

Fenestration Testing Laboratory, Inc.

10235 8th Street, Rancho Cucamonga, CA 91730

Report #: T23-099

REPORT SUMMARY

REPORT

T23-099

TESTED FOR

Fleetwood Windows & Doors
1 Fleetwood Way
Corona, CA 92879

SERIES & PRODUCT TYPE

3070 - ALUMINUM SLIDING GLASS DOOR

CONFIGURATION

XXX

FRAME SIZE

3517.90 mm x 3013.20 mm (138.50" x 118.63")

SPECIFICATION

NAFS - North American Fenestration Standard/specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/LS.2/A440-22

PRIMARY DESIGNATOR

CLASS R-PG20 3517.90 x 3013.20 mm (138.50 x 118.63 in) Type: SD (with sill pan leg height 1.58" and all four interlocks being narrow interlocks)

CLASS R-PG30 3517.90 x 3013.20 mm (138.50 x 118.63 in) Type: SD (with sill pan leg height 1.88" with two narrow interlocks and two HP narrow interlocks)

TEST COMPLETION DATE

November 28, 2023

REPORT DATE

June 13, 2024

Fenestration Testing Laboratory, Inc.

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1.0 Tested For: Fleetwood Windows & Doors
1 Fleetwood Way
Corona, CA 92879

2.0 Purpose:

The purpose of this report is to present the testing methods employed and the test results obtained during the performance testing of one (1) ALUMINUM SLIDING GLASS DOOR described in paragraph 5.0 of this report.

3.0 Test References:

3.1 NAFS - North American Fenestration Standard/specification for windows, doors, and skylights
AAMA/WDMA/CSA 101/1.S.2/A440-22

3.2 ASTM F 842-17 Forced Entry Resistance Tests for Sliding Door Assemblies

3.3 CAWM 300-96 Forced Entry Test Resistance Tests for Sliding Glass Doors

4.0 Compliance Statement: The test results in paragraph 6.0 indicate that the test sample described in paragraph 5.0 of this report met the performance requirements of the above specifications for the performance grade shown in 4.1 below.

4.1 CLASS R-PG20 3517.90 x 3013.20 mm (138.50 x 118.63 in) Type: SD (with sill pan leg height 1.58" and all four interlocks being narrow interlocks)

CLASS R-PG30 3517.90 x 3013.20 mm (138.50 x 118.63 in) Type: SD (with sill pan leg height 1.88" with two narrow interlocks and two HP narrow interlocks)

5.0 Sample Submitted:

5.1 Product Type: ALUMINUM SLIDING GLASS DOOR

5.2 Series: 3070

5.3 Configuration: XXX

5.4 Product Dimensions:

	Millimeters	Inches
Total Frame:	3517.90 x 3013.20	138.50 x 118.63
Left Panel:	1204.98 x 2973.32	47.44 x 117.06
Center Panel:	1155.70 x 2973.32	45.50 x 117.06
Right Panel:	1159.00 x 2973.32	45.63 x 117.06

5.5 Glass and Glazing: Applies to all three IGUs

IGU Thickness	Spacer Size	Interior Lite	Exterior Lite	Glazing method
1" overall wide	0.5"	1/4" Tempered	1/4" Tempered	Channel glazed with wrap around vinyl gasket;

5.6 Weepage:

Drainage Method	Size	Quantity	Location
Weep notch	1" x 3/16"	Four (4)	Total of four - one 8" and 60" from each end. The bottom of the sill extrusion was notched across all tracks.

5.7 Pressure balancing: None

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5.8 Weather-stripping:

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
0.230" Overall high polypile with center fin	See "Location"	Head - two strips per channels with one strip facing in and one facing out for a total of six (6) strips. Sill - Four strips per channel with two facing in and two facing out for a total of twelve (12) strips.
0.270" overall high polypile with center fin	Four (4)	Each interlock contained on strip facing the adjacent interlock.
0.250" Q-lon foam filled bulb	Four (4) strips	Left lock jamb - two strips with one facing in and one facing out. Right lock jamb - two strips with one facing in and one facing out.

5.9 Sealants:

Sealant was applied at the following locations:

-All frame corners were sealed full profile

5.10 Hardware:

<i>Type</i>	<i>Quantity</i>	<i>Location</i>
Metal Archetype narrow two point lock	Two (2)	Left panel lock stile - locked to the outermost jamb active channel. Right panel lock stile - locked to the innermost jamb active channel. . Each lock actuator was located 48" from the bottom of the stile and engaged a mortise hook at 8" and 32" above the lock actuator. Each lock hook engaged its respective metal strike fastened to the jamb with a pair of screws.
A2 tandem adjustable metal rollers.	Six (6)	Each of the three active panels contained a metal roller at each end of the bottom rail.

5.11 Construction:

<i>Location</i>	<i>Joinery Type</i>	<i>Number of Fasteners</i>	<i>Fastener Size</i>
Frame corners	The head and sill were butted to jambs and mechanically joined with screws	Three (3) per corner	#10 x 1.5" PPH
Panel corners	The stiles were butted to the rail and mechanically joined with screws.	One (1) per corner	#10 x 2" PPH - lock stiles #10 x 2" PFH interlocks
For the DP30 structural test, the two narrow interlocks on inboard side were removed and replaced with HP narrow interlocks. Additional testing for information only was conducted with all four interlocks being HP narrow interlocks.			

5.12 Reinforcement: None

5.13 Installation:

<i>Location on frame</i>	<i>Anchor type</i>	<i>Spacing</i>
The head and jambs were fastened to the rough opening with screws applied through the frame. At each spacing point, three screws were applied; one in each channel.	#10 x 2" PFH	8" from each end and 16" on center. Wood furring applied over the nail-on fins and fastened with screws to the rough opening.
The sill was set in sealant and for DP20 and DP30 the above description applies. However, for information purposes only, Fleetwood performed additional structural loads exceeding DP30 requirements. For loads over 45 psf, #8 x 1.5" screws were applied 12" from each end and 60" on center in the field.		

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6.0 - Test procedures and results: All testing procedures were performed in accordance with the performance requirements of the test specifications referenced in paragraph 3.0 of this report. The number preceding each test listed below refers to the corresponding section in the NAFS.

8.3.1 - Operation Force (ASTM E2068-00(2022))

Test Description	Results	Allowed	Comments
Maximum force to initiate and motion	53.37 N (12.00 lbf)	155 N (35 lbf)	1
Latching device force to operate	8.89 N (2.00 lbf)	100 N (22.48 lbf)	

8.3.2 - Air Infiltration (ASTM E283-19)

Test Description	Results	Allowed	Comments
75 Pa differential pressure	Pass	1.5 L/s*m ²	
1.57 psf differential pressure	Pass	0.30 cfm/ft ²	
The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/1.S.2/A440 for air leakage resistance.			

8.3.2 - Air Exfiltration (ASTM E283-19)

Test Description	Results	Allowed	Comments
75 Pa differential pressure	Pass	1.5 L/s*m ²	
1.57 psf differential pressure	Pass	0.30 cfm/ft ²	
The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/1.S.2/A440 for air leakage resistance.			

8.3.3 - Water Penetration (ASTM E547-00(2016)) with sill pan leg 1.58" high

Test Description	Results	Allowed	Comments
DP20 - 150 Pa (3.13 psf)	No water penetration	No water penetration	1

8.3.3 - Water Penetration (ASTM E547-00(2016)) with sill pan leg 1.88" high

Test Description	Results	Allowed	Comments
DP30 - 220 Pa (4.59 psf)	No water penetration	No water penetration	1

Structural Load Testing for DP20 with all four interlocks Narrow Interlocks

8.3.4.2 - Uniform Load Deflection at Design Pressure (ASTM E330-14 (2021))

Test Description	Results	Allowed	Comments
DP20 - 960 Pa (20.05 psf)Pos	46.48 mm (1.83")	Report only	2
DP20 - 960 Pa (20.05 psf)Neg	56.39 mm (2.22")	Report only	2

8.3.4.3 - Uniform Load Structural at 1.5 x Design Pressure (ASTM E330-14 (2021))

Test Description	Results	Allowed	Comments
OL for DP20 - 1440 Pa (30.08 psf)Pos	3.81 mm (0.15")	11.68 mm (0.46")	2
OL for DP20 - 1440 Pa (30.08 psf)Neg	1.52 mm (0.06")	11.68 mm (0.46")	2

Structural Load Testing for DP30 with two Narrow Interlocks and two HP Narrow interlocks

8.3.4.2 - Uniform Load Deflection at Design Pressure (ASTM E330-14 (2021))

Test Description	Results	Allowed	Comments
DP30 - 1440 Pa (30.08 psf)Pos	40.13 mm (1.58")	Report only	2
DP30 - 1440 Pa (30.08 psf)Neg	28.96 mm (1.14")	Report only	2

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8.3.4.3 – Uniform Load Structural at 1.5 x Design Pressure (ASTM E330-14 (2021))

Test Description	Results	Allowed	Comments
OL for DP30 - 2160 Pa (45.11 psf)Pos	0.76 mm (0.03")	11.68 mm (0.46")	2
OL for DP30 - 2160 Pa (45.11 psf)Neg	0.51 mm (0.02")	11.68 mm (0.46")	2

8.3.5 – Forced Entry Resistance (ASTM F842-17(2023) & CAWM 300-96)

Test Description	Results	Allowed	Comments
ASTM F842 Type A D and CAWM Type I	No Entry	No Entry	

8.3.6.2 – Deglazing Test

Test Description	Results	Allowed	Comments
Active Sash Pull Stile - 320 N (71.94 lbf)	1%	Less than 90% of glazing bite	
Active Sash Rail - 230 N (51.71 lbf)	0%	Less than 90% of glazing bite	

Additional Structural Load Testing

With two Narrow Interlocks and two HP Narrow interlocks to DP60

Deflection at 60.15 psf

Test Description	Results	Allowed	Comments
DP60 - 2880 Pa (60.15 psf)Pos	54.36 mm (2.14")	Report only	2
DP60 - 2880 Pa (60.15 psf)Neg	51.82 mm (2.04")	Report only	2

Permanent Set at 60.15 psf

Test Description	Results	Allowed	Comments
DP60 - 2880 Pa (60.15 psf)Pos	2.29 mm (0.09")	11.68 mm (0.46")	2
DP60 - 2880 Pa (60.15 psf)Neg	0.00 mm (0.00")	11.68 mm (0.46")	2

With all four Interlocks being HP Narrow interlocks to DP60

Deflection at 60.15 psf

Test Description	Results	Allowed	Comments
DP60 - 2880 Pa (60.15 psf)Pos	28.96 mm (1.14")	Report only	2
DP60 - 2880 Pa (60.15 psf)Neg	30.73 mm (1.21")	Report only	2

Permanent Set at 60.15 psf

Test Description	Results	Allowed	Comments
DP60 - 2880 Pa (60.15 psf)Pos	1.27 mm (0.05")	11.68 mm (0.46")	2
DP60 - 2880 Pa (60.15 psf)Neg	0.00 mm (0.00")	11.68 mm (0.46")	2

With two Narrow Interlocks and two HP Narrow interlocks to DP67.5

Deflection at 67.5 psf

Test Description	Results	Allowed	Comments
67.5 PSF Pos	61.98 mm (2.44")	Report only	2
67.5 PSF Neg	57.40 mm (2.26")	Report only	2

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Permanent Set at 67.5 psf

Test Description	Results	Allowed	Comments
67.5 PSF Pos	4.06 mm (0.16")	11.68 mm (0.46")	2
67.5 PSF Neg	0.76 mm (0.03")	11.68 mm (0.46")	2

With all four Interlocks being HP Narrow interlocks to DP67.5

Deflection at 67.5 psf

Test Description	Results	Allowed	Comments
67.5 PSF Pos	24.89 mm (0.98")	Report only	2
67.5 PSF Neg	34.29 mm (1.35")	Report only	2

Permanent Set at 67.5 psf

Test Description	Results	Allowed	Comments
67.5 PSF Pos	2.54 mm (0.10")	11.68 mm (0.46")	2
67.5 PSF Neg	0.51 mm (0.02")	11.68 mm (0.46")	2

Comment #1 - Tested without insect screen.

Comment #2 - Deflection measurement taken from interlocks.

Testing was witnessed by: Jim Cruz with FTL and Corey Jones with Fleetwood.

For a complete description of the tested sample, refer to the attached three (3) pages consisting of a bill of materials, cross section drawings, and individual part drawings. This report is complete only when all the above referenced bill of materials and drawings are attached.

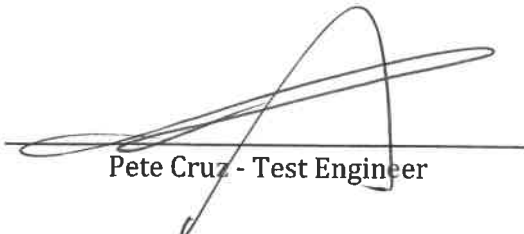
The bill of materials, cross section drawings, and part drawings of frame and sash members are on file and have been compared to the sample submitted. Test sample sections, bill of materials, drawings and a copy of this report will be retained at the test laboratory for four years.

This test report may not be modified in any way without the written consent of Fenestration Testing Laboratory, Inc (FTL).

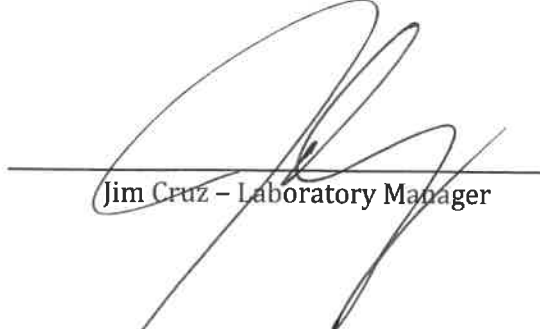
The preceding test results relate only to the tested specimen and were obtained by using the applicable test methods listed in section 3.0 and 6.0 above. This report does not constitute certification of this product or an endorsement by this laboratory. It is the property of the client named in section 1.0 above. Certification can only be granted by an approved administrator and/or validator.

Test Completion Date: November 28, 2024

Report Completion Date: June 13, 2024

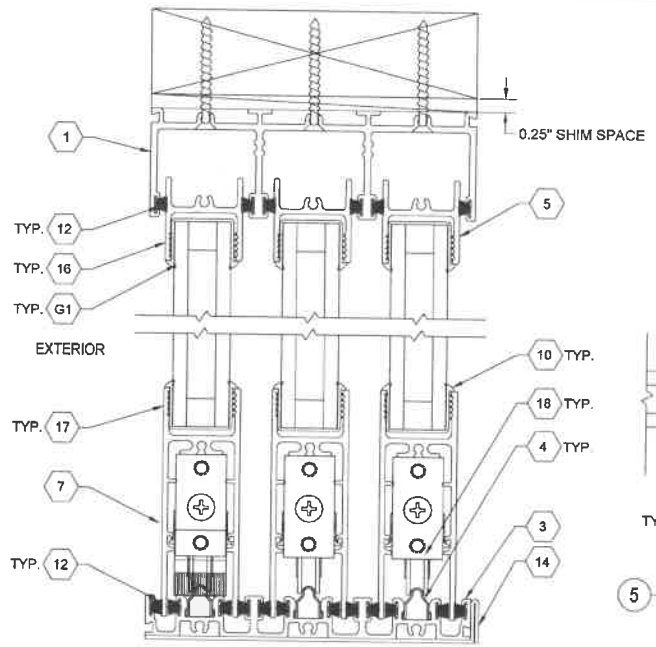


Pete Cruz - Test Engineer

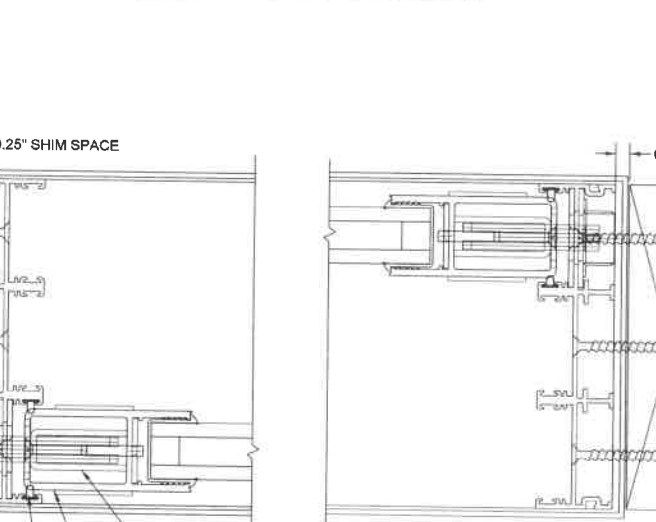


Jim Cruz - Laboratory Manager

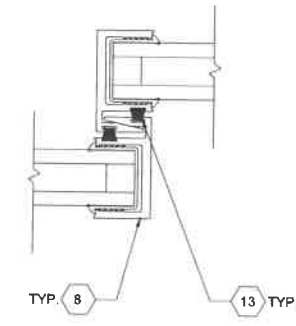
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SCALE: FULL SIZE



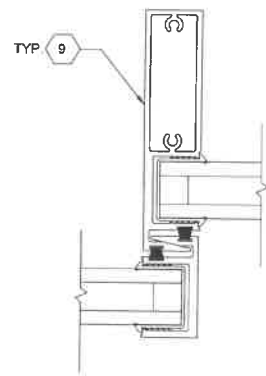
2 3070 SILL
SCALE: FULL SIZE



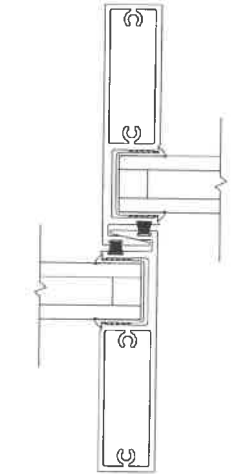
5 INTERLOCKERS
SCALE: FULL SIZE



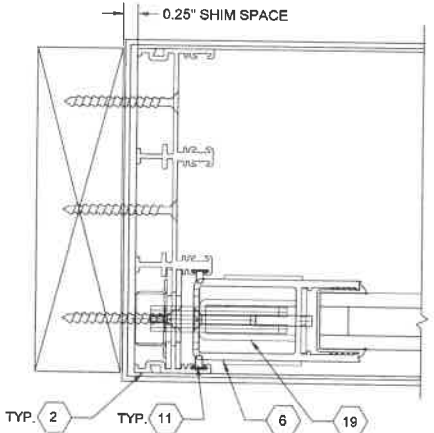
6 INTERLOCKERS
SCALE: FULL SIZE



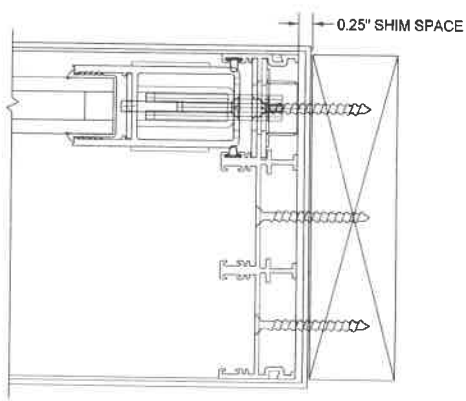
7 INTERLOCKERS
SCALE: FULL SIZE



3 FIXED JAMB
SCALE: FULL SIZE



4 LOCKING JAMB
SCALE: FULL SIZE



FENESTRATION TESTING LAB
 REPORT NO: T23-099
 DATE: 6/21/24

MATERIAL: 3070	DATE: 10/09/23	REVISIONS	DATE	DRAWN BY	COMMENTS
CUSTOMER: JCSB NAME	JCSB NUMBER: 12754			CJ	
1 FLEETWOOD WAY CORONA, CA 92719 www.fleetwoodusa.com					
FLEETWOOD WINDOWS & DOORS					
SCALE: 1" = 1"					
DRAWING NO.: (2)					
SHEET 1					
2 of 3					

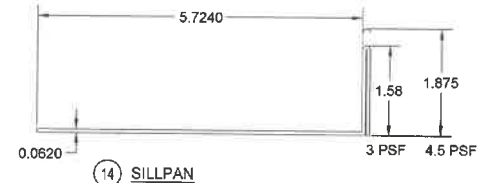
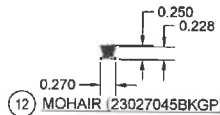
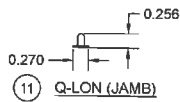
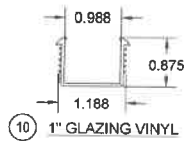
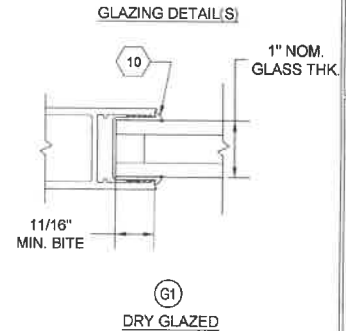
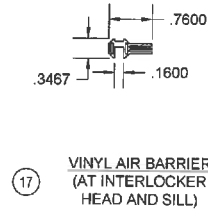
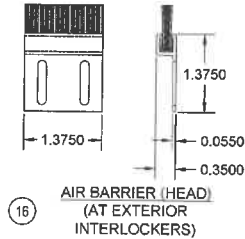
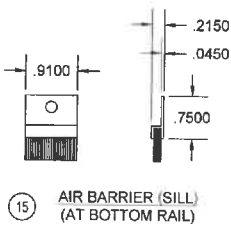
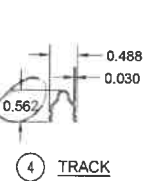
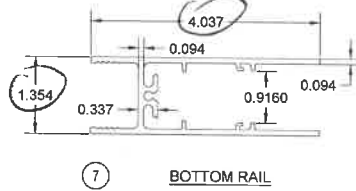
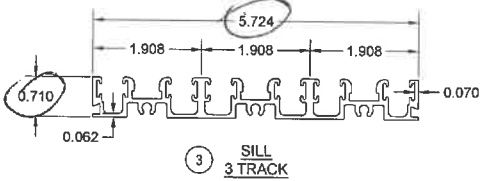
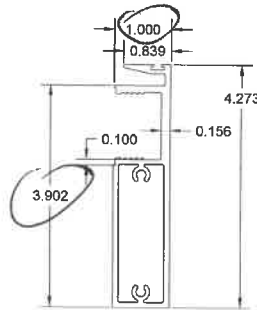
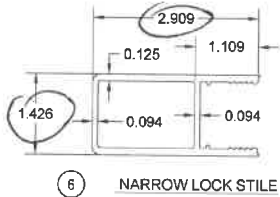
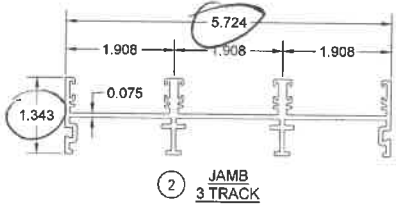
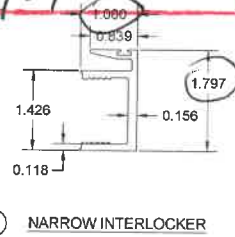
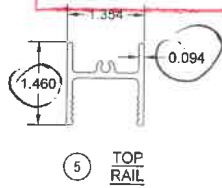
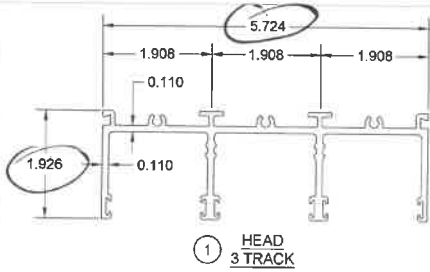
FENESTRATION TESTING LAB

REPORT NO:

T23-099

DATE:

6/24/24



BILL OF MATERIALS				
EXTRUSIONS				
ITEM NO.	FWID #	DESCRIPTION	VENDOR	VENDOR PART NO.
1	3703	HEAD (3-TRACK)		
2	3713	JAMB (3-TRACK)		
3	3743	SILL (3-TRACK)		
4	FW1020	STAINLESS STEEL TRACK		
5	3004	TOP RAIL		
6	3005	NARROW LEAD STILE		
7	3709	BOTTOM RAIL		
8	3737	NARROW INTERLOCKER		
9	3738	HP NARROW INTERLOCKER		
HARDWARE				
ITEM NO.	FWID #	DESCRIPTION	VENDOR	VENDOR PART NO.
10	22909	1" GLAZING VINYL	RYKO	R11542
11	19120	Q-LON 0.25 x 0.27	SCHLEGEL	P4R1BL-00000
12	20487	MOHAIR 0.23 x 0.27	AMESBURY	23027045BKGP
13	19122	MOHAIR 0.27 x 0.187	AMESBURY	27018745BKWP
14	-	SILLPAN		
15	25779	SILL BRUSH AIR BARRIER		
16	19104	HEAD BRUSH AIR BARRIER		
17	27449	VINYL AIR BARRIER		
18	20514	A2 TANDEM ROLLER	D&B	228-100
19	25319	ARCHETYPE NARROW LOCK	D&B	-

MATERIAL: 3070
DRAWN BY: CJ
DATE: 10/30/23
JOB NUMBER: 1754
CUSTOMER: FLEETWOOD
JOB NAME: FLEETWOOD WINDOWS & DOORS
1 FLEETWOOD WAY
CORONA, CA 92879
www.fleetwoodusa.com

SCALE: 1" = 1"
DRAWING NO.: (3)
SHEET: 3 OF 3