-94, *Impact Test Procedures.*

TAS 202-94, *Criteria for Testing Impact and Non Impact Resistant Building Envelope Components Using Uniform Static Air Pressure Loading.*

TAS 203-94, *Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.*

Drawing Reference: The test specimen drawings have been reviewed and verified by Architectural Testing and are representative of the sample tested.

Test Specimen Description:

Series/Model: Norwood 3070HI

Product Type: 90° Outside Corner Sliding Glass Pocket Door

Test Specimen Description: (Continued)

Overall Size:

Front Elevation: 14' 6" wide by 9' 7" high by 5.724" deep

Return Elevation: 5' 2" wide by 9' 7" high by 5.724" deep

Fixed Panel Size: 4' 10-5/8" wide by 9' 5-1/4" high

Double Interlock Active Panel Size: 4' 8-13/16" wide by 9' 5-3/8" high

Active Panel with Male Yoke: 5' 0-7/8" wide by 9' 5-3/8" high

Active Pocket Panel Size: 5' 1-5/8" wide by 9' 5-3/8" high

Finish: All aluminum was painted white.

Glazing Details: All panels were glazed with a nominal 5/8" thick laminated glass consisting of 0.220" heat strengthened glass, a 0.100" Safety-Plus® II interlayer and 0.220" heat-strengthened glass manufactured by Glasslam International. All panels were channel glazed using Dow Corning 995 sealant and 4' long setting blocks. The glass bite was 9/16".

Weatherstripping:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Amesbury center-fin weather seal 0.270" high polypropylene pile	12 Rows	Each sill track leg. (Weatherstripping applied for the length of panel travel)
Amesbury center-fin weather seal 0.290" high polypropylene pile	6 Rows	Each head track leg. (Applied for the length of panel travel)
Amesbury center-fin weather seal 0.230" high polypropylene pile	2 Rows	Female yoke
Amesbury heavy density weather seal 0.300" high polypropylene pile	1 Row	Each panel interlock stile

Test Specimen Description: (Continued)

Weatherstripping: (Continued)

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Aluminum clip with brush seal air barrier	6	The bottom end of each panel interlock stile and the top end of the pocket panel butt stile. Each air barrier was secured with two #6 x 1/2" long TEKS screws.
6" long vinyl weatherstrip holder with Q-Lon vinyl wrapped foam weather seal 0.300" high	1 Piece	The bottom end of the center panel interlock stiles, the bottom end of the pocket panel interlock stile, the bottom end of the fixed panel interlock stile and the top end of the center panel interlock where it mates with the fixed panel interlock.
Dual leaf vinyl weatherstrip	1 Row	Interior jamb track exterior leg.

Frame Construction: All frame members consisted of extruded aluminum extrusions. An aluminum sill pan with 0.062" thick walls was employed. The vertical leg of the sill pan measured 2.00" high and was 0.135" thick. The door employed a three track head fabricated from two sections joined side-by-side with a solid PVC connector measuring 0.266" x 0.167" overall. One section employed two tracks, the other section one track. The sections were attached using #8 x 3/4" Phillips pan head sheet metal screws located at approximately 35" on center. The two-piece sill consisted of two sections joined side-by-side with a solid PVC connector measuring 0.266" x 0.167" overall. The height of the threshold was 0.710". The fixed panel jamb was coped, butted and attached to the head and sill with three #10 x 3/4" Phillips pan head sheet metal screws at each location. An intermediate pocket jamb was attached to a nominal No. 2 Douglas Fir 4 x 4 with seven #8 x 1-1/2" Phillips pan head sheet metal screws spaced 4" from each end and approximately 18" on center. Aluminum head channel fillers were employed between the fixed panel and the intermediate pocket jamb and between the double interlock active panel and the intermediate pocket jamb. The frame and sill members were cut at a 45° angle at the outside corner of the OXX-XP door.

Panel Construction: All panels were constructed from extruded aluminum alloy. The corners were coped, butted and attached using a single #10 x 2" Phillips oval head sheet metal screw per corner. The male and female yokes were attached to the corner panel butt stiles using #8 x 3/4" Phillips pan head sheet metal screws; seven per side. The fixed panel was attached to the fixed panel jamb with four #8 x 1/2" Phillips flat head sheet metal screws at 39" from each end; two at the interior and two at the exterior. The top of interlock stile and lead stiles were filled with spray foam.

Test Specimen Description: (Continued)

Hardware:

<u>Description</u>	<u>Quantity</u>	<u>Location</u>
Mammoth adjustable metal double roller assembly (wheel diameter 3")	6	Two per active panel bottom rail.
Two point locking system	1	Locking points located at 46-1/4" and 81-1/2" from the bottom of the male yoke stile with the keeper cut into the female yoke stile strike opening 3/4" x 2-1/4".

Drainage: The underside of the sill was saw cut 1" wide by leg height (approximately 0.157") by the full depth of the sill to allow drainage into the sill pan. The cuts were located approximately 12" from each end of the sill and 24" on center

Reinforcement: No reinforcement was utilized.

Installation: Screws and method of attachment:

Header: #10 x 2" Phillips pan head screws spaced 5" from each end and 14-16" on center. Three fasteners were located at each location, one per track.

Sill: #10 x 2" Phillips pan head screws spaced 5" from each end and 14-16" on center. Three fasteners were located at each location, one per track.

Fixed panel jamb: (16) #10 x 2" Phillips flat head sheet metal screws 4" from each end spaced evenly (three per location, one per track).

Fixed panels: Four #8 x 3/4" Phillips pan head sheet metal screws attaching the fixed panel jamb stile to the jamb 39" from each end, two at the interior and two at the exterior.

Test Results: The following results have been recorded:

Protocol TAS 202-94, Static Air Pressure Tests

Test Unit #1

Design Pressure: +55.0 / -60.0 psf

Title of Test	Results		
Air Infiltration 1.57 psf (25 mph)	0.25 cfm/ft ²		
Structural Loads	Indicator Readings (inch)		
50% of Test Pressure (+41.25 psf)	<u>#1</u>	<u>#2</u>	<u>#3</u>
Maximum Deflection	0.07	0.28	0.15
Permanent Set	0.06	0.05	0.04
Design Pressure (+55.0 psf)			
Maximum Deflection	0.06	0.33	0.16
Permanent Set	0.01	0.01	0.00
50% of Test Pressure (- 45.0 psf)			
Maximum Deflection	0.15	0.16	0.17
Permanent Set	0.07	0.08	0.09
Design Pressure (-60.0 psf)			
Maximum Deflection	0.12	0.15	0.16
Permanent Set	0.05	0.06	0.09
Water Infiltration 15% Positive Design Pressure (+8.25 psf)	No Penetration		
Test Pressure (+82.5 psf)			
Maximum Deflection	0.08	0.32	0.22
Permanent Set	0.05	0.02	0.09
Test Pressure (-90.0 psf)			
Maximum Deflection	0.04	0.22	0.28
Permanent Set	0.02	0.04	0.11
Forced Entry - ASTM F 842-97	Pass		

Note: See Architectural Testing Sketch #1 for indicator locations.

Test Results: (Continued)

Protocol TAS 201-94, *Impact Test Procedures*

Missile Weight: 9 lbs

Muzzle Distance from Test Specimen: 17 ft.

Test Unit # 1

Impact #1: Missile Velocity: 49.6 fps

Impact Area: Center of the front elevation corner panel

Observations: No tear

Results: Pass

Impact #2: Missile Velocity: 49.7 fps

Impact Area: Bottom left corner of the corner panel front elevation

Observations: No tear

Results: Pass

Impact #3: Missile Velocity: 50.9 fps

Impact Area: Center of the corner panel stile

Observations: No Damage

Results: Pass

Note: Refer to Architectural Testing Sketch #2 for impact locations.

Test Results: (Continued)

Protocol TAS 203-94, Cyclic Wind Pressure Loading

Test Unit #1

Design Pressure: +55.0 / -82.5 psf

POSITIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)		
			#1	#2	#3
11.0 to 27.5	3500	2.96	0.04	0.19	0.10
0 to 33.0	300	5.93	0.07	0.27	0.12
27.5 to 44.0	600	4.23	0.03	0.32	0.13
16.5 to 55.0	100	9.23	0.01	0.37	0.14
			Permanent Set (inch)		
			0.00	0.10	0.15

NEGATIVE PRESSURE

Pressure Range (psf)	Number of Cycles	Average Cycle Time (sec.)	Maximum Deflection at Indicator (inch)		
			#1	#2	#3
18.0 to 60.0	50	8.53	0.03	0.16	0.14
30.0 to 48.0	1050	3.75	0.01	0.11	0.14
0 to 36.0	50	6.12	0.03	0.09	0.12
12.0 to 30.0	3350	2.76	0.02	0.07	0.10
			Permanent Set (inch)		
			0.00	0.01	0.02

Result: Pass

Note: Refer to Architectural Testing Sketch #1 for indicator locations.

Test Equipment:

Cannon: Steel pipe barrel utilizing compressed air to propel the missile

Missile: 2x4 Southern Pine

Timing Device: Electronic Beam Type

Cycling Mechanism: Computer controlled centrifugal blower with electronic pressure measuring device

Deflection Measuring Device: Linear transducers,

Laboratory Compliance Statements: The following are provided as required by the protocols for the testing reported herein.

Upon completion of testing, specimens tested for TAS 201-94 met the requirements of Section 1626 of the Florida Building Code, Building (2004).

Upon completion of testing, specimens tested for TAS 202-94 met the requirements of Section 1620 of the Florida Building Code, Building (2004).

Upon completion of testing, specimens tested for TAS 203-94 met the requirements of Section 1626 of the Florida Building Code, Building (2004).

Tape and film were used to seal against air leakage during structural testing. In our opinion, the tape and film did not influence the results of the test.

Testing was conducted at the Architectural Testing, Inc. laboratory located in Fresno, California.

List of Official Observers:

<u>Name</u>	<u>Company</u>
Nathan Baker	Fleetwood Windows & Doors
Leaton Kirk	Architectural Testing, Inc.
Dennis Janzen	Architectural Testing, Inc.
Jeffrey T. Kaminski, P.E.	Architectural Testing, Inc.
Tyler Westerling, P.E.	Architectural Testing, Inc.

Detailed drawings, data sheets, representative samples of test specimens, a copy of this report, or other pertinent project documentation will be retained by Architectural Testing, Inc. for a period of ten years from the original test date. At the end of this retention period, such materials shall be discarded without notice and the service life of this report will expire.

Results obtained are tested values and were secured by using the designated test methods. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. It is the exclusive property of the client so named herein and relates only to the specimen tested. This report may not be reproduced, except in full, without the written approval of Architectural Testing, Inc.

For ARCHITECTURAL TESTING, INC.

Tyler Westerling, P.E.
Project Engineer

Jeffrey T. Kaminski, P.E.
Senior Project Engineer

TW:kb/cmd

Attachments (pages): This report is complete only when all attachments listed are included.

Appendix-A: Sketches (2)

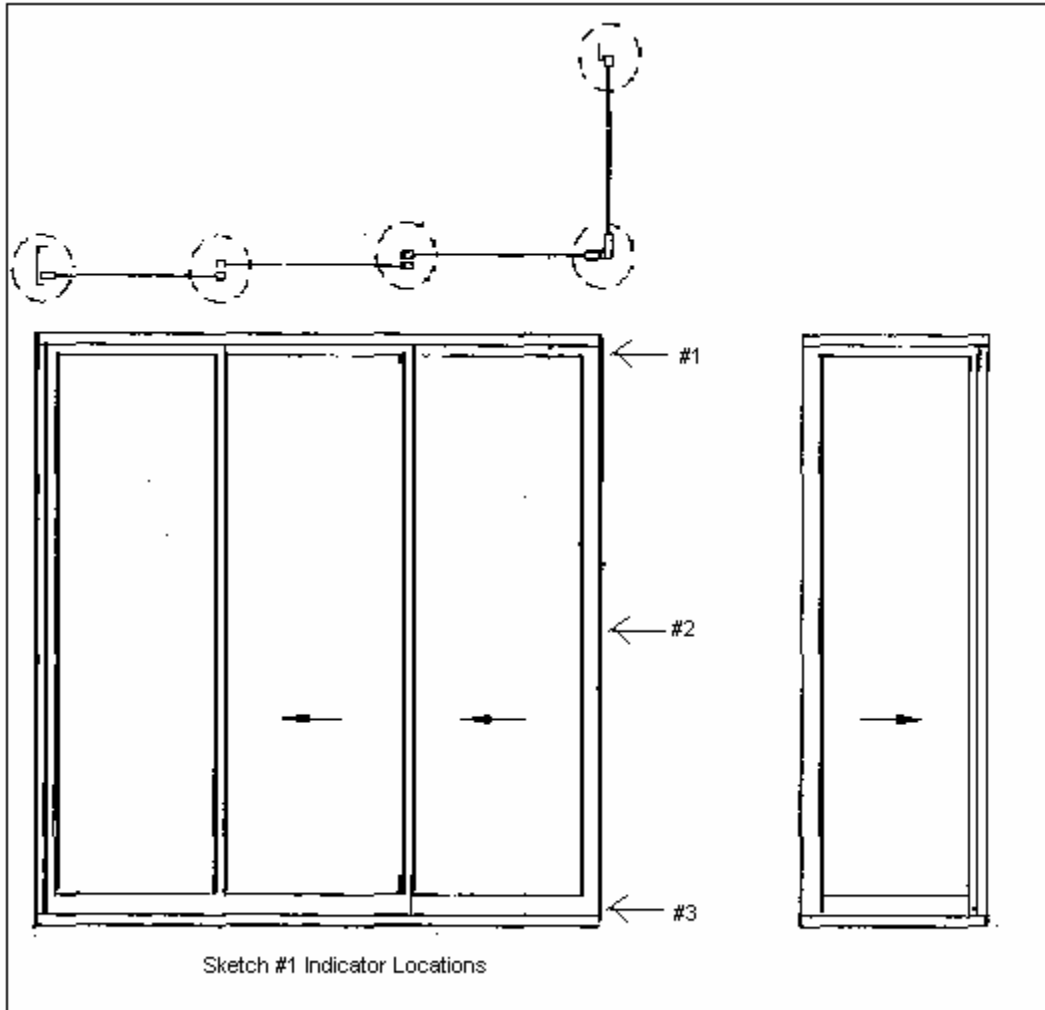
Appendix-B: Drawings (4)

Revision Log

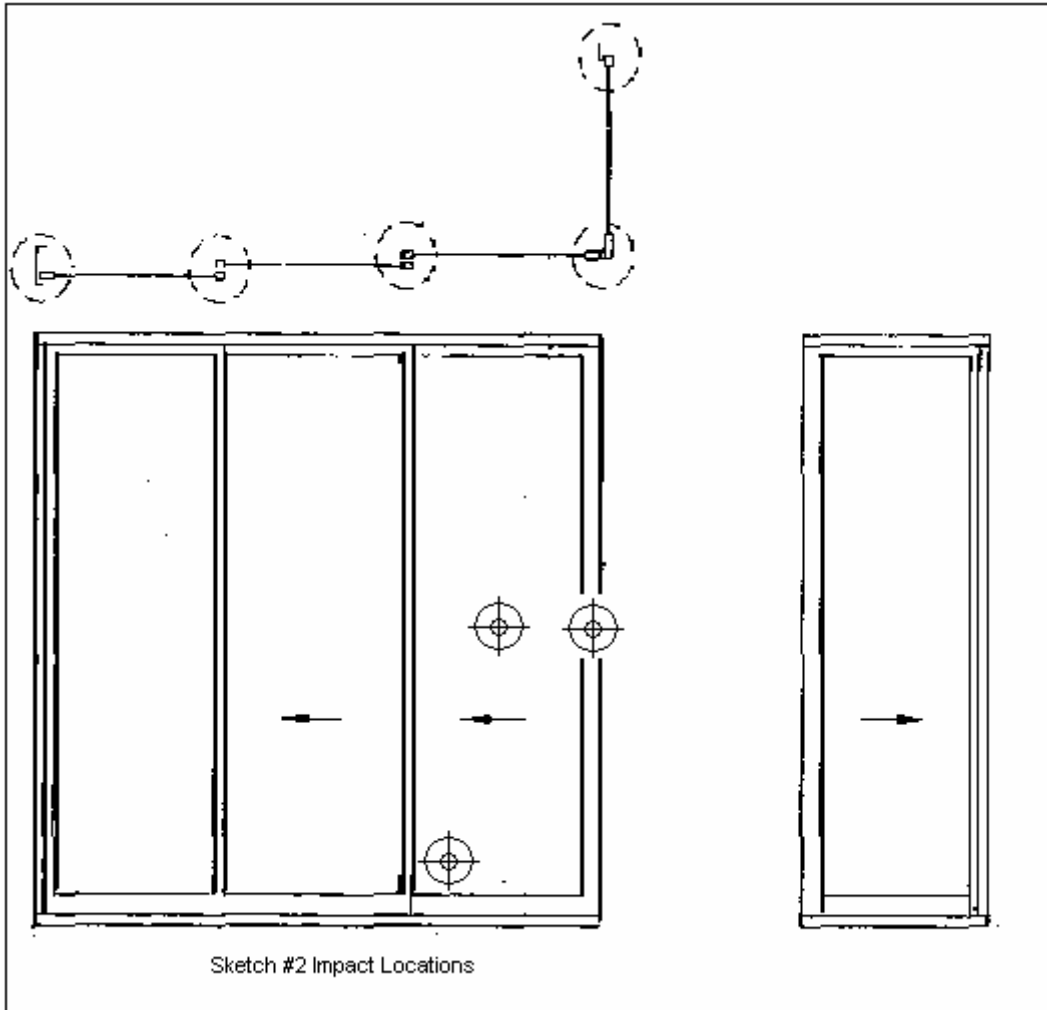
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0	02/25/08	N/A	Original report issue

Appendix A

Sketches



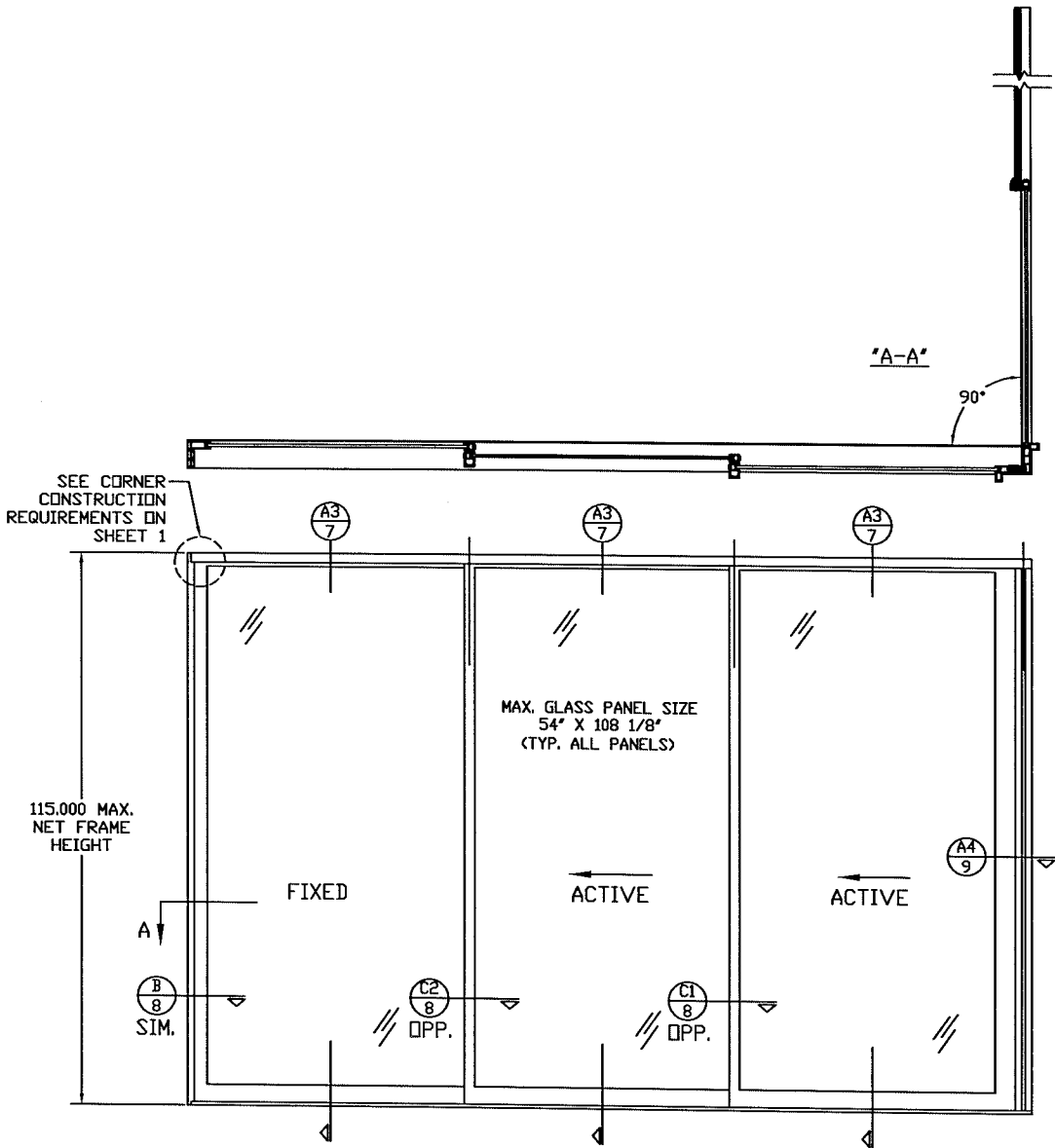
Sketch #1
Indicator Locations



**Sketch #2
Impact Locations**

Appendix B

Drawings

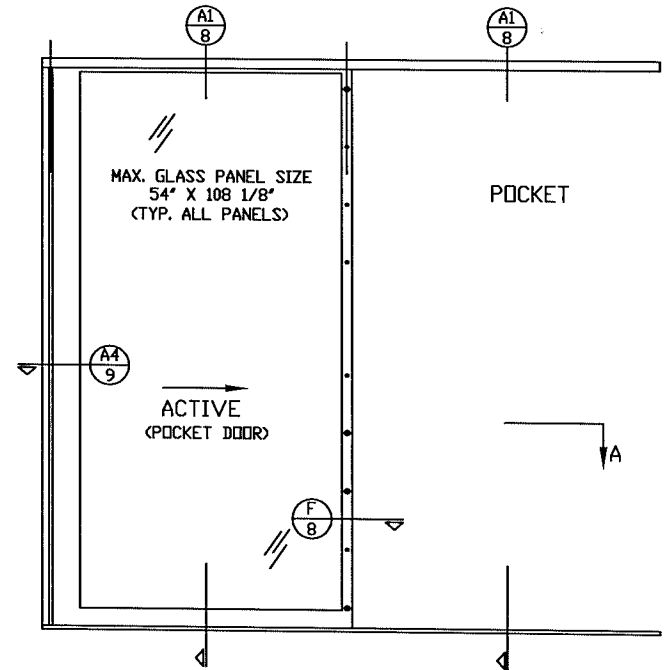


Architectural Testing, Inc
 Test sample complies with these details
 Deviations are noted.

7 8 6 7 3

FEB 0 4 2008

Report# Tech
 Date



DRAWN BY WDE	DATE 01/04/08	TITLE NORWOOD 3070HI 2008 CERTIFICATION SPECIMEN 3A/3B	 FLEETWOOD WINDOWS & DOORS FleetwoodUSA.com
SCALE 1/24	REV#	DRAWING NUMBER CERT-DADE08-S3	
CONFIGURATION# 90° QXXIXP			



Architectural Testing, Inc.
Test sample complies with these details
Deviations are noted.

7 8 6 7 3

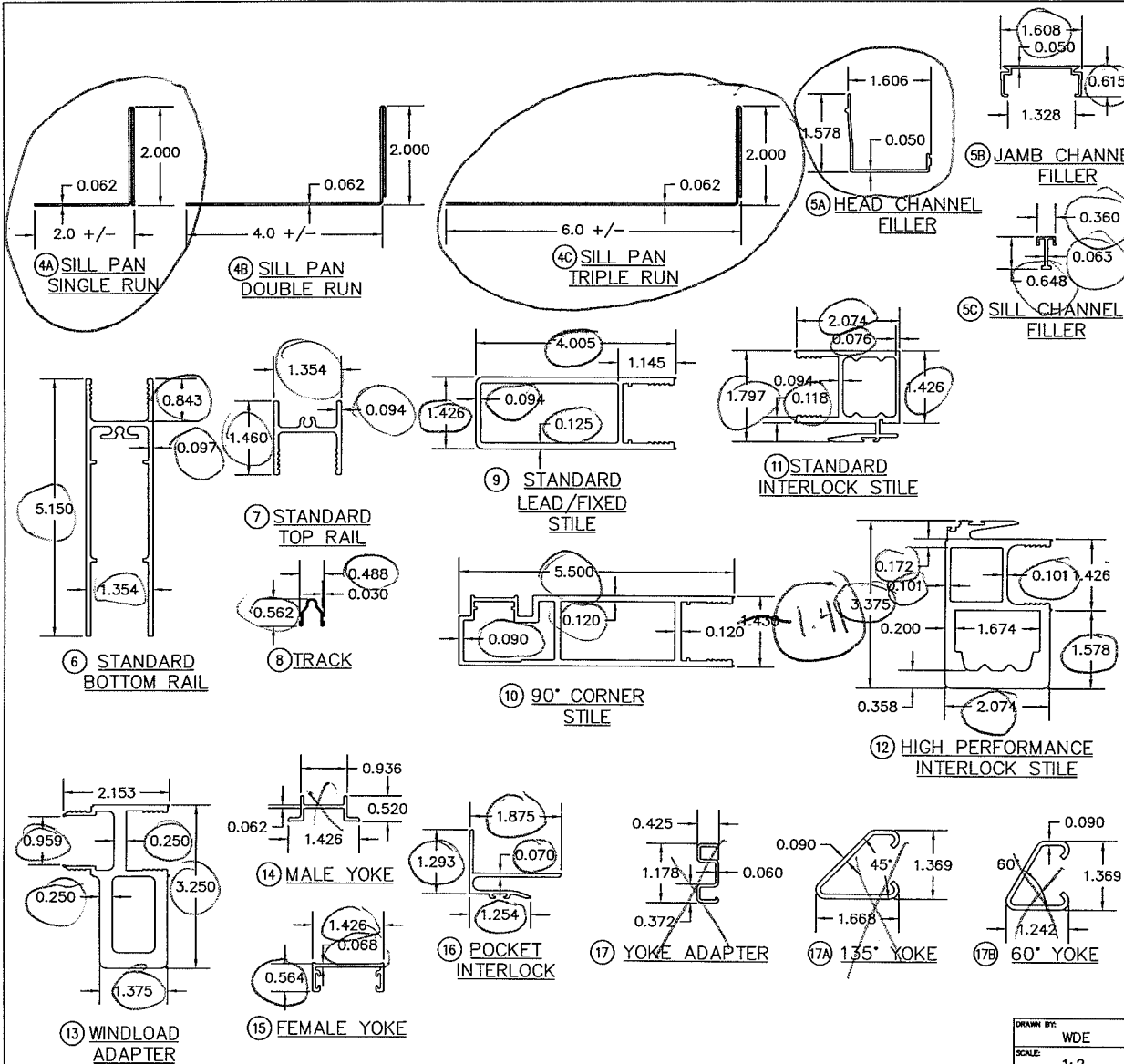
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Report#

Date

Tech

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ITEM #	PART	ITEM DESCRIPTION	MANUFACTURER/NOTES
PARTS			
1A	3046	HEAD TRACK (1 RUN)	6063-T6 ALUMINUM
1B	3702	HEAD TRACK (2 RUNS)	6063-T6 ALUMINUM
1C	3703	HEAD TRACK (3 RUNS)	6063-T6 ALUMINUM
2A	3741	SILL TRACK (1 RUN)	6063-T6 ALUMINUM
2B	3742	SILL TRACK (2 RUNS)	6063-T6 ALUMINUM
2C	3743	SILL TRACK (3 RUNS)	6063-T6 ALUMINUM
3A	3048	JAMB TRACK (1 RUN)	6063-T6 ALUMINUM
3B	3712	JAMB TRACK (2 RUNS)	6063-T6 ALUMINUM
3C	3713	JAMB TRACK (3 RUNS)	6063-T6 ALUMINUM
4A	3720	SIL PAN (SINGLE RUN)	6063-T6 ALUMINUM
4B	3720	SIL PAN (DOUBLE RUN)	6063-T6 ALUMINUM
4C	3720	SIL PAN (TRIPLE RUN)	6063-T6 ALUMINUM
5A	3011	HEAD CHANNEL FILLER	6063-T6 ALUMINUM
5B	3747	SILL CHANNEL FILLER	6063-T6 ALUMINUM
5C	3750	JAMB CHANNEL FILLER	6063-T6 ALUMINUM
6	3004	STANDARD TOP RAIL	6063-T6 ALUMINUM
7	3709	STANDARD BOTTOM RAIL	6063-T6 ALUMINUM
8	M622	TRACK	STAINLESS STEEL
9	3767	STANDARD LEAD/FIXED STILE	6063-T6 ALUMINUM
10	3750	90° CORNER LOCK STILE	6063-T6 ALUMINUM
11	3006	STANDARD INTERLOCK STILE	6063-T6 ALUMINUM
12	3034	HIGH PERFORMANCE INTERLOCK STILE	6063-T6 ALUMINUM
13	3715	WINDLOAD ADAPTER	6063-T6 ALUMINUM
14	3039	MALE YOKE	6063-T6 ALUMINUM
15	3040	FEMALE YOKE	6063-T6 ALUMINUM
16	3730	POCKET INTERLOCKER	6063-T6 ALUMINUM
17	FW1037	YOKE ADAPTER	6063-T6 ALUMINUM
18A	FW1036	135° YOKE	6063-T6 ALUMINUM
18B	FW1036	60° YOKE	6063-T6 ALUMINUM
SEALS & SEALANTS			
20	-	LARGE MOHAIR	AMESBURY 13330-270R
21	-	FIN SEAL	AMESBURY 43629-270R
22	-	SEALANT	DOW CORNING 995
23	FW1036	PANEL BUMPER	
24	U-5212	O-LON SEAL	SCHLAGEL
HARDWARE			
30	117-101	HANDLE SET W/ LATCH	FLEETWOOD
31	117-106	HANDLE SET	FLEETWOOD
32	1099-1	STRIKE PLATE ASSY.(JAMB)	FLEETWOOD
33	3764	STRIKE PLATE (MALE YOKE)	FLEETWOOD
34	3765	STRIKE PLATE BACKUP (MALE YOKE)	FLEETWOOD
35	FW-1120	YOKE ADAPTER BACKUP PLATE	FLEETWOOD
36	FW-1120	MALE YOKE BACKUP PLATE	FLEETWOOD
37	FW-1042	MAMMOTH ROLLER ASSEMBLY	FLEETWOOD
38	AN7839	AIR BARRIER	PEMCO
38	AN7839-1	AIR BARRIER	PEMCO
MISCELLANEOUS			
40	-	4" LONG SETTING BLOCK	AS REQ'D
41	R10882	PVC M/S TRACK CONNECTOR	RYKO
42	3762	PANEL SETTING BLOCK	6063-T6 ALUMINUM
43	-	NO.8 X 1/2" PNHD SMS	STAINLESS STEEL
44	-	NO.8 X 1/2" SMS	STAINLESS STEEL
45	-	#6 TEK X 3/8"	STAINLESS STEEL

DRAWN BY:	DATE:	TITLE:
WDE	01/04/08	NORWOOD 3070HI
SCALE:	REV:	'08 CERTIFICATION
1:2		
CONFIGURATION:		
SECTION DETAILS		

FLEETWOOD
WINDOWS & DOORS
FleetwoodUSA.com

DRAWING NUMBER: CRT-DADFOR-510
SHEET: 10 OF 10



Architectural Testing, Inc.
Test sample complies with these details
Deviations are noted.

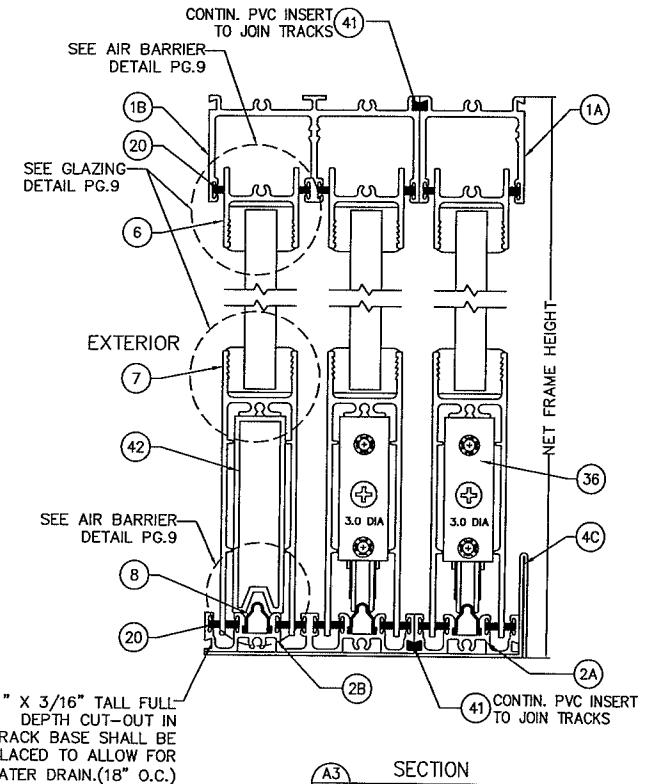
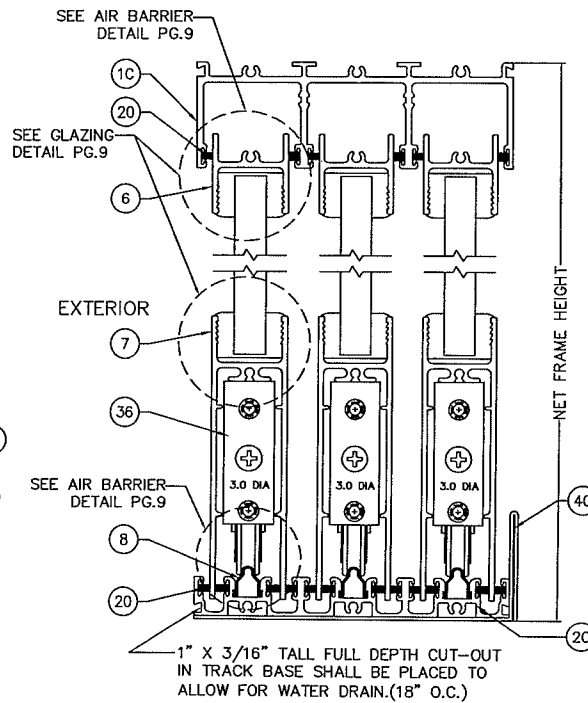
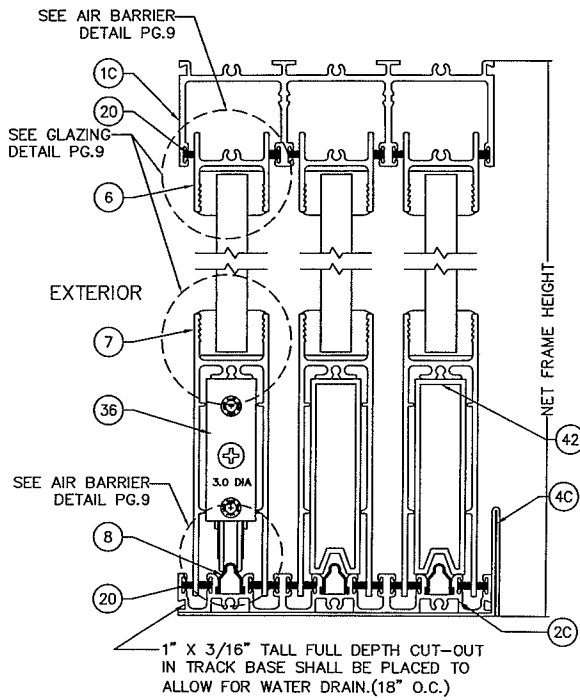
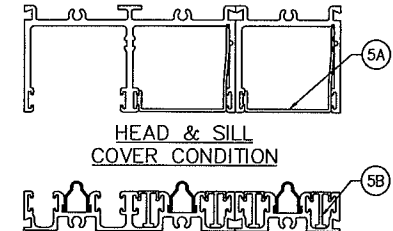
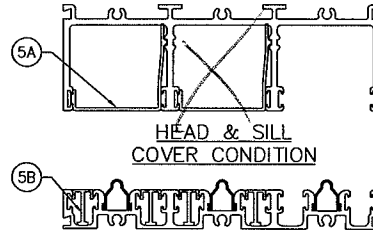
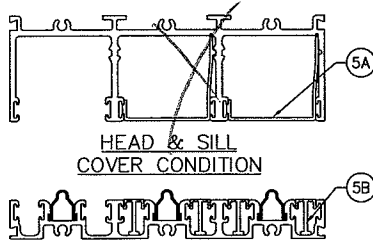
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Report

Date

Task



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A2 SECTION
7 SCALE: 1/2 FULL

A3 SECTION
7 SCALE: 1/2 FULL

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SCALE: 1:2
CONFIGURATION: SECTION DETAILS
DATE: 01/04/08
REV:

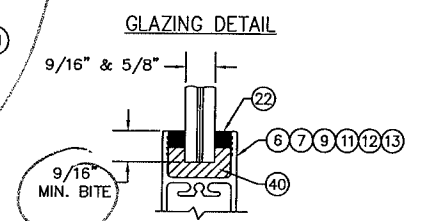
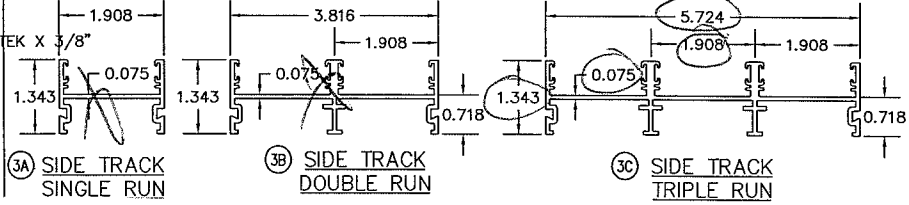
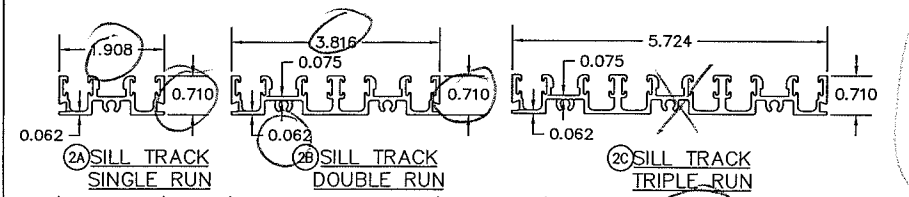
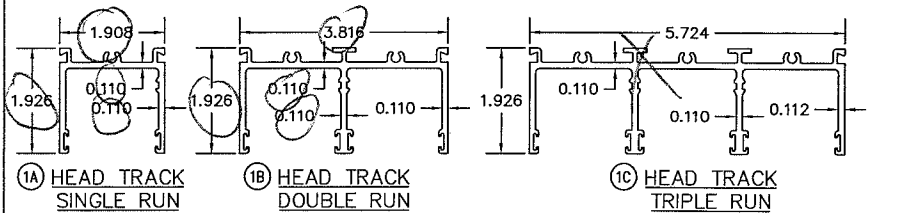
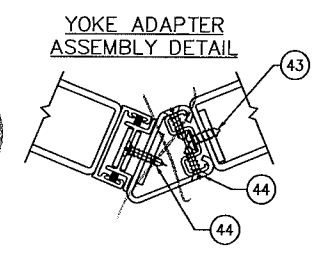
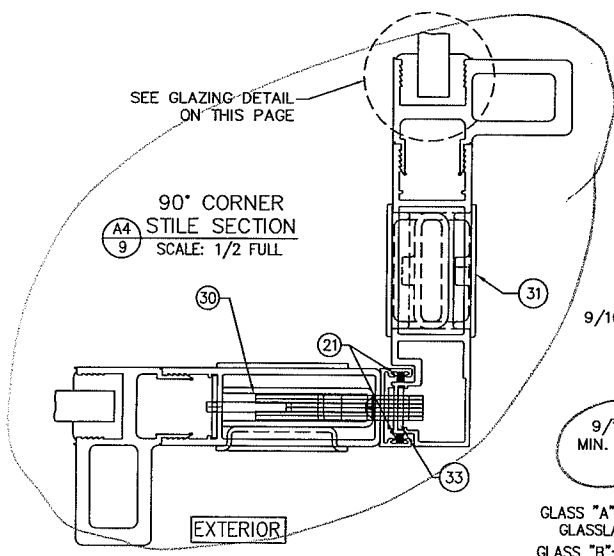
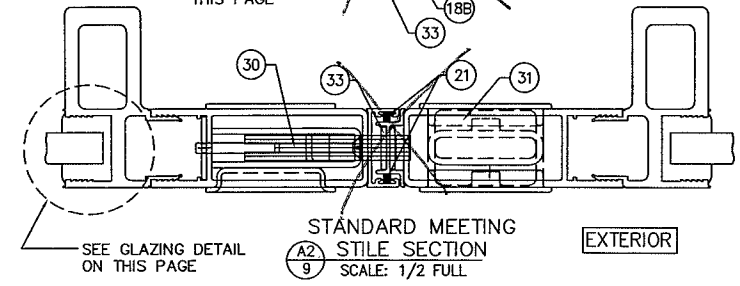
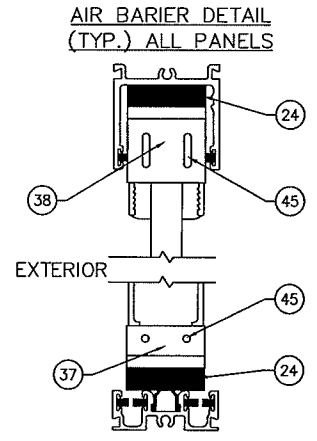
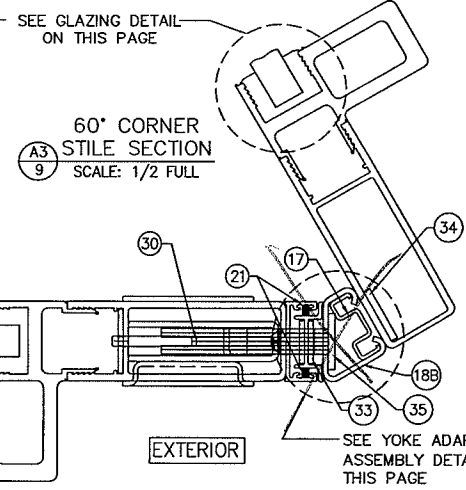
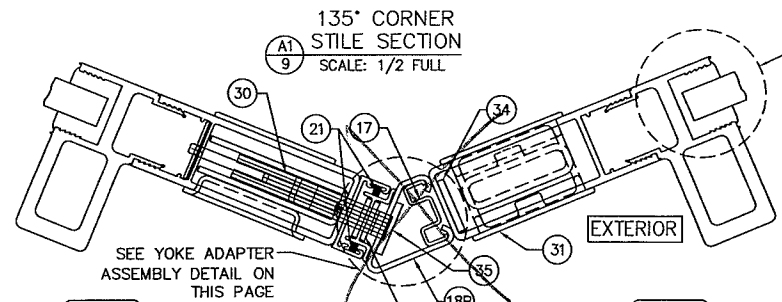
TITLE:
NORWOOD 3070HI
'08 CERTIFICATION

FLEETWOOD
WINDOWS & DOORS
FleetwoodUSA.com
DRAWING NUMBER: 7-2
SHEET: 7 OF 10

7 8 6 7 3

FEB 0 4 2008

Report# Date
 Test#



GLASS "A": 5/8" THICK LAMINATED, IMPACT GLASS BY GLASSLAM (1/4" H.S./0.100 SAFETY PLUS/ 1/4" H.S.
 GLASS "B": 9/16" THICK LAMINATED, IMPACT GLASS BY OLD CASTLE (1/4" H.S./0.100 SAFETY PLUS/ 1/4" H.S.