

**MIAMI-DADE COUNTY  
PERFORMANCE TEST REPORT**

**Rendered to:**

**FLEETWOOD WINDOWS & DOORS**

**SERIES/MODEL: Norwood 3070HI OOXIXXP  
PRODUCT TYPE: Sliding Glass Pocket Door**

**This report contains in its entirety:**

**Cover Page: 1 page  
Report Body: 10 pages  
Sketches: 1 page  
Drawings: 5 pages**

**Report No.: 78671.01-301-18  
Test Dates: 12/17/07  
Through: 01/25/08  
Report Date: 02/21/08  
Expiration Date: 01/25/18  
Miami-Dade County Notification No.: ATI CA 07008**

**MIAMI-DADE COUNTY PERFORMANCE TEST REPORT**

Rendered to:

FLEETWOOD WINDOWS & DOORS  
395 Smitty Way  
Corona, California 92879

Report No.: 78671.01-301-18

Test Dates: 12/17/07

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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 3070HI configuration OOXIXXXP, sliding glass 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

**Configuration:** OOXIXXXP

**Product Type:** Sliding Glass Pocket Door

**Test Specimen Description:** (Continued)

**Overall Size:** 28' 8" wide by 10' 10" high by 5.724" deep

**Fixed Panel Size:** Two panels 4' 8-5/8" wide by 10' 8-1/8" high – Panels 1 and 2

**Active Panel with Female Yoke:** 5' 0-7/8" wide by 10' 8-1/8" high – Panel 3

**Active Panel with Male Yoke:** 5' 1" wide by 10' 8-1/8" high – Panel 4

**Double Interlock Active Panel Size:** 4' 8-5/8" wide by 10' 8-1/8" high – Panel 5

**Active Pocket Panel Size:** 4' 9-1/8" wide by 10' 8-1/8" high – Panel 6

**Finish:** All aluminum was painted white.

**Glazing Details:** Panels 1, 2 and 5 were glazed with a nominal 5/8" thick laminated glass consisting of 0.220" heat-strengthened glass, 0.100" Safety-Plus® II interlayer, and 0.220" heat-strengthened glass manufactured by Glasslam International. Panels 3, 4 and 6 were glazed with a nominal 9/16" thick laminated glass consisting of 0.220" heat-strengthened glass, 0.075" StormGlass™ and 0.220" heat-strengthened glass manufactured by Oldcastle Glass®. 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>
6" long vinyl weatherstrip holder with Q-Lon vinyl wrapped foam weather seal 0.300" high	1 Piece	The top and bottom of each panel interlock stile
Aluminum clip with brush seal air barrier	16	The top and bottom of each panel interlock stile. Each air barrier was secured with two #6 x 1/2" TEKS screws.
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" by 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 #8 x 1-1/2" Phillips pan head sheet metal screws spaced 4" from each end and approximately 18" on center. Aluminum head channel filler was employed between the fixed panel and the intermediate pocket jamb and between the double interlock fixed panel and the intermediate pocket jamb. Aluminum sill channel fillers were employed between the fixed panel and the intermediate pocket jamb and between the double interlock fixed panel and the intermediate pocket jamb. Aluminum jamb channel fillers were employed between the head and sill of the fixed jamb exterior and center tracks.

**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 yoke adapter was attached to the Panel 4 keeper stile, and the female yoke adapter was attached to the Panel 3 lock stile using #8 x 3/4" Phillips pan head sheet metal screws; eight per side. 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")	8	Two per active panel bottom rail
Fleetwood two point locking system (Part #117-101)	1	Locking points located at 48" and 84" from the top of the male yoke stile with the keeper cut into the female yoke stile strike opening 3/4" by 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:** (69) #10 x 2" long Phillips pan head screws spaced 5" from each end and then 14-16" on center. Three fasteners were located at each location, one per track.

**Sill:** (69) #10 x 2" Phillips pan head screws spaced 5" from each end and then 14-16" on center. Three fasteners were located at each location, one per track.

**Fixed Panel Jamb:** (33) #10 x 2" Phillips flat head sheet metal screws 4" from each end spaced evenly (three per location, one per track).

**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)	0.14 cfm/ft <sup>2</sup>		
Structural Loads	Indicator Readings (inch)		
50% of Test Pressure (+41.25 psf)	#1	#2	#3
Maximum Deflection	0.36	1.44	0.23
Permanent Set	0.05	0.05	0.05
Design Pressure (+55.0 psf)			
Maximum Deflection	0.45	1.93	0.26
Permanent Set	0.02	0.04	0.02
50% of Test Pressure (- 45.0 psf)			
Maximum Deflection	0.48	1.27	0.16
Permanent Set	0.12	0.08	0.04
Design Pressure (-60.0 psf)			
Maximum Deflection	0.60	1.57	0.20
Permanent Set	0.08	0.05	0.05
Water Infiltration 15% Positive Design Pressure (+8.25 psf)	No Penetration		
Test Pressure (+82.5 psf)			
Maximum Deflection	0.75	2.69	0.58
Permanent Set	0.21	0.35	0.25
Test Pressure (-90.0 psf)			
Maximum Deflection	0.73	2.97	0.67
Permanent Set	0.19	0.37	0.31
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: 49.5 fps

**Impact Area:** Center of the second panel from left

**Observations:** No tear

**Results:** Pass

**Impact #2:** Missile Velocity: 49.8 fps

**Impact Area:** Bottom right corner of the second panel from left

**Observations:** No tear

**Results:** Pass

**Impact #3:** Missile Velocity: 49.2 fps

**Impact Area:** Bottom left corner of the fourth panel from left

**Observations:** No tear

**Results:** Pass

**Impact #4:** Missile Velocity: 49.0 fps

**Impact Area:** Center of the fourth panel from left

**Observations:** Missile punched through laminate

**Results:** Fail

**Impact #5:** Missile Velocity: 49.5 fps

**Impact Area:** Center of third panel from left

**Observations:** No tear

**Results:** Pass

**Impact #6:** Missile Velocity: 49.8 fps

**Impact Area:** Bottom right corner of third panel from left

**Observations:** No tear

**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 / -60.0 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	8.32	0.31	1.00	0.25
0 to 33.0	300	10.66	0.37	1.19	0.30
27.5 to 44.0	600	7.11	0.43	1.39	0.35
16.5 to 55.0	100	13.75	0.45	1.68	0.43
			Permanent Set (inch)		
			0.03	0.02	0.01

**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	10.77	0.50	1.87	0.25
30.0 to 48.0	1050	4.55	0.45	1.39	0.18
0 to 36.0	50	16.90	0.39	1.19	0.16
12.0 to 30.0	3350	5.26	0.31	0.91	0.14
			Permanent Set (inch)		
			0.04	0.01	0.03

**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.

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Tyler Westerling, P.E.  
Project Engineer

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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 (1)

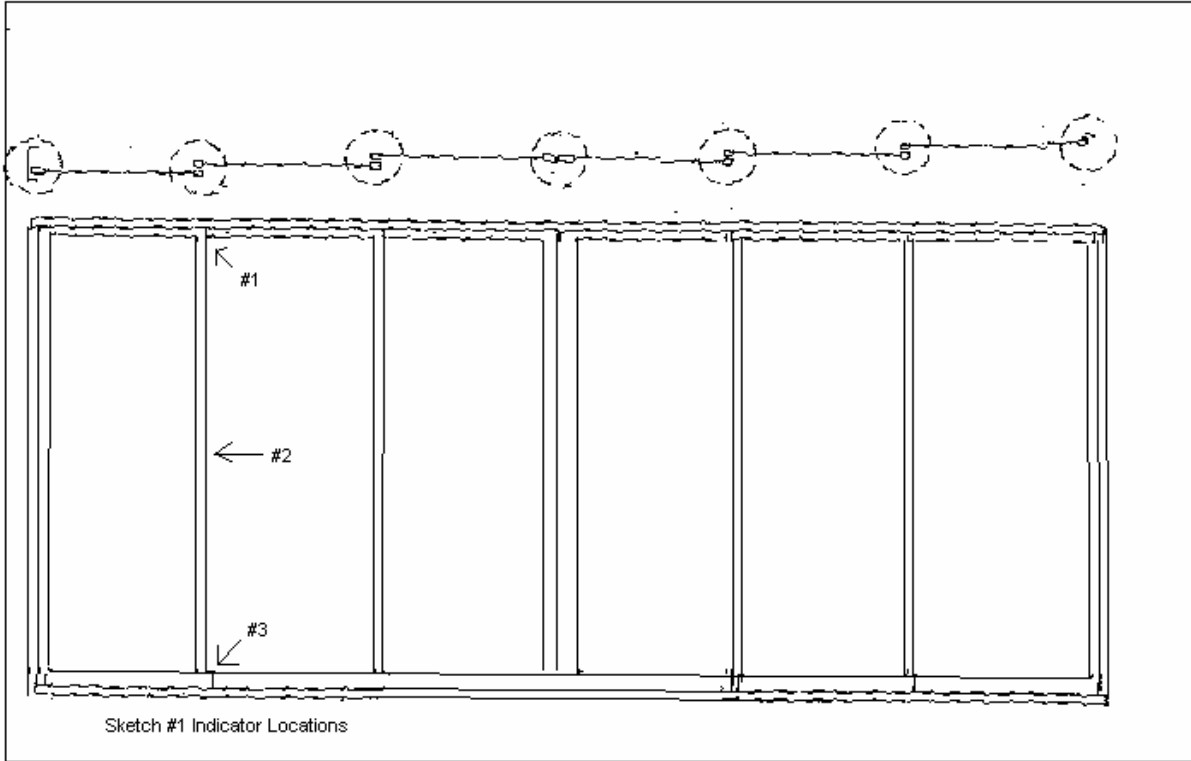
Appendix-B: Drawings (5)

### Revision Log

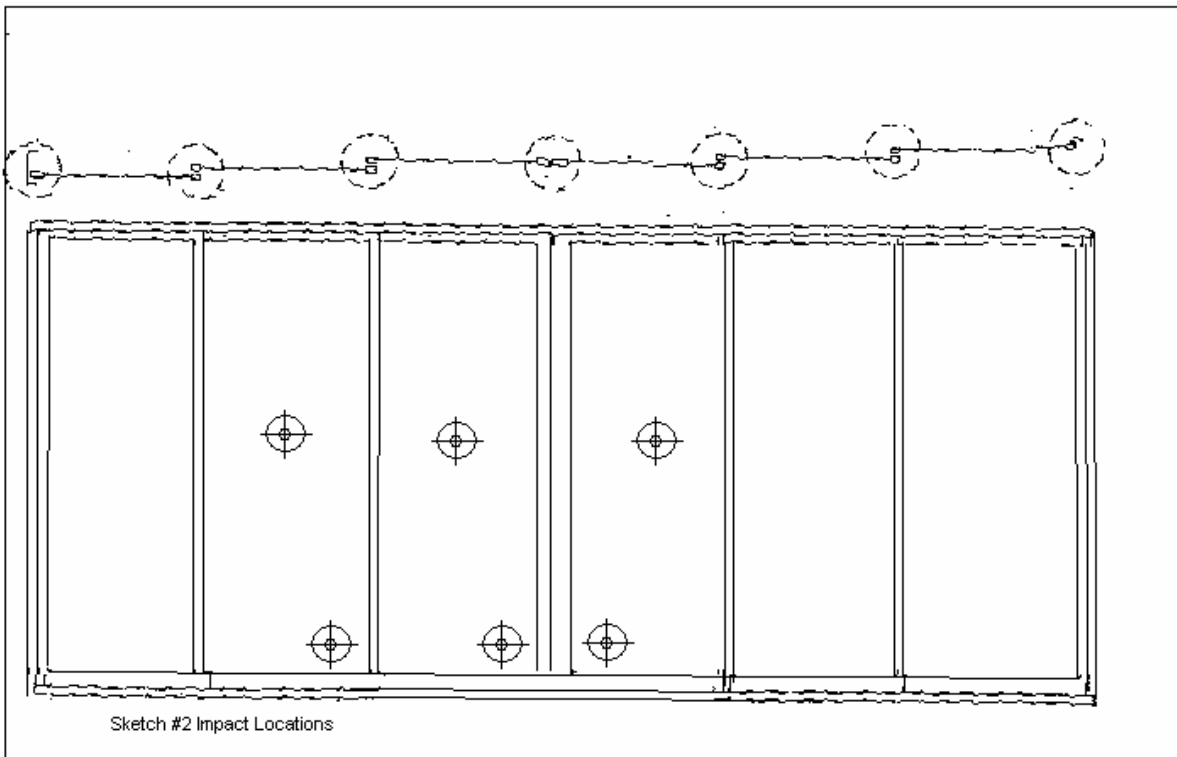
<u>Rev. #</u>	<u>Date</u>	<u>Page(s)</u>	<u>Revision(s)</u>
0	02/21/08	N/A	Original report issue

## **Appendix A**

### **Sketches**



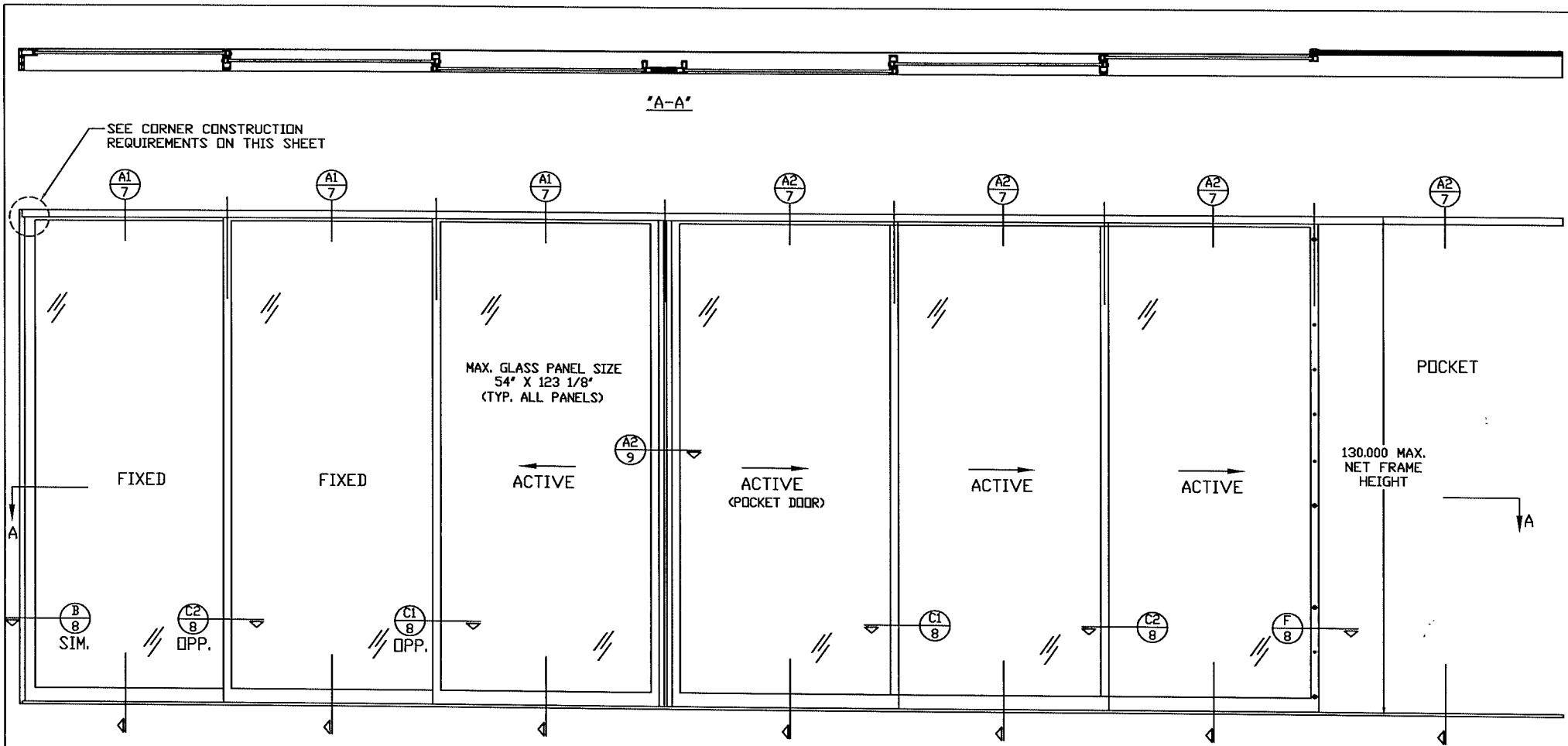
**Sketch #1  
Indicator Locations**



**Sketch #2  
Impact Locations**

## **Appendix B**

### **Drawings**



SEE CORNER CONSTRUCTION REQUIREMENTS ON THIS SHEET

"A-A"

MAX. GLASS PANEL SIZE  
54" X 123 1/8"  
(TYP. ALL PANELS)

POCKET

130,000 MAX.  
NET FRAME  
HEIGHT

**CORNER CONSTRUCTION:**

FRAME HEAD: COPE SIDE TRACK, BUTT HEAD TRACK TO SIDE TRACK & SECURE WITH 2 NO. 10 X 3/4" SMS THROUGH SIDE TRACK INTO HEAD TRACK SPLINES.

FRAME SILL: COPE SIDE TRACK, BUTT SILL TRACK TO SIDE TRACK & SECURE WITH 2 NO. 10 X 3/4" SMS THROUGH SIDE TRACK INTO SILL TRACK SPLINES.

FIXED PANEL: BUTT TOP & BOTTOM RAILS TO SIDE STILES AND SECURE EACH CORNER WITH 1 NO. 10 X 2" SMS THROUGH THE SIDE STILE INTO THE RAIL SPLINE.

OPERABLE PANEL: SAME AS FIXED PANEL. NOTE THAT A PILOT HOLE IS PLACED THROUGH THE OUTER WALL OF THE STILE WITH THE SCREW HEAD MEETING THE INNER WALL.



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

78671

FEB 04 2008

Report#

Date

Test *pu*

DRAWN BY: WDE	DATE: 01/04/08
SCALE: 1/24	REV:
CONFIGURATION: DOXIXXP	

TITLE:  
NORWOOD 3070HI  
2008 CERTIFICATION  
SPECIMEN 1A/1B

	<b>FLEETWOOD</b>
	WINDOWS & DOORS
FleetwoodUSA.com	
DRAWING NUMBER: CERT-DADE08-S1	SHEET: 1 OF 10

78671

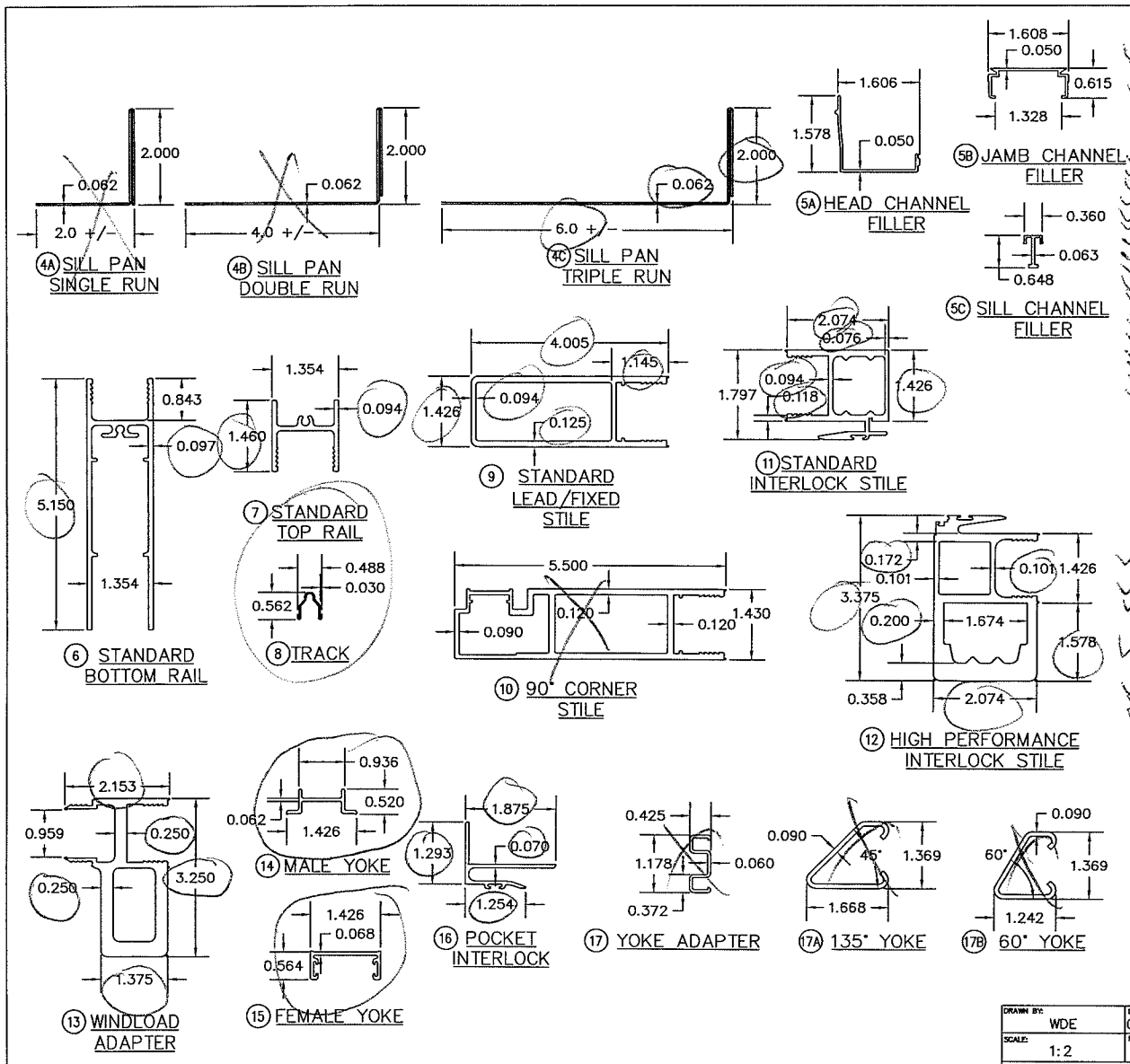
FEB 04 2008

Reports

Test

TM

Date



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	SILL PAN (SINGLE RUN)	6063-T6 ALUMINUM
4B	3720	SILL PAN (DOUBLE RUN)	6063-T5 ALUMINUM
4C	3720	SILL PAN (TRIPLE RUN)	6063-T5 ALUMINUM
5A	3011	HEAD CHANNEL FILLER	6063-T5 ALUMINUM
5B	3747	SILL CHANNEL FILLER	6063-T5 ALUMINUM
5C	3750	JAMB CHANNEL FILLER	6063-T5 ALUMINUM
6	3004	STANDARD TOP RAIL	6063-T5 ALUMINUM
7	3709	STANDARD BOTTOM RAIL	6063-T5 ALUMINUM
8	M622	TRACK	STAINLESS STEEL
9	3767	STANDARD LEAD/FIXED STILE	6063-T5 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-T5 ALUMINUM
14	3039	MALE YOKE	6063-T6 ALUMINUM
15	3040	FEMALE YOKE	6063-T5 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 43620-270R
22	-	SEALANT	DOW CORNING 995
23	FW1036	PANEL BUMPER	SCHLAGE
24	U-5212	Q-LON SEAL	SCHLAGE
HARDWARE			
30	117-101	HANDLE SET W/ LATCH	FLEETWOOD
31	117-106	HANDLE SET	FLEETWOOD
32	1059-1	STRIKE PLATE ASSY.(JAMB)	FLEETWOOD
33	3764	STRIKE PLATE(MALE YOKE)	FLEETWOOD
33	3765	STRIKE PLATE BACKUP(MALE YOKE)	FLEETWOOD
34	FW-1120	YOKE ADAPTER BACKUP PLATE	FLEETWOOD
35	FW-1120	MALE YOKE BACKUP PLATE	FLEETWOOD
36	FW-1042	MAMMOTH ROLLER ASSEMBLY	FLEETWOOD
37	AN7839	AIR BARRIER	PEMCO
38	AN7839-L	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" PHND SMS	STAINLESS STEEL
44	-	NO.8 X 1/2" SMS	STAINLESS STEEL
45	-	#6 TEX X 3/8"	STAINLESS STEEL
-	-	-	-

DRAWN BY: WDE  
 SCALE: 1:2  
 CONFIGURATION: SECTION DETAILS

DATE: 01/04/08  
 REV:  
 TITLE: NORWOOD 3070H '08 CERTIFICATION

**FLEETWOOD**  
 WINDOWS & DOORS  
 FleetwoodUSA.com

DRAWING NUMBER: CFRT-DADFOR-S10  
 SHEET: 10 OF 10





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

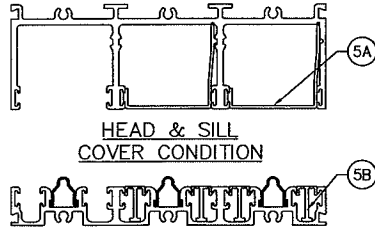
78671

FEB 04 2008

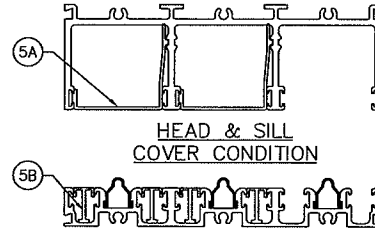
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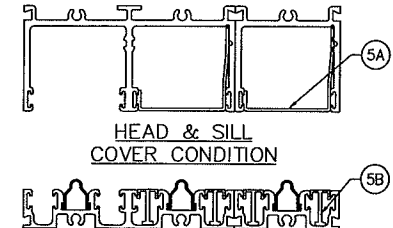
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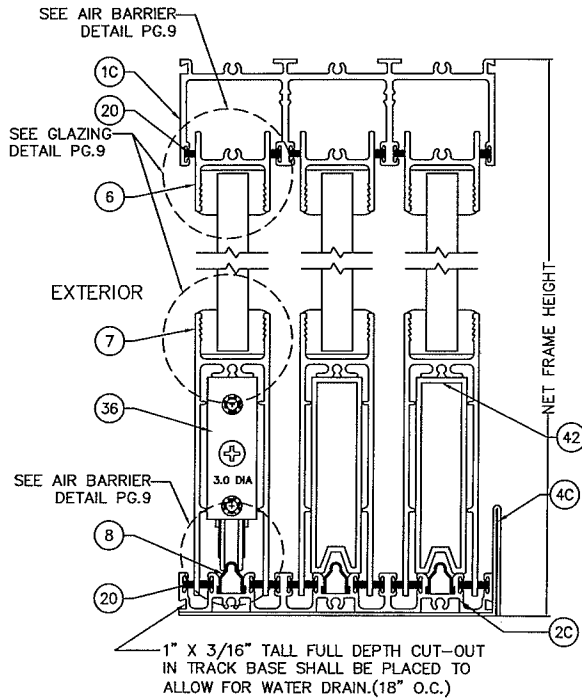
HEAD & SILL  
COVER CONDITION



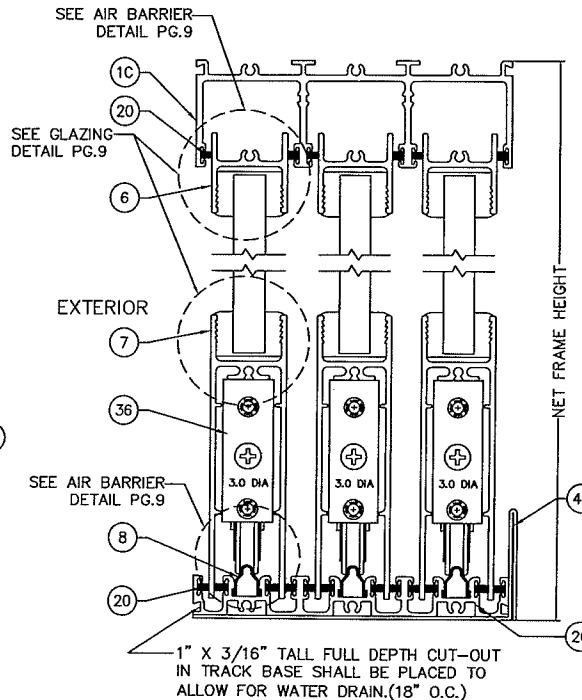
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COVER CONDITION



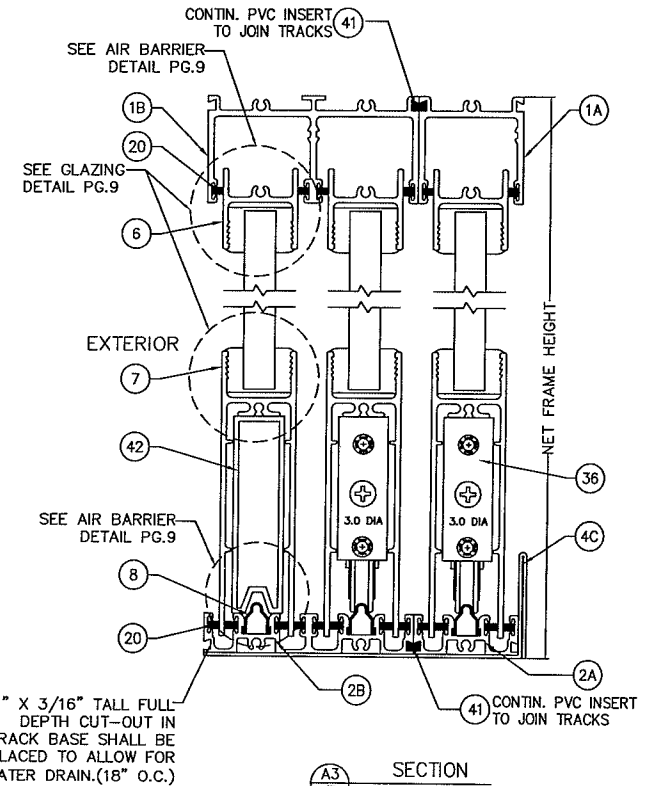
HEAD & SILL  
COVER CONDITION



A1 SECTION  
SCALE: 1/2 FULL



A2 SECTION  
SCALE: 1/2 FULL



A3 SECTION  
SCALE: 1/2 FULL

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

NORWOOD 3070HI  
'08 CERTIFICATION

	<b>FLEETWOOD</b>
	WINDOWS & DOORS
FleetwoodUSA.com	
DRAWING NUMBER:	SHEET:
CEPT-DADFOR-S10	7 OF 10



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

78671

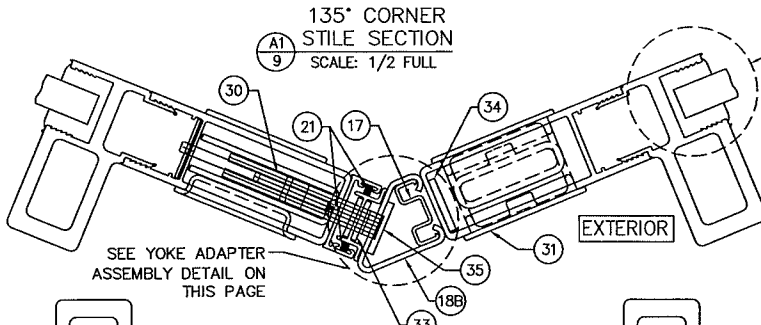
FEB 04 2008

Report#

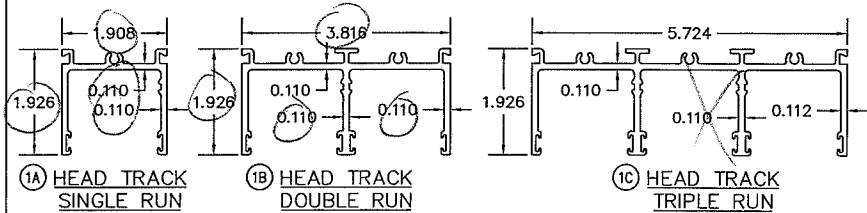
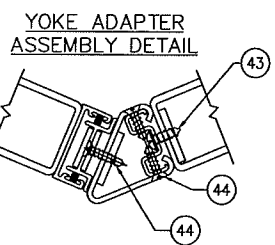
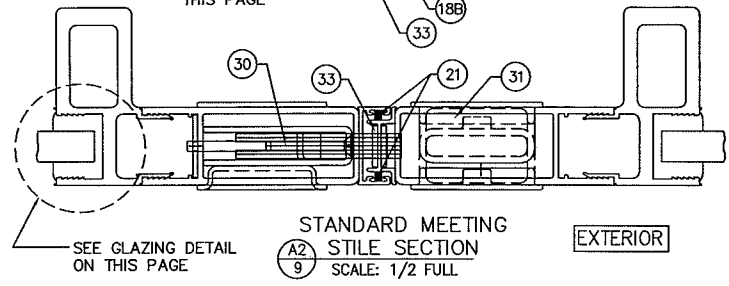
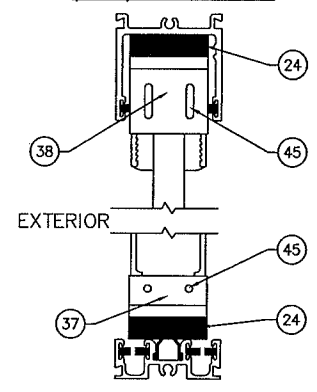
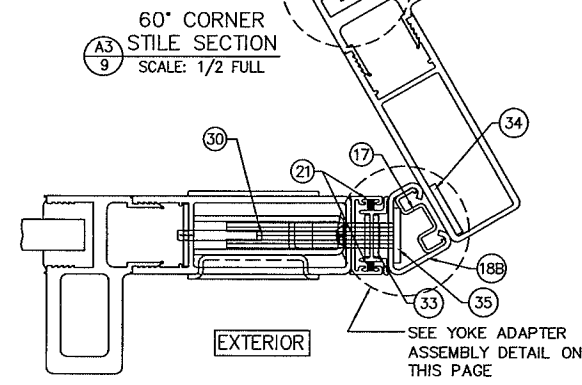
Date

Test

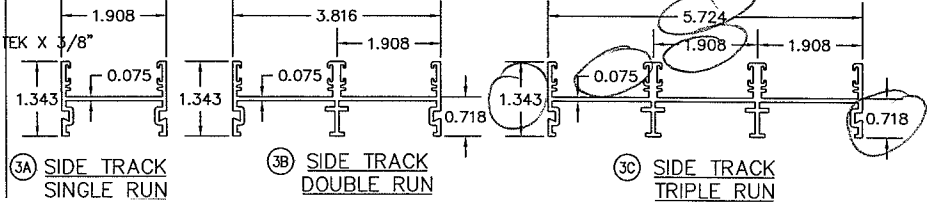
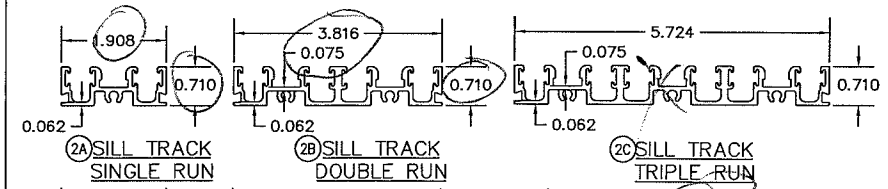
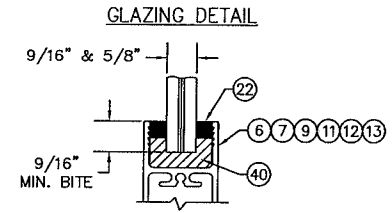
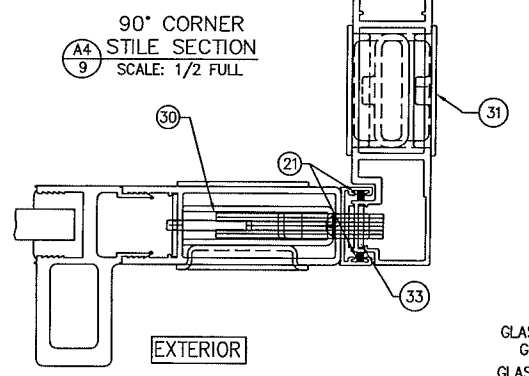
AIR BARRIER DETAIL  
 (TYP.) ALL PANELS



SEE GLAZING DETAIL ON THIS PAGE



SEE GLAZING DETAIL ON THIS PAGE



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.

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

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 SHEET: 10 OF 10



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

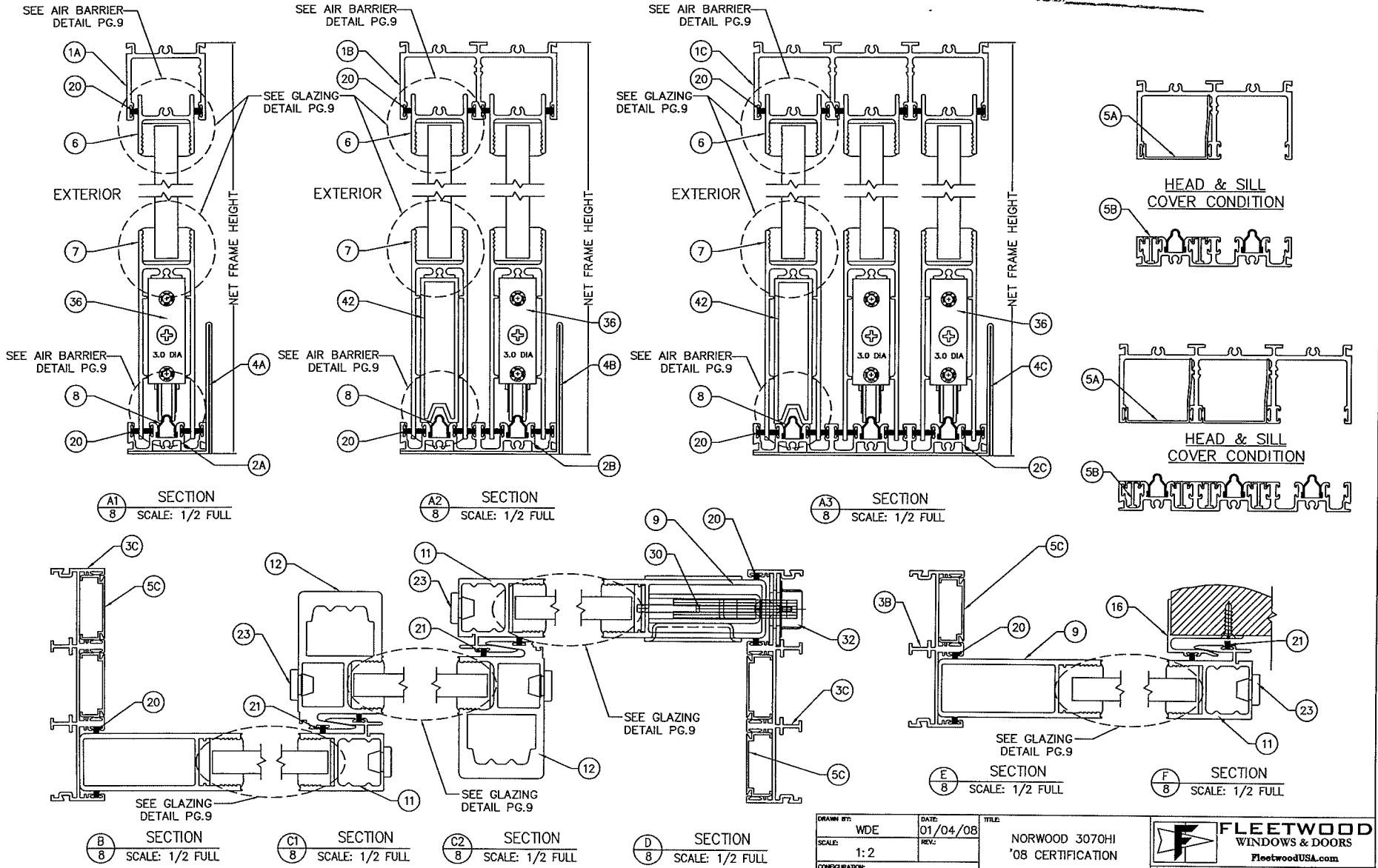
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FEB 04 2008

Reports

Technician: *TW*

Date



DRAWN BY: WDE  
 SCALE: 1:2  
 CONFIGURATION: SECTION DETAILS

DATE: 01/04/08  
 REV:

TITLE: NORWOOD 3070HI '08 CERTIFICATION

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