Fenestration Testing Laboratory, Inc.

10235 8th Street, Rancho Cucamonga, CA 91730

Report Number T18-072

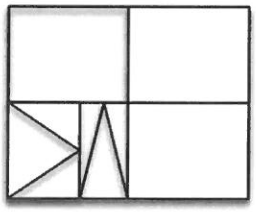
REPORT SUMMARY

REPORT NUMBER
T18-072

TESTED FOR
Fleetwood Windows & Doors
1 Fleetwood Way
Corona, CA 92879

SERIES & PRODUCT TYPE
4800-T with 450-T Insert CA - THERMALLY BROKEN ALUMINUM FIXED WITH CASEMENT/AWNING COMPOSITE WINDOW INSERT

CONFIGURATION
OO/XX-O



FRAME SIZE
3657.60 mm x 3657.60 mm (144.00" x 144.00")

SPECIFICATION
NAFS - North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-11

PRIMARY DESIGNATOR
CLASS R-PG20 3657.60 x 3657.60 mm (144.00 x 144.00 in) Type: C & FW

TEST COMPLETION DATE
December 17, 2018

REPORT DATE
December 31, 2018

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) THERMALLY BROKEN ALUMINUM FIXED WINDOW WITH CASEMENT/AWNING COMPOSITE WINDOW INSERT described in paragraph 4.0 of this report.

3.0 Test References:
3.1 NAFS - North American Fenestration Standard/specification for windows, doors, and skylights AAMA/WDMA/CSA 101/I.S.2/A440-11
3.2 ASTM F 588-14 Forced Entry Resistance Tests for Windows
3.3 CAWM 301-90(1995) Forced Entry Test for Windows (CMBSO 1-79)

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 3657.60 x 3657.60 mm (144.00 x 144.00 in) Type: C AND FW

5.0 Sample Submitted:
5.1 Product Type: THERMALLY BROKEN ALUMINUM FIXED WINDOW WITH CASEMENT/AWNING COMPOSITE WINDOW INSERT
5.2 Series: 4800-T with 450-T Insert CA
5.3 Configuration: OO/XX-O
5.4 Product Dimensions:

	Millimeters	Inches
Total Frame:	3657.60 x 3657.60	144.00 x 144.00
Fixed DLO (all three fixed lites same):	1762.25 x 1762.25	69.38 x 69.38
Casement Vent:	1054.10 x 1746.25	41.50 x 68.75
Awning Vent:	685.80 x 1746.25	27.00 x 68.75

5.5 Glass and Glazing: (Applies to fixed lites and both active lites)

IGU Thickness	*Spacer Type*	*Interior Lite*	*Exterior Lite*	*Glazing method*
1.25" overall wide	Metal box type	1/4" Tempered	1/4" Tempered	**For fixed sill, jamb and head and active lites:** Outside glazed onto "mini" hollow bulb vinyl. Glass sat on 0.375" high rubber setting block at quarter points on the bottom of each IGU. A silicone heel bead was applied 3" each way from each corner. Aluminum snap-in glazing stop was applied full perimeter on the exterior of each IGU. A strip of "large" hollow bulb vinyl was applied to each glazing stop.
				For intermediate horizontal and verticals: Outside glazed onto "mini" hollow bulb vinyl. Glass sat on 0.375" high rubber setting block at quarter points on the bottom of each IGU. A silicone heel bead was applied 3" each way from each corner. Aluminum glazing anchor was applied over horizontal and vertical TDLs. Each glazing anchor contained a strip of "large" hollow bulb vinyl.

5.6 Weepage:

Drainage Method	*Size*	*Quantity*	*Location*
Rectangular weep	0.5" x 0.19"	One (1) at each end of each bay	Sill outside face
Weep notch	1.38" x 0.14"	One (1) at each end of each bay	Sill inside leg for retaining glazing stop
Weep notch	1.38" x 0.13"	One (1) at each end of each bay	Each intermediate horizontal at each end where the intermediate horizontal met the jamb or the center vertical. Water drained to lower lites and drained down the vertical glazing pockets to the sill.
Vertical round weep	3/8" diameter	Four (4)	The casement bottom rail contained a pair of weeps at each end from the glazing pocket down through the bottom rail walls.
Weep notch	1.19" x 0.19"	See "Location"	Casement sill – one at each end and one at midspan; the casement vent bottom rail bulb vinyl facing in was notched in line with each weep. Awning sill – one at each end. The awning bottom rail bulb vinyl facing in was notched in line with each weep.

5.7 Pressure balancing: None

5.8 Weather-stripping:

Type	*Quantity*	*Location*
"Mini" hollow bulb vinyl	See "Location"	Other than as described under glazing: - One strip full perimeter of the casement and awning vent respectively facing in. - One strip full perimeter of the frame opening that received the casement/awning frame facing out. - One strip full perimeter of the casement/awning frame that weathered to the fixed window that it was inserted into.
"Large" hollow bulb vinyl	See "Location"	Other than as described under glazing: - One strip full perimeter of each casement and awing frame opening facing out. - One strip on sill and jamb glazing stop and one strip on the horizontal and vertical glazing anchors used to retain the casement/ awning frame in the larger frame opening.
Foam filled hollow bulb	See "Location"	The awning vent contained a strip on the top rail, and each stile.

5.9 Sealants:

Sealant was applied at the following locations:
- All frame corners, fixed and operable, were sealed full profile.
- The intermediate horizontals and intermediate vertical (TDLs) were sealed to the frame full profile at all joints and to each other at the intersection.
- The casement and awning vent corners were sealed full profile.
- Screws for fastening lock rod retainers and for fastening strikes were sealed.
- The nail-on fin was sealed to the rough opening full perimeter.

5.10 Hardware:

Type	*Quantity*	*Location*
Three point lock	One	Lock jamb of casement insert – The handle housing fit into a fabricated hole in the lock jamb and was fastened with a pair of screws and metal retainer on the outboard side of the jamb. A metal cam handle operated a metal sliding rod containing three lock pins. The sliding rod was retained by plastic guides and each guide was fastened with two screws to the lock jamb. Each pin engaged its respective metal strike. Each strike was fastened with four screws to the lock stile.
One point lock	Two (2)	Each lock jamb of the awning insert - each handle housing fit into a fabricated hole in its respective lock jamb and was fastened with a pair of screws and metal retainer on the outboard side of the jamb. Each metal cam handle operated a metal sliding rod containing a lock pin. Each sliding rod was retained by plastic guides and each guide was fastened with two screws to the lock jamb. Each pin engaged a metal strike. Each strike was fastened with four screws to its respective lock stile.
4 bar friction hinge	Four (4)	Two for the awning and two for the casement – At the awning window, a hinge was fastened to its respective jamb with three screws and to its respective stile with three screws. At the casement window, a hinge was fastened to the head and another to the sill each with three screws respectively and each was fastened to the casement bottom or top rail with three screws respectively.
Snubber	One (1) pair	The casement hinge stile contained a snubber at mid-span fastened with a pair of screws. When closed, this snubber engaged its corresponding snubber fastened with a pair of screws to the hinge jamb.
Lift block	One (1) pair	The casement sill contained a nylon lift wedge block fastened with a single screw to the sill at the lock stile jamb side. When closed, this block engaged its corresponding wedge block fastened to the bottom rail with a single screw.

5.11 Construction:

Location	*Joinery Type*	*Number of Fasteners*	*Fastener Size*
Frame corners – 4800-T frame	Mechanically joined	Four (4) per corner	#10 x 1" PPH
Vertical TDL to head and sill and horizontal TDLs to jambs	Mechanically joined	Three (3) per joint	#10 x 1" PPH
Horizontals TDLs to vertical TDL	An intersecting TDL plate (2.5" x 4.125" x 1/8") was fastened to the end of each horizontal TDL with three #10 x 1" PFH screws. Each plate in turn was fastened to the vertical TDL with six #10 x 0.75" hex head bolts each with its respective nut. Each bolt went through both plates and the TDL.		
Glazing anchors to horizontal and vertical TDLs	A glazing anchor extrusion was fastened to its respective TDL with #10 x 1" PFH screws through the outside face every 24". Additionally, 1/4" x 1.625" hex head bolts and lock nuts secured the glazing anchors every 24". Each bolt went through both legs of the glazing anchor and through the TDL.		
Casement frame corners	Keyed, staked and welded	N/A	N/A
Casement and Awning vent corners	Each corner was keyed and staked with two keys and welded	A #8 x 0.5" PFH screw was applied through the thermal strut and into the corner key 1" from each corner in each direction.	
The TDL between the casement and awning (integral mullion) was welded at each end to the frame.			
The glazing anchor attached to the TDLs each had a snap-on glazing anchor cover.			

5.12 Reinforcement: None

5.13 Installation:

Location on frame	*Anchor type*	*Spacing*
Full perimeter through the nail-on fin	#8 x 1.75" PFH	3" from each end and 12" on center; Wood furring applied over the nail-on fins and fastened with screws to the rough opening.

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.

9.3.1 – Operation Force (ASTM E2068-00(2016)) Casement Window

Test Description	Results	Allowed	Comments
Maximum force to initiate motion	25.93 N (5.83 lbf)	Report only	
Maximum force to maintain motion	17.79 N (4.00 lbf)	100 N (22.48)	
Latching device force	20.01 N (4.50 lbf)	100 N (22.48 lbf)	

9.3.1 – Operation Force (ASTM E2068-00(2016)) Awning Window

Test Description	Results	Allowed	Comments
Maximum force to initiate motion	25.93 N (6.67 lbf)	Report only	
Maximum force to maintain motion	17.79 N (5.00 lbf)	100 N (22.48)	
Latching device force	20.01 N (4.00 lbf)	100 N (22.48 lbf)	

9.3.2 – Air Infiltration (ASTM E283-04(2012))

Test Description	Results	Allowed	Comments
75 Pa differential pressure	0.05 L/s*m^2	1.5 L/s*m^2	
1.57 psf differential pressure	0.01 cfm/ft^2	0.30 cfm/ft^2	
The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.			

9.3.2 – Air Infiltration (ASTM E283-04(2012))

Test Description	Results	Allowed	Comments
300 Pa differential pressure	0.30 L/s*m^2	1.5 L/s*m^2	
6.27 psf differential pressure	0.06 cfm/ft^2	0.30 cfm/ft^2	
The tested specimen meets the performance levels specified in AAMA/WDMA/CSA 101/I.S.2/A440 for air leakage resistance.			

9.3.3 – Water Penetration (ASTM E547-00(2016))

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

9.3.4.2 – Uniform Load Deflection at Design Pressure (ASTM E330-14) 4800-T full length TDL 142.5"

Test Description	Results	Allowed	Comments
DP20 - 960 Pa (20.05 psf) Pos	23.11 mm (0.91")	Report only	
DP20 - 960 Pa (20.05 psf) Neg	19.81 mm (0.78")	Report only	

9.3.4.3 – Uniform Load Structural Overload (OL) at 1.5 x Design Pressure (ASTM E330-14)
4800-T full length TDL 142.5"

Test Description	Results	Allowed	Comments
OL for DP20 - 1440 Pa (30.08 psf) Pos	9.40 mm (0.37")	14.48 mm (0.57")	
OL for DP20 - 1440 Pa (30.08 psf) Neg	6.10 mm (0.24")	14.48 mm (0.57")	

9.3.4.2 – Uniform Load Deflection at Design Pressure (ASTM E330-14) –
450-T Casement/Awning TDL 67.88"

Test Description	Results	Allowed	Comments
DP20 - 960 Pa (20.05 psf) Pos	3.18 mm (0.13")	Report only	
DP20 - 960 Pa (20.05 psf) Neg	2.54 mm (0.10")	Report only	

9.3.4.3 – Uniform Load Structural Overload (OL) at 1.5 x Design Pressure (ASTM E330-14)
450-T Casement/Awning TDL 67.88"

Test Description	Results	Allowed	Comments
OL for DP20 - 1440 Pa (30.08 psf) Pos	2.29 mm (0.09")	6.86 mm (0.27")	
OL for DP20 - 1440 Pa (30.08 psf) Neg	1.57 mm (0.06")	6.86 mm (0.27")	

9.3.5 – Forced Entry Resistance (ASTM F588-14 & CAWM 301-90(1995)) for casement and awning and fixed windows

Test Description	Results	Allowed	Comments
ASTM F588 Type B and CAWM 301 Type II	No Entry	No Entry	2
ASTM F588 Type D and CAWM 301 Type V	No Entry	No Entry	2

9.3.6.4.2 – Sash Vertical Deflection Test - Casement

Test Description	Results	Allowed	Comments
For R and LC - 200 N (44.96 lbf)	1.52 mm (0.06")	≤ 21.08 mm (0.83")	

9.3.6.5.2 – Distributed load Test - Casement

Test Description	Results	Allowed	Comments
For LC - 300 N (6.27 psf)	Passed	Sash operates/No damage	3

9.3.6.5.5 – Awning hardware load test

Test Description	Results	Allowed	Comments
For CW 140 N (31.47 lbf)	35.05 mm (1.38")	45.72 mm (1.80")	4

Comment #1 - Internal screen not a factor in test. The water penetration test passed at a level above the overall rating.
Comment #2 – The fixed, casement, and awning passed the FER test at grade 10 per ASTM F588 and CAWM 301.
Comment #3 – The sash passed this test at an LC level which is higher than the R class requirement. Section 9.3.6.5.2 states "At the conclusion of the test, the sash shall properly and fully close. There shall be no failure of screws, track, or hinge, or permanent deformation of support arms." This is the criteria applied by stating "Passed" under "Results". The test was conducted only in the open direction due to the use of 4 bar friction hinges. The sash opened 45 degrees.
Comment #4 – The awning hardware load test passed at a CW level which exceeds the overall R class requirements.
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 four (4) pages consisting of bill of materials, cross section drawings, and die 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 die 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: December 17, 2018

Report Completion Date: December 31, 2018

Pete Cruz - Test Engineer

Jim Cruz - Laboratory Testing Manager

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TEST SPECIMEN

1. SERIES / MODEL: 4800–T OO/OO W/ 450–T INSERT
2. PRODUCT TYPE: FIXED WINDOW W/ INSERT

GENERAL NOTES

1. BUCKING OPENINGS & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER LOADS TO THE STRUCTURE AND TO BE REVIEWED BY BUILDING OFFICIAL.

2. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & MAY NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS.

3. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF AAMA AND BUILDING CODE.

SPECIFICATIONS

1. AAMA/WDMA/CSA 101/I.S.2/A440–11; A440 S1–013 (CANADIAN SUPPLEMENT) – (NON–IMPACT GLAZING)

CORNERS CONSTRUCTION

1. FRAME CORNER: THE JAMBS ARE BUTTED TO THE HEAD AND SILL AND ATTACHED WITH SCREWS.
2. TDL BARS ARE BUTTED TO THE HEAD, SILL, AND JAMBS AND ATTACHED WITH SCREWS. INTERSECTING TDL BARS ARE SECURED WITH PLATES AND MECHANICALLY FASTENED.

GLAZING

A: 1.25" IG – 1/4" TEMPERED – 1/4" TEMPERED.

CONFIGURATIONS

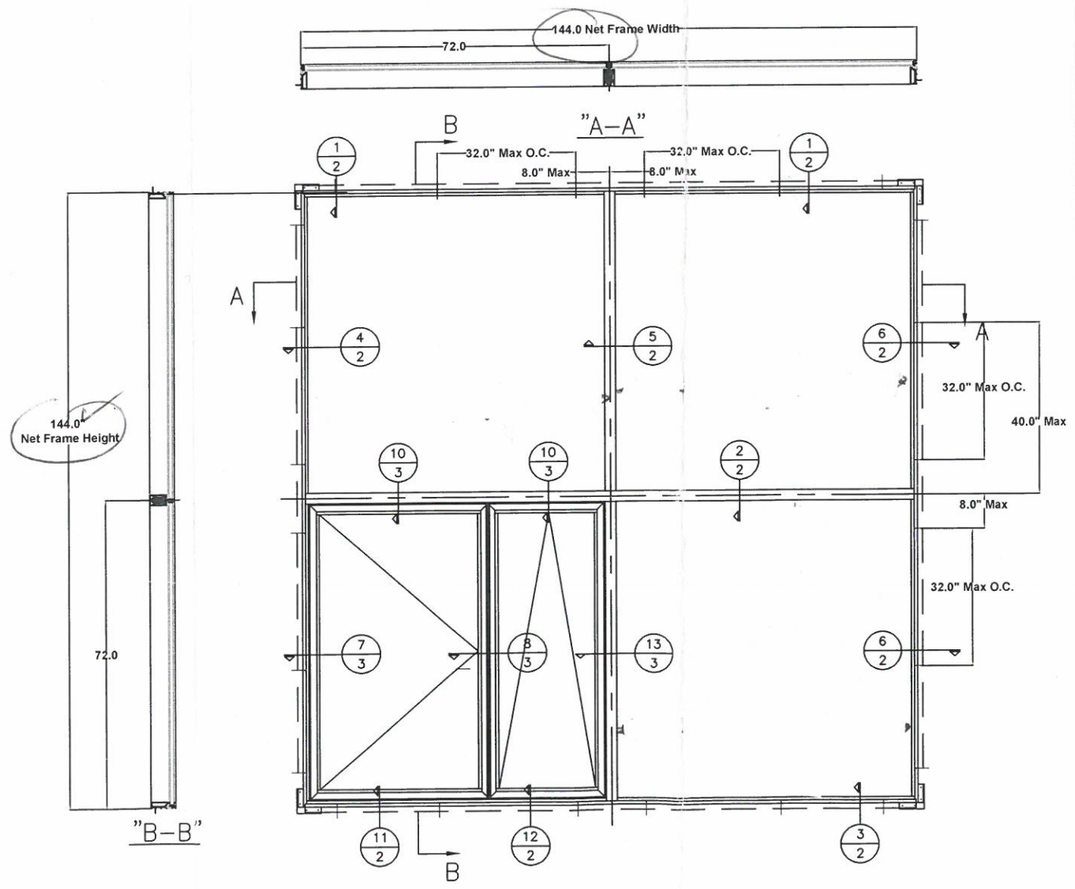
OUTSIDE GLAZED OO/OO–GTF WITH 450–T INSERT
(VERTICAL TDL: ONE PIECE FROM THE TOP TO BOTTOM)
450–T INSERT CA

WEEPING

SILL: 4" FROM ENDS AND C.L. OF VERTICAL TDL'S

ANCHORING

8" FROM ENDS AT 32" O.C. 2X PER LOCATION



W1 4800–T OO/OO–GTF
SCALE: 3/4" = 1'

*FRAME ANCHOR REQUIREMENTS TABLE			
OPENING TYPE (SUBSTRATE)	FRAME TO OPENING FASTENER TYPE	MINIMUM EMBEDMENT	MINIMUM EDGE DIST.
2X_ WOOD FRAME OR BUCK	(1) NO. 8 SMS SCREW	1 1/2"	3/4"
MIN. 18 GA. 33 KSI STEEL STUD	(1) NO. 8 SMS SCREW	FULL	3/8"
CMU/CONCRETE	(2) 3/16" CONCRETE SCREWS	1 1/4"	2 5/8"

(1) SMS SCREWS
(2) CONCRETE SCREWS SHALL BE 3/16" ITW TAPCON

AIR INFILTRATION TABLE	
PRESSURE (PSF)	
RATING	VALUE

WATER INFILTRATION TABLE	
PRESSURE (PSF)	
RATING	VALUE

450–T DESIGN PRESSURE TABLE			
MAX WINDOW WIDTH	MAX WINDOW HEIGHT	DESIGN PRESSURE (PSF)	
		POSITIVE	NEGATIVE
41.75"	69.25"		

4800–T DESIGN PRESSURE TABLE		
MAX WINDOW HEIGHT	DESIGN PRESSURE (PSF)	
	POSITIVE	NEGATIVE
72"		

FENESTRATION TESTING LAB
REPORT NO: T18-072
DATE: 12/28/18

COMMENTS | DRAWN BY | DATE | REVISIONS

DATE: 8/3/18
DRAWN BY: CJ
JOB NUMBER: 10081

MATERIAL: 4800-T WITH 450-T INSERT CA
CUSTOMER: FLEETWOOD WINDOWS AND DOORS
JOB NAME: 4800-T WITH 450-T INSERT CA TESTING

1 FLEETWOOD WAY
CORONA, CA 92879
www.fleetwoodusa.com
FLEETWOOD WINDOWS & DOORS

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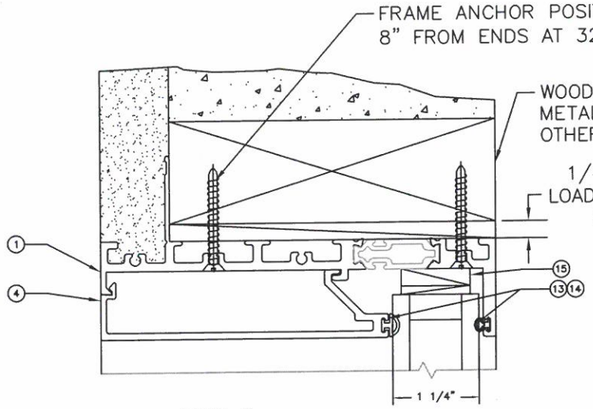
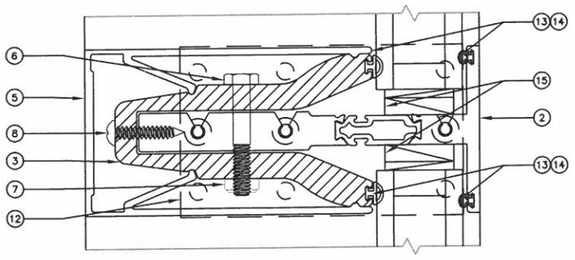
DRAWING NO.: 1
SHEET: 1 OF 4



1 4800–T OUTSIDE GLAZED HEAD
SCALE: FULL SIZE



2 4800–T HORIZONTAL MULLION
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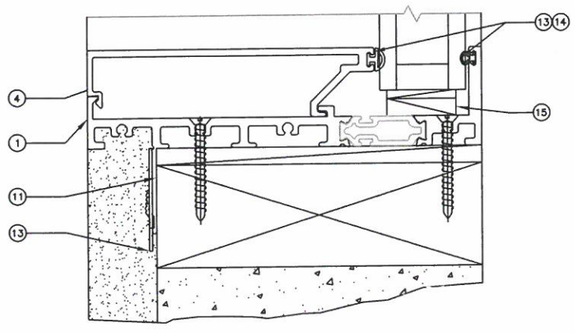

3 4800–T OUTSIDE GLAZED SILL
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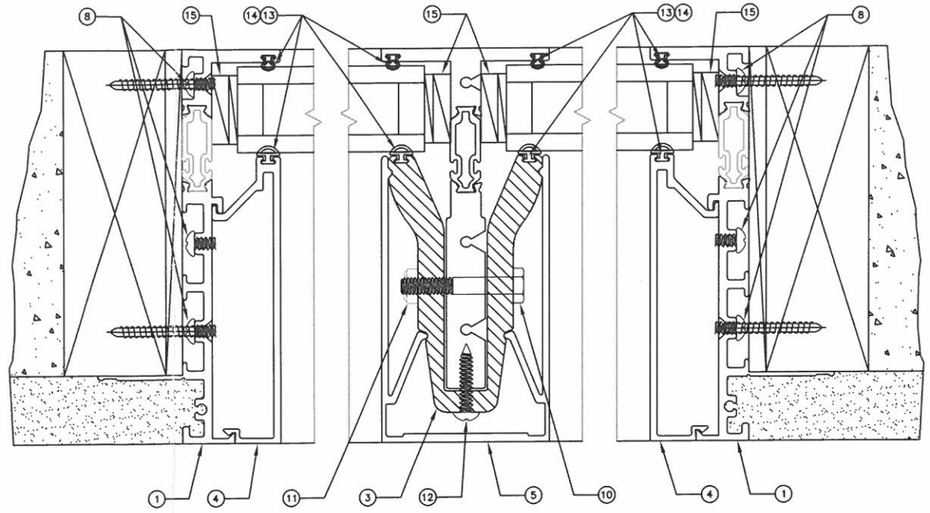

4 4800–T OUTSIDE GLAZED JAMB
SCALE: FULL SIZE

5 4800–T VERTICAL MULLION
SCALE: FULL SIZE

6 4800–T OUTSIDE GLAZED JAMB
SCALE: FULL SIZE

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DRAWN BY:	CJ
DATE:	8/3/18
JOB NUMBER:	10081

REVISIONS	DATE	DRAWN BY	COMMENTS

FLEETWOOD WINDOWS & DOORS
1 FLEETWOOD WAY
CORONA, CA 92879
www.fleetwoodusa.com

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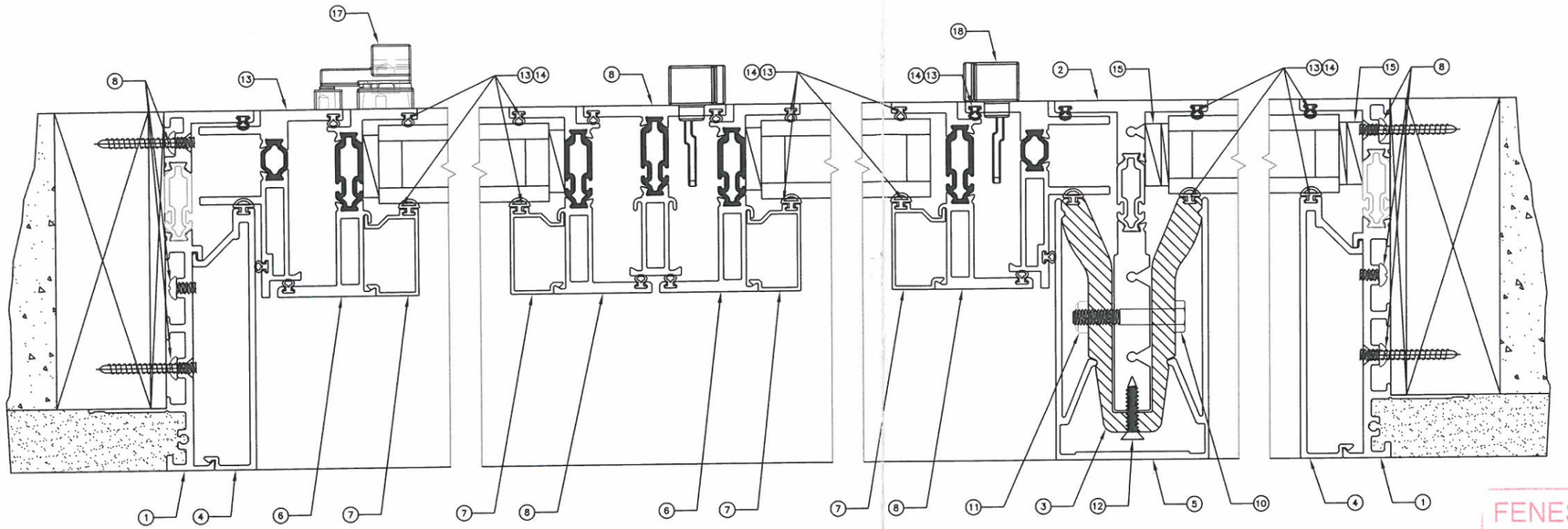

7 4800–T OUTSIDE GLAZED JAMB W/ 450–T INSERT
SCALE: FULL SIZE

8 450–T VERTICAL MULLION
SCALE: FULL SIZE

13 4800–T VERTICAL MULLION
SCALE: FULL SIZE

6 4800–T OUTSIDE GLAZED JAMB
SCALE: FULL SIZE

FENESTRATION TESTING LAB
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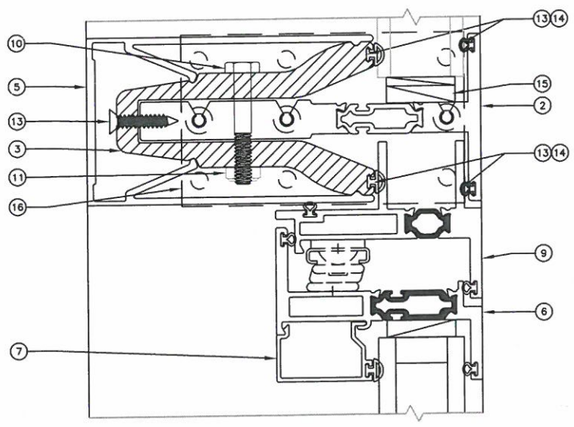
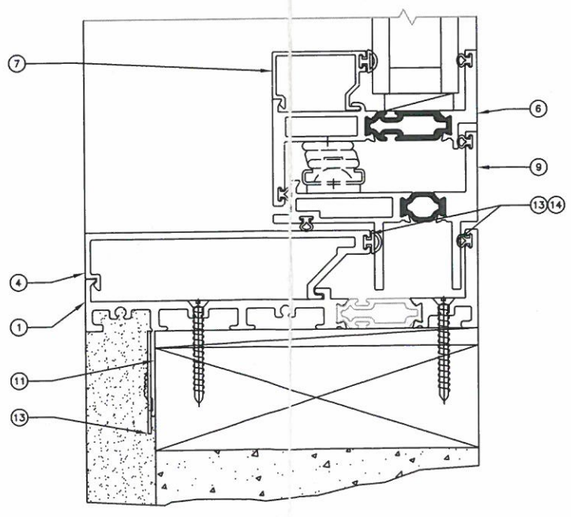
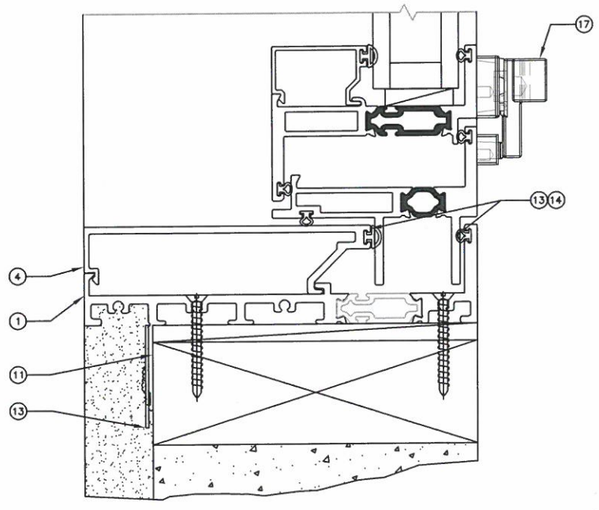


10 4800–T HORIZONTAL MULLION W/ 450–T INSERT
SCALE: FULL SIZE



11 4800–T HORIZONTAL MULLION W/ 450–T INSERT
SCALE: FULL SIZE



12 4800–T HORIZONTAL MULLION W/ 450–T INSERT
SCALE: FULL SIZE

REVISIONS	DATE	DRAWN BY	COMMENTS

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JOB NUMBER: 10081

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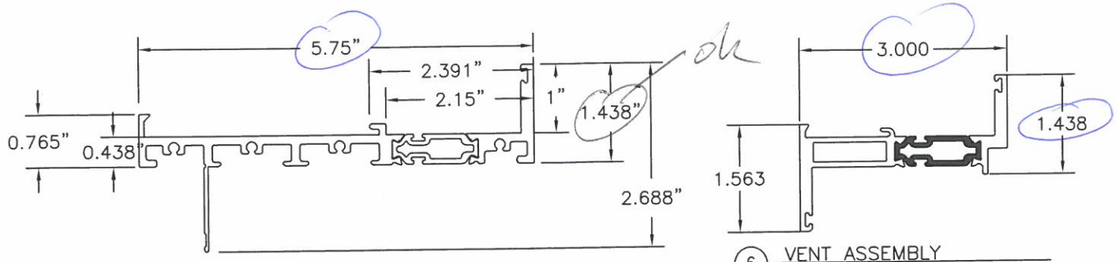
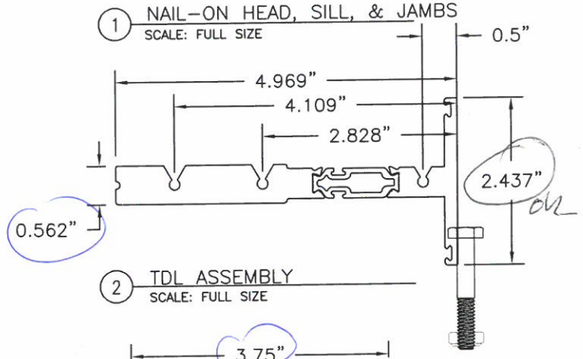
CUSTOMER: FLEETWOOD WINDOWS AND DOORS
JOB NAME: 4800-T WITH 450-T INSERT CA TESTING

FLEETWOOD WINDOWS & DOORS
1 FLEETWOOD WAY
CORONA, CA 92879
www.fleetwoodusa.com

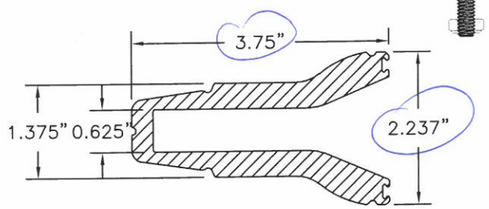
SCALE : 1' = 1'
DRAWING NO. : 3
SHEET : 3 OF 4



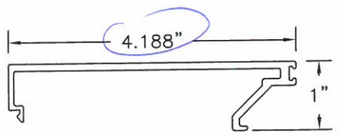
1 NAIL-ON HEAD, SILL, & JAMBS
SCALE: FULL SIZE



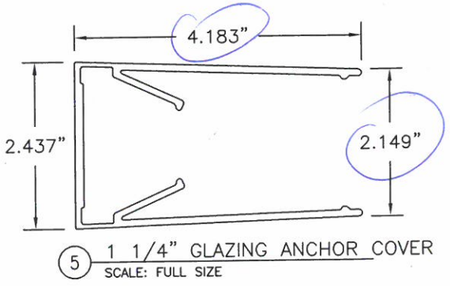
2 TDL ASSEMBLY
SCALE: FULL SIZE



3 1 1/4" GLAZING ANCHOR
SCALE: FULL SIZE

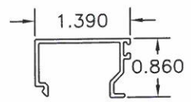


4 1 1/4" GLASS STOP
SCALE: FULL SIZE

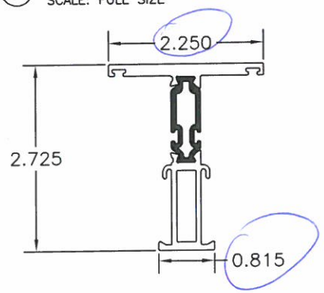


5 1 1/4" GLAZING ANCHOR COVER
SCALE: FULL SIZE

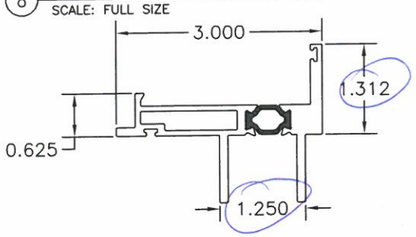
6 VENT ASSEMBLY
SCALE: FULL SIZE



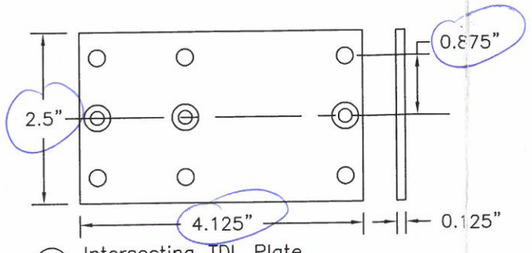
7 1 1/4" GLASS STOP
SCALE: FULL SIZE



8 TDL ASSEMBLY
SCALE: FULL SIZE

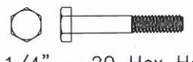


9 450-T INSERT ASSEMBLY
SCALE: FULL SIZE



16 Intersecting TDL Plate
SCALE: FULL SIZE

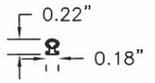
ITEM #	PART	ITEM DESCRIPTION	NOTES
		EXTRUSIONS	
1	4801	NAIL FIN FRAME ASSEMBLY	6063-T6 ALUMINUM EXTRUSION
2	4802	TDL ASSEMBLY	6063-T6 ALUMINUM EXTRUSION
3	4805	1 1/4" GLAZING ANCHOR	6063-T6 ALUMINUM EXTRUSION
4	4803	1 1/4" GLASS STOP	6063-T6 ALUMINUM EXTRUSION
5	4807	1 1/4" GLAZING ANCHOR COVER	6063-T6 ALUMINUM EXTRUSION
6	4502	VENT ASSEMBLY	6063-T6 ALUMINUM EXTRUSION
7	4504	1 1/4" GLASS STOP	6063-T6 ALUMINUM EXTRUSION
8	4506	TDL ASSEMBLY	6063-T6 ALUMINUM EXTRUSION
9	4510	450-T INSERT ASSEMBLY	6063-T6 ALUMINUM EXTRUSION
		FASTENERS	
10	–	1/4" – 20 HEX HEAD BOLT	
11	–	1/4" – 20 HEX HEAD LOCKNUT	
12	20350	NO. 10 SCREW FHP 1"	
		SEALS & SEALANTS	
13	25199	MINI BULB VINYL (EPDM 70 DUROMETER, ASTM C864)	TREMCO, # TX20801E
14	25031	BULB VINYL-LARGE (EPDM 70 DUROMETER, ASTM C864)	TREMCO, #TX113638E
		MISCELLANEOUS	
15		SETTING BLOCK 4" X 3/8" X 1"	
16	26151	INTERSECTING TDL PLATE	
17	26060	CAM HANDLE AND STRIKE	
18	26069	MULTIPOINT	



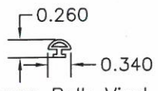
10 1/4" – 20 Hex Head Bolt
SCALE: FULL SIZE

11 1/4" – 20 Hex Head Locknut
SCALE: FULL SIZE

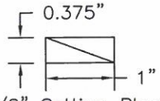
12 No. 10 Screw FHP 1"
SCALE: FULL SIZE



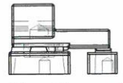
13 Mini Bulb Vinyl
SCALE: FULL SIZE



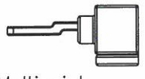
14 Large Bulb Vinyl
SCALE: FULL SIZE



15 3/8" Setting Block
SCALE: FULL SIZE



17 Cam Handle and Strike
SCALE: FULL SIZE



18 Multipoint
SCALE: FULL SIZE

FENESTRATION TESTING LAB
REPORT NO: TT8-072
DATE: 12/28/18

COMMENTS | DRAWN BY | DATE | REVISIONS

DRAWN BY: CJ
DATE: 8/3/17
JOB NUMBER: 10081

MATERIAL: 4800-T WITH 450-T INSERT CA
CUSTOMER: FLEETWOOD WINDOWS AND DOORS
JOB NAME: 4800-T WITH 450-T INSERT CA TESTING

FLEETWOOD WINDOWS & DOORS
1 FLEETWOOD WAY
CORONA, CA 92879
www.fleetwoodusa.com

SCALE: 1" = 1"
DRAWING NO.: 4
SHEET: 4 OF 4