



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)
BOARD AND CODE ADMINISTRATION DIVISION

NOTICE OF ACCEPTANCE (NOA)

MIAMI-DADE COUNTY
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175-2474
T (786) 315-2590 F (786) 315-2599

www.miamidade.gov/building

E.S. Windows, LLC
3550 NW 49th Street
Miami, FL 33142

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER-Product Control Section to be used in Miami-Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/ or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.

DESCRIPTION: Series "7100" Aluminum Window Wall System - S.M.I.

APPROVAL DOCUMENT: Drawing No. **W12-51**, titled "Series 7100 Alum. Window Wall System (S.M.I.)", sheets 1 through 13 and 13.1 of 13, dated 09/12/12, with revision **F** dated 07/18/2023, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Small Missile Impact Resistant

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, **Barranquilla, Colombia**, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

RENEWAL of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

TERMINATION of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/ or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

INSPECTION: A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA **revises and renews** NOA No. **21-0212.03** and consists of this page 1 and evidence pages E-1, E-2, and E-3, as well as approval document mentioned above.

The submitted documentation was reviewed by **Sifang Zhao, P.E.**



S.Z.

09/14/2023

NOA No. 23-0724.10
Expiration Date: November 07, 2028
Approval Date: September 14, 2023
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 13-0617.25)
1. Drawing No. **W12-51**, titled "Series 7100 Alum. Window Wall System (S.M.I.)", sheets 1 through 13 and 13.1 of 13, dated 09/12/12, with revision **E** dated 01/22/21, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0212.03)

B. TESTS

1. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Small Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of a series ES-7100 aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-8101**, dated 01/06/15, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 15-0430.06)
2. Test reports on: 1) Safety Performance Test, (Drop Test) per ANSI Z97.1-2009 along with marked-up drawings and installation diagram of a series ES-7000 aluminum window wall system and a series ES-7100 aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-7862**, dated 07/25/14 and revised on 07/13/15, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 15-0430.06)
3. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Small Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Forced Entry Test, per FBC 2411.3.2.1, and TAS 202-94
along with marked-up drawings and installation diagram of a series ES-7100 aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-7155**, dated 07/15/13, signed and sealed by Jorge A. Naya, P.E.
(Submitted under NOA No. 13-0617.25)



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.10
Expiration Date: November 07, 2028
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC 6th Edition (2017)**, dated 06/16/15, revised on 10/26/17, and further updated on 01/18/21 to comply with **FBC 7th Edition (2020)**, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0212.03)
2. Glazing complies with **ASTM E1300-09**

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER).

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **19-0305.02** issued to **Kuraray America, Inc.** for their "**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**" dated 05/09/19, expiring on 07/08/24.

F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 7th Edition (2020)**, and of no financial interest, dated January 18, 2021, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0212.03)

G. OTHERS

1. **1**Notice of Acceptance No. **17-1218.09**, issued to E.S. Windows, LLC, for their Series "7100" Aluminum Window Wall System – S.M.I., approved on 03/08/18 and expiring on 11/07/23.



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.10
Expiration Date: November 07, 2028
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

2. Drawing No. **W12-51**, titled “Series 7100 Alum. Window Wall System (S.M.I.)”, sheets 1 through 13 and 13.1 of 13, dated 09/12/12, with revision **F** dated 07/18/2023, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

1. Miami-Dade Department of Regulatory and Economic Resources (RER)

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **19-0305.02** issued to **Kuraray America, Inc.** for their “**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**” dated 05/09/19, expiring on 07/08/24.

F. STATEMENTS

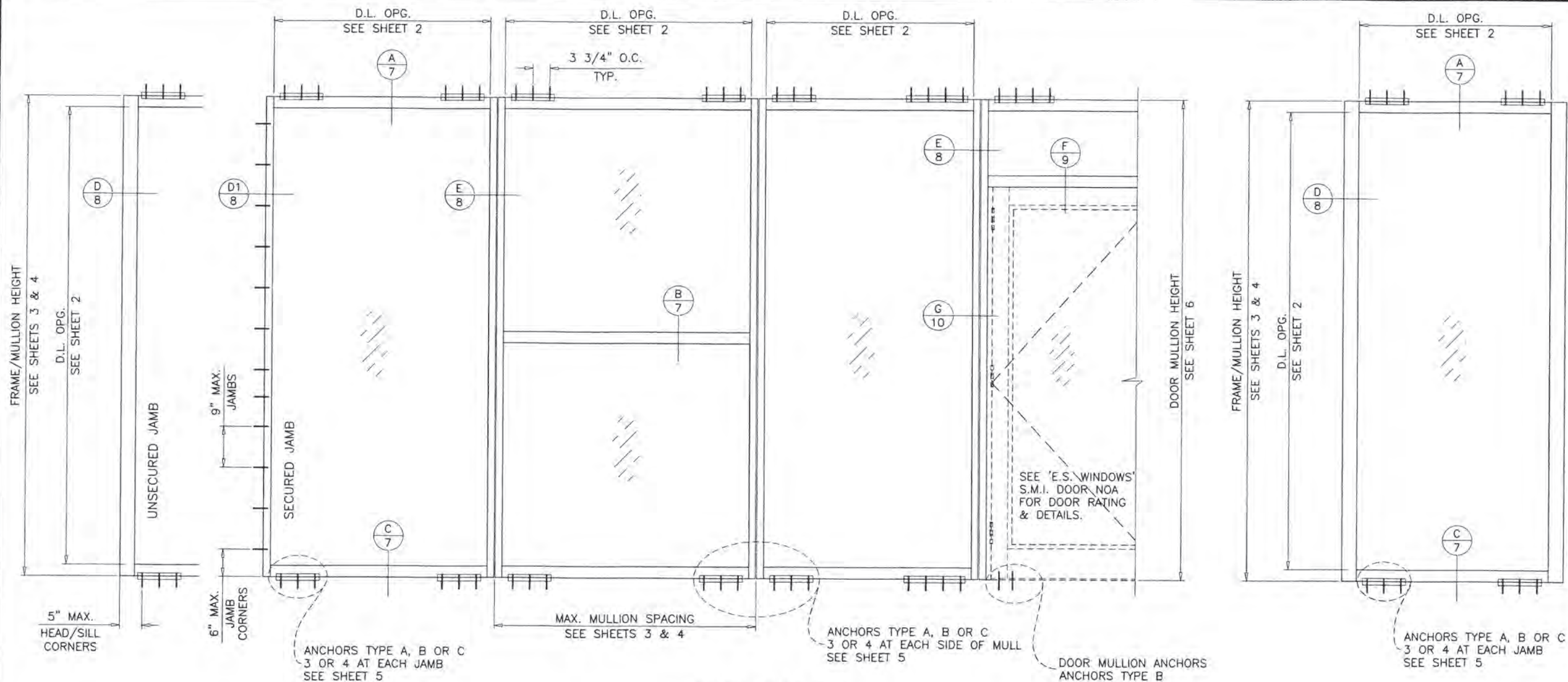
1. Statement letter of conformance, complying with **FBC 7th Edition (2020)** and **FBC 8th Edition (2023)**, and of no financial interest, dated July 19, 2023, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

G. OTHERS

2. Notice of Acceptance No. **21-0212.03**, issued to E.S. Windows, LLC, for their Series “7100” Aluminum Window Wall System – S.M.I., approved on 04/19/2021 and expiring on 11/07/23.



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.10
Expiration Date: November 07, 2028
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TYPICAL ELEVATIONS

SERIES 7100 ALUMINUM WINDOW WALL SYSTEM

THIS SYSTEM MAY BE USED IN CONJUNCTION WITH MIAMI-DADE COUNTY APPR'D SMALL MISSILE IMPACT RESISTANT DOORS. LOWER DESIGN PRESSURE FROM STOREFRONT OR DOOR APPROVAL WILL APPLY TO ENTIRE SYSTEM.

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2020 (7TH EDITION)/2023 (8TH EDITION) FLORIDA BUILDING CODE INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).

ANCHORS SHALL BE CORROSION RESISTANT, SPACED AS SHOWN ON DETAILS AND INSTALLED PER MANUF'S INSTRUCTIONS. SPECIFIED EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.

ALL SHIMS TO BE HIGH IMPACT, NON-METALLIC AND NON-COMPRESSIBLE.

MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE 2020/2023 FLORIDA BLDG. CODE & ADOPTED STANDARDS.

THIS PRODUCT APPROVAL IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT, i.e. LIFE SAFETY OF THIS PRODUCT, ADEQUACY OF STRUCTURE RECEIVING THIS PRODUCT AND SEALING AROUND OPENING FOR WATER INFILTRATION RESISTANCE ETC. CONDITIONS NOT SHOWN IN THIS DRAWING ARE TO BE ANALYZED SEPARATELY, AND TO BE REVIEWED BY BUILDING OFFICIAL.

DESIGN LOADS SHOWN ARE BASED ON 'ALLOWABLE STRESS DESIGN (ASD)'.

INSTRUCTIONS:

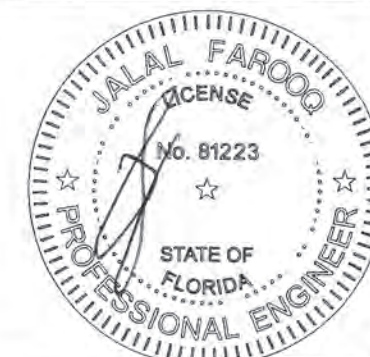
USE CHARTS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN WIND PRESSURE REQUIREMENTS BASED ON WIND VELOCITY, BLDG. HEIGHT, WIND ZONE USING APPLICABLE ASCE 7 STANDARD.
- STEP 2** SEE CHARTS ON SHEET 2 FOR GLASS DESIGN LOAD CAPACITY.
- STEP 3** CHECK MULLION DESIGN LOAD CAPACITY FOR A GIVEN SPACING AND HEIGHT USING CHARTS ON SHEETS 3, 4 & 6 THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 4** USING CHARTS ON SHEET 5 SELECT ANCHOR OPTION WITH DESIGN LOAD CAPACITY MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** FOR SECURED JAMB OPTION CHECK JAMB ANCHOR CAPACITY USING CHART ON SHEET 8.
- STEP 6** THE LOWEST VALUE RESULTING FROM STEPS 2, 3, 4 AND 5 THAT EXCEED THE DESIGN WIND PRESSURES DETERMINED THRU STEP 1 SHALL APPLY TO ENTIRE SYSTEM.
- STEP 7** FOR SYSTEMS WITH UNANCHORED JAMBS, USING SHEET 11, DETERMINE THE MIN. & MAX. GAP DIMENSIONS.
- STEP 8** WHEN USING THIS SYSTEM WITH DOORS, THE LOWER VALUE OF THE DESIGN PRESSURE RATING FOR THE SYSTEM AND THE DOOR SHALL APPLY.

THIS SYSTEM IS RATED FOR SMALL MISSILE IMPACT. MIAMI-DADE COUNTY APPROVED IMPACT RESISTANT SHUTTERS REQUIRED FOR INSTALLATIONS UP TO 30 FT. OF GRADE. SHUTTERS NOT REQD. FOR INSTALLATIONS ABOVE 30 FT. OF GRADE.

PRODUCT COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

LAMINATED GLASS
INSUL. LAM. GLASS
SMALL MISSILE IMPACT



PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10

Expiration Date 11/07/2028

By 
Miami-Dade Product Control

JUL 11 2023

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 264-8100 FAX. (305) 262-6978
(C.A.N. 3538)

SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

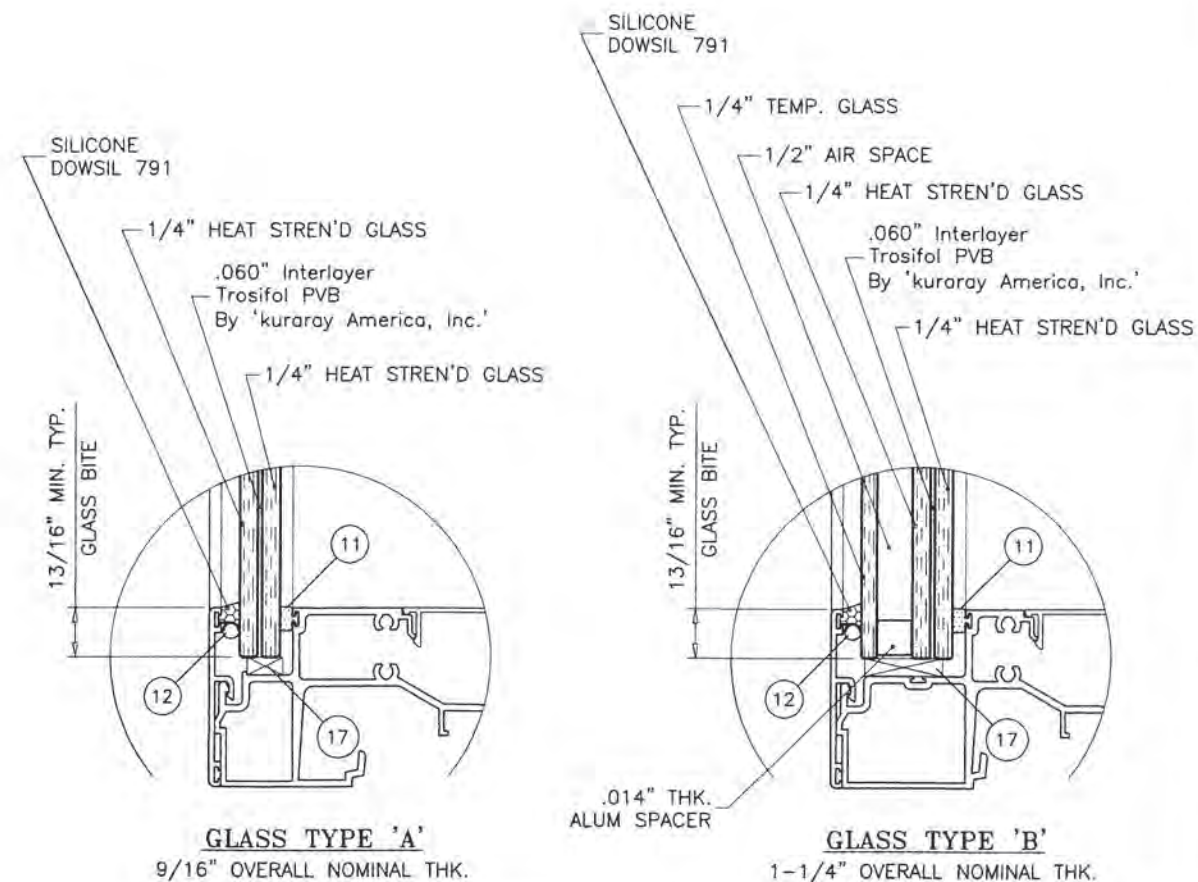
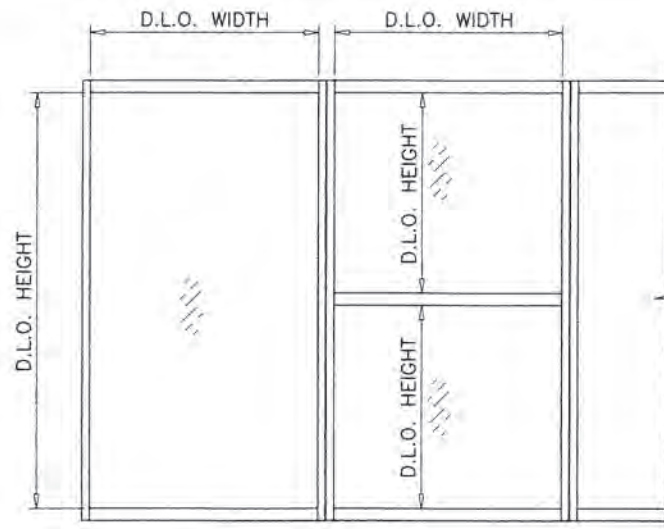
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	C	07.29.15		NO CHANGE THIS SHEET
	D	11.01.17		UPDATED TO 2017 FBC
	E	01.22.21		UPDATED TO 2020 FBC
	F	07.18.23		UPDATED TO 2023 FBC

date:	09-12-12
scale:	1/2"=1'-0"
dr. by:	TARIO
chk. by:	
drawing no.	W12-51
sheet	1 of 13

STORE W12-51ES

GLASS DESIGN LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPE 'A'	GLASS TYPE 'B'
D.L.O. WIDTH	D.L.O. HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)
36"	88	150.0	150.0
39"		150.0	150.0
42"		150.0	150.0
45 1/2"		150.0	150.0
48"		145.7	150.0
51"		140.0	150.0
54"		134.6	147.0
57 1/2"		110.0	110.0
36"	92	150.0	150.0
39"		150.0	150.0
42"		150.0	150.0
45 1/2"		146.4	150.0
48"		141.8	150.0
51"		134.8	147.0
54"		129.4	140.0
57 1/2"		110.0	110.0
36"	96	150.0	150.0
39"		150.0	150.0
42"		150.0	150.0
45 1/2"		143.3	150.0
48"		136.7	150.0
51"		129.7	141.0
54"		110.0	110.0
57 1/2"		110.0	110.0
36"	100	150.0	150.0
39"		150.0	150.0
42"		149.1	150.0
45 1/2"		138.1	150.0
48"		131.8	150.0
51"		110.0	110.0
54"		110.0	110.0
57 1/2"		110.0	110.0
36"	104	150.0	150.0
39"		150.0	150.0
42"		144.3	150.0
45 1/2"		133.7	147.0
48"		127.3	145.0
51"		110.0	110.0
54"		110.0	110.0
57 1/2"		110.0	110.0
36"	108	150.0	150.0
39"		150.0	150.0
42"		140.2	150.0
45 1/2"		129.7	142.0
48"		110.0	110.0
51"		110.0	110.0
54"		110.0	110.0
57 1/2"		105.7	110.0

GLASS DESIGN LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPE 'A'	GLASS TYPE 'B'
D.L.O. WIDTH	D.L.O. HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)
36"	112	150.0	150.0
39"		146.3	150.0
42"		136.5	150.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		110.0	110.0
54"		107.6	110.0
36"	116	150.0	150.0
39"		142.7	150.0
42"		133.3	147.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		110.0	110.0
54"		110.0	110.0
36"	120	150.0	150.0
39"		142.2	150.0
42"		110.0	110.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		106.6	110.0
54"		110.0	110.0
36"	124	150.0	150.0
39"		142.6	150.0
42"		110.0	110.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		110.0	110.0
54"		110.0	110.0
36"	128	150.0	150.0
39"		142.9	150.0
42"		110.0	110.0
45 1/2"		110.0	110.0
48"		108.5	110.0
51"		110.0	110.0
54"		110.0	110.0
36"	132"	150.0	150.0
39"		110.0	110.0
42"		110.0	110.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		110.0	110.0
54"		110.0	110.0
36"	136"	150.0	150.0
39"		110.0	110.0
42"		110.0	110.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		110.0	110.0
54"		110.0	110.0
36"	139"	150.0	150.0
39"		110.0	110.0
42"		110.0	110.0
45 1/2"		110.0	110.0
48"		110.0	110.0
51"		110.0	110.0
54"		110.0	110.0



GLAZING OPTIONS

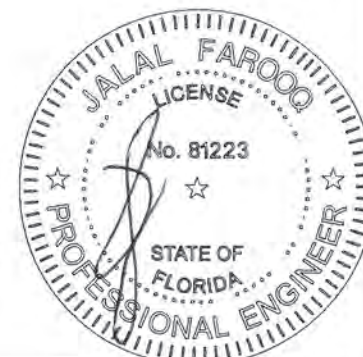
PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10

Expiration Date 11/07/2028

By 
Miami-Dade Product Control

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E1300-09 (3 SEC. GUSTS).

JUL 10 2023



SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

E.S. WINDOWS, LLC

3550 N.W. 49 STREET
MIAMI, FL. 33142

TEL. (305) 638-5151 FAX. (305) 638-5158

no.	date	by	description
C	07.29.15		REV. PER RER COMMENTS
D	11.01.17		UPDATED TO 2017 FBC
E	01.22.21		UPDATED TO 2020 FBC
F	07.18.23		NO CHANGE THIS SHEET

date:	09-12-12
scale:	3/8" = 1"
dr. by:	TARIQ
chk. by:	

drawing no.
W12-51

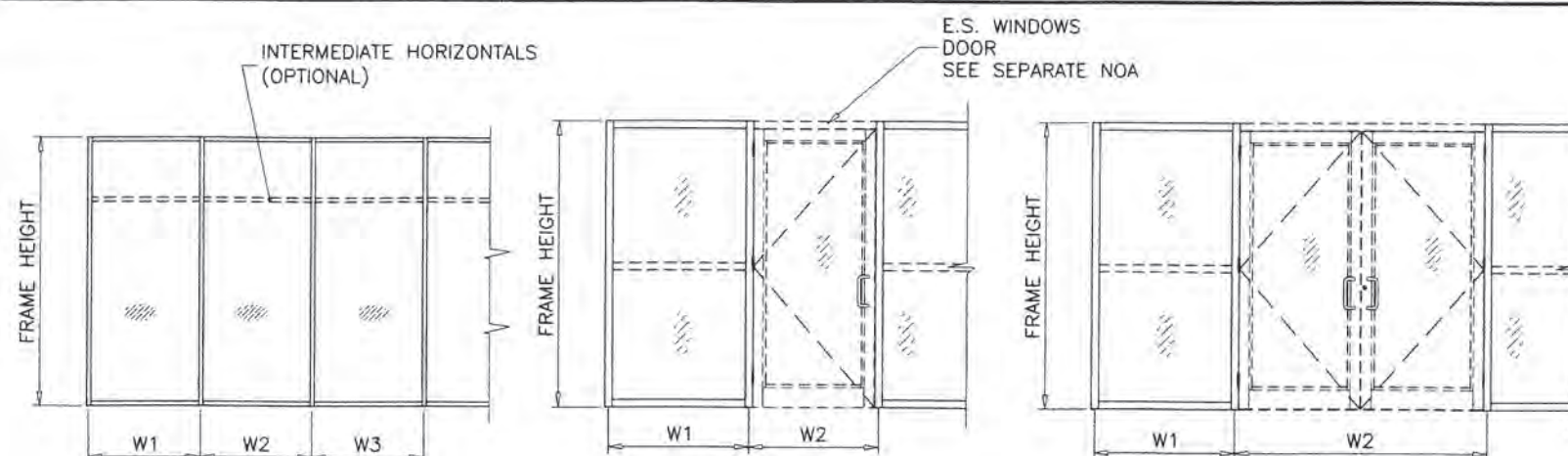
sheet 2 of 13

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 264-8100 FAX. (305) 262-6978
(C.A.N. 3538)

STORE W12-51ES

MULLION DESIGN LOAD CAPACITY - PSF CHART FOR LAMINATED GLASS MULLIONS			
NOMINAL DIMS.		JAMB 'J1' MULL 'M1'	
WIDTH (W)	FRAME HEIGHT	EXT. (+)	INT. (-)
30"	108"	125.0	125.0
36"		125.0	125.0
42"		125.0	125.0
48"		125.0	125.0
54"		125.0	125.0
60"		116.7	116.7
30"	114"	125.0	125.0
36"		125.0	125.0
42"		125.0	125.0
48"		125.0	125.0
54"		115.4	115.4
60"		103.9	103.9
30"	120"	125.0	125.0
36"		125.0	125.0
42"		125.0	125.0
48"		115.1	115.1
54"		102.3	102.3
57"		92.1	92.1
30"	126"	125.0	125.0
36"		125.0	125.0
42"		113.6	113.6
48"		99.4	99.4
54"		88.4	88.4
30"	132"	125.0	125.0
36"		115.3	115.3
42"		98.8	98.8
48"		86.5	86.5
52"		76.9	76.9
30"	138"	121.1	121.1
36"		100.9	100.9
42"		86.5	86.5
48"		75.7	75.7
50"		69.9	69.9
30"	144"	106.6	106.6
36"		88.8	88.8
42"		76.1	76.1
48"		66.6	66.6

MULLION DESIGN LOAD CAPACITY – PSF CHART FOR LAMINATED GLASS MULLIONS					
NOMINAL DIMS.		JAMB 'J2' MULL 'M2'		JAMB 'J3' MULL 'M3'	
WIDTH (W)	FRAME HEIGHT	EXT. (+)	INT. (–)	EXT. (+)	INT. (–)
30"	96"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	150.0	125.0	150.0
48"		125.0	150.0	125.0	150.0
54"		125.0	150.0	125.0	150.0
58"		125.0	150.0	125.0	150.0
60"		125.0	140.0	125.0	140.0
30"	102"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	150.0	125.0	150.0
48"		125.0	150.0	125.0	150.0
54"		125.0	150.0	125.0	150.0
55"		125.0	150.0	125.0	150.0
60"		125.0	140.0	125.0	140.0
30"	108"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	150.0	125.0	150.0
48"		125.0	150.0	125.0	150.0
54"		125.0	140.0	125.0	140.0
60"		125.0	140.0	125.0	140.0
30"	114"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	150.0	125.0	150.0
48"		125.0	150.0	125.0	150.0
49"		125.0	150.0	125.0	150.0
54"		125.0	140.0	125.0	140.0
60"		125.0	129.8	125.0	140.0
30"	120"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	150.0	125.0	150.0
48"		125.0	140.0	125.0	140.0
54"		125.0	130.2	125.0	140.0
57"		123.3	123.3	125.0	140.0
30"	126"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	150.0	125.0	150.0
48"		125.0	132.8	125.0	140.0
54"		118.1	118.1	125.0	140.0
30"	132"	125.0	150.0	125.0	150.0
36"		125.0	150.0	125.0	150.0
42"		125.0	138.3	125.0	150.0
48"		121.0	121.0	125.0	140.0
52"		111.7	111.7	125.0	140.0
30"	138"	125.0	150.0	125.0	150.0
36"		125.0	147.6	125.0	150.0
40"		125.0	126.5	125.0	150.0
42"		110.7	110.7	125.0	140.0
48"		106.3	106.3	125.0	140.0
50"		102.2	102.2	125.0	140.0
30"	144"	125.0	150.0	125.0	150.0
36"		125.0	135.6	125.0	150.0
39"		125.0	125.2	125.0	150.0
42"		116.2	116.2	125.0	140.0
48"		101.7	101.7	125.0	140.0

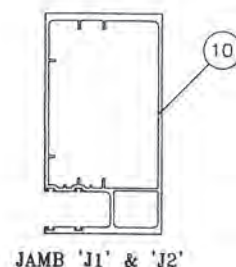


$$\text{WIDTH (W) AT JAMB} = W1$$

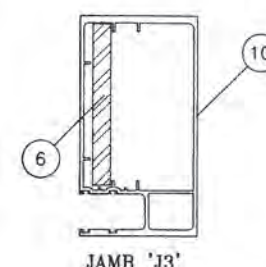
$$\text{WIDTH (W) AT MULLION} = \frac{W2 + W3}{2}$$

$$\text{WIDTH (W) AT MULLION} = \frac{W1 + W2}{2}$$

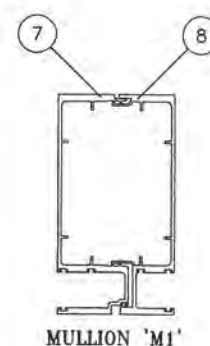
$$\text{WIDTH (W) AT MULLION} = \frac{W1}{2} + \frac{W2}{4}$$



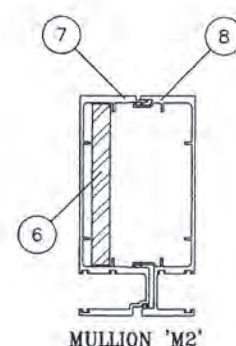
Ix IN ⁴	Sx IN ³
14.6111	4.6414



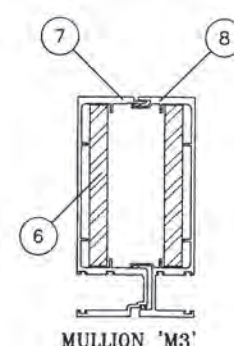
	Ix IN ⁴	Sx IN ³
ALUMINUM	14.6111	4.6414
STEEL	3.797	1.687
TOTAL Ix ALUM + Ix STL X 2.9	25.622	



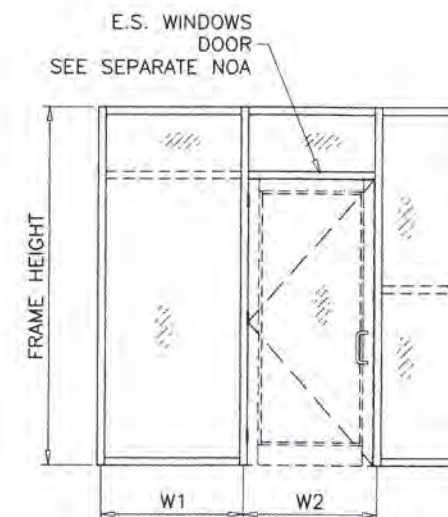
Ix IN ⁴	Sx IN ³
15.385	4.546



	Ix IN ⁴	Sx IN ³
ALUMINUM	15.385	4.546
STEEL	3.797	1.6875
TOTAL Ix ALUM + Ix STL X 2.9	26.396	



	Ix IN ⁴	Sx IN ³
ALUMINUM	15.385	4.546
STEEL	7.594	3.375
TOTAL Ix ALUM + Ix STL X 2.9	37.407	

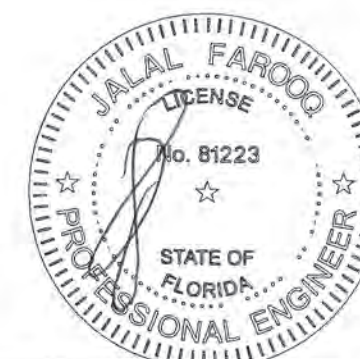


$$\text{WIDTH (W) AT MULLION} = \frac{W1 + W2}{2}$$

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10

Expiration Date 11/07/2028

By **Miami-Dade Product Control**



JUL 10 2023

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 262-6978 FAX. (305) 262-6978

SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:

no	date	by	description
C	07.29.15		NO CHANGE THIS SHEET
D	11.01.17		UPDATED TO 2017 FBC
E	01.22.21		UPDATED TO 2020 FBC
F	07.18.23		NO CHANGE THIS SHEET

date: 09-12-12
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

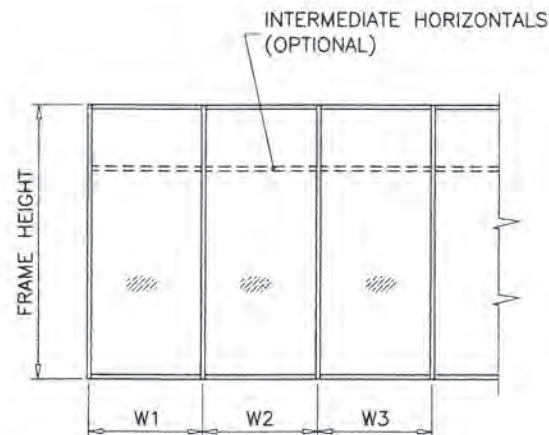
drawing no.
W12-51
sheet 3 of 13

MULLION DESIGN LOAD CAPACITY - PSF
CHART FOR INSUL. LAM. GLASS MULLIONS

NOMINAL DIMS.		JAMB 'J1' MULL 'M1'	
WIDTH (W)	FRAME HEIGHT	EXT. (+)	INT. (-)
30"	108"	100.0	110.0
36"		100.0	110.0
42"		100.0	110.0
48"		100.0	110.0
54"		100.0	110.0
60"		100.0	110.0
30"	114"	100.0	110.0
36"		100.0	110.0
42"		100.0	110.0
48"		100.0	110.0
54"		100.0	110.0
60"		100.0	100.6
30"	120"	100.0	110.0
36"		100.0	110.0
42"		100.0	110.0
48"		100.0	107.8
54"		95.9	95.9
57"		86.3	86.3
30"	126"	100.0	110.0
36"		100.0	110.0
42"		100.0	106.5
48"		93.2	93.2
54"		82.8	82.8
30"	132"	100.0	110.0
36"		100.0	108.0
42"		92.6	92.6
48"		81.0	81.0
52"		72.0	72.0
30"	138"	100.0	110.0
36"		94.5	94.5
42"		81.0	81.0
48"		70.9	70.9
50"		65.5	65.5
30"	144"	99.9	99.9
36"		83.2	83.2
42"		71.3	71.3
48"		62.4	62.4

MULLION DESIGN LOAD CAPACITY - PSF
CHART FOR INSUL. LAM. GLASS MULLIONS

NOMINAL DIMS.		JAMB 'J2' MULL 'M2'		JAMB 'J3' MULL 'M3'	
WIDTH (W)	FRAME HEIGHT	EXT. (+)	INT. (-)	EXT. (+)	INT. (-)
30"	96"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	150.0	100.0	150.0
48"		100.0	150.0	100.0	150.0
54"		100.0	150.0	100.0	150.0
58"		100.0	140.0	100.0	140.0
60"		100.0	140.0	100.0	140.0
30"	102"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	150.0	100.0	150.0
48"		100.0	150.0	100.0	150.0
54"		100.0	140.0	100.0	140.0
55"		100.0	140.0	100.0	140.0
60"		100.0	140.0	100.0	140.0
30"	108"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	150.0	100.0	150.0
48"		100.0	150.0	100.0	150.0
54"		100.0	140.0	100.0	140.0
60"		100.0	140.0	100.0	140.0
30"	114"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	150.0	100.0	150.0
48"		100.0	140.0	100.0	140.0
49"		100.0	140.0	100.0	140.0
54"		100.0	140.0	100.0	140.0
58"		100.0	140.0	100.0	140.0
60"		100.0	140.0	100.0	140.0
30"	120"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	150.0	100.0	150.0
48"		100.0	140.0	100.0	140.0
54"		100.0	137.8	100.0	140.0
57"		100.0	130.6	100.0	140.0
30"	126"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	150.0	100.0	150.0
48"		100.0	133.9	100.0	140.0
54"		100.0	119.0	100.0	140.0
30"	132"	100.0	150.0	100.0	150.0
36"		100.0	150.0	100.0	150.0
42"		100.0	133.1	100.0	140.0
48"		100.0	116.5	100.0	140.0
52"		100.0	107.5	100.0	137.9
30"	138"	100.0	150.0	100.0	150.0
36"		100.0	135.9	100.0	150.0
42"		100.0	116.5	100.0	140.0
48"		100.0	101.9	100.0	133.0
50"		97.9	97.9	100.0	127.6
30"	144"	100.0	140.0	100.0	140.0
36"		100.0	119.6	100.0	140.0
39"		100.0	110.4	100.0	140.0
42"		100.0	102.5	100.0	133.7
48"		89.7	89.7	100.0	117.0

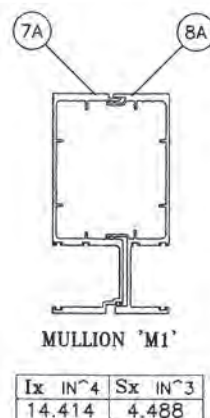
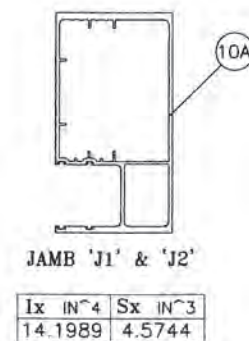


$$\text{WIDTH (W)} = W1$$

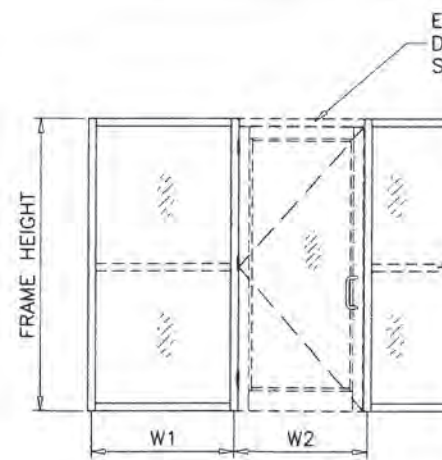
AT JAMB

$$\text{WIDTH (W)} = \frac{W2 + W3}{2}$$

AT MULLION

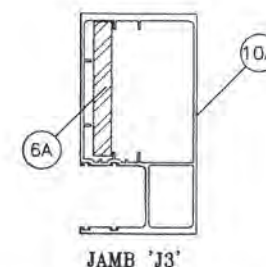


ALUMINUM	Ix IN ⁴	Sx IN ³
STEEL	2.197	1.172
TOTAL	Ix ALUM + Ix STL X 2.9	20.786

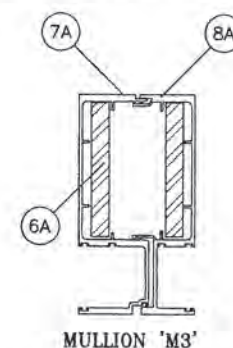


$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

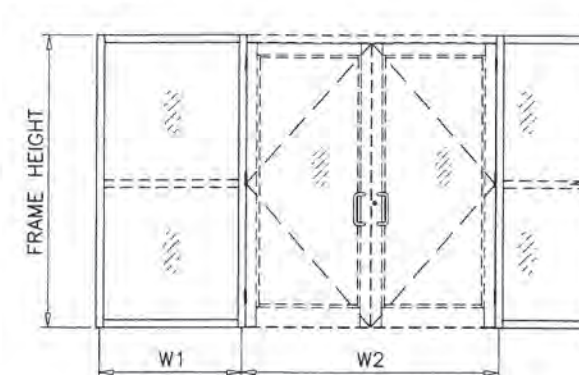
AT MULLION



ALUMINUM	Ix IN ⁴	Sx IN ³
STEEL	2.197	1.172
TOTAL	Ix ALUM + Ix STL X 2.9	20.571

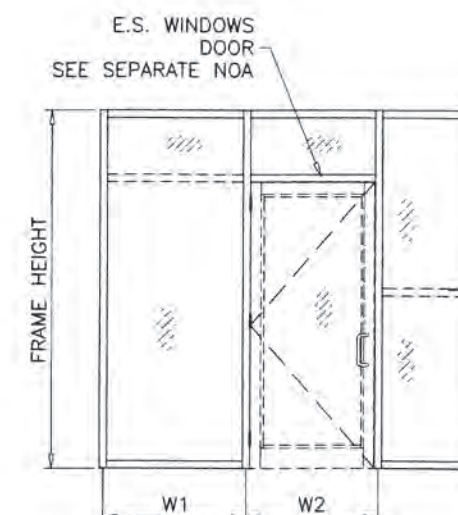


ALUMINUM	Ix IN ⁴	Sx IN ³
STEEL	4.394	2.344
TOTAL	Ix ALUM + Ix STL X 2.9	27.158



$$\text{WIDTH (W)} = \frac{W1}{2} + \frac{W2}{4}$$

AT MULLION



$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

AT MULLION

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10

Expiration Date 11/07/2028

By 
Miami-Dade Product Control



JUL 10 2023

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

a f c

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 264-8100 FAX. (305) 262-6978

SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:	no	date	by	description
	C	07.29.15		NO CHANGE THIS SHEET
	D	11.01.17		UPDATED TO 2017 FBC
	E	01.22.21		UPDATED TO 2020 FBC
	F	07.18.23		NO CHANGE THIS SHEET

date:	09-12-12
scale:	3/8" = 1"
dr. by:	TARIQ
chk. by:	

drawing no.

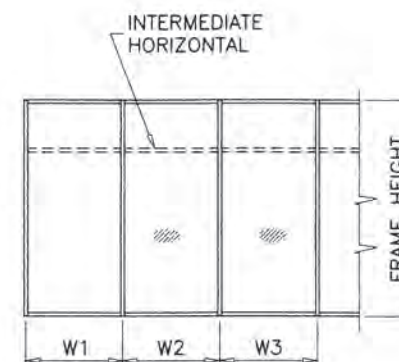
W12-51

sheet 4 of 13

STORE W12-51ES

HEAD/SILL ANCHOR DESIGN LOAD CAPACITY - PSF EXT.(+) & INT.(-)													
NOMINAL DIMS.		TYPE 'A'			TYPE 'B'			TYPE 'C'			TYPE 'D'		
WIDTH (W)	FRAME HEIGHT	A3	A4	A5	B3	B4	B5	C3	C4	C5	D3	D4	D5
30"	90"	150.0	150.0	150.0	150.0	150.0	150.0	120.0	150.0	150.0	150.0	150.0	150.0
36"		150.0	150.0	150.0	150.0	150.0	150.0	100.0	134.0	150.0	150.0	150.0	150.0
42"		131.0	150.0	150.0	149.0	150.0	150.0	86.0	115.0	143.0	142.0	150.0	150.0
48"		115.0	150.0	150.0	130.0	150.0	150.0	75.0	100.0	125.0	124.0	150.0	150.0
54"		102.0	136.0	150.0	116.0	150.0	150.0	67.0	89.0	111.0	110.0	147.0	150.0
60"		92.0	122.0	150.0	104.0	139.0	150.0	60.0	80.0	100.0	99.0	132.0	150.0
30"	96"	150.0	150.0	150.0	150.0	150.0	150.0	113.0	150.0	150.0	150.0	150.0	150.0
36"		144.0	150.0	150.0	150.0	150.0	150.0	94.0	125.0	150.0	150.0	150.0	150.0
42"		123.0	150.0	150.0	139.0	150.0	150.0	81.0	107.0	134.0	133.0	150.0	150.0
48"		108.0	144.0	150.0	122.0	150.0	150.0	71.0	94.0	118.0	116.0	150.0	150.0
54"		96.0	128.0	150.0	108.0	144.0	150.0	63.0	84.0	104.0	103.0	138.0	150.0
60"		86.0	115.0	144.0	98.0	130.0	150.0	56.0	75.0	94.0	93.0	124.0	150.0
30"	102"	150.0	150.0	150.0	150.0	150.0	150.0	106.0	142.0	150.0	150.0	150.0	150.0
36"		135.0	150.0	150.0	150.0	150.0	150.0	88.0	118.0	147.0	146.0	150.0	150.0
42"		116.0	150.0	150.0	131.0	150.0	150.0	76.0	101.0	126.0	125.0	150.0	150.0
48"		101.0	135.0	150.0	115.0	150.0	150.0	66.0	88.0	111.0	109.0	146.0	150.0
54"		90.0	120.0	150.0	102.0	136.0	150.0	59.0	79.0	98.0	97.0	130.0	150.0
60"		81.0	108.0	135.0	92.0	122.0	150.0	53.0	71.0	88.0	88.0	117.0	146.0
30"	108"	150.0	150.0	150.0	150.0	150.0	150.0	100.0	134.0	150.0	150.0	150.0	150.0
36"		128.0	150.0	150.0	144.0	150.0	150.0	84.0	111.0	139.0	138.0	150.0	150.0
42"		109.0	146.0	150.0	124.0	150.0	150.0	72.0	95.0	119.0	118.0	150.0	150.0
48"		96.0	128.0	150.0	108.0	144.0	150.0	63.0	84.0	104.0	103.0	138.0	150.0
54"		85.0	113.0	142.0	96.0	128.0	150.0	56.0	74.0	93.0	92.0	122.0	150.0
60"		77.0	102.0	128.0	87.0	116.0	144.0	50.0	67.0	84.0	83.0	110.0	138.0
30"	114"	145.0	150.0	150.0	150.0	150.0	150.0	95.0	127.0	150.0	150.0	150.0	150.0
36"		121.0	150.0	150.0	137.0	150.0	150.0	79.0	106.0	132.0	131.0	150.0	150.0
42"		104.0	138.0	150.0	117.0	150.0	150.0	68.0	90.0	113.0	112.0	149.0	150.0
48"		91.0	121.0	150.0	103.0	137.0	150.0	59.0	79.0	99.0	98.0	131.0	150.0
54"		81.0	107.0	134.0	91.0	122.0	150.0	53.0	70.0	88.0	87.0	116.0	145.0
60"		73.0	97.0	121.0	82.0	109.0	137.0	47.0	63.0	79.0	78.0	104.0	131.0
30"	120"	138.0	150.0	150.0	150.0	150.0	150.0	90.0	120.0	150.0	149.0	150.0	150.0
36"		115.0	150.0	150.0	130.0	150.0	150.0	75.0	100.0	125.0	124.0	150.0	150.0
42"		98.0	131.0	150.0	111.0	149.0	150.0	64.0	86.0	107.0	106.0	142.0	150.0
48"		86.0	115.0	144.0	98.0	130.0	150.0	56.0	75.0	94.0	93.0	124.0	150.0
54"		77.0	102.0	128.0	87.0	116.0	144.0	50.0	67.0	84.0	83.0	110.0	138.0
57"		73.0	97.0	121.0	82.0	109.0	137.0	47.0	63.0	79.0	78.0	104.0	131.0
30"	126"	131.0	150.0	150.0	149.0	150.0	150.0	86.0	115.0	143.0	142.0	150.0	150.0
36"		109.0	146.0	150.0	124.0	150.0	150.0	72.0	95.0	119.0	118.0	150.0	150.0
42"		94.0	125.0	150.0	106.0	141.0	150.0	61.0	82.0	102.0	101.0	135.0	150.0
48"		82.0	109.0	137.0	93.0	124.0	150.0	54.0	72.0	90.0	89.0	118.0	148.0
54"		73.0	97.0	121.0	83.0	110.0	138.0	48.0	64.0	80.0	79.0	105.0	131.0
57"		73.0	97.0	121.0	83.0	110.0	138.0	48.0	64.0	80.0	79.0	105.0	131.0
30"	132"	125.0	150.0	150.0	142.0	150.0	150.0	82.0	109.0	137.0	135.0	150.0	150.0
36"		104.0	139.0	150.0	118.0	150.0	150.0	68.0	91.0	114.0	113.0	150.0	150.0
42"		89.0	119.0	149.0	101.0	135.0	150.0	59.0	78.0	98.0	97.0	129.0	150.0
48"		78.0	104.0	130.0	89.0	118.0	148.0	51.0	68.0	85.0	85.0	113.0	141.0
52"		72.0	96.0	120.0	82.0	109.0	136.0	47.0	63.0	79.0	78.0	104.0	130.0
52"		72.0	96.0	120.0	82.0	109.0	136.0	47.0	63.0	79.0	78.0	104.0	130.0

HEAD/SILL ANCHOR DESIGN LOAD CAPACITY - PSF EXT.(+) & INT.(-)													
NOMINAL DIMS.		TYPE 'A'			TYPE 'B'			TYPE 'C'			TYPE 'D'		
WIDTH (W)	FRAME HEIGHT	A3	A4	A5	B3	B4	B5	C3	C4	C5	D3	D4	D5
30"	138"	120.0	150.0	150.0	136.0	150.0	150.0	78.0	105.0	131.0	129.0	150.0	150.0
36"		100.0	133.0	150.0	113.0	150.0	150.0	65.0	87.0	109.0	108.0	144.0	150.0
42"		86.0	114.0	143.0	97.0	129.0	150.0	56.0	75.0	93.0	92.0	123.0	150.0
48"		75.0	100.0	125.0	85.0	113.0	141.0	49.0	65.0	82.0	81.0	108.0	135.0
50"		72.0	96.0	120.0	81.0	109.0	136.0	47.0	63.0	78.0	78.0	104.0	129.0
50"		72.0	96.0	120.0	81.0	109.0	136.0	47.0	63.0	78.0	78.0	104.0	129.0
30"	144"	115.0	150.0	150.0	130.0	150.0	150.0	75.0	100.0	125.0	124.0	150.0	150.0
36"		96.0	128.0	150.0	108.0	144.0	150.0	63.0	84.0	104.0	103.0	138.0	150.0
42"		82.0	109.0	137.0	93.0	124.0	150.0	54.0	72.0	90.0	89.0	118.0	148.0
48"		72.0	96.0	120.0	81.0	108.0	135.0	47.0	63.0	78.0	78.0	103.0	129.0
48"		72.0	96.0	120.0	81.0	108.0	135.0	47.0	63.0	78.0	78.0	103.0	129.0
48"		72.0	96.0	120.0	81.0	108.0	135.0	47.0	63.0	78.0	78.0	103.0	129.0



WIDTH (W) = W1
AT FRAME JAMB

WIDTH (W) = $\frac{W2 + W3}{2}$
AT FRAME MULLION

ANCHORS TYPES: SEE SHEET 7 FOR DESCRIPTION

A3 = (3) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
B3 = (3) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
C3 = (3) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
D3 = (3) ANCHORS TYPE 'D' AT EACH SIDE OF JAMB AND MULLION

A4 = (4) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
B4 = (4) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
D4 = (4) ANCHORS TYPE 'D' AT EACH SIDE OF JAMB AND MULLION

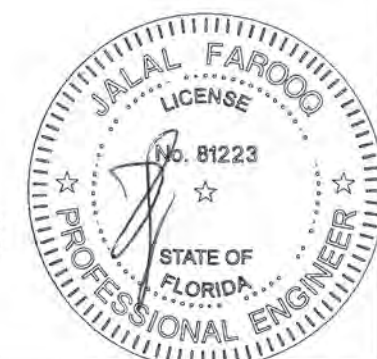
A5 = (5) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
B5 = (5) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
C5 = (5) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
D5 = (5) ANCHORS TYPE 'D' AT EACH SIDE OF JAMB AND MULLION

ALL OTHER ANCHORS TO BE SPACED AS PER ELEVATION.

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10

Expiration Date 11/07/2028

By
Miami-Dade Product Control



JUL 1 J 2023

NOTE:
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 264-8100 FAX. (305) 262-6978

SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

STORE W12-51ES

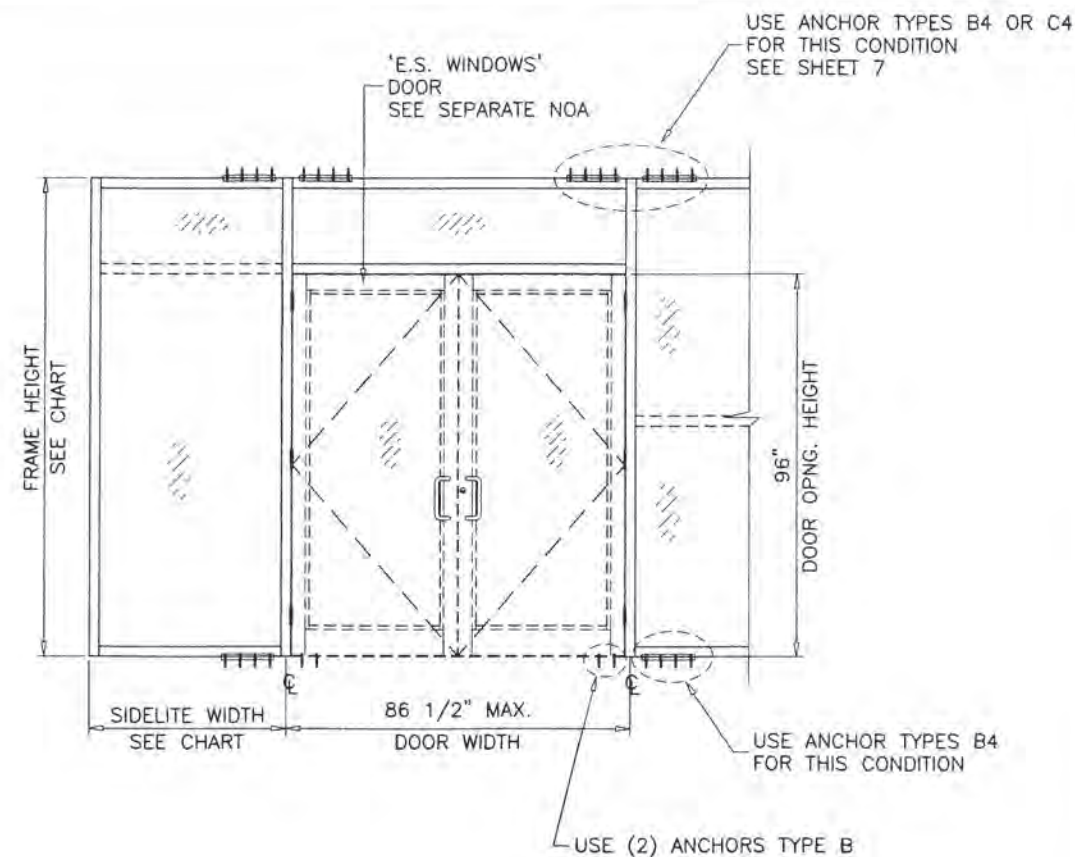
revisions:

no	date	description
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D	11.01.17	UPDATED TO 2017 FBC
E	01.22.21	UPDATED TO 2020 FBC
F	07.18.23	NO CHANGE THIS SHEET

date: 04-24-13
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

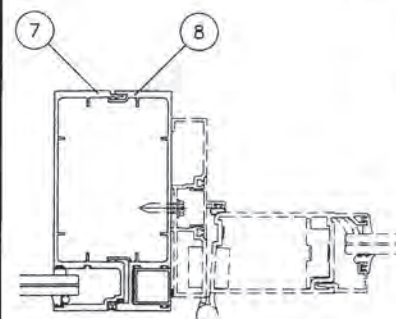
drawing no.
W12-51
sheet 5 of 13

DOOR MULLION DESIGN LOAD CAPACITY-PSF				
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	MULL 'MD1' EXT. (+) INT. (-)	MULL 'MD2' EXT. (+) INT. (-)	MULL 'MD3' EXT. (+) INT. (-)
30	120	90.0	90.0	90.0
36		90.0	90.0	90.0
42		90.0	90.0	90.0
48		90.0	90.0	90.0
54		90.0	90.0	90.0
57		88.6	90.0	90.0
30	126	90.0	90.0	90.0
36		90.0	90.0	90.0
42		88.2	90.0	90.0
48		83.9	90.0	90.0
54		80.0	90.0	90.0
30	132	87.1	90.0	90.0
36		82.2	90.0	90.0
42		77.6	90.0	90.0
48		73.4	90.0	90.0
52		70.9	89.2	90.0
30	138	74.1	90.0	90.0
36		69.8	90.0	90.0
42		66.0	86.7	90.0
48		62.6	82.6	90.0
50		61.5	81.4	90.0
30	144	63.6	86.9	90.0
36		60.0	82.5	90.0
42		56.8	78.5	90.0
48		53.9	74.8	90.0



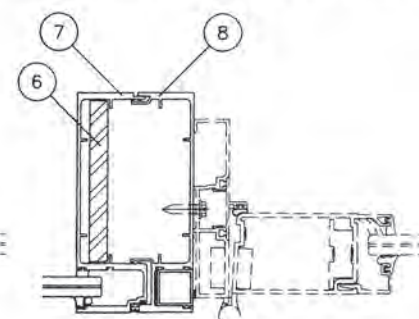
DOOR MULLION DESIGN LOAD CAPACITY-PSF				
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	MULL 'MD1' EXT. (+) INT. (-)	MULL 'MD2' EXT. (+) INT. (-)	MULL 'MD3' EXT. (+) INT. (-)
30	120	90.0	90.0	90.0
36		90.0	90.0	90.0
42		90.0	90.0	90.0
48		90.0	90.0	90.0
54		89.6	90.0	90.0
57		87.5	90.0	90.0
30	126	90.0	90.0	90.0
36		90.0	90.0	90.0
42		86.4	90.0	90.0
48		81.7	90.0	90.0
54		77.4	90.0	90.0
30	132	81.8	90.0	90.0
36		77.0	90.0	90.0
42		72.7	90.0	90.0
48		68.8	90.0	90.0
52		66.5	90.0	90.0
30	138	69.4	90.0	90.0
36		65.4	90.0	90.0
42		61.8	89.2	90.0
48		58.6	84.6	90.0
50		57.7	83.1	90.0
30	144	59.6	85.9	90.0
36		56.2	81.1	90.0
42		53.2	76.7	90.0
48		50.5	72.9	90.0

LAMINATED GLASS MULLIONS



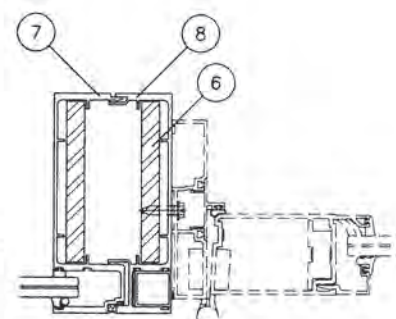
MULLION 'MD1'

Ix IN ⁴	Sx IN ³
15.385	4.546



MULLION 'MD2'

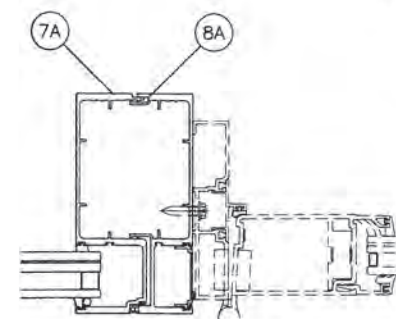
	Ix IN ⁴	Sx IN ³
ALUMINUM	15.385	4.546
STEEL	3.797	1.6875
TOTAL		
Ix ALUM + Ix STL X 2.9	26.396	



MULLION 'MD3'

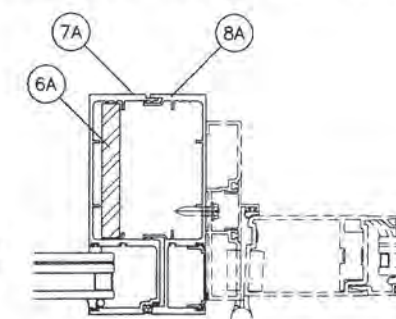
	Ix IN ⁴	Sx IN ³
ALUMINUM	15.385	4.546
STEEL	7.594	3.375
TOTAL		
Ix ALUM + Ix STL X 2.9	37.407	

INSUL. LAM. GLASS MULLIONS



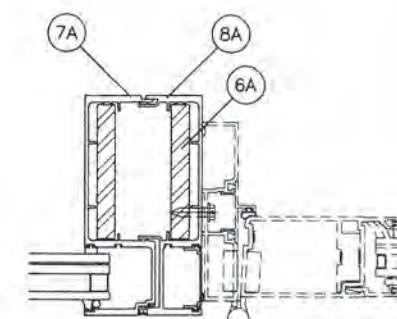
MULLION 'MD1'

Ix IN ⁴	Sx IN ³
14.414	4.488



MULLION 'MD2'

	Ix IN ⁴	Sx IN ³
ALUMINUM	14.414	4.488
STEEL	2.197	1.172
TOTAL		
Ix ALUM + Ix STL X 2.9	20.786	



MULLION 'MD3'

	Ix IN ⁴	Sx IN ³
ALUMINUM	14.414	4.488
STEEL	4.394	2.344
TOTAL		
Ix ALUM + Ix STL X 2.9	27.158	

PRODUCT REVISED
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By 
Miami-Dade Product Control



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9360 SUNSET DRIVE, SUITE 220
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SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:	no	date	by	description
	C	07/29/15		NO CHANGE THIS SHEET
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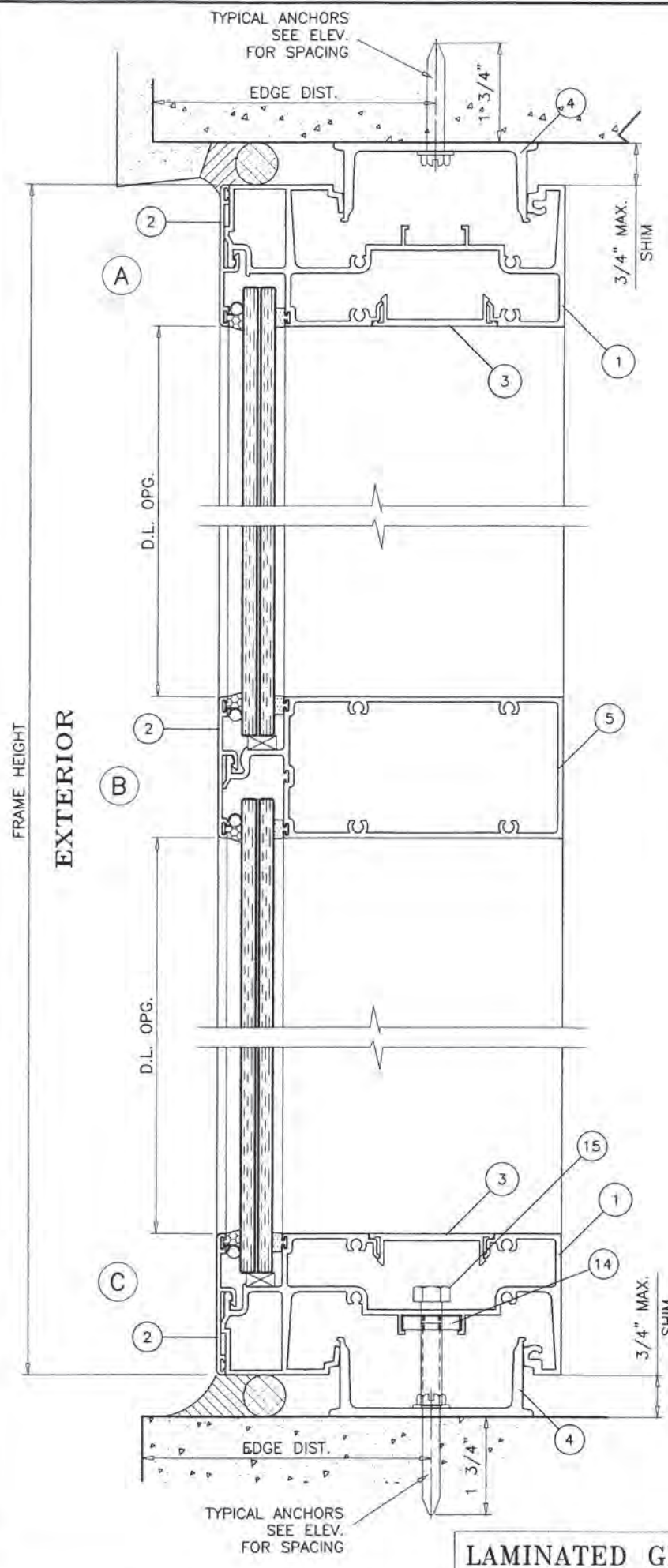
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dr. by: TARIQ
chk. by:

drawing no.

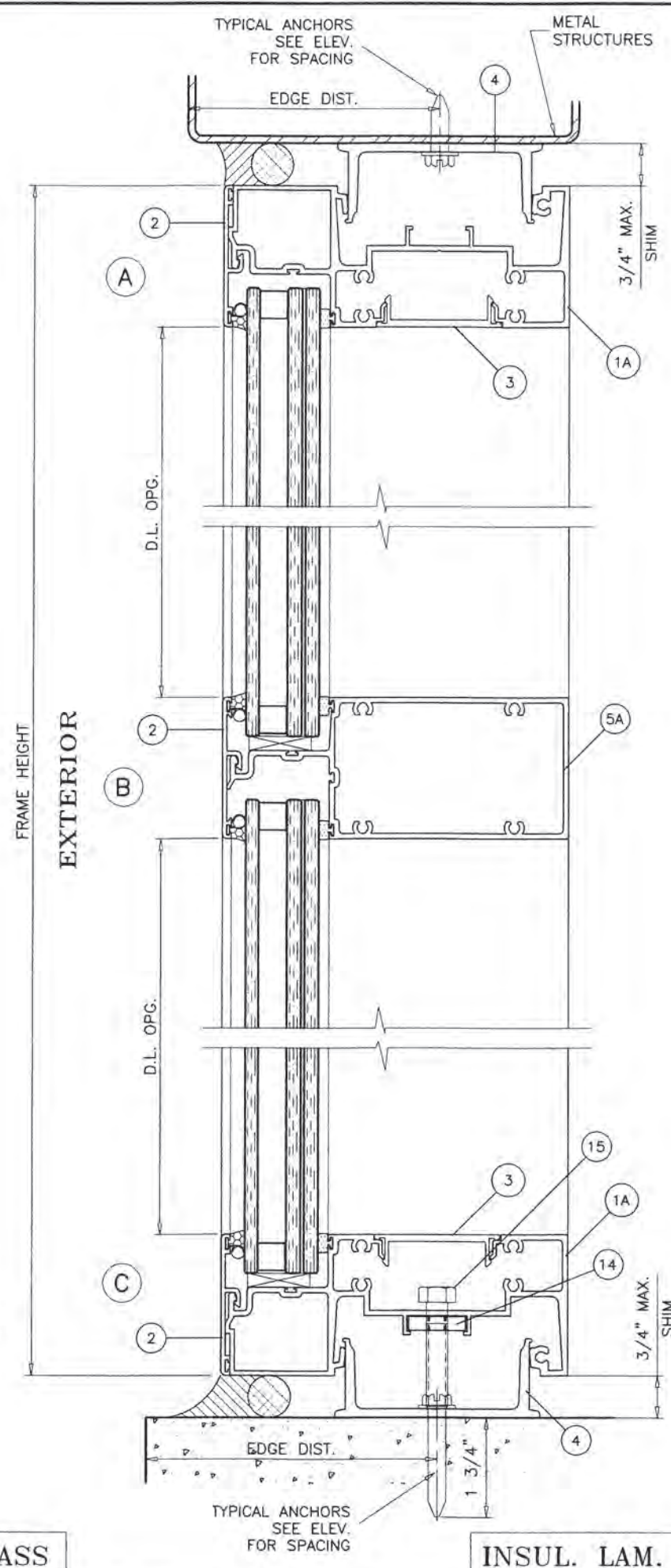
W12-51

sheet 6 of 13

STORE W12-51ES



LAMINATED GLASS



INSUL. LAM. GLASS

METAL STRUCTURES NOT BY 'E.S. WDW.'
MUST SUPPORT LOADS IMPOSED BY GLAZING SYSTEM AND
TRANSFER THEM TO THE BUILDING STRUCTURE.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING

TYPE 'A'

1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)

DIRECTLY INTO CONCRETE (3000 PSI MIN.)
WITH 1-3/4" MIN. EMBED INTO CONC.

ANCHOR EDGE DISTANCES

INTO CONCRETE = 2-1/2" MIN.

TYPE 'B'

5/16" DIA. ULTRACON BY 'DEWALT' (Fu=177 KSI, Fy=155 KSI)

DIRECTLY INTO CONCRETE (3000 PSI MIN.)
WITH 2" MIN. EMBED INTO CONC.

ANCHOR EDGE DISTANCES

INTO CONCRETE = 3-1/8" MIN.

TYPE 'C'

#14 SMS OR SELF DRILLING SCREWS ST/ST (Fu=100 KSI, Fy=65 KSI)

INTO METAL STRUCTURES
(3) THREADS MIN. PENETRATION BEYOND SUBSTRATE
ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

ANCHOR EDGE DISTANCES

INTO METAL STRUCTURE = 1" MIN.

TYPE 'D'

#14 SMS OR SELF DRILLING SCREWS ST/ST (Fu=100 KSI, Fy=65 KSI)

INTO METAL STRUCTURES
(3) THREADS MIN. PENETRATION BEYOND SUBSTRATE
ALUMINUM: 1/4" THK. MIN. (6063-T5 MIN.)
STEEL: 1/4" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

ANCHOR EDGE DISTANCES

INTO METAL STRUCTURE = 1" MIN.

SEALANTS:

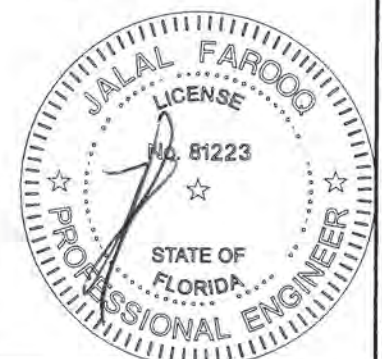
ALL FRAME CORNERS, JOINTS, MULLION SEAMS AND PERIMETER OF
GLAZING BEAD TO FRAME SEALED WITH SILICONE SEALANT.

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10

Expiration Date 11/07/2028

By
Miami-Dade Product Control

JUL 11 2023



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
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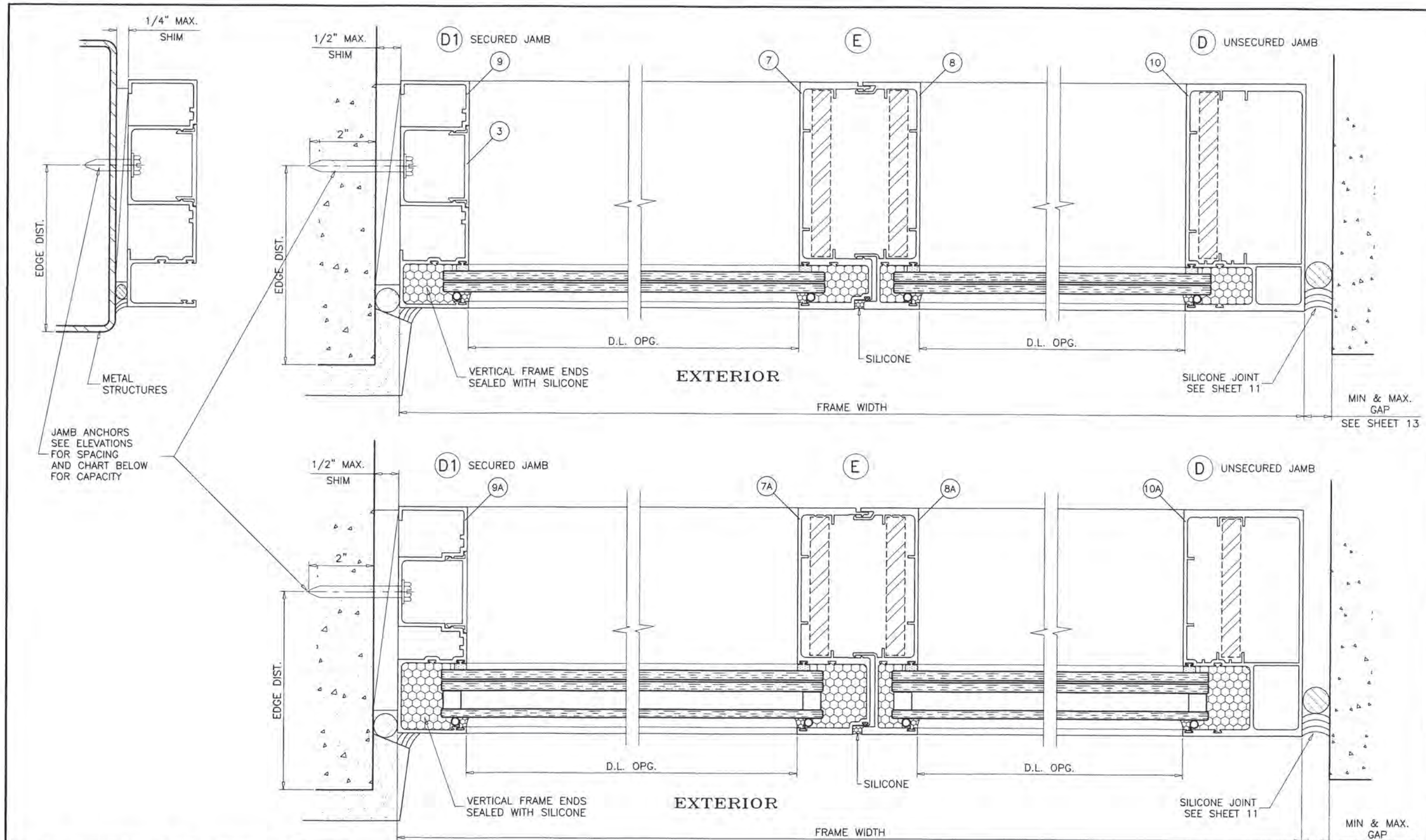
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no	date	description
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D	11.01.17	UPDATED TO 2017 FBC
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date: 04-14-13
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

drawing no.
W12-51


sheet 7 of 13



JAMB ANCHORS DESIGN LOAD CAPACITY - PSF				
WIDTH (W)	3/8" MAX. SHIM SPACE		1/2" MAX. SHIM SPACE	
	ANCHORS 'A'	ANCHORS 'B'	ANCHORS 'A'	ANCHORS 'B'
	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
30"	150.0	150.0	150.0	150.0
36"	150.0	150.0	126.8	150.0
42"	139.7	150.0	108.6	150.0
48"	122.3	150.0	95.1	150.0
54"	108.7	150.0	84.5	150.0
60"	97.8	150.0	76.1	150.0

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no	date	by	description
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F	07.18.23	NO CHANGE THIS SHEET	

date: 09-12-12

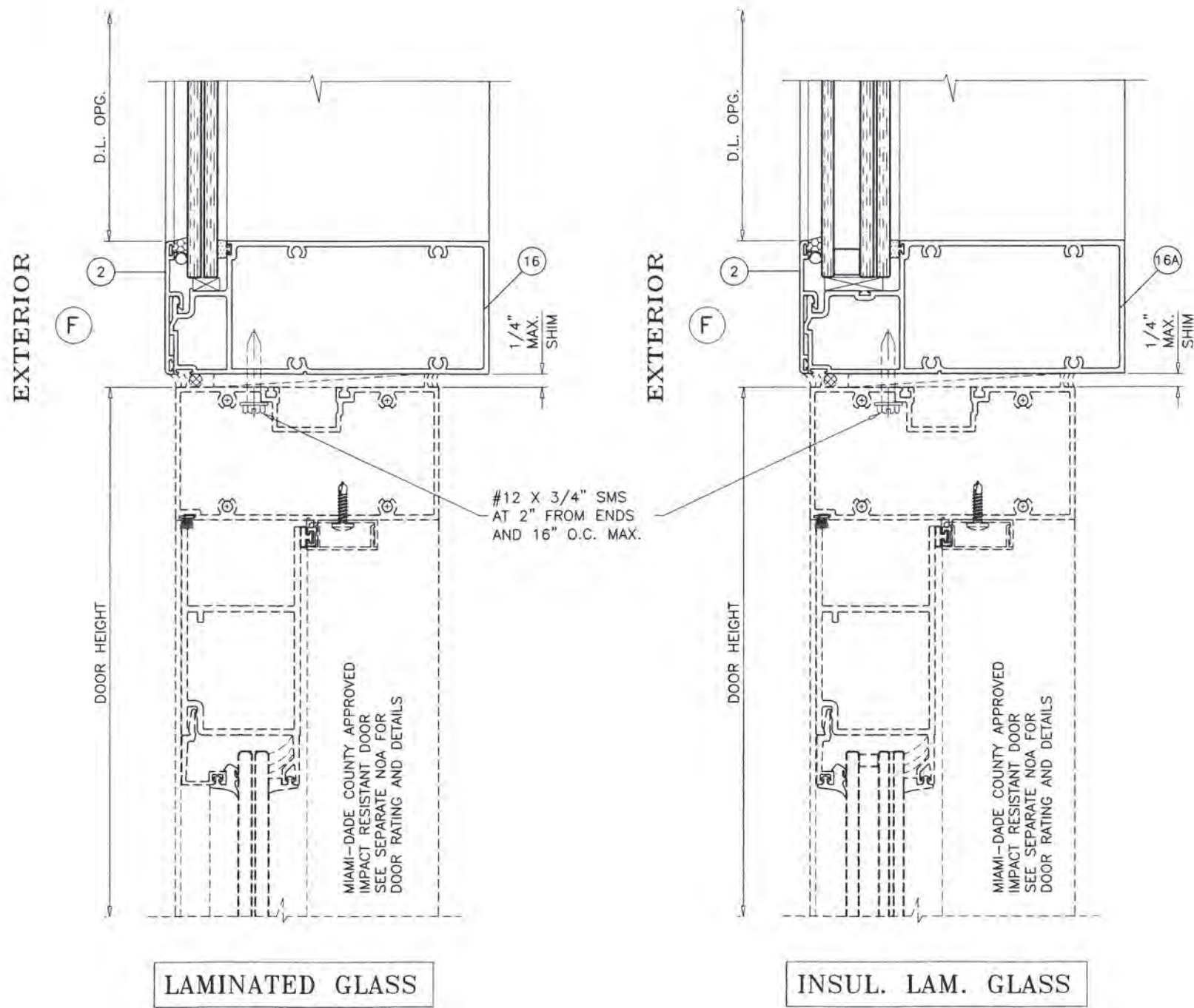
scale: 3/8" = 1"

dr. by: TARIQ

chk. by:

drawing no.
W12-51

sheet 8 of 13



SEE SEPARATE NOA FOR DESIGN LOAD CAPACITY OF DOORS AND DOOR ANCHORS.

LOWER VALUES FROM DOORS NOA OR WINDOWALL SYSTEM CAPACITY CHARTS WILL APPLY TO ENTIRE SYSTEM.

PRODUCT REVISED
 as complying with the Florida Building Code
 NOA-No. 23-0724.10
 Expiration Date 11/07/2028
 By *[Signature]*
 Miami-Dade Product Control

JUL 13 2023



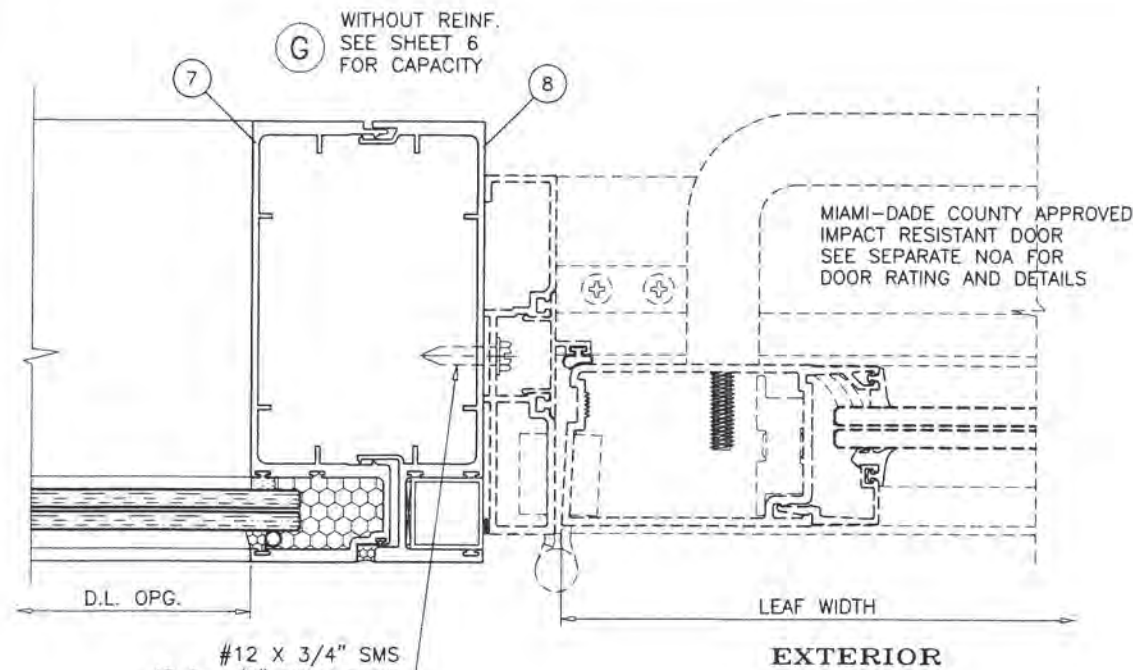
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 chk. by:

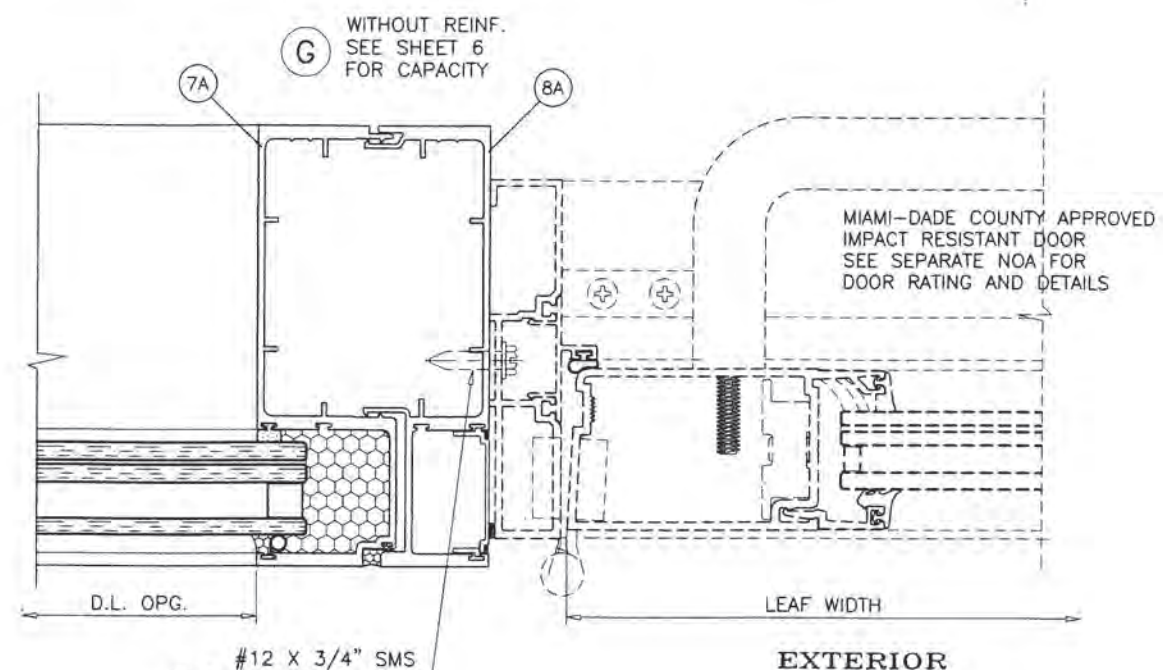
drawing no.
W12-51
 sheet 9 of 13

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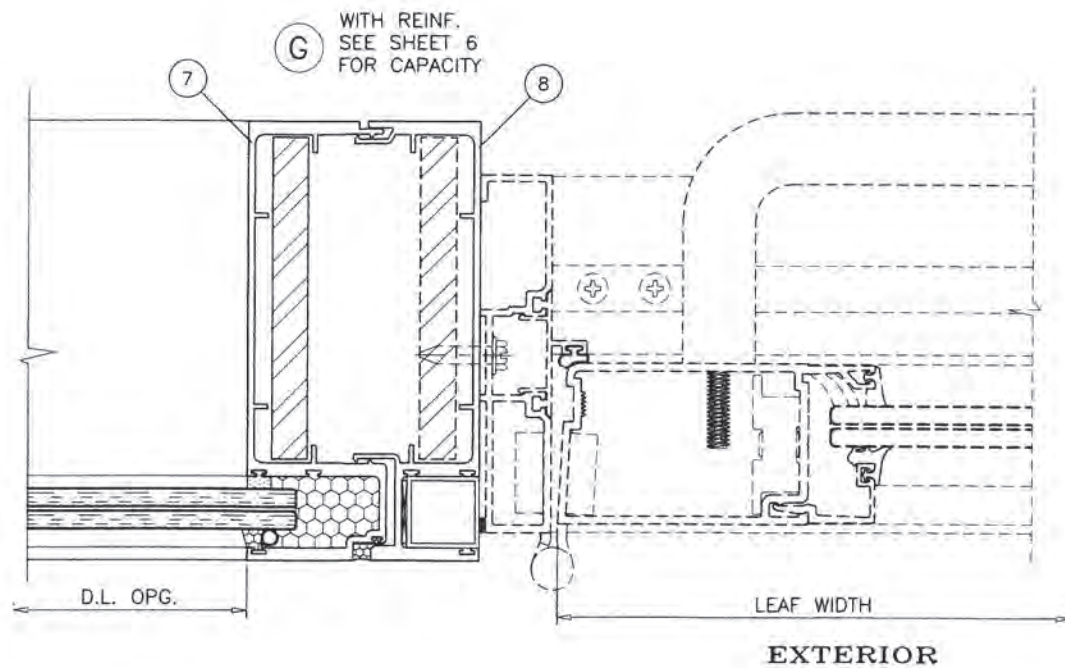
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 STORE W12-51ES



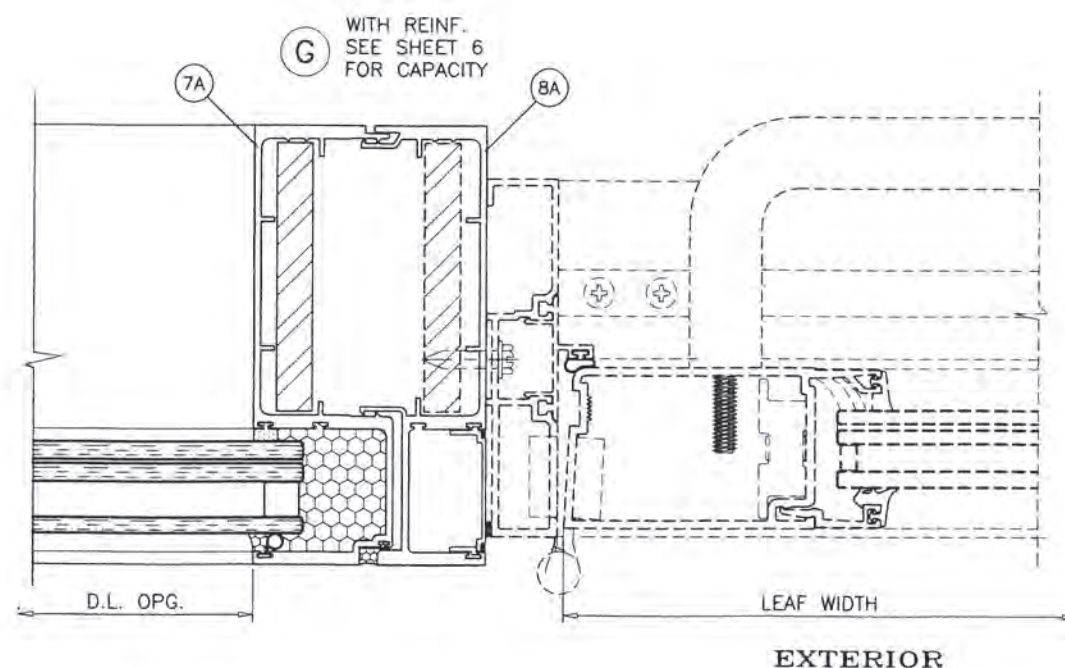
#12 X 3/4" SMS
AT 5-1/2" FROM ENDS
AND 14" O.C. MAX.



#12 X 3/4" SMS
AT 5-1/2" FROM ENDS
AND 14" O.C. MAX.



LAMINATED GLASS



INSUL. LAM. GLASS

SEE SEPARATE NOA FOR DESIGN LOAD
CAPACITY OF DOORS AND DOOR ANCHORS.
LOWER VALUES FROM DOORS NOA
OR WINDOWALL SYSTEM CAPACITY CHARTS
WILL APPLY TO ENTIRE SYSTEM.

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Miami-Dade Product Control

JUL 10 2023



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STORE W12-51ES

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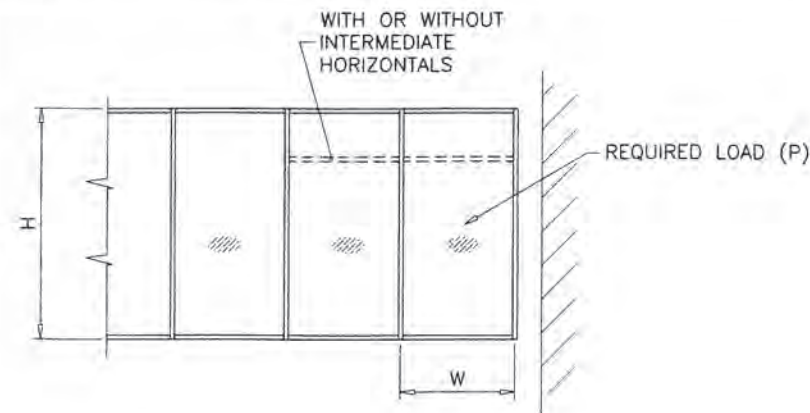
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date: 09-12-12
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

drawing no.
W12-51
sheet 10 of 13

UNANCHORED JAMB DEFLECTION AT 100 PSF DESIGN WIND PRESSURE DEFLECTION - IN. (CHART D100)					
NOMINAL DIMS.		LAM. GLASS		INSUL. LAM. GLASS	
WIDTH (W)	FRAME HEIGHT	UNREINF.	REINF.	UNREINF.	REINF.
30"	96"	.079	.045	.081	.056
36"		.095	.054	.097	.067
42"		.110	.063	.114	.078
48"		.126	.072	.130	.090
54"		.142	.081	.146	.101
60"		.158	.090	.162	.112
30"	102"	.100	.057	.103	.071
36"		.121	.069	.124	.086
42"		.141	.080	.145	.100
48"		.161	.092	.165	.114
54"		.181	.103	.186	.128
60"		.201	.115	.207	.143
30"	108"	.126	.072	.130	.090
36"		.152	.086	.156	.108
42"		.177	.101	.182	.126
48"		.202	.115	.208	.144
54"		.227	.130	.234	.161
60"		.253	.144	.260	.179
30"	114"	.157	.089	.161	.111
36"		.188	.107	.194	.134
42"		.220	.125	.226	.156
48"		.251	.143	.258	.178
54"		.282	.161	.290	.200
60"		.314	.179	.323	.223
30"	120"	.192	.110	.198	.137
36"		.231	.132	.238	.164
42"		.269	.154	.277	.191
48"		.308	.176	.317	.219
54"		.365	.198	.376	.260
60"		.421	.240	.433	.299
30"	126"	.234	.133	.241	.166
36"		.281	.160	.289	.199
42"		.328	.187	.337	.233
48"		.374	.213	.385	.266
54"		.421	.240	.433	.299
60"		.478	.278	.490	.337
30"	132"	.282	.161	.290	.200
36"		.338	.193	.348	.240
42"		.395	.225	.406	.280
48"		.451	.257	.464	.320
54"		.508	.289	.521	.359
60"		.565	.321	.578	.398
30"	138"	.337	.192	.346	.239
36"		.404	.230	.416	.287
42"		.471	.269	.485	.335
48"		.539	.307	.554	.383
54"		.606	.345	.621	.431
60"		.673	.383	.688	.479
30"	144"	.399	.228	.411	.284
36"		.479	.273	.493	.340
42"		.559	.319	.575	.397
48"		.639	.364	.657	.454
54"		.719	.409	.737	.510
60"		.799	.454	.817	.566



UNANCHORED JAMBS MOVEMENT AND JOINT SEALANT DETERMINATION
CHART D100 AT LEFT TO BE USED TO DETERMINE JAMB DEFLECTION
AT 100 PSF DESIGN WIND PRESSURE FOR ANY OF THE POSSIBLE
UNANCHORED CONDITIONS.
THIS VALUE CAN BE USED TO DETERMINE THE ACTUAL PROJECT DEFLECTION
USING INSTRUCTIONS SHOWN BELOW.
USING GAP/DEFLECTION CHART DETERMINE THE MAX. DEFLECTION ALLOWED
FOR THE GAPS SHOWN FOR TWO SEALANT TYPES.

INSTRUCTIONS: TO OBTAIN DEFLECTION AT PROJECT (Pd)

1. DETERMINE APPLICABLE JAMB (UNREINFORCED OR REINFORCED)
2. OBTAIN REQUIRED DESIGN WIND PRESSURE.
3. READ DEFLECTION AT 100 PSF (D100) FROM CHART AT LEFT.
4. OBTAIN PROJECT DEFLECTION (PD)

$$PD = \frac{P}{100} \times D100$$

(PD MUST NOT EXCEED L/180)

5. FROM CHART BELOW DETERMINE MAX. DEFLECTION ALLOWABLE FOR A GIVEN PROJECT GAP AND SEALANT TYPE.

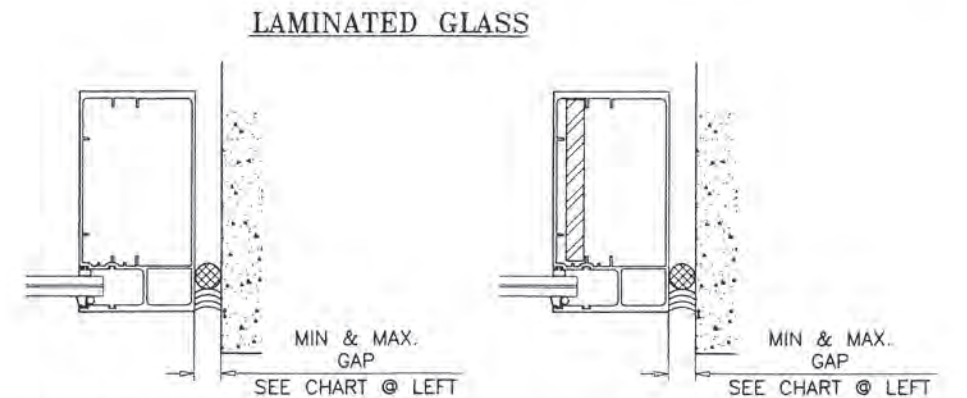
GAP/DEFL. CHART	
GAP, IN.	MAX. DEFL.
.250"	.433"
.375"	.649"
.500"	.800"
.625"	.800"
.750"	.800"
1.000"	.800"

MAXIMUM GAP = 1"
MINIMUM GAP = 1/4"

EXAMPLE:
FOR A GAP OF 1/2"
MAX. DEFLECTION ALLOWED = .800" FOR 100% STRETCH SEALANT

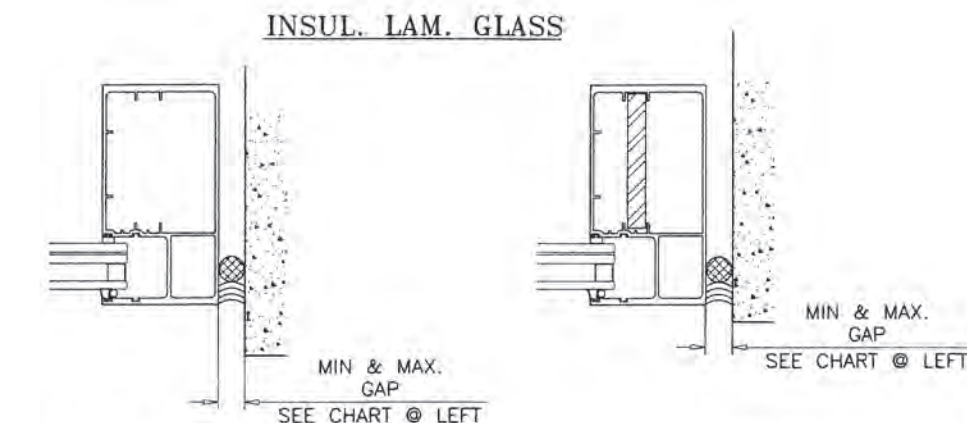
ALTERNATE SEALANTS AT JAMB GAPS CAN BE
DESIGNED BY ENGINEER OF RECORD
BASED ON MANUFACTURER GUIDE LINES.

GAPS LESS THAN 1/4" MAY BE DESIGNED BY
ENGINEER OF RECORD BY THE USE OF BOND
BREAKER TAPE OR 15% OF GAP ALLOWED MOVEMENT.



Ix IN^4	Sx IN^3
14.6111	4.6414


	Ix IN^4	Sx IN^3
ALUMINUM	14.6111	4.6414
STEEL	3.797	1.687
TOTAL Ix ALUM + Ix STL X 2.9	25.622	




Ix IN^4	Sx IN^3
14.1989	4.5744

	Ix IN^4	Sx IN^3
ALUMINUM	14.1989	4.5744
STEEL	2.197	1.172
TOTAL Ix ALUM + Ix STL X 2.9	20.571	

NOTE:
DATA IN THIS SHEET MAY BE USED TO QUALIFY SEALANT
TO BE USED AT UNANCHORED JAMBS.
MAX. MOVEMENT CONSIDERED=100% STRETCH.
PLEASE REFER TO SEALANT MANUFACTURER'S DATA AND
APPLICATION MANUAL FOR COMPATABILITY OF SEALANT TO
SUBSTRATE & WINDOW WALL MATERIAL/FINISH AND
COMPLIANCE FOR WARRANTY.

PRODUCT REVISED
as complying with the Florida
Building Code
NOA-No. 23-0724.10
Expiration Date 11/07/2028
By 
Miami-Dade Product Control





AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173
TEL. (305) 262-8100 FAX. (305) 262-6978

SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

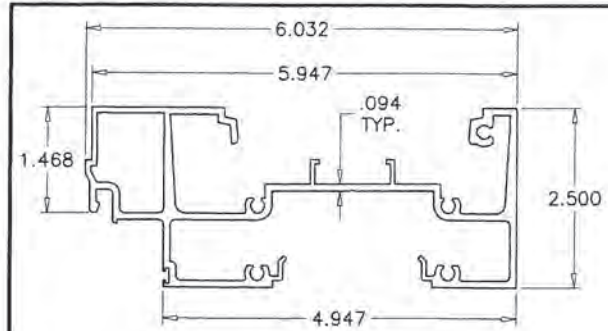
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:

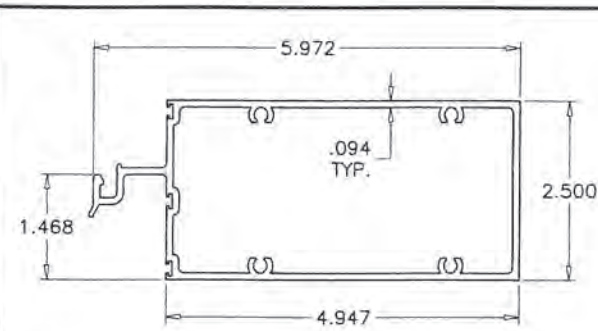
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chk. by:

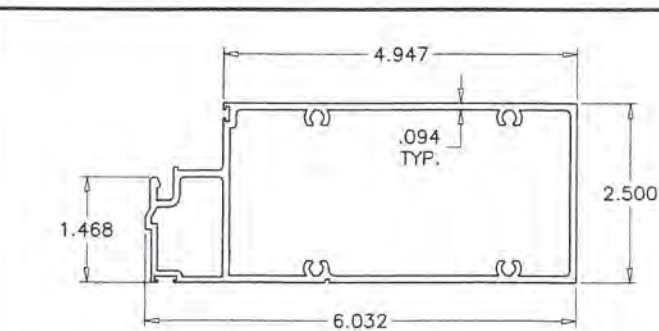
drawing no.
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sheet 11 of 13



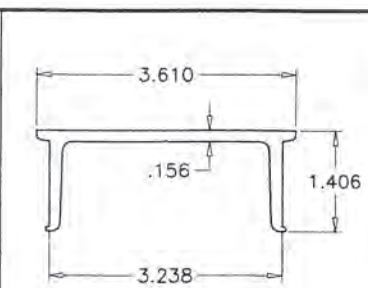
① FRAME HEAD/SILL (LAM. GLASS)



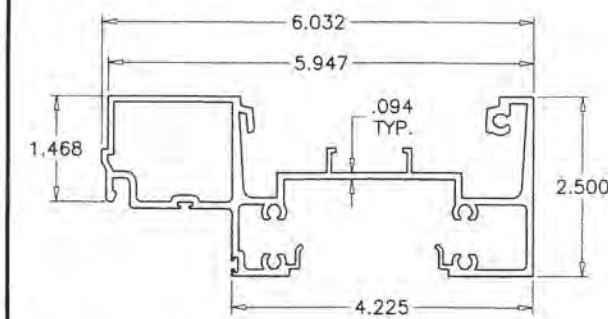
⑤ INTERMEDIATE HORIZONTAL (LAM. GLASS)



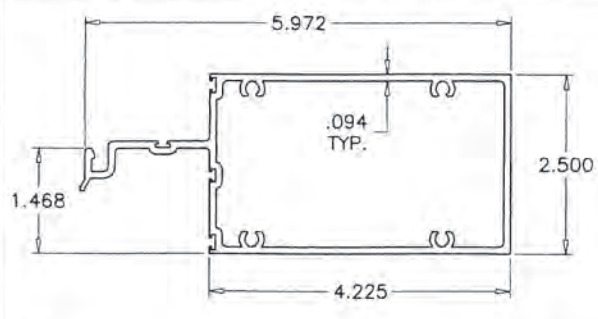
⑬ TRANSOM MULLION (LAM. GLASS)



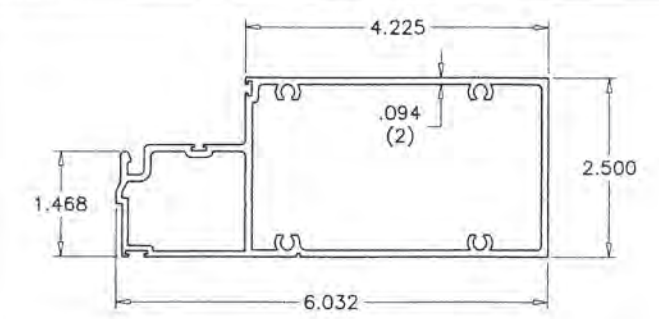
④ ANCHOR BASE



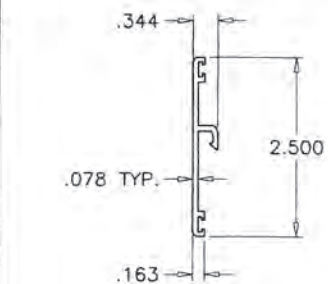
①A FRAME HEAD/SILL (LAM. INSUL. GLASS)



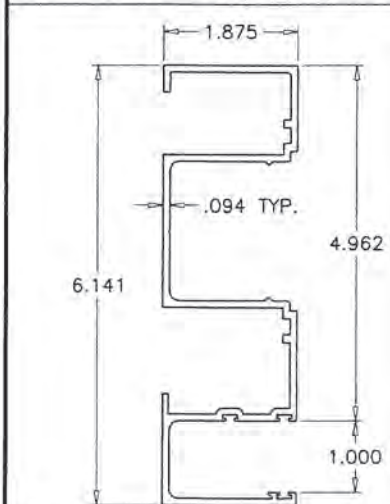
⑤A INTERMEDIATE HORIZONTAL (LAM. INSUL. GLASS)



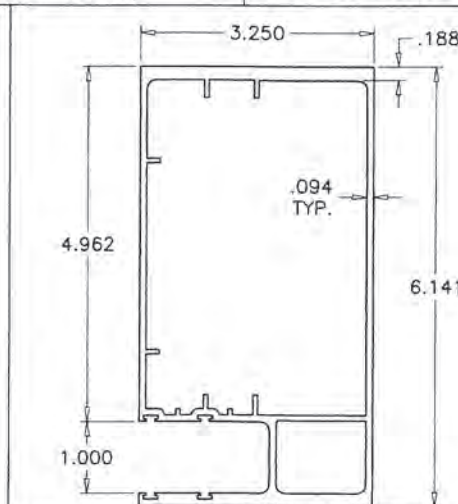
⑬A TRANSOM MULLION (LAM. INSUL. GLASS)



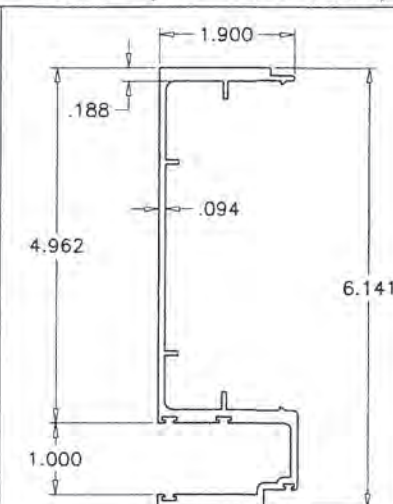
② GLAZING STOP



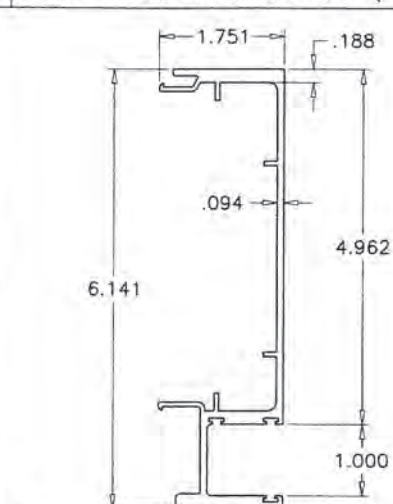
⑨ SECURED JAMB (LAM. GLASS)



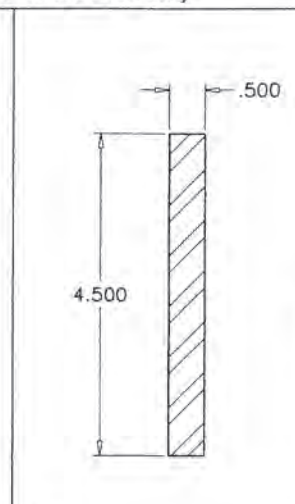
⑩ UNSECURED JAMB (LAM. GLASS)



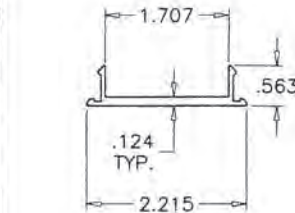
⑦ MALE MULLION (LAM. GLASS)



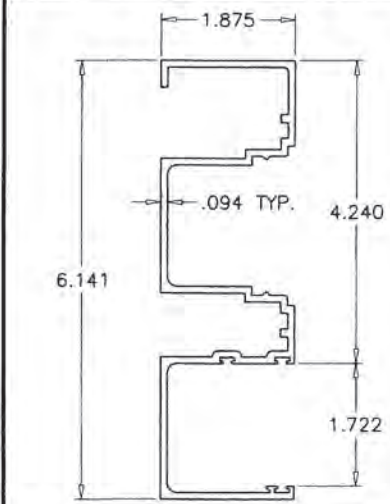
⑧ FEMALE MULLION (LAM. GLASS)



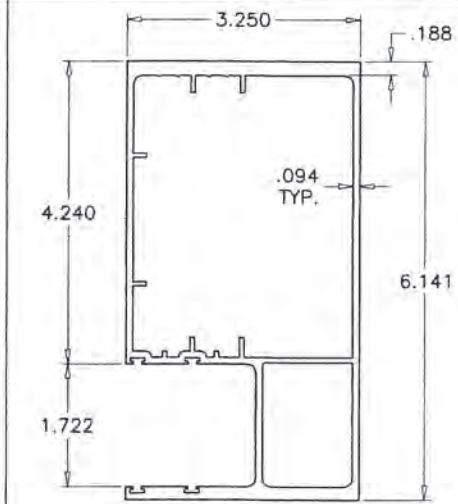
⑥ REINF. BAR (LAM. GLASS)



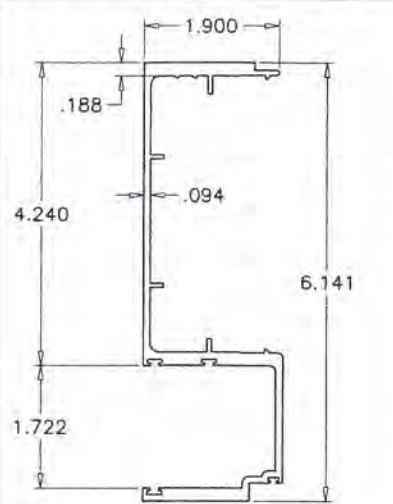
③ SNAP COVER



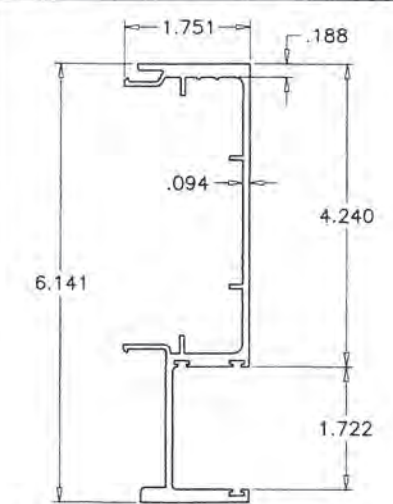
⑨A SECURED JAMB (LAM. INSUL. GL.)



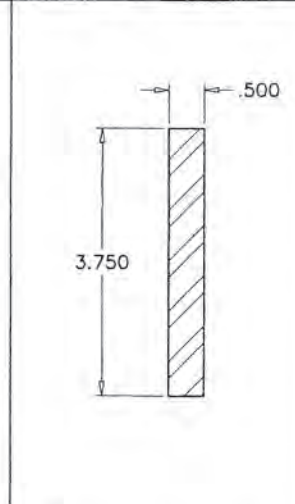
⑩A UNSECURED JAMB (LAM. INSUL. GL.)



⑦A MALE MULLION (LAM. INSUL. GL.)



⑧A FEMALE MULLION (LAM. INSUL. GL.)



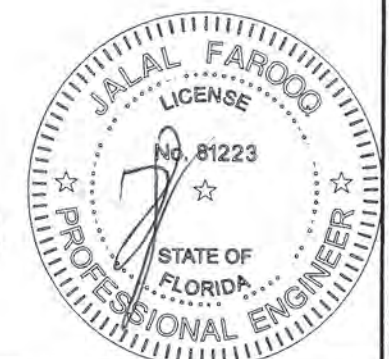
⑥A REINF. BAR (LAM. INSUL. GLASS)

PRODUCT REVISED
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Expiration Date 11/07/2028

By 
Miami-Dade Product Control

JUL 11 2023



SERIES 7100 ALUM WINDOW WALL SYSTEM (S.M.I.)

E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:	no	date	by	description
	C	07.29.15		NO CHANGE THIS SHEET
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date: 09-12-12
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

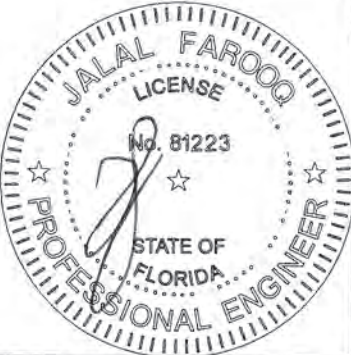
drawing no.
W12-51
sheet 12 of 13

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AL-FAROOQ CORPORATION
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9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978


STORE W12-51ES

ITEM NO.	PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
1	ES7001B	AS REQD.	FRAME HEAD/SILL (LAM. GLASS)	6005-T5	-
1A	ES7021B	AS REQD.	FRAME HEAD/SILL (INSUL. LAM. GLASS)	6005-T5	-
2	ES7006	AS REQD.	GLAZING STOP	6063-T6	-
3	ES7003	AS REQD.	SNAP COVER	6063-T5	-
4	ES7004	AS REQD.	ANCHOR BASE, 9" LONG	6005-T5	-
5	ES7005	AS REQD.	INTERMEDIATE HORIZONTAL (LAM. GLASS)	6005-T5	-
5A	ES7022	AS REQD.	INTERMEDIATE HORIZONTAL (INSUL. LAM. GLASS)	6005-T5	-
6	-	AS REQD.	REINFORCING BAR (LAM. GLASS)	STEEL	A36, Fu MIN. = 58 KSI
6A	-	AS REQD.	REINFORCING BAR (INSUL. LAM. GLASS)	STEEL	A36, Fu MIN. = 58 KSI
7	ES7007	AS REQD.	MALE MULLION (LAM. GLASS)	6005-T5	-
7A	ES7023	AS REQD.	MALE MULLION (INSUL. LAM. GLASS)	6005-T5	-
8	ES7008	AS REQD.	FEMALE MULLION (LAM. GLASS)	6005-T5	-
8A	ES7024	AS REQD.	FEMALE MULLION (INSUL. LAM. GLASS)	6005-T5	-
9	ES7009	AS REQD.	SECURED JAMB (LAM. GLASS)	6063-T6	-
9A	ES7025	AS REQD.	SECURED JAMB (INSUL. LAM. GLASS)	6063-T6	-
10	ES7010A	AS REQD.	UNSECURED JAMB (LAM. GLASS)	6005-T5	-
10A	ES7026A	AS REQD.	UNSECURED JAMB (INSUL. LAM. GLASS)	6005-T5	-
11	-	AS REQD.	INTERIOR GASKET	EPDM	DUROMETER 60±5 SHORE A
12	ES7012	AS REQD.	EXTERIOR GLASS SEAL	EPDM	SILICONE DUROMETER 60±5 SHORE A
13	#12 X 1"	AS REQD.	FRAME ASSEMBLY SCREWS	-	PH SMS
13A	#14 X 1"	AS REQD.	FRAME ASSEMBLY SCREWS	-	PH SMS
14	-	AS REQD.	1/4" X 1" BAR WITH 3/8" THREADED HOLE	ALUMINUM	6063-T5 MIN.
15	3/8" BOLT	AS REQD.	LEVELING SCREW	ST/ST	-
16	-	AS REQD.	TRANSOM MULLION (LAM. GLASS)	6005-T5	-
16A	-	AS REQD.	TRANSOM MULLION (INSUL. LAM. GLASS)	6005-T5	-
17	-	2/ LITE	SETTING BLOCK	EPDM	DUROMETER 80±5 SHORE A

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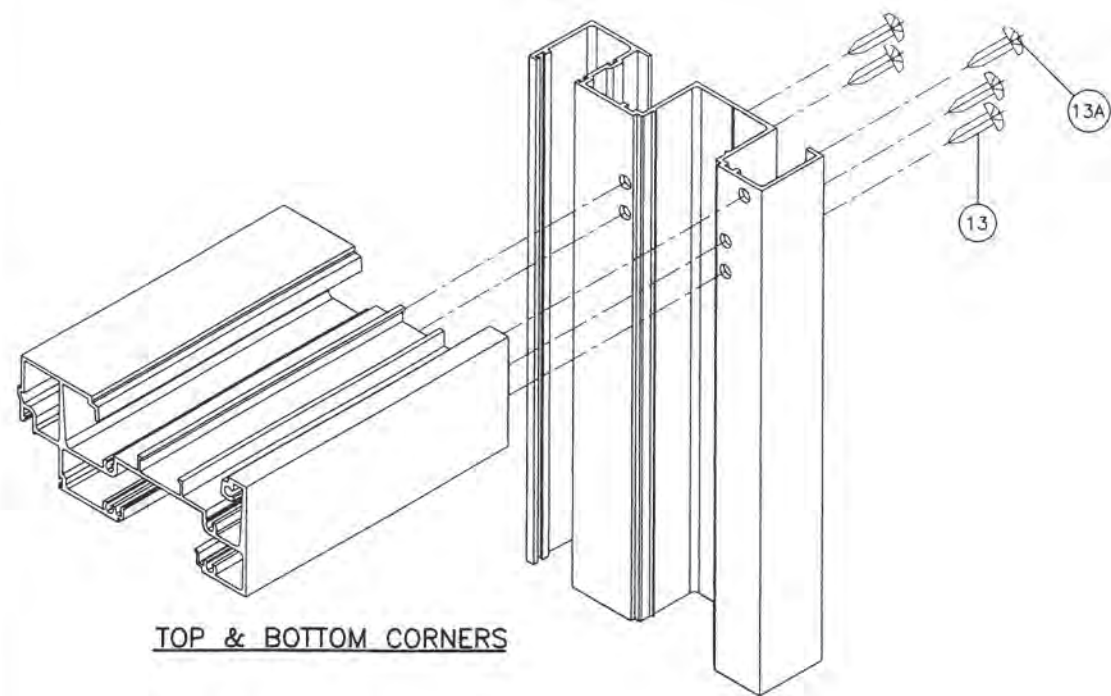
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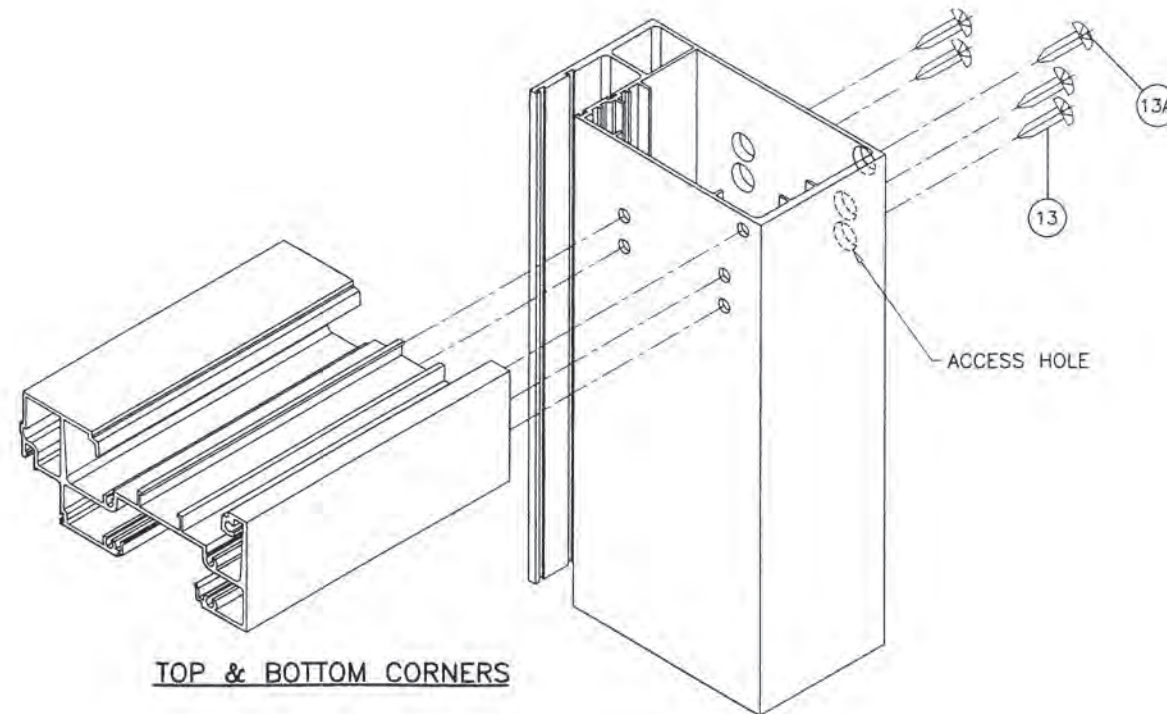
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W12-51
sheet 13 of 13

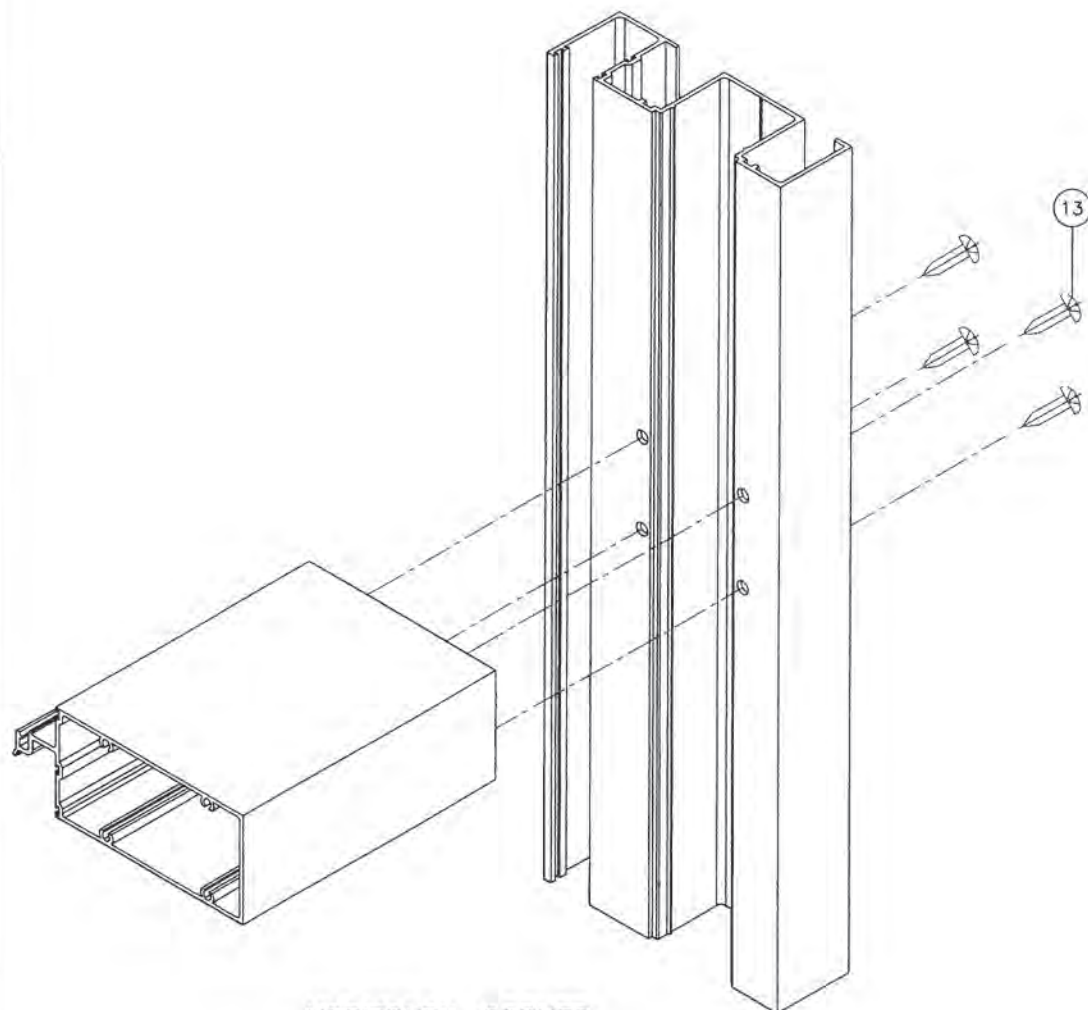
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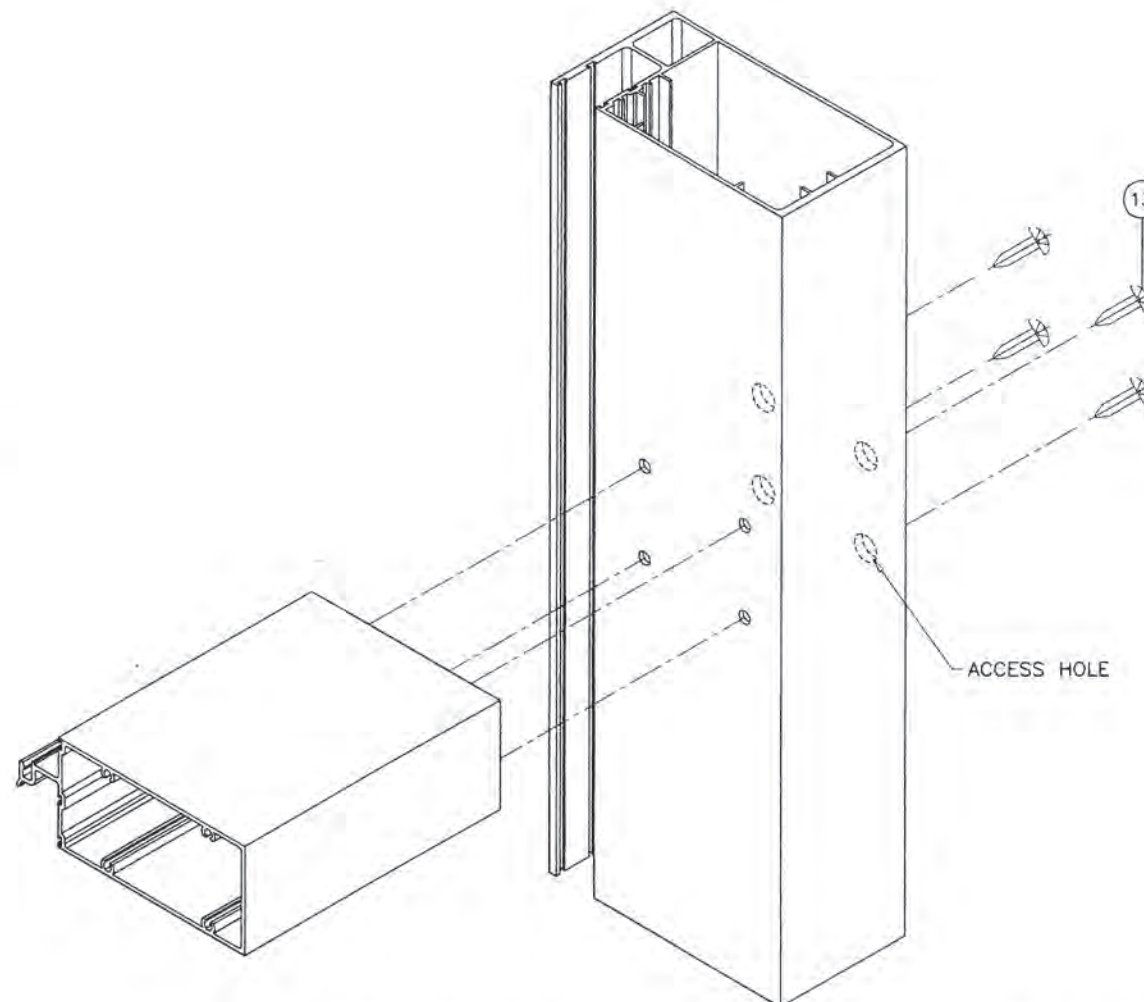
TOP & BOTTOM CORNERS



TOP & BOTTOM CORNERS



HORIZONTAL CORNER



HORIZONTAL CORNER

JUL 10 2023

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