



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

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

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 “ES-8000T Thermally Broken” Aluminum Window Wall System – L.M.I.

APPROVAL DOCUMENT: Drawing No. **W14-38**, titled “ES-8000T Alum. Window Wall System (L.M.I.)”, sheets 1, 2, 3, 4, 5, 6, 7, 7.1, 8, 9, 10, 11, 11.1, 12 and 13 of 13, dated 10/01/14, with revision F dated 11/12/20, 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: Large and 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.

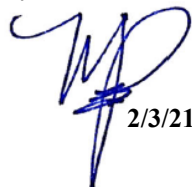
ADVERTISEMENT: The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

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. 19-0326.07** and consists of this page 1 and evidence pages E-1, E-2, E-3 and E-4, as well as approval document mentioned above.

The submitted documentation was reviewed by **Manuel Perez, P.E.**




 2/3/21

NOA No. 20-1118.02
Expiration Date: August 25, 2026
Approval Date: February 11, 2021
 Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

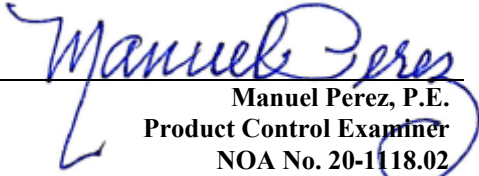
1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 15-0826.26)
2. Drawing No. **W14-38**, titled "ES-8000T Alum. Window Wall System (L.M.I.)", sheets 1, 2, 3, 4, 5, 6, 7, 7.1, 8, 9, 10, 11, 11.1, 12 and 13 of 13, dated 10/01/14, with revision **E** dated 02/20/19, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.
(Submitted under NOA No. 19-0326.07)

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) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Drop Load Test, per ANSI Z97.1 (400 foot-pound impact)
along with marked-up drawings and installation diagram of an aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-9605**, dated 08/16/17, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 18-0129.07)
2. 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) Large 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
7) Drop Load Test, per CPCS 16 CFR 1201 (Cat 11)
8) Safety Performance Test, (class A) per ANSI Z97.1
along with marked-up drawings and installation diagram of an aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-7546**, dated 04/14/15, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 15-0826.26)


Manuel Perez, P.E.
Product Control Examiner
NOA No. 20-1118.02
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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 01/15/18, and supporting technical information for approved modification, dated 03/12/19, all prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.
(Submitted under NOA No. 19-0326.07)
2. Glazing complies with **ASTM E1300-09**

D. QUALITY ASSURANCE

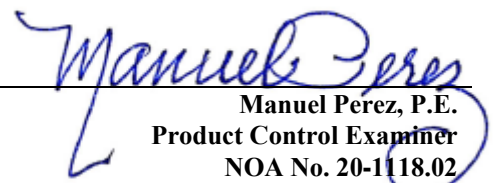
1. Miami-Dade Department of Regulatory and Economic Resources (RER).

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **17-0808.02** issued to **Kuraray America, Inc.** for their "**SentryGlas® (Clear and White) Glass Interlayers**" dated 12/28/17, expiring on 07/04/23.
2. Notice of Acceptance No. **17-1114.14** issued to **Kuraray America, Inc.** for their "**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**" dated 01/18/18, expiring on 07/08/19.
3. Bayer Material Science, LLC Part No. **Baydur TB 100-30 Thermal Break System** complying with ASTM D638 Tensile Strength of 5,700 psi, ASTM D 790 Flexural Modulus of 225 ksi, ASTM D 256 Notched Izod of 1.9 ft.-lb./in., ASTM D 648 Heat Distortion of 178°F @ 66 psi, ASTM D 2240 Hardness Shore D @ 5 sec. of ±78 Durometer, ASTM D 1622 Density of 72 pcf and ¼" thickness.
4. 0.375" (Length) by 0.26" (Height) by 0.0059" (Thickness) (9.5x6.6x0.15mm) Aluminum Low Profile Insulated-Glass spacer **Helima AH 956 N** (P/N.: USA K 001 000 000 R7) with Aluminum Alloy **AW-3000** (F_t_u=17 ksi and F_t_y=12ksi) by **Helmut Lingemann GmbH & Co., KG**.

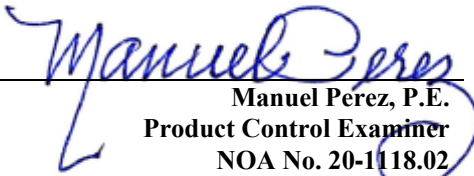
F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 6th Edition (2017)**, dated March 12, 2019, issued by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.
(Submitted under NOA No. 19-0326.07)
2. Distributor Agreement between ES Windows-Energia Solar, S.A., Barranquilla, Columbia, S.A. and E.S. Windows, LLC, Miami, Florida, dated 09/12/13, signed by Ms. Adriana Montoya, Manager and Andres Chamorro, General Manager respectively on behalf of the companies.
(Submitted under NOA No. 15-0826.26)


Manuel Perez, P.E.
Product Control Examiner
NOA No. 20-1118.02
Expiration Date: August 25, 2026
Approval Date: February 11, 2021

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. **EVIDENCE SUBMITTED UNDER PREVIOUS NOA's (CONTINUED)**
- F. **STATEMENTS (CONTINUED)**
 3. Laboratory compliance letters for Test Report No. **FTL-7546**, dated 04/14/15, issued by Fenestration Testing Laboratory, Inc., signed and sealed by Idalmis Ortega, P.E. *(Submitted under NOA No. 15-0826.26)*
 4. Proposal issued by Product Control, dated 11/08/13, signed by Jaime D. Gascon, P.E. *(Submitted under NOA No. 15-0826.26)*
 5. Proposal No. **17-0417R** issued by the Product Control Section, dated June 6, 2017 and revised on August 8, 2017, signed by Manuel Perez, P.E. *(Submitted under NOA No. 18-0129.07)*
- G. **OTHERS**
 1. Notice of Acceptance No. **18-0129.07**, issued to E.S. Windows, LLC for their Series "ES-8000T Thermally Broken" Aluminum Window Wall System - L.M.I., approved on 07/05/18 and expiring on 08/25/21.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 20-1118.02
Expiration Date: August 25, 2026
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E.S. Windows, LLC

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

2. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **W14-38**, titled “ES-8000T Alum. Window Wall System (L.M.I.)”, sheets 1, 2, 3, 4, 5, 6, 7, 7.1, 8, 9, 10, 11, 11.1, 12 and 13 of 13, dated 10/01/14, with revision **F** dated 11/12/20, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC 6th Edition (2017)**, dated 01/15/18, supporting technical information for approved modification, dated 03/12/19, and further updated to complying with **FBC 7th Edition (2020)**, prepared by Al-Farooq Corporation, dated 11/16/20, signed and sealed by Jalal Farooq, P.E.
2. Glazing complies with **ASTM E1300-09**

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

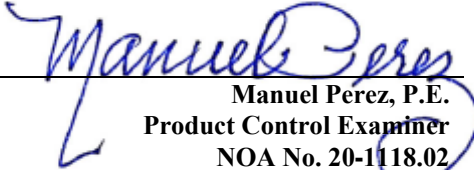
1. Notice of Acceptance No. **18-0725.11** issued to **Kuraray America, Inc.** for their “**Kuraray SentryGlas[®] Xtra[™] (SGX[™]) Clear Glass Interlayer**” dated 05/23/19, expiring on 05/23/24.
2. Notice of Acceptance No. **19-0305.02** issued to **Kuraray America, Inc.** for their “**Trosifol[®] Ultraclear, Clear and Color PVB Glass Interlayers**” dated 05/09/19, expiring on 07/08/24.

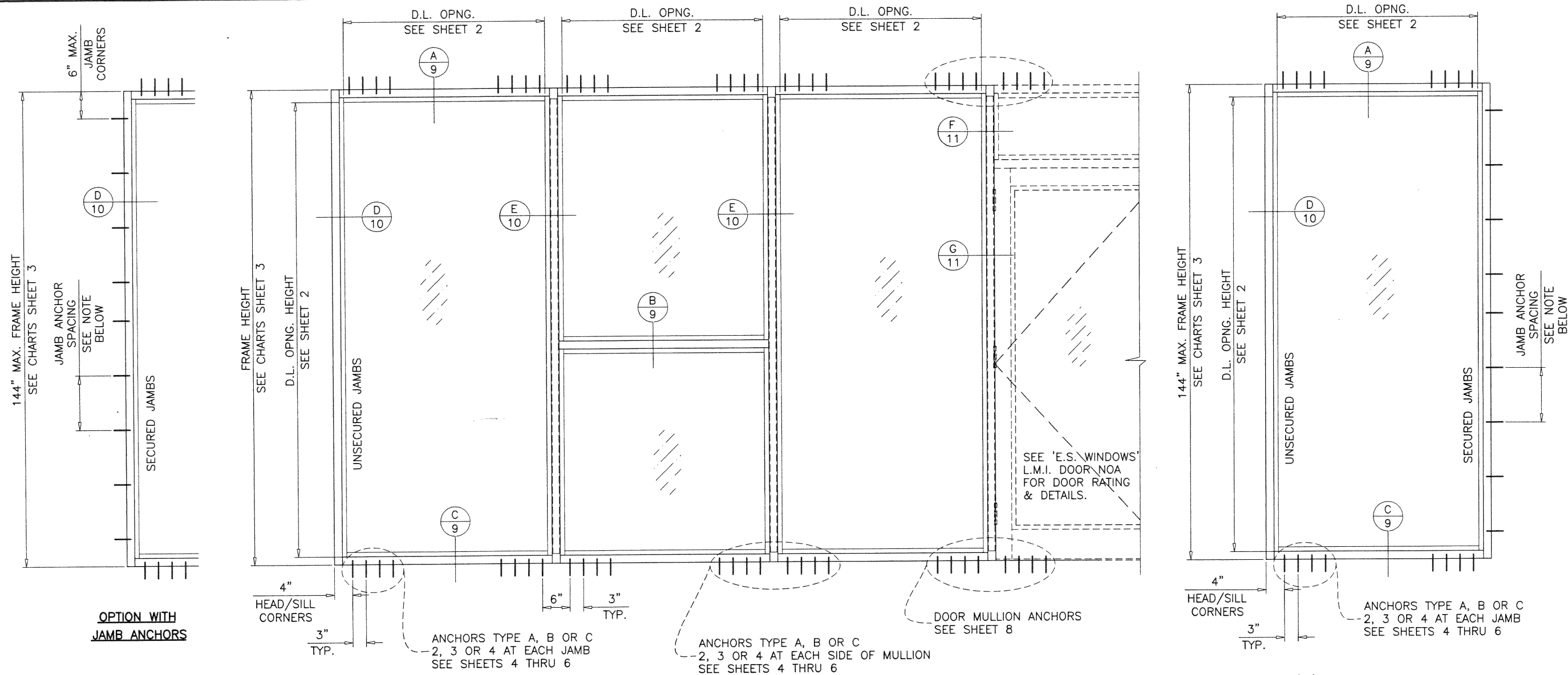
F. STATEMENTS

1. Statement letter of conformance, complying with **FBC 6th Edition (2017)**, with **FBC 7th Edition (2020)**, and of no financial interest, dated November 16, 2020, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

G. OTHERS

1. Notice of Acceptance No. **19-0326.07**, issued to E.S. Windows, LLC for their Series “**ES-8000T Thermally Broken**” Aluminum Window Wall System – L.M.I., approved on 05/09/19 and expiring on 08/25/21.


Manuel Perez, P.E.
Product Control Examiner
NOA No. 20-1118.02
Expiration Date: August 25, 2026
Approval Date: February 11, 2021



**SERIES ES-8000T
ALUMINUM WINDOW WALL SYSTEM**

THIS SYSTEM IS RATED FOR LARGE & SMALL MISSILE IMPACT
SHUTTERS ARE NOT REQUIRED.

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2017 (6TH EDITION)/2020 (7TH EDITION) FLORIDA BUILDING CODE INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).

1BY OR 2BY WOOD BUCKS & BUCK FASTENERS BY OTHERS, MUST BE DESIGNED AND INSTALLED ADEQUATELY TO TRANSFER APPLIED PRODUCT LOADS TO THE BUILDING STRUCTURE.

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.

A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY. 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 2017/2020 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)'.

TYPICAL ELEVATIONS

INSTRUCTIONS:

USE CHARTS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN WIND LOAD REQUIREMENT BASED ON WIND VELOCITY, BLDG. HEIGHT, WIND ZONE USING APPLICABLE ASCE 7 STANDARD.
- STEP 2** SEE CHARTS ON SHEET 2 FOR DESIGN LOAD CAPACITY OF DESIRED GLASS SIZE.
- STEP 3** CHECK MULLION CAPACITY FOR A GIVEN SPACING AND HEIGHT USING CHARTS ON SHEETS 3 FOR WINDOW WALL MULLION AND SHEETS 7 THRU 8 FOR DOOR MULLION THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 4** CHECK ANCHOR CAPACITY FOR WINDOW WALL SYSTEM USING CHARTS ON SHEETS 4 THRU 6 FOR DOOR MULLION ANCHOR CAPACITY SEE CHART ON SHEET 8. THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 5** THE LOWEST VALUE RESULTING FROM STEPS 2, 3 AND 4 SHALL APPLY TO ENTIRE SYSTEM.

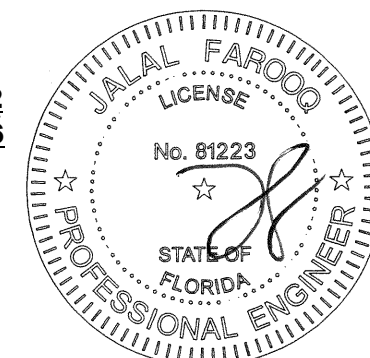
JAMB ANCHORS:

FOR 12" MAX. SPACING LIMIT MAX. LOADS TO 80.0 PSF FOR ANCHOR TYPES 'A' & 'B' TO 74.0 PSF FOR ANCHOR TYPE 'C'
FOR LOADS HIGHER THAN SHOWN ABOVE LIMIT ANCHOR SPACING TO 6" MAX.

PRODUCT COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. **20-1118.02**
Expiration Date: **08/25/2026**
By: *Manuel Perez*
Miami-Dade Product Control

NOV 18 2020



af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220 (C.A.N. 3538)
MIAMI, FLORIDA 33173
TEL. (305) 264-8100 FAX. (305) 262-6978
COMP-ANL\W14-38ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.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	08.22.17		GENERAL REVISION
D	04.05.18		NO CHANGE THIS SHEET
E	02.20.19		NO CHANGE THIS SHEET
F	11.12.20		UPDATED TO 2020 FBC

revisions:

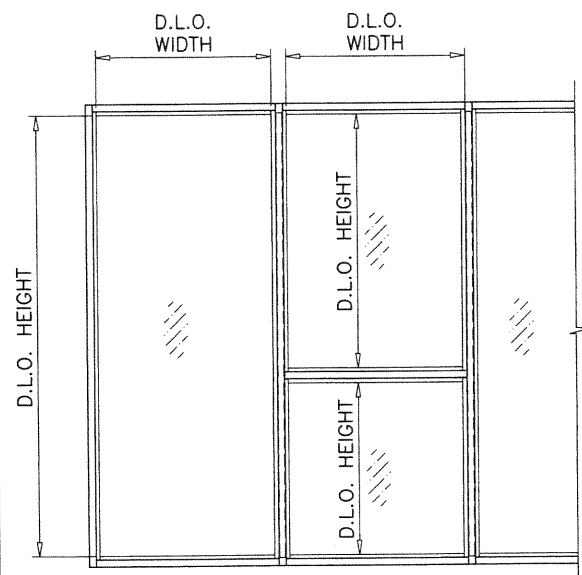
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chk. by:

drawing no. **W14-38**
sheet 1 of 13

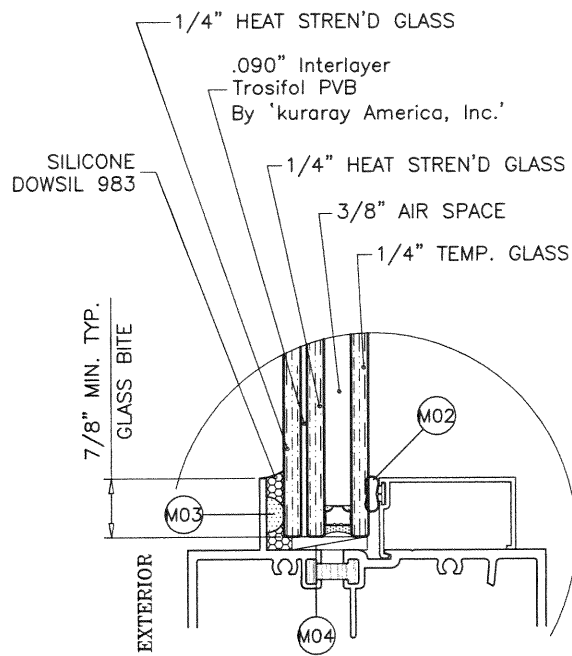
GLASS LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPES	
		'GL1'/'GL1R'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)	INT.(-)
26-1/4"	105-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	108-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	114-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	120-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
50-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	126-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
48-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	132-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0
46-1/4"		60.0	70.0
56-1/4"		60.0	70.0
26-1/4"	138-1/2"	60.0	70.0
32-1/4"		60.0	70.0
38-1/4"		60.0	70.0
44-1/4"		60.0	70.0

GLASS LOAD CAPACITY - PSF					
NOMINAL DIMS.		GLASS TYPES			
		'GL2'		'GL2R'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
26-1/4"	84-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	90-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	93-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	96-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
50-1/4"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	102-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
49"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	105-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
48"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	108-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0
46"		90.0	120.0	90.0	90.0
56-1/4"		90.0	120.0	90.0	90.0
26-1/4"	114-1/2"	90.0	120.0	90.0	90.0
32-1/4"		90.0	120.0	90.0	90.0
38-1/4"		90.0	120.0	90.0	90.0
44-1/4"		90.0	120.0	90.0	90.0

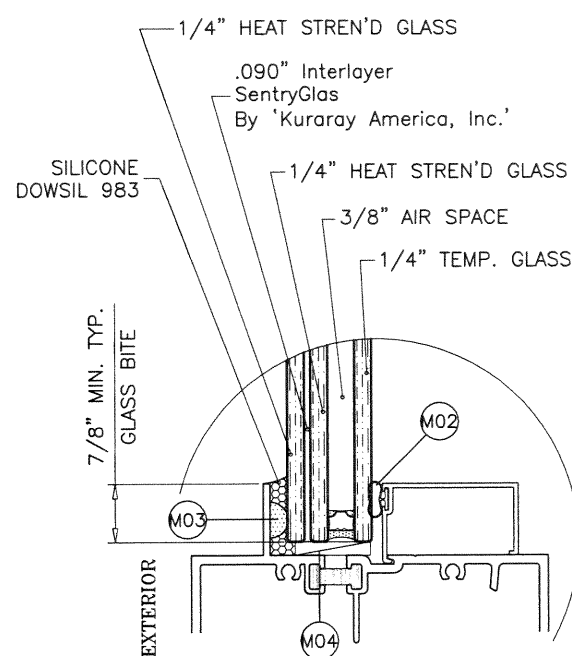
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



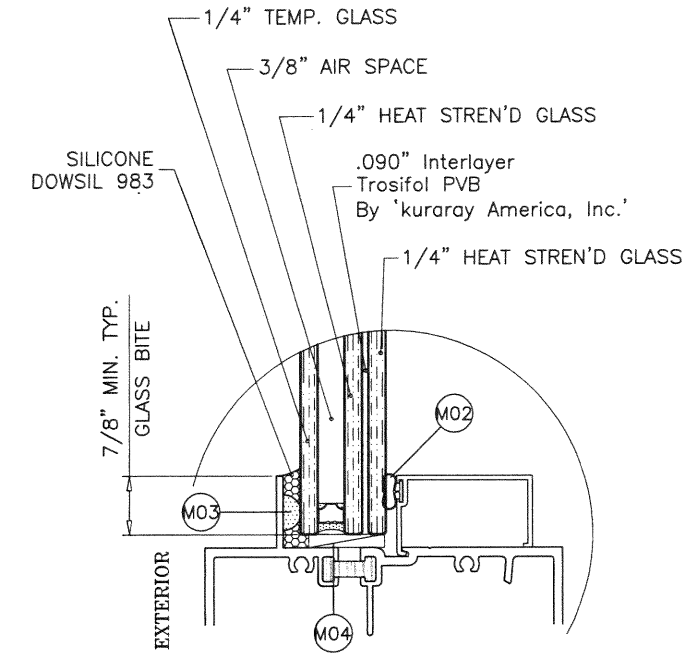
GLASS



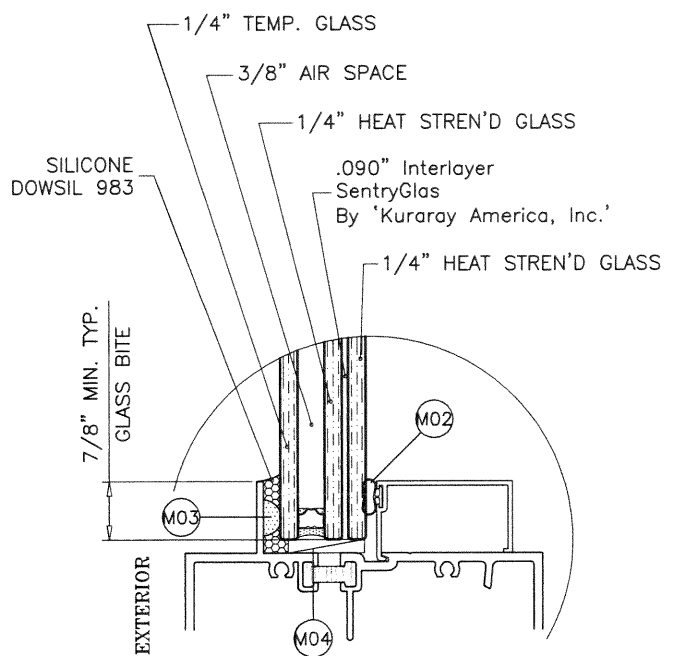
GLASS TYPE 'GL1'
1-3/16" OVERALL INSUL. LAM. GLASS



GLASS TYPE 'GL2'
1-3/16" OVERALL INSUL. LAM. GLASS



GLASS TYPE 'GL1R'
1-3/16" OVERALL INSUL. LAM. GLASS

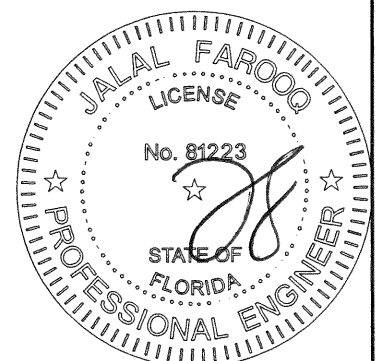


GLASS TYPE 'GL2R'
1-3/16" OVERALL INSUL. LAM. GLASS

3/8" AIR SPACE CONSISTING OF:
SPACER:
 'HELIMA' LOW PROFILE ALUMINUM SPACER
 BY 'LINGERMANN GMBH'
 AROUND THE PERIMETER OF THE GLASS.
PERIMETER SEALANT:
 SILICONE
 DOWSIL 791
 GE 2000

PRODUCT REVISED
 as complying with the Florida
 Building Code
NOA-No. 20-1118.02
Expiration Date: 08/25/2026
 By: *Manuel Perez*
 Miami-Dade Product Control

NOV 18 2020



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

af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 COMP-ANL W14-38ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL. 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

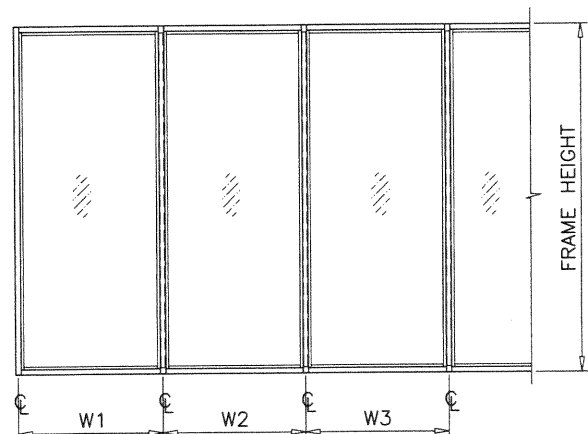
no.	date	by	description
C	08.22.17		GENERAL REVISION
D	04.05.18		REV. PER RER COMMENTS
E	02.20.19		NO CHANGE THIS SHEET
F	11.12.20		UPDATED TO 2020 FBC

date: 10-01-14
 scale: -
 dr. by: TARIQ
 chk. by:
 drawing no.
W14-38
 sheet 2 of 13

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB MULLION	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)
30"	96"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		90.0	120.0
60"		90.0	120.0
30"	98-1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		90.0	120.0
60"	60.0	70.0	
30"	102"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		90.0	120.0
60"	60.0	70.0	
30"	108"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		60.0	70.0
60"	60.0	70.0	
30"	110-1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	116.1
54"		60.0	70.0
60"	60.0	70.0	
30"	114"	90.0	120.0
36"		90.0	120.0
42"		90.0	118.1
48"		90.0	105.2
54"		60.0	70.0
60"	60.0	70.0	
30"	120"	90.0	120.0
36"		90.0	116.0
42"		90.0	100.7
48"		90.0	89.5
54"		60.0	70.0
57"	60.0	70.0	
30"	126"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"	60.0	69.4	
30"	132"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	66.5
52"	60.0	62.0	

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB MULLION	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)
30"	138"	60.0	70.0
36"		60.0	70.0
42"		60.0	65.4
48"		57.9	57.9
50"		55.8	55.8
30"	144"	60.0	70.0
36"		60.0	66.4
42"		57.4	57.4
48"		50.8	50.8

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

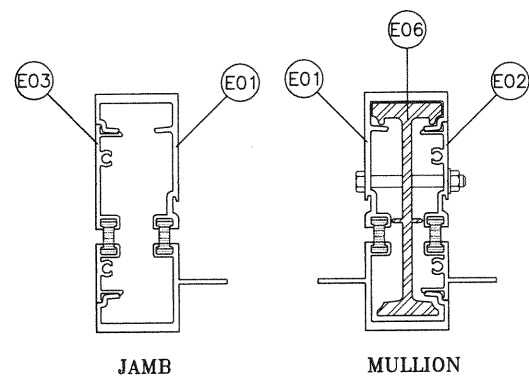


$$\text{WIDTH (W)} = W1$$

AT FRAME JAMB

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

AT FRAME MULLION

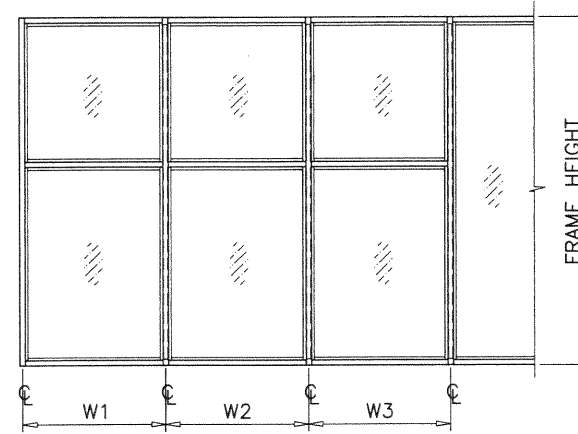


Ix IN ⁴	Sx IN ³
6.5995	2.5891

Ix IN ⁴	Sx IN ³
11.2393	4.3497

DESIGN LOAD CAPACITY - PSF JAMB/MULLION WITH INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB MULLION	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)
30"	96"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
30"	98-1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
30"	102"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
30"	108"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	115.3
30"	110-1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
30"	114"	90.0	107.7
36"		90.0	120.0
42"		90.0	112.1
30"	120"	90.0	98.1
36"		90.0	120.0
42"		90.0	112.1
48"		84.1	84.1
30"	126"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
30"	132"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	63.2
30"	138"	60.0	70.0
36"		60.0	70.0
42"		60.0	63.2
30"	144"	55.3	55.3
36"		60.0	70.0
42"		60.0	64.9
48"		55.6	55.6
48"	48.7	48.7	

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



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

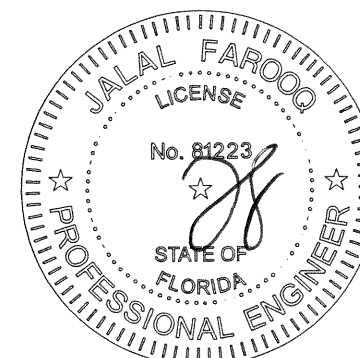
AT FRAME JAMB

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

AT FRAME MULLION

MULLIONS

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Expiration Date: **08/25/2026**
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no	date	description
C	08.22.17	GENERAL REVISION
D	04.05.18	NO CHANGE THIS SHEET
E	02.20.19	JAMB/MULLION REV.
F	11.12.20	UPDATED TO 2020 FBC

date:	10-01-14
scale:	-
dr. by:	TARIO
chk. by:	

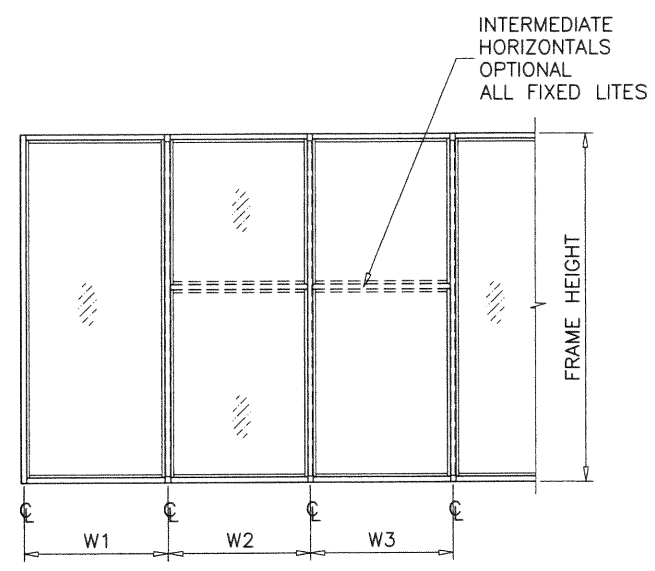
drawing no.
W14-38

sheet 3 of 13

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS.		ANCHORS TYPE 'A'							
		1/4" MAX. SHIM		3/8" MAX. SHIM		1/2" SHIM			
WIDTH (W)	FRAME HEIGHT	A2	A3	A4	A2	A3	A4	A3	A4
30"	78"	120.0	120.0	120.0	90.3	120.0	120.0	105.3	120.0
36"		107.1	120.0	120.0	75.2	112.9	120.0	87.8	117.0
42"		91.8	120.0	120.0	64.5	96.7	120.0	75.2	100.3
48"		80.3	120.0	120.0	56.4	84.6	112.9	65.8	87.8
54"		71.4	107.1	120.0	50.2	75.2	100.3	58.5	78.0
60"	64.2	96.4	120.0	45.1	67.7	90.3	52.7	70.2	
30"	84"	119.3	120.0	120.0	83.8	120.0	120.0	97.8	120.0
36"		99.4	120.0	120.0	69.9	104.8	120.0	81.5	108.6
42"		85.2	120.0	120.0	59.9	89.8	119.8	69.8	93.1
48"		74.6	111.9	120.0	52.4	78.6	104.8	61.1	81.5
54"		66.3	99.4	120.0	46.6	69.9	93.2	54.3	72.4
60"	59.7	89.5	119.3	41.9	62.9	83.8	48.9	65.2	
30"	90"	111.4	120.0	120.0	78.3	117.4	120.0	91.3	120.0
36"		92.8	120.0	120.0	65.2	97.8	120.0	76.1	101.4
42"		79.5	119.3	120.0	55.9	83.8	111.8	65.2	86.9
48"		69.6	104.4	120.0	48.9	73.4	97.8	57.0	76.1
54"		61.9	92.8	120.0	43.5	65.2	86.9	50.7	67.6
60"	55.7	83.5	111.4	39.1	58.7	78.3	45.6	60.8	
30"	96"	104.4	120.0	120.0	73.4	110.0	120.0	85.6	114.1
36"		87.0	120.0	120.0	61.1	91.7	120.0	71.3	95.1
42"		74.6	111.9	120.0	52.4	78.6	104.8	61.1	81.5
48"		65.3	97.9	120.0	45.9	68.8	91.7	53.5	71.3
54"		58.0	87.0	116.0	40.8	61.1	81.5	47.5	63.4
60"	52.2	78.3	104.4	36.7	55.0	73.4	42.8	57.0	
30"	102"	98.3	120.0	120.0	69.0	103.6	120.0	80.5	107.4
36"		81.9	120.0	120.0	57.5	86.3	115.1	67.1	89.5
42"		70.2	105.3	120.0	49.3	74.0	98.6	57.5	76.7
48"		61.4	92.1	120.0	43.2	64.7	86.3	50.3	67.1
54"		54.6	81.9	109.2	38.4	57.5	76.7	44.7	59.6
60"	49.1	70.0	70.0	34.5	51.8	69.0	40.3	53.7	
30"	108"	92.8	120.0	120.0	65.2	97.8	120.0	76.1	101.4
36"		77.3	116.0	120.0	54.3	81.5	108.7	63.4	84.5
42"		66.3	99.4	120.0	46.6	69.9	93.2	54.3	72.4
48"		58.0	87.0	116.0	40.8	61.1	81.5	47.5	63.4
54"		51.6	77.3	103.1	36.2	54.3	72.5	42.3	56.3
60"	46.4	69.6	70.0	32.6	48.9	65.2	38.0	50.7	
30"	114"	87.9	120.0	120.0	61.8	92.7	120.0	72.1	96.1
36"		73.3	109.9	120.0	51.5	77.2	103.0	60.0	80.1
42"		62.8	94.2	120.0	44.1	66.2	88.3	51.5	68.6
48"		54.9	82.4	109.9	38.6	57.9	77.2	45.0	60.0
54"		48.8	70.0	70.0	34.3	51.5	68.6	40.0	53.4
60"	44.0	65.9	70.0	30.9	46.3	61.8	36.0	48.0	
30"	120"	83.5	120.0	120.0	58.7	88.0	117.4	68.4	91.3
36"		69.6	104.4	120.0	48.9	73.4	97.8	57.0	76.1
42"		59.7	89.5	119.3	41.9	62.9	83.8	48.9	65.2
48"		52.2	78.3	104.4	36.7	55.0	73.4	42.8	57.0
54"		46.4	69.6	70.0	32.6	48.9	65.2	38.0	50.7
30"	126"	70.0	70.0	70.0	55.9	70.0	70.0	65.2	70.0
36"		66.3	70.0	70.0	46.6	69.9	70.0	54.3	70.0
42"		56.8	70.0	70.0	39.9	59.9	70.0	46.6	62.1
48"		49.7	70.0	70.0	34.9	52.4	69.9	40.7	54.3
54"		44.2	66.3	70.0	31.1	46.6	62.1	36.2	48.3

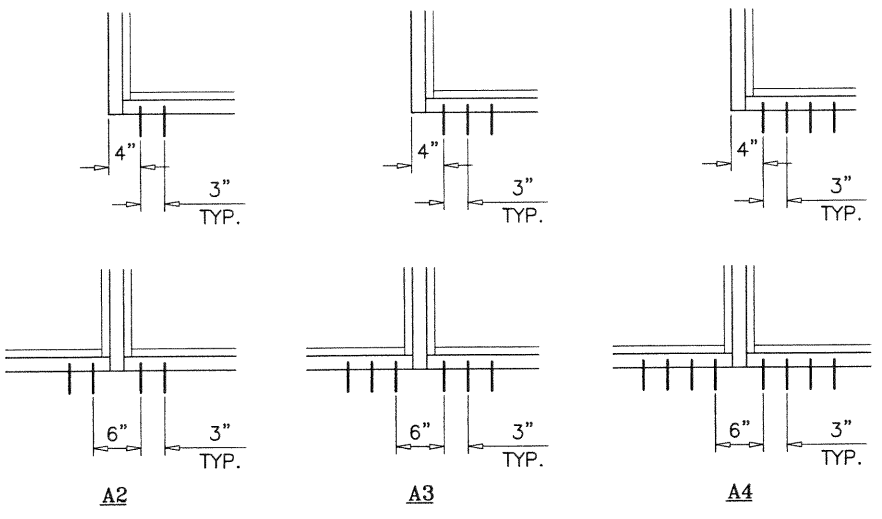
ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS.		ANCHORS TYPE 'A'							
		1/4" MAX. SHIM		3/8" MAX. SHIM		1/2" SHIM			
WIDTH (W)	FRAME HEIGHT	A2	A3	A4	A2	A3	A4	A3	A4
30"	132"	70.0	70.0	70.0	53.4	70.0	70.0	62.2	70.0
36"		63.3	70.0	70.0	44.5	66.7	70.0	51.9	69.1
42"		54.2	70.0	70.0	38.1	57.2	70.0	44.4	59.3
48"		47.5	70.0	70.0	33.3	50.0	66.7	38.9	51.9
30"	138"	70.0	70.0	70.0	51.0	70.0	70.0	59.5	70.0
36"		60.5	70.0	70.0	42.5	63.8	70.0	49.6	66.1
42"		51.9	70.0	70.0	36.5	54.7	70.0	42.5	56.7
48"	45.4	68.1	70.0	31.9	47.8	63.8	37.2	49.6	
30"	144"	69.6	70.0	70.0	48.9	70.0	70.0	57.0	70.0
36"		58.0	70.0	70.0	40.8	61.1	70.0	47.5	63.4
42"		49.7	70.0	70.0	34.9	52.4	69.9	40.7	54.3
48"		43.5	65.3	70.0	30.6	45.9	61.1	35.7	47.5

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



WIDTH (W) = W1
AT FRAME JAMB

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

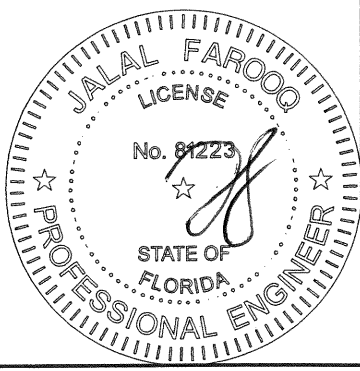


ANCHORS TYPES: SEE SHEET 9 FOR DESCRIPTION
A2 = (2) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
A3 = (3) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION
A4 = (4) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. **20-1118.02**
Expiration Date: **08/25/2026**

By: *Manuel Torres*
Miami-Dade Product Control

NOV 18 2020



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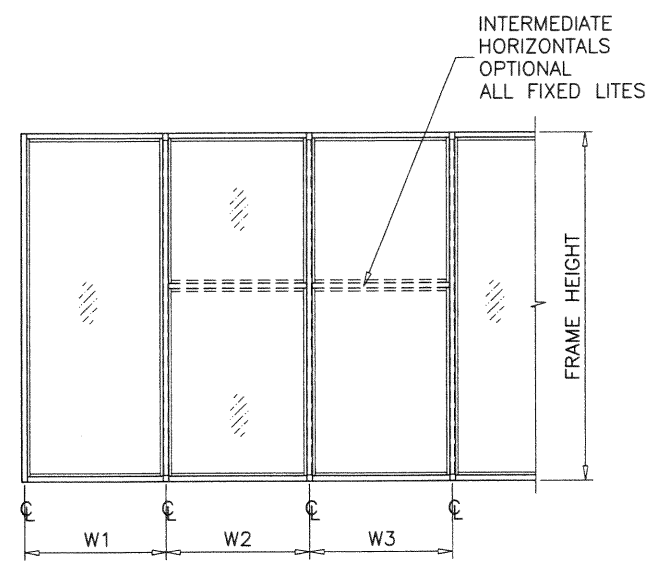
drawing no.
W14-38
sheet 4 of 13

ANCHORS

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS.		ANCHORS TYPE 'C'							
		1/4" MAX. SHIM		3/8" MAX. SHIM		1/2" SHIM			
WIDTH (W)	FRAME HEIGHT	C2	C3	C4	C2	C3	C4	C3	C4
30"	78"	120.0	120.0	120.0	91.6	120.0	120.0	108.6	120.0
36"		120.0	120.0	120.0	76.3	114.5	120.0	90.5	120.0
42"		120.0	120.0	120.0	65.4	98.1	120.0	77.5	103.4
48"		120.0	120.0	120.0	57.2	85.8	114.5	67.8	90.5
54"		106.9	120.0	120.0	50.9	76.3	101.7	60.3	80.4
60"		96.2	120.0	120.0	45.8	68.7	91.6	54.3	72.4
30"	84"	120.0	120.0	120.0	85.0	120.0	120.0	100.8	120.0
36"		120.0	120.0	120.0	70.9	106.3	120.0	84.0	112.0
42"		120.0	120.0	120.0	60.7	91.1	120.0	72.0	96.0
48"		111.7	120.0	120.0	53.1	79.7	106.3	63.0	84.0
54"		99.3	120.0	120.0	47.2	70.9	94.5	56.0	74.7
60"		89.4	120.0	120.0	42.5	63.8	85.0	50.4	67.2
30"	90"	120.0	120.0	120.0	79.4	119.0	120.0	94.1	120.0
36"		120.0	120.0	120.0	66.1	99.2	120.0	78.4	104.5
42"		119.2	120.0	120.0	56.7	85.0	113.4	67.2	89.6
48"		104.3	120.0	120.0	49.6	74.4	99.2	58.8	78.4
54"		92.7	120.0	120.0	44.1	66.1	88.2	52.3	69.7
60"		83.4	120.0	120.0	39.7	59.5	79.4	47.0	62.7
30"	96"	120.0	120.0	120.0	74.4	111.6	120.0	88.2	117.6
36"		120.0	120.0	120.0	62.0	93.0	120.0	73.5	98.0
42"		111.7	120.0	120.0	53.1	79.7	106.3	63.0	84.0
48"		97.8	120.0	120.0	46.5	69.8	93.0	55.1	73.5
54"		86.9	120.0	120.0	41.3	62.0	82.7	49.0	65.3
60"		78.2	117.3	120.0	37.2	55.8	74.4	44.1	58.8
30"	102"	120.0	120.0	120.0	70.0	105.0	120.0	83.0	110.7
36"		120.0	120.0	120.0	58.4	87.5	116.7	69.2	92.2
42"		105.1	120.0	120.0	50.0	75.0	100.0	59.3	79.1
48"		92.0	120.0	120.0	43.8	65.6	87.5	51.9	69.2
54"		81.8	120.0	120.0	38.9	58.4	77.8	46.1	61.5
60"		70.0	70.0	70.0	35.0	52.5	70.0	41.5	55.3
30"	108"	120.0	120.0	120.0	66.1	99.2	120.0	78.4	104.5
36"		115.9	120.0	120.0	55.1	82.7	110.2	65.3	87.1
42"		99.3	120.0	120.0	47.2	70.9	94.5	56.0	74.7
48"		86.9	120.0	120.0	41.3	62.0	82.7	49.0	65.3
54"		77.2	115.9	120.0	36.7	55.1	73.5	43.6	58.1
60"		69.5	70.0	70.0	33.1	49.6	66.1	39.2	52.3
30"	114"	120.0	120.0	120.0	62.7	94.0	120.0	74.3	99.0
36"		109.8	120.0	120.0	52.2	78.3	104.4	61.9	82.5
42"		94.1	120.0	120.0	44.8	67.1	89.5	53.1	70.7
48"		82.3	120.0	120.0	39.2	58.7	78.3	46.4	61.9
54"		70.0	70.0	70.0	34.8	52.2	69.6	41.3	55.0
60"		65.9	70.0	70.0	31.3	47.0	62.7	37.1	49.5
30"	120"	120.0	120.0	120.0	59.5	89.3	119.0	70.6	94.1
36"		104.3	120.0	120.0	49.6	74.4	99.2	58.8	78.4
42"		89.4	120.0	120.0	42.5	63.8	85.0	50.4	67.2
48"		78.2	117.3	120.0	37.2	55.8	74.4	44.1	58.8
54"		69.5	70.0	70.0	33.1	49.6	66.1	39.2	52.3
30"		126"	70.0	70.0	70.0	56.7	70.0	70.0	67.2
36"	70.0		70.0	70.0	47.2	70.0	70.0	56.0	70.0
42"	70.0		70.0	70.0	40.5	60.7	70.0	48.0	64.0
48"	70.0		70.0	70.0	35.4	53.1	70.0	42.0	56.0
54"	66.2		70.0	70.0	31.5	47.2	63.0	37.3	49.8

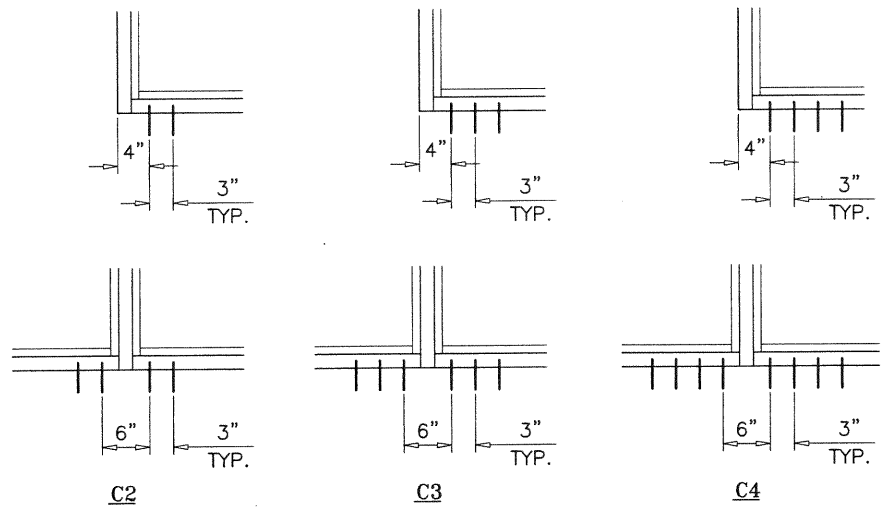
ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS.		ANCHORS TYPE 'C'							
		1/4" MAX. SHIM		3/8" MAX. SHIM		1/2" SHIM			
WIDTH (W)	FRAME HEIGHT	C2	C3	C4	C2	C3	C4	C3	C4
30"	132"	70.0	70.0	70.0	54.1	70.0	70.0	64.1	70.0
36"		70.0	70.0	70.0	45.1	67.6	70.0	53.5	70.0
42"		70.0	70.0	70.0	38.6	58.0	70.0	45.8	61.1
48"		70.0	70.0	70.0	33.8	50.7	67.6	40.1	53.5
30"	138"	70.0	70.0	70.0	51.8	70.0	70.0	61.4	70.0
36"		70.0	70.0	70.0	43.1	64.7	70.0	51.1	68.2
48"		68.0	70.0	70.0	32.3	48.5	64.7	38.3	51.1
30"	144"	70.0	70.0	70.0	49.6	70.0	70.0	58.8	70.0
36"		70.0	70.0	70.0	41.3	62.0	70.0	49.0	65.3
42"		70.0	70.0	70.0	35.4	53.1	70.0	42.0	56.0
48"		65.2	70.0	70.0	31.0	46.5	62.0	36.8	49.0

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



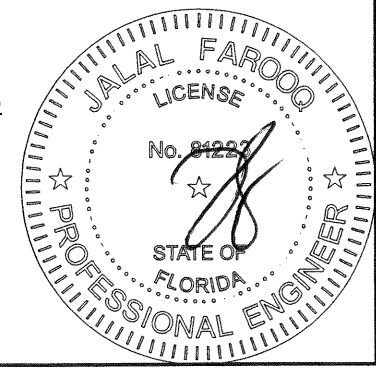
WIDTH (W) = W1
AT FRAME JAMB

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



ANCHORS TYPES: SEE SHEET 9 FOR DESCRIPTION
 C2 = (2) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
 C3 = (3) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION
 C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION

PRODUCT REVISED
 as complying with the Florida Building Code
 NOA-No. **20-1118.02**
 Expiration Date: **08/25/2026**
 By: *Manuel Peres*
 Miami-Dade Product Control
 NOV 18 2020



AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 COMP-ANL W14-38ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL. 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

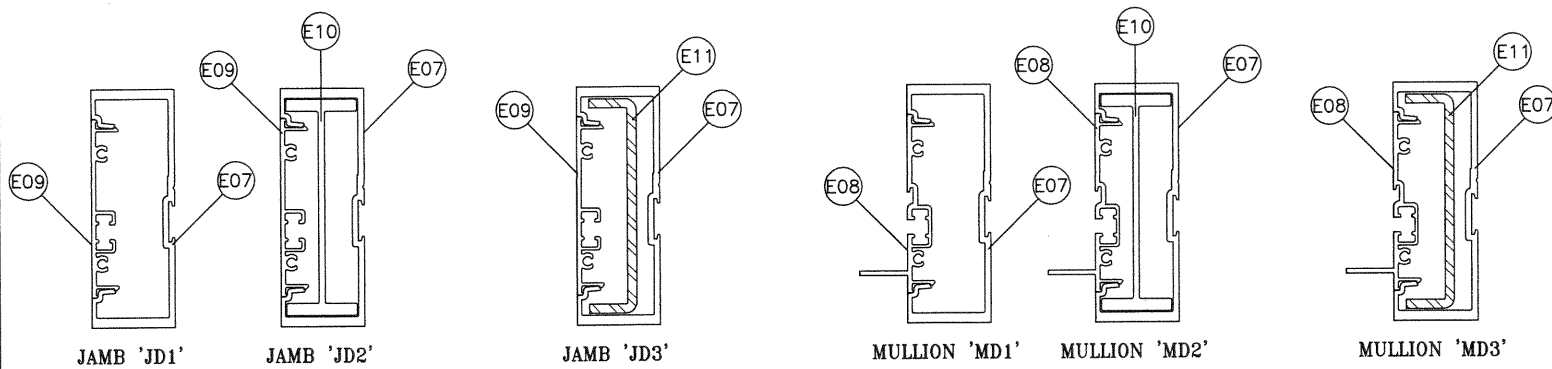
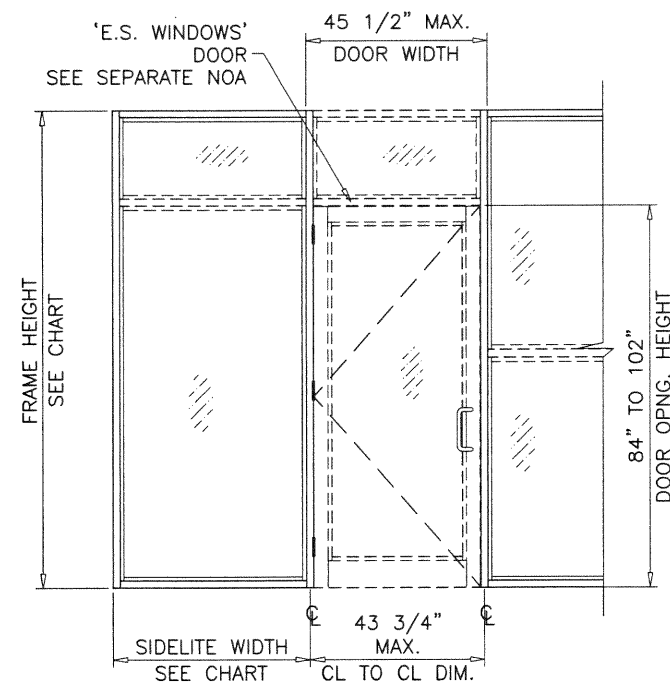
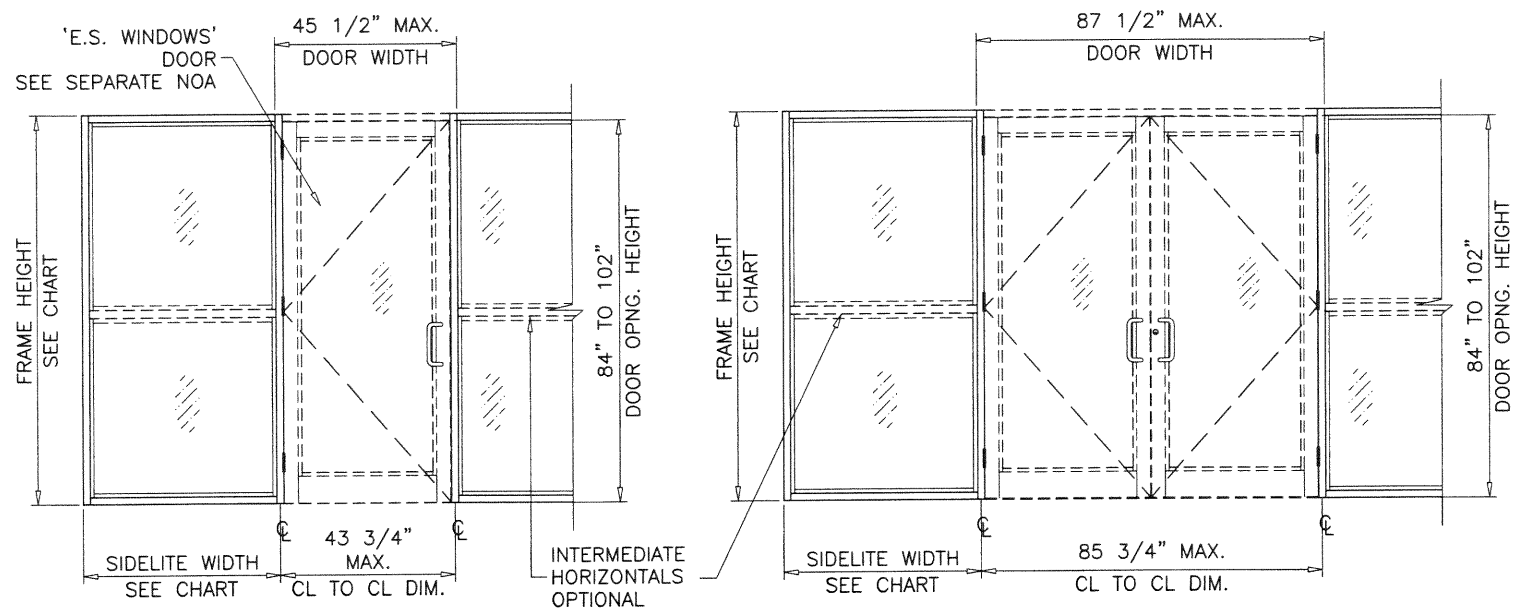
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C	08.22.17	GENERAL REVISION
D	04.05.18	NO CHANGE THIS SHEET
E	02.20.19	NO CHANGE THIS SHEET
F	11.12.20	UPDATED TO 2020 FBC

date: 10-01-14
 scale: -
 dr. by: TARIQ
 chk. by:
 drawing no. **W14-38**
 sheet 6 of 13

ANCHORS

DOOR MULLION LOAD CAPACITY-PSF					
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	JAMB 'JD1' MULL 'MD1'	JAMB 'JD1' MULL 'MD2'	JAMB 'JD2' JAMB 'JD3' MULL 'MD3'	JAMB 'JD3' MULL 'MD4'
		EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)
32	86-1/2	120.0	120.0	120.0	120.0
36		120.0	120.0	120.0	120.0
42		120.0	120.0	120.0	120.0
48		120.0	120.0	120.0	120.0
54		120.0	120.0	120.0	120.0
60		120.0	120.0	120.0	120.0
32	98-1/2	112.6	120.0	120.0	120.0
36		107.1	120.0	120.0	120.0
42		99.7	120.0	120.0	120.0
48		93.3	120.0	120.0	120.0
54		87.7	120.0	116.1	120.0
32	110-1/2	79.8	120.0	118.5	120.0
36		75.8	120.0	112.6	120.0
42		70.6	113.6	104.9	120.0
48		66.1	106.3	98.2	120.0

DOOR MULLION LOAD CAPACITY-PSF					
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	JAMB 'JD1' MULL 'MD1'	JAMB 'JD1' MULL 'MD2'	JAMB 'JD2' JAMB 'JD3' MULL 'MD3'	JAMB 'JD3' MULL 'MD4'
		EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)
32	98-1/2	90.0	90.0	90.0	90.0
36		90.0	90.0	90.0	90.0
42		90.0	90.0	90.0	90.0
48		90.0	90.0	90.0	90.0
54		87.7	90.0	90.0	90.0
32	110-1/2	79.8	90.0	90.0	90.0
36		75.8	90.0	90.0	90.0
42		70.6	90.0	90.0	90.0
48		66.1	90.0	90.0	90.0
32	114	72.6	90.0	90.0	90.0
36		69.1	90.0	90.0	90.0
42		64.3	90.0	90.0	90.0
48	120	60.2	90.0	90.0	90.0
32		62.3	90.0	90.0	90.0
36	120	59.2	90.0	90.0	90.0
42		55.2	88.7	89.1	90.0
48	120	51.6	83.0	83.4	90.0



Ix IN ⁴	Sx IN ³	Ix IN ⁴	Sx IN ³
6.570	2.7226	10.6577	3.8057

ALUMINUM	6.570	2.7226
STEEL	2.7506	1.2224
TOTAL	14.5467	
Ix ALUM + Ix STL X 2.9		

Ix IN ⁴	Sx IN ³	Ix IN ⁴	Sx IN ³
6.7195	2.6757	10.8072	4.4788

ALUMINUM	6.7195	2.6757
STEEL	2.7506	1.224
TOTAL	14.6962	
Ix ALUM + Ix STL X 2.9		

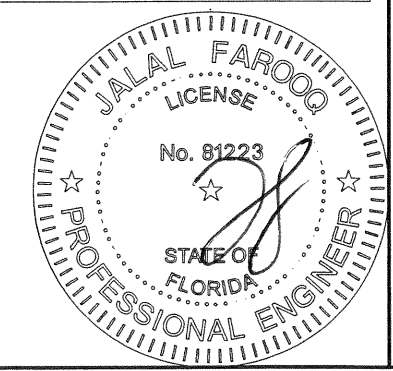
Ix IN ⁴	Sx IN ³	Ix IN ⁴	Sx IN ³
6.7195	2.6757	3.7533	3.5717

ALUMINUM	6.7195	2.6757
STEEL	3.7533	3.5717
TOTAL	17.6041	
Ix ALUM + Ix STL X 2.9		

PRODUCT REVISED
as complying with the Florida Building Code
NOA-No. 20-1118.02
Expiration Date: 08/25/2026
By: *Manuel Perez*
Miami-Dade Product Control

NOV 18 2020

DOOR-WINDOWALL
TRANSITION MULLION



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978
COMP-ANL W14-38ES

ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
3550 N.W. 49 STREET
MIAMI, FL. 33142
TEL. (305) 638-5151 FAX. (305) 638-5158

no	date	description
C	08.22.17	GENERAL REVISION
D	04.05.18	NO CHANGE THIS SHEET
E	02.20.19	NO CHANGE THIS SHEET
F	11.12.20	UPDATED TO 2020 FBC

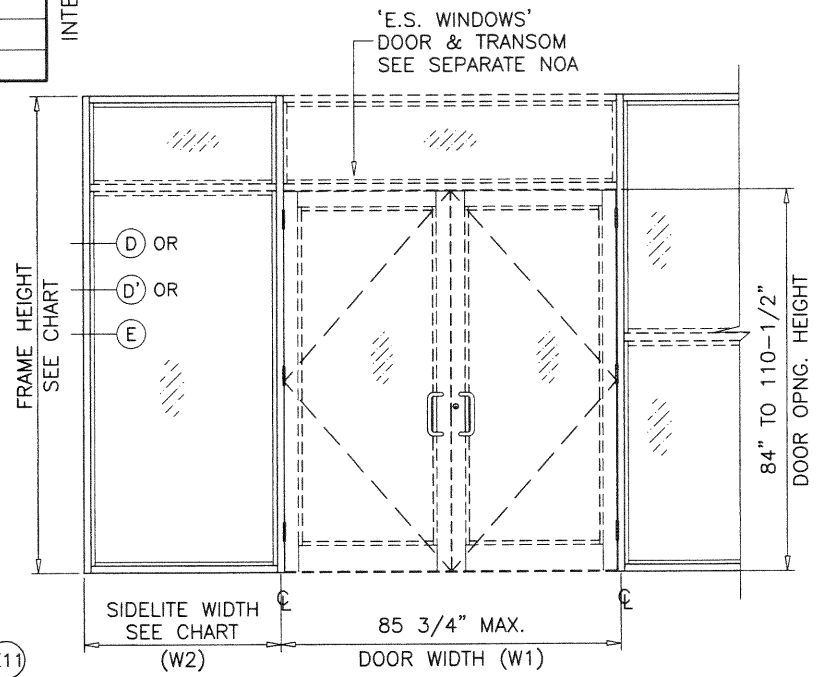
date: 10-01-14
scale: -
dr. by: TARIQ
chk. by:

drawing no.
W14-38
sheet 7 of 13

DOOR MULLION LOAD CAPACITY - PSF							
NOMINAL DIMS.				JAMB 'JD1'	JAMB 'JD1'	JAMB 'JD2'	JAMB 'JD3'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	MULL 'MD1'	MULL 'MD2'	MULL 'MD3'	MULL 'MD4'
				EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	30	96	84	90.0	90.0	90.0	90.0
				90.0	90.0	90.0	90.0
				90.0	90.0	90.0	90.0
				90.0	90.0	90.0	90.0
				90.0	90.0	90.0	90.0
				85.7	90.0	90.0	90.0
	36	102	84	90.0	90.0	90.0	90.0
				86.9	90.0	90.0	90.0
				81.5	90.0	90.0	90.0
				76.7	90.0	90.0	90.0
				72.5	90.0	89.0	90.0
				74.2	90.0	90.0	90.0
	42	108	84	69.5	90.0	89.1	90.0
				65.4	90.0	84.4	90.0
				61.7	90.0	80.2	90.0
				60.2	90.0	81.7	90.0
				56.6	90.0	77.4	90.0
				53.3	85.8	73.4	87.8
	48	114	84	50.5	81.2	69.9	83.5
				49.7	80.0	71.9	85.9
				46.8	75.3	68.1	81.5
				44.2	71.2	64.8	77.4
				41.9	67.5	61.7	73.8
				90.0	90.0	90.0	90.0
85-3/4	30	90	90	90.0	90.0	90.0	90.0
				90.0	90.0	90.0	90.0
				86.6	90.0	90.0	90.0
				81.2	90.0	90.0	90.0
				76.5	90.0	90.0	90.0
				79.3	90.0	90.0	90.0
	36	102	90	74.0	90.0	90.0	90.0
				69.3	90.0	88.9	90.0
				65.2	90.0	84.3	90.0
				63.9	90.0	85.6	90.0
				59.9	90.0	80.8	90.0
				56.3	90.0	76.5	90.0
	42	108	90	53.1	85.4	72.7	86.9
				52.4	84.2	74.5	89.1
				49.2	79.1	70.5	84.3
				46.3	74.5	66.9	80.0
				43.8	70.5	63.6	76.1
				90.0	90.0	90.0	90.0
	48	114	90	90.0	90.0	90.0	90.0
				90.0	90.0	90.0	90.0
				86.6	90.0	90.0	90.0
				81.2	90.0	90.0	90.0
				76.5	90.0	90.0	90.0
				79.3	90.0	90.0	90.0
30	120	90	74.0	90.0	90.0	90.0	
			69.3	90.0	88.9	90.0	
			65.2	90.0	84.3	90.0	
			63.9	90.0	85.6	90.0	
			59.9	90.0	80.8	90.0	
			56.3	90.0	76.5	90.0	
36	120	90	53.1	85.4	72.7	86.9	
			52.4	84.2	74.5	89.1	
			49.2	79.1	70.5	84.3	
			46.3	74.5	66.9	80.0	
			43.8	70.5	63.6	76.1	
			90.0	90.0	90.0	90.0	

DOOR MULLION LOAD CAPACITY - PSF							
NOMINAL DIMS.				JAMB 'JD1'	JAMB 'JD1'	JAMB 'JD2'	JAMB 'JD3'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	MULL 'MD1'	MULL 'MD2'	MULL 'MD3'	MULL 'MD4'
				EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	30	108	96	84.6	90.0	90.0	90.0
				78.6	90.0	90.0	90.0
				73.4	90.0	90.0	90.0
				68.8	90.0	89.7	90.0
				68.2	90.0	90.0	90.0
				63.5	90.0	85.3	90.0
	36	114	96	59.5	90.0	80.6	90.0
				56.0	90.0	76.3	90.0
				55.5	89.3	78.0	90.0
				51.9	83.5	73.6	88.0
				48.8	78.5	69.7	83.3
				46.0	74.0	66.2	79.1
85-3/4	30	102	102	72.4	90.0	90.0	90.0
				67.2	90.0	90.0	90.0
				62.7	90.0	85.9	90.0
				58.8	90.0	81.1	90.0
				59.0	90.0	82.6	90.0
				55.0	88.4	77.7	90.0
	36	120	102	51.5	82.8	73.3	87.7
				48.4	77.8	69.4	83.0
				63.7	90.0	90.0	90.0
				59.0	90.0	85.7	90.0
				55.0	88.4	80.4	90.0
				51.5	82.8	75.7	90.0
48	120	110-1/2	90.0	90.0	90.0	90.0	
			90.0	90.0	90.0	90.0	
			86.6	90.0	90.0	90.0	
			81.2	90.0	90.0	90.0	
			76.5	90.0	90.0	90.0	
			79.3	90.0	90.0	90.0	

INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



JAMB 'JD1'

Ix IN ⁴	Sx IN ³
6.570	2.7226

JAMB 'JD2'

Ix IN ⁴	Sx IN ³
10.6577	3.8057

JAMB 'JD3'

Ix IN ⁴	Sx IN ³
6.570	2.7226
2.7506	1.2224
TOTAL	14.5467
Ix ALUM + Ix STL X 2.9	

MULLION 'MD1'

Ix IN ⁴	Sx IN ³
6.7195	2.6757

MULLION 'MD2'

Ix IN ⁴	Sx IN ³
10.8072	4.4788

MULLION 'MD3'

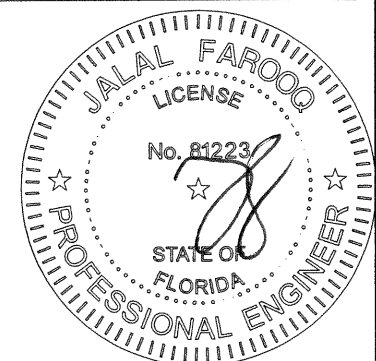
Ix IN ⁴	Sx IN ³
6.7195	2.6757
2.7506	1.224
TOTAL	14.6962
Ix ALUM + Ix STL X 2.9	

MULLION 'MD4'

Ix IN ⁴	Sx IN ³
6.7195	2.6757
3.7533	3.5717
TOTAL	17.6041
Ix ALUM + Ix STL X 2.9	

PRODUCT REVISED
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NOA-No. 20-1118.02
Expiration Date: **08/25/2026**
By: *Manuel Perez*
Miami-Dade Product Control

**DOOR-WINDOW WALL
TRANSITION MULLION**



NOV 18 2020

AL-FAROOQ CORPORATION
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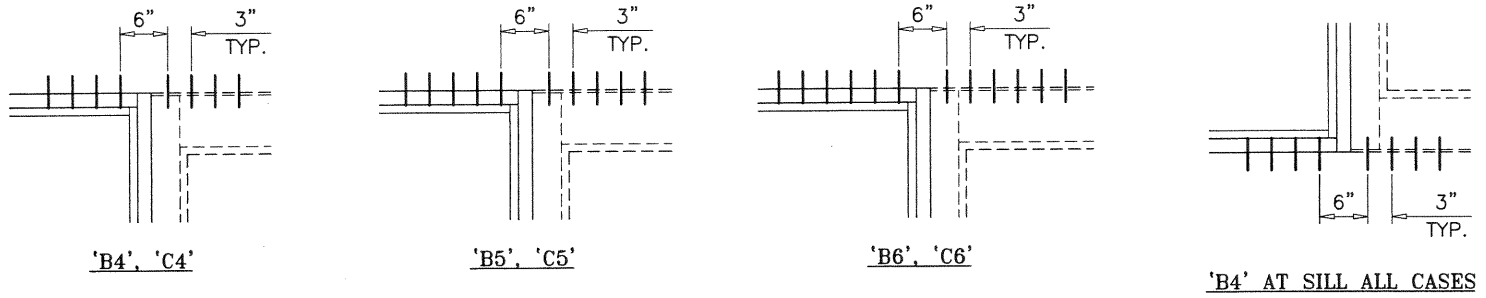
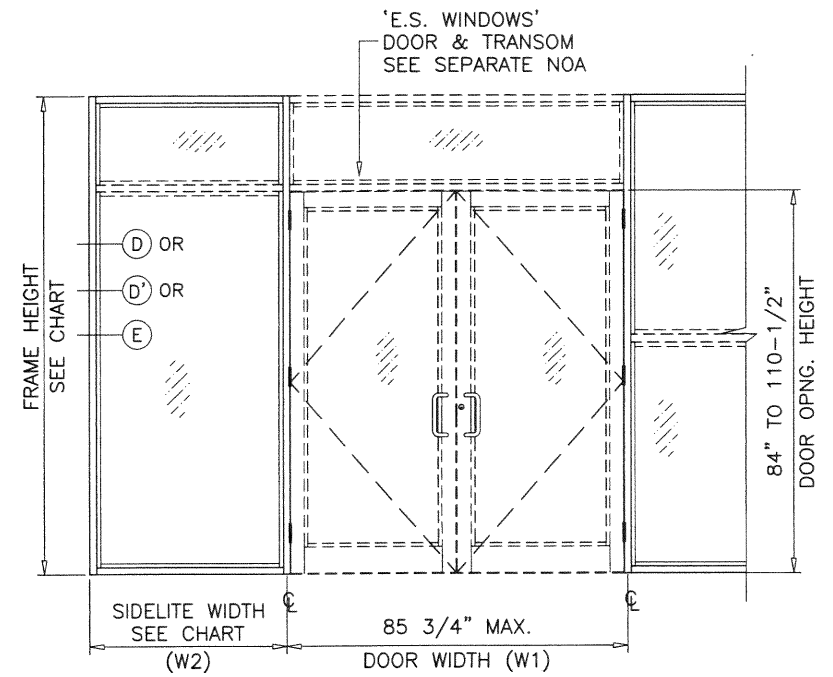
date: 10-01-14	scale: -	dr. by: TARIO	chk. by:
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drawing no. **W14-38**
sheet 7.1 of 13

DOOR MULLION HEAD ANCHOR LOAD CAPACITY - PSF						
NOMINAL DIMS.				'B4'/'C4'	'B5'/'C5'	'B6'/'C6'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	96	84	84	89.6	90.0	90.0
				85.0	90.0	90.0
				80.8	90.0	90.0
				77.0	90.0	90.0
				73.6	90.0	90.0
				70.4	88.0	90.0
	102	84	84	86.0	90.0	90.0
				81.5	90.0	90.0
				77.4	90.0	90.0
				73.8	90.0	90.0
				70.4	88.0	90.0
				82.7	90.0	90.0
	108	84	84	78.3	90.0	90.0
				74.3	90.0	90.0
				70.8	88.4	90.0
				79.7	90.0	90.0
				75.4	90.0	90.0
				71.5	89.4	90.0
	114	84	84	68.0	85.0	90.0
				76.9	90.0	90.0
				72.6	90.0	90.0
				68.9	86.1	90.0
				65.4	81.8	90.0
				84.1	90.0	90.0
85-3/4	102	90	90	79.7	90.0	90.0
				75.8	90.0	90.0
				72.3	90.0	90.0
				69.1	86.4	90.0
				80.9	90.0	90.0
				76.7	90.0	90.0
	108	90	90	72.9	90.0	90.0
				69.4	86.8	90.0
				78.0	90.0	90.0
				73.9	90.0	90.0
				70.1	87.7	90.0
				66.8	83.5	90.0
	114	90	90	75.3	90.0	90.0
				71.2	89.1	90.0
				67.6	84.5	90.0
				64.3	80.4	90.0
				84.1	90.0	90.0
				79.7	90.0	90.0
	120	90	90	75.8	90.0	90.0
				72.3	90.0	90.0
				69.1	86.4	90.0
				80.9	90.0	90.0
				76.7	90.0	90.0
				72.9	90.0	90.0

DOOR MULLION HEAD ANCHOR LOAD CAPACITY - PSF						
NOMINAL DIMS.				'B4'/'C4'	'B5'/'C5'	'B6'/'C6'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	108	96	79.2	90.0	90.0	
			75.1	90.0	90.0	
			71.5	89.3	90.0	
	114	96	68.1	85.2	90.0	
			76.4	90.0	90.0	
			72.4	90.0	90.0	
	120	96	68.8	86.0	90.0	
			65.6	82.0	90.0	
			73.8	90.0	90.0	
	85-3/4	114	102	69.9	87.4	90.0
				66.4	83.0	90.0
				63.2	79.0	90.0
120		102	74.9	90.0	90.0	
			71.0	88.8	90.0	
			67.6	84.5	90.0	
85-3/4	120	110-1/2	64.4	80.5	90.0	
			72.4	90.0	90.0	
			68.6	85.7	90.0	
	120	110-1/2	65.2	81.5	90.0	
			62.1	77.7	90.0	
			70.4	88.0	90.0	
85-3/4	120	110-1/2	66.8	83.5	90.0	
			63.6	79.5	90.0	
			60.7	75.9	90.0	

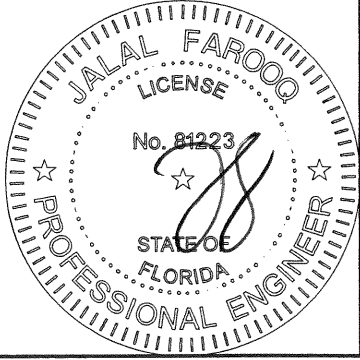
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION
 B4 = (4) ANCHORS TYPE 'B' AT EACH SIDE OF DOOR MULLION
 B5 = (5) ANCHORS TYPE 'B' AT EACH SIDE OF DOOR MULLION
 B6 = (6) ANCHORS TYPE 'B' AT EACH SIDE OF DOOR MULLION
 C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION
 C5 = (5) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION
 C6 = (6) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION
 ALL OTHER ANCHORS TO BE SPACED AS PER ELEVATION.
 SHIM SPACE FOR ANCHORS TYPE 'C' LIMITED TO 1/4" MAX.

TRANSITION MULLION ANCHORS

PRODUCT REVISED
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 NOA-No. **20-1118.02**
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 By: *Manuel Ferrer*
 Miami-Dade Product Control

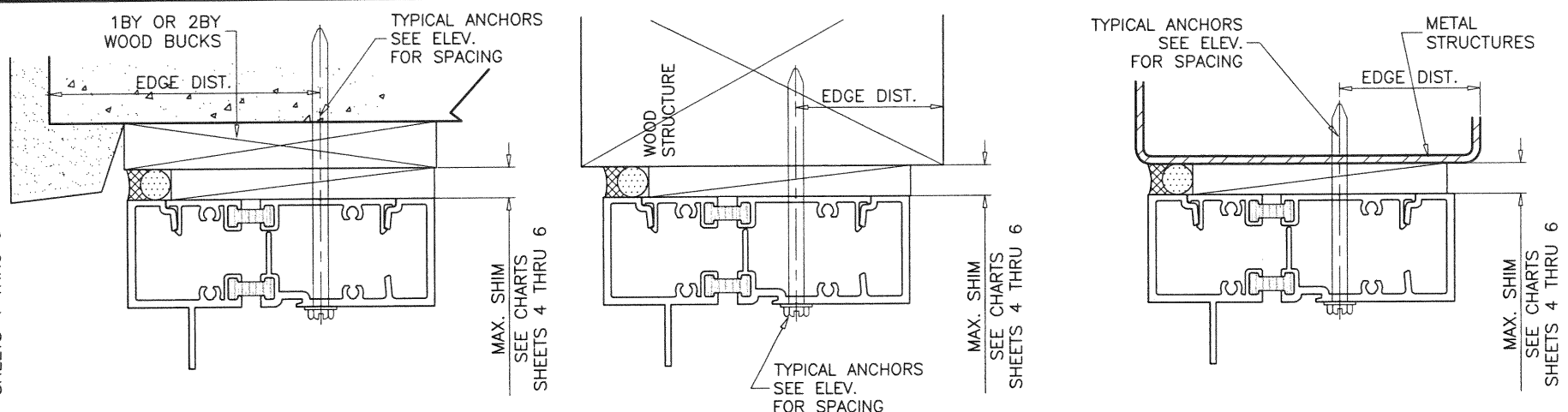
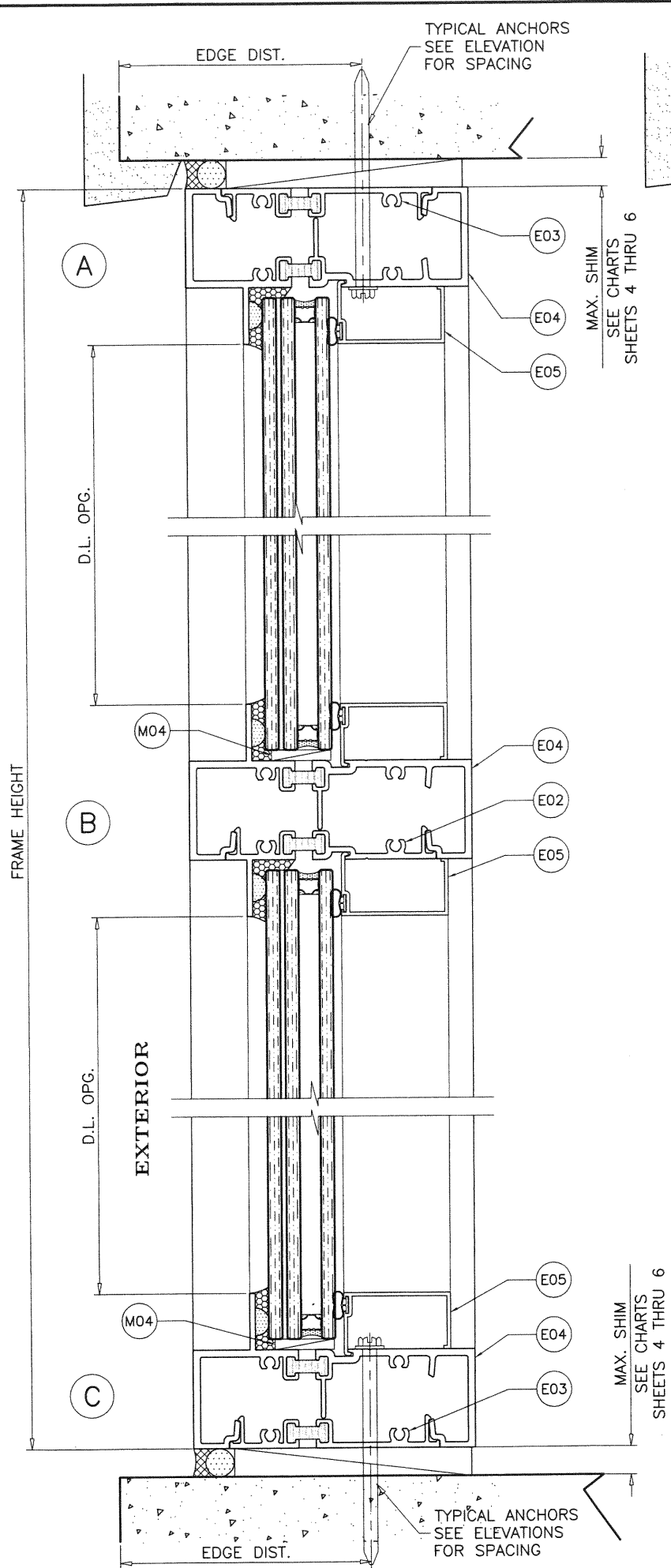


ES-8000T ALUM WINDOW WALL SYSTEM (L.M.I.)
E.S. WINDOWS, LLC
 3550 N.W. 49 STREET
 MIAMI, FL. 33142
 TEL. (305) 638-5151 FAX. (305) 638-5158

no	date	description
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F	11.12.20	UPDATED TO 2020 FBC

date: 10-01-14
 scale: -
 dr. by: TARIQ
 chk. by:
 drawing no. **W14-38**
 sheet **8** of 13

af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 COMP-ANL\W14-38ES



TYPICAL ANCHORS: SEE ELEV. FOR SPACING

TYPE 'A' - 1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 INTO WOOD STRUCTURES
 2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY BUCKS INTO CONC. OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
 DIRECTLY INTO CONC. OR BLOCKS
 2" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 2" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

ANCHOR EDGE DISTANCES
 INTO CONCRETE AND MASONRY = 2-1/2" MIN.
 INTO WOOD STRUCTURE = 1" MIN.

TYPE 'B' - 5/16" DIA. ULTRACON BY 'DEWALT' (Fu=177 KSI, Fy=155 KSI)
 INTO WOOD STRUCTURES
 2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY BUCKS INTO CONC. OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
 DIRECTLY INTO CONC. OR BLOCKS
 2" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 2" MIN. EMBED INTO FILLED BLOCKS (JAMBS)

ANCHOR EDGE DISTANCES
 INTO CONCRETE AND MASONRY = 2-1/2" MIN.
 INTO WOOD STRUCTURE = 1-1/4" MIN.

TYPE 'C' - 1/4" DIA. TEKS OR SELF DRILLING SCREWS ST/ST (GRADE 5 CRS)
 INTO F.B.C. APPROVED MULLIONS
 OR
 INTO METAL STRUCTURES (HEAD/SILL/JAMBS)
 (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 = 1/2" MIN.

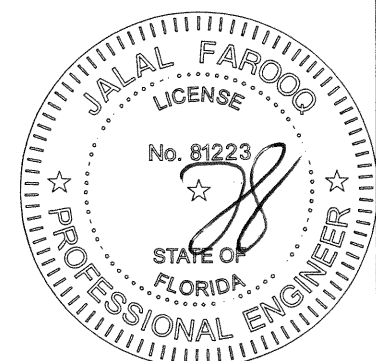
WOOD AT HEAD, SILL OR JAMBS SG = 0.55 MIN.
 CONCRETE AT HEAD, SILL OR JAMBS f'c = 3000 PSI MIN.
 C-90 GROUT FILLED NORMAL WEIGHT BLOCK AT JAMBS f'm = 2000 PSI MIN.

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

1BY OR 2BY WOOD BUCKS AND METAL STRUCTURE NOT BY 'E.S. WDW.' MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

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 Miami-Dade Product Control

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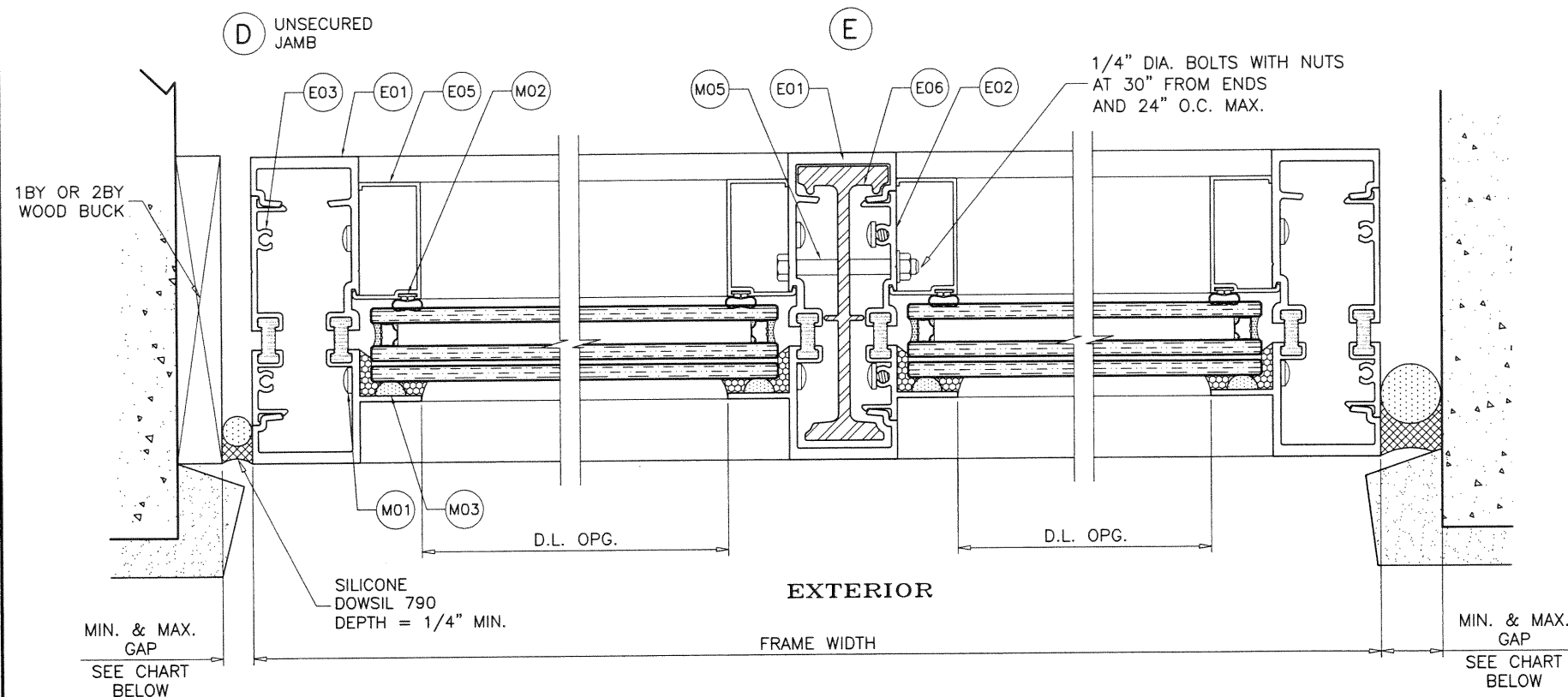
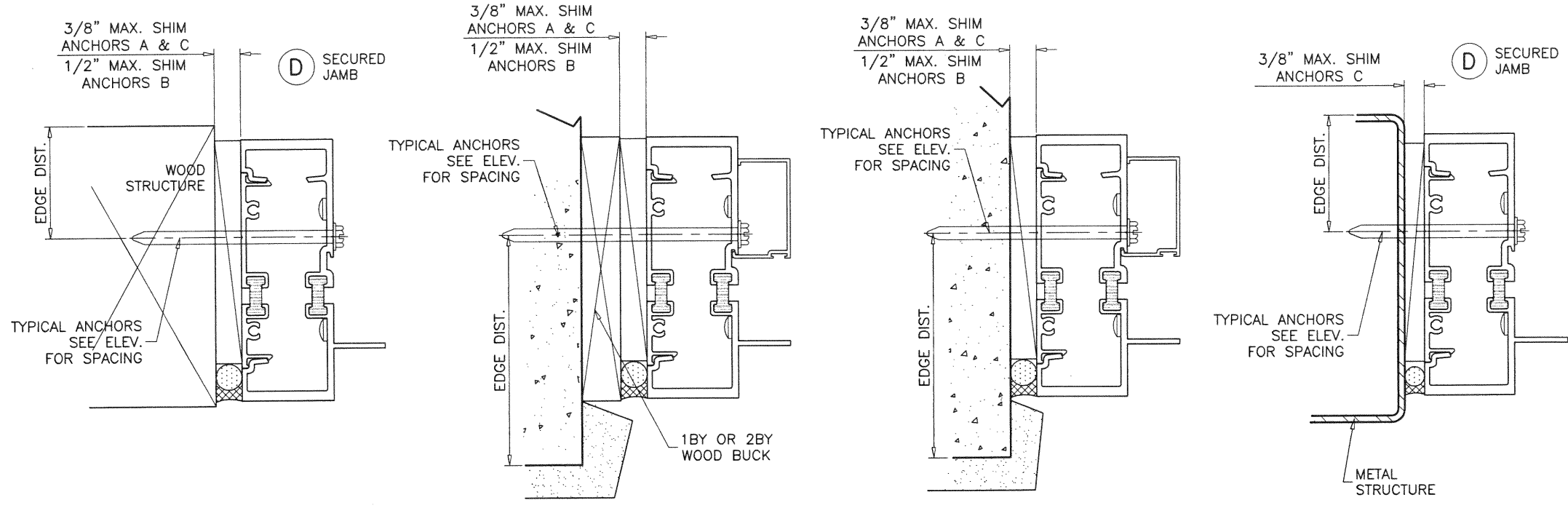
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AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
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dr. by:	TARIQ
chk. by:	

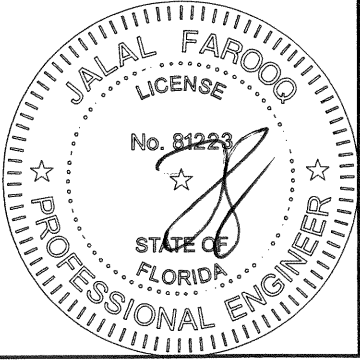
drawing no.	W14-38
sheet	9 of 13



MAX. GAPS FOR UNANCHORED JAMBS		
MAX. FRAME HEIGHT	JAMB J1	
	MIN.	MAX.
96"	1/4"	1"
102"	1/4"	1"
108"	3/8"	1"
120"	3/8"	1"
132"	3/8"	1"
144"	3/8"	1"

NOTE:
 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.
 REFER TO ACI-117-10 FOR CONSTRUCTION TOLERANCES.
 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.

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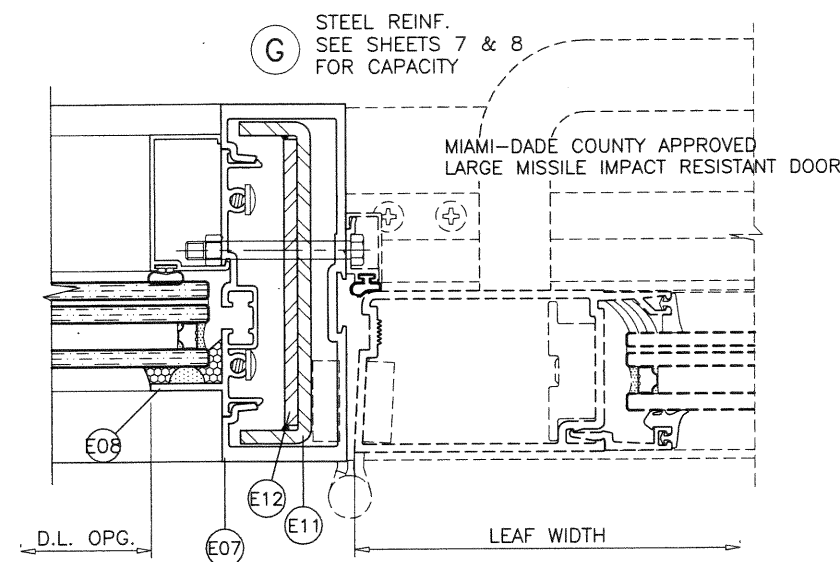
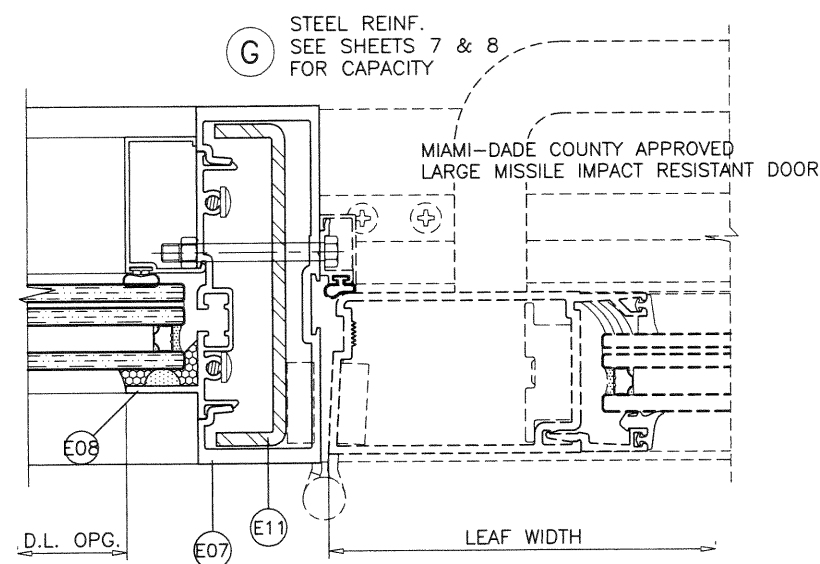
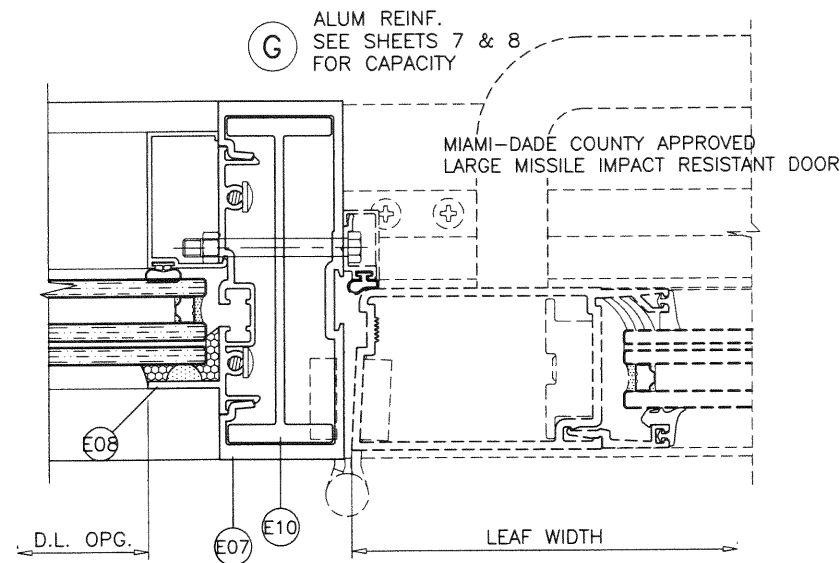
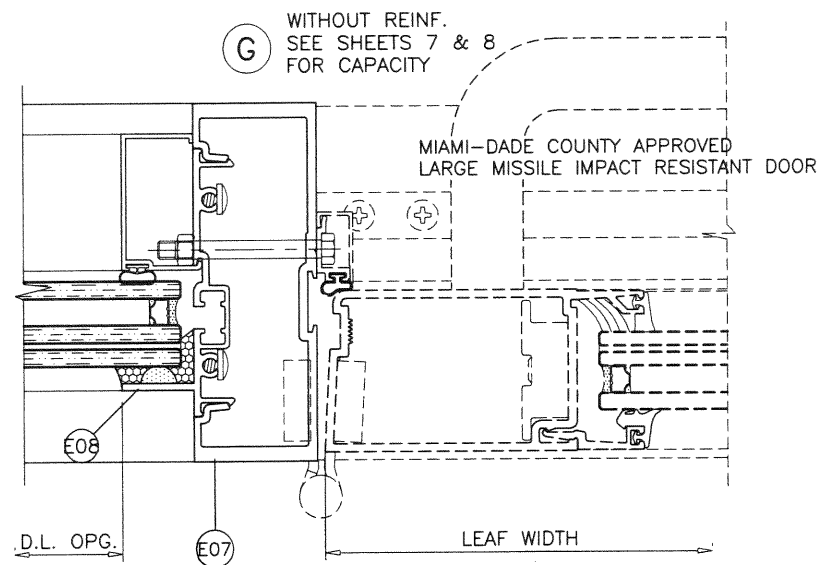
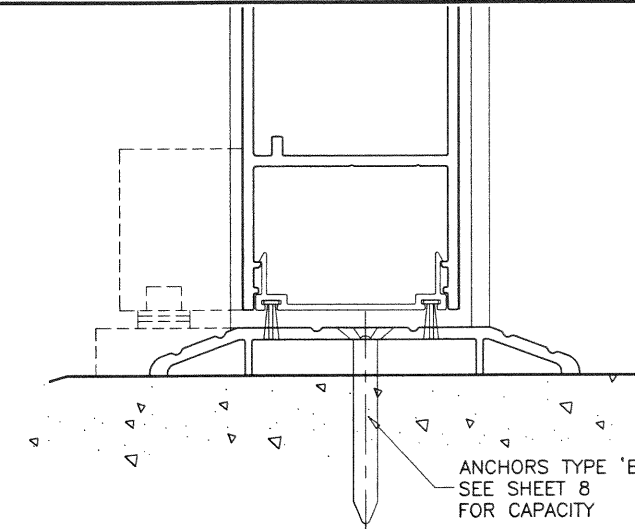
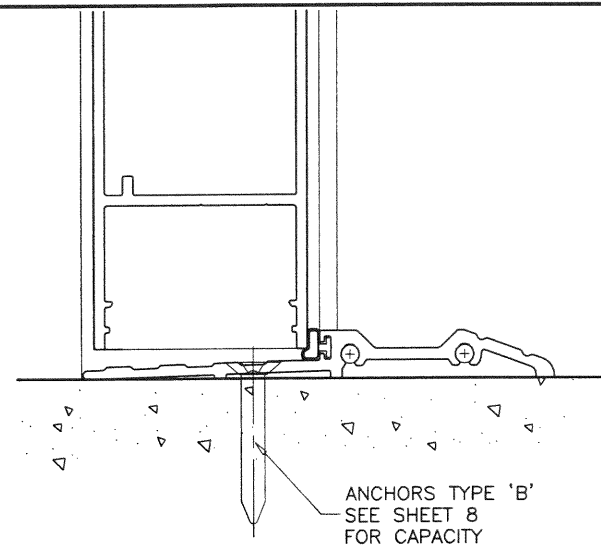
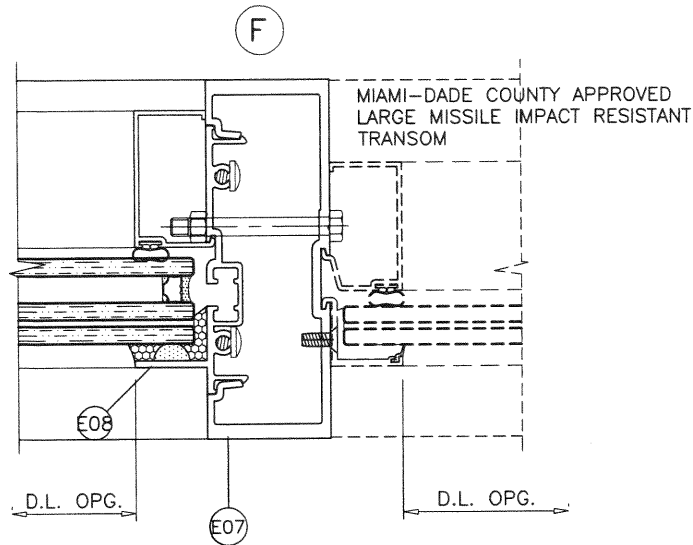
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dr. by:	TARIO
chk. by:	

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sheet	10 of 13

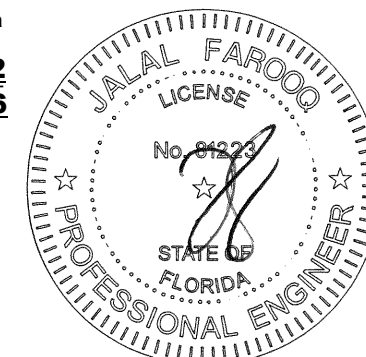
COMP-ANL W14-38ES



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

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Miami-Dade Product Control

NOV 18 2020



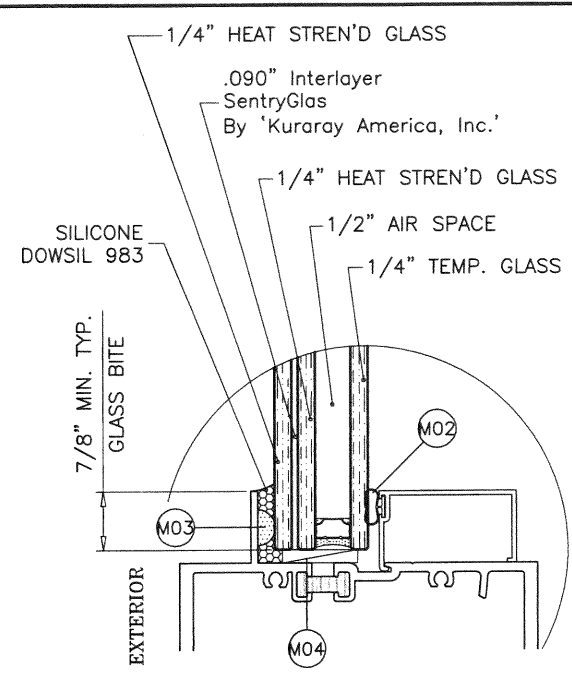
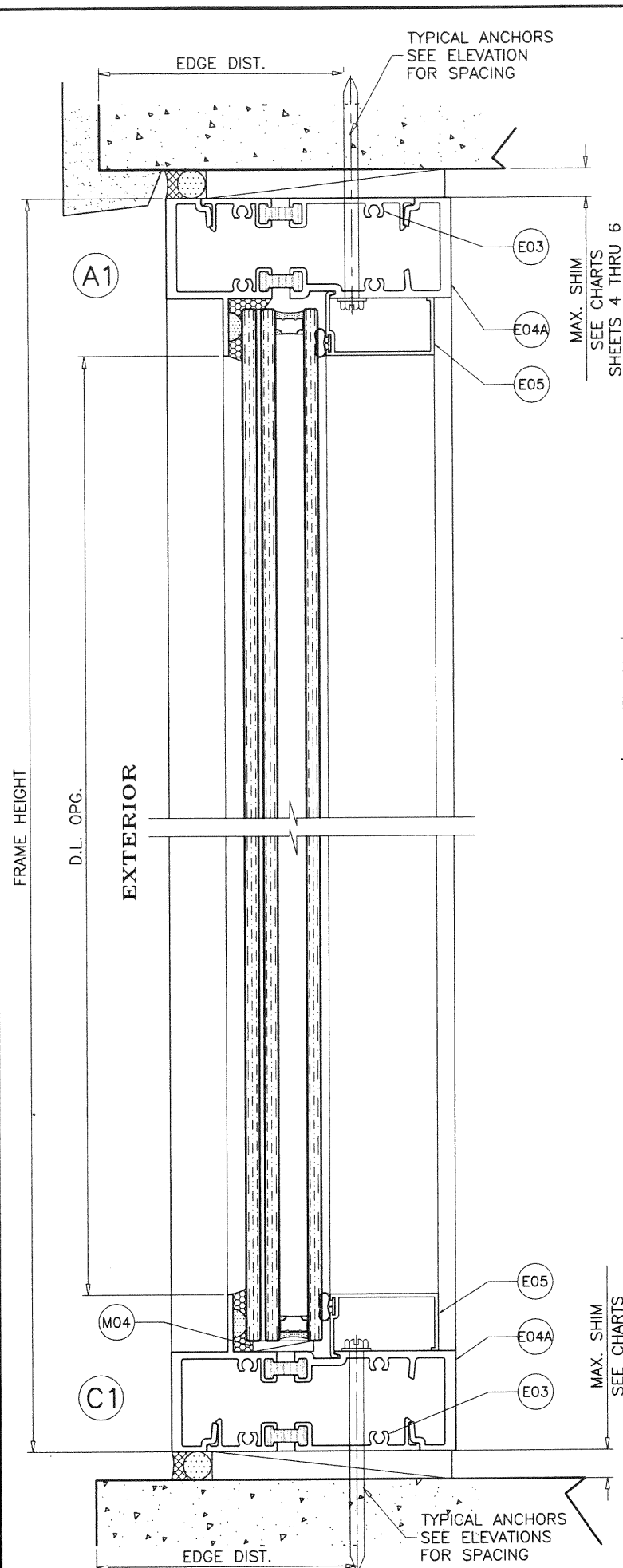
af c
AL-FAROOQ CORPORATION
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sheet 11 of 13

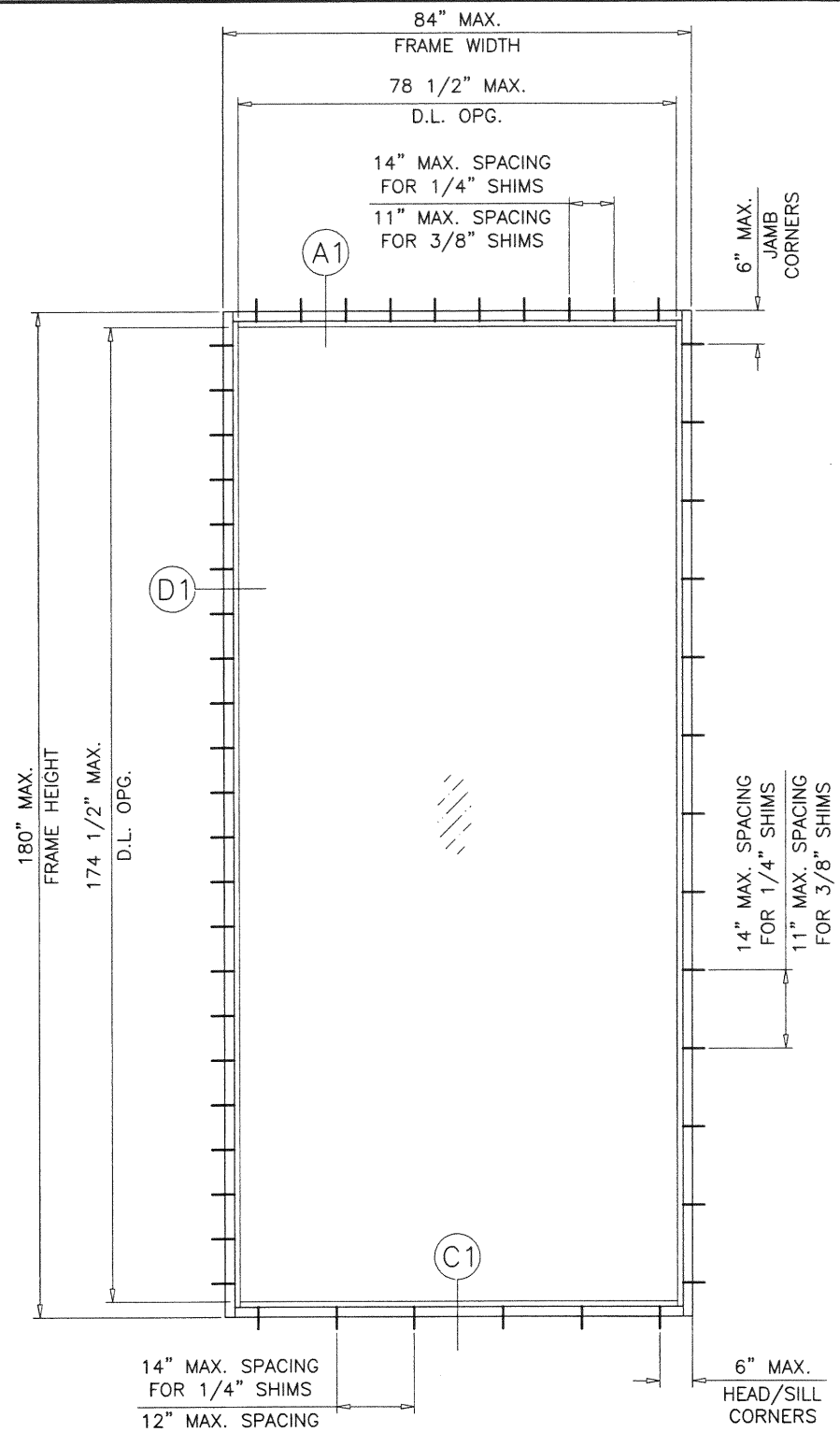
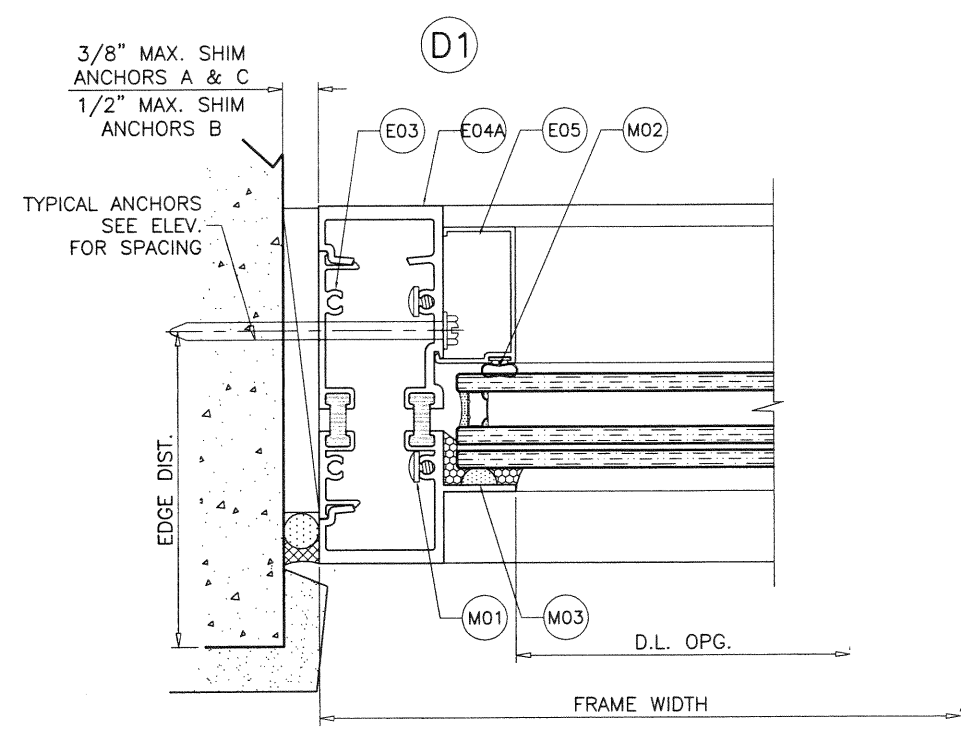


GLASS TYPE 'GL3'
1-5/16" OVERALL INSUL. LAM. GLASS

1/2" AIR SPACE CONSISTING OF:
SPACER:
 'HELIMA' LOW PROFILE ALUMINUM SPACER
 BY 'LINGERMANN GMBH'
 AROUND THE PERIMETER OF THE GLASS.
PERIMETER SEALANT:
 SILICONE
 DOWSIL 791
 GE 2000

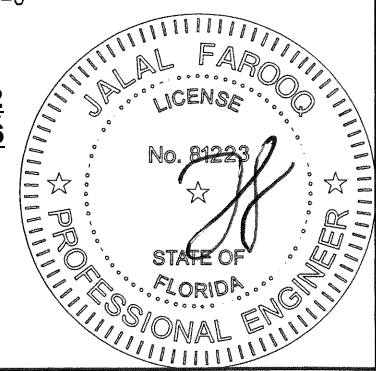
**MAXIMUM DESIGN LOAD RATING = + 70.0 PSF
- 70.0 PSF**
 (FOR SINGLE UNITS SHOWN IN THIS SHEET OR SMALLER)

THESE FRAMES CAN BE USED AT ALL SUBSTRATES SHOWN ON SHEETS 9 AND 10.



**TYPICAL ELEVATION
SINGLE (O) PANEL**
Scale: 3/8"=1'-0"

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 Miami-Dade Product Control
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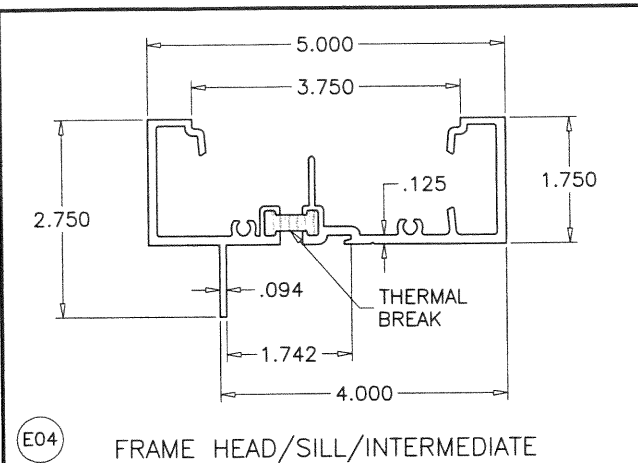
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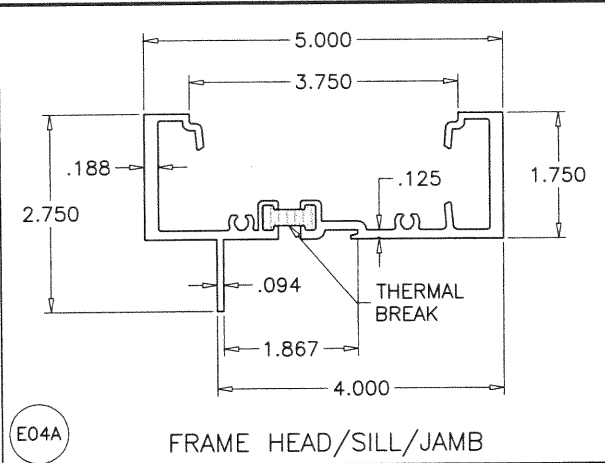
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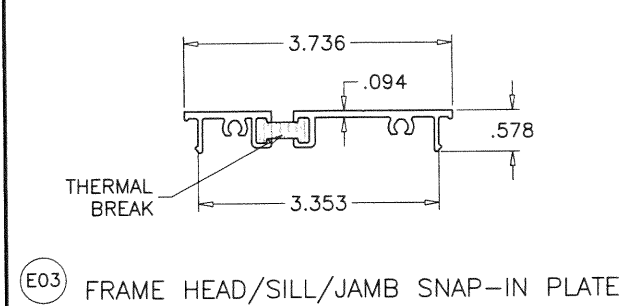
drawing no.
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 sheet 11.1 of 13



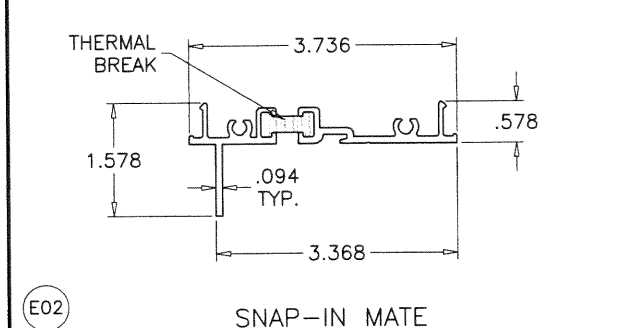
E04 FRAME HEAD/SILL/INTERMEDIATE



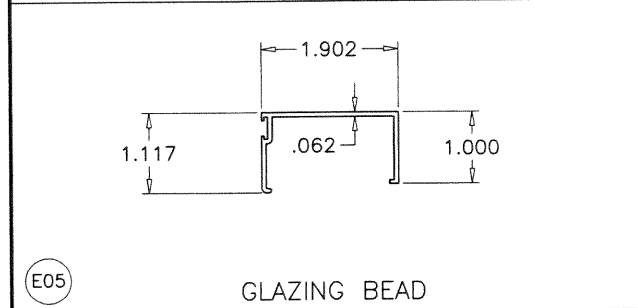
E04A FRAME HEAD/SILL/JAMB



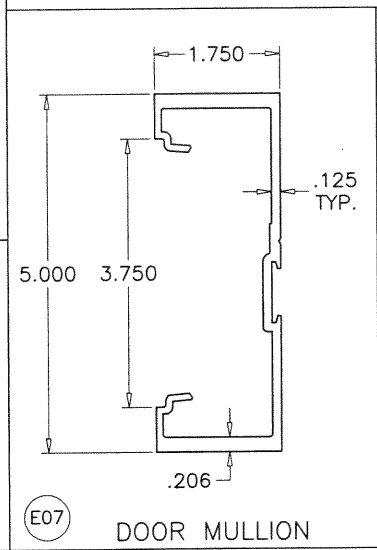
E03 FRAME HEAD/SILL/JAMB SNAP-IN PLATE



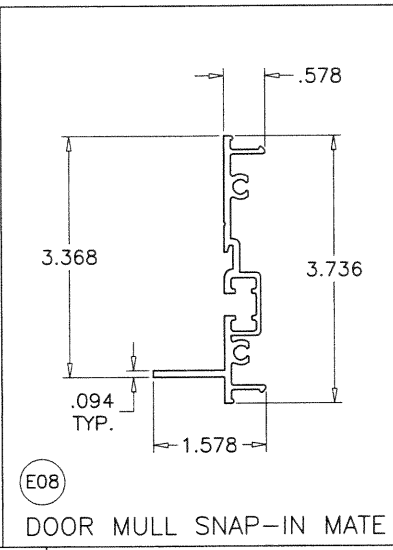
E02 SNAP-IN MATE



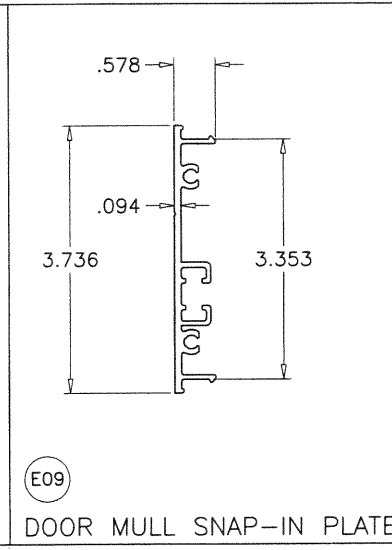
E05 GLAZING BEAD



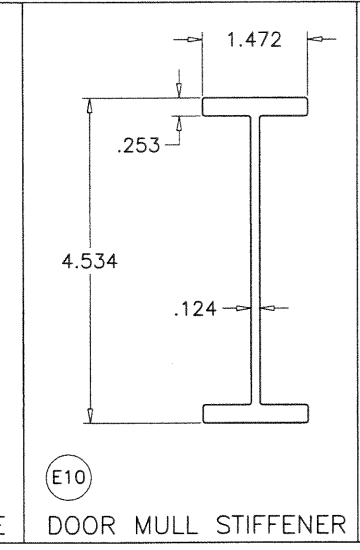
E07 DOOR MULLION



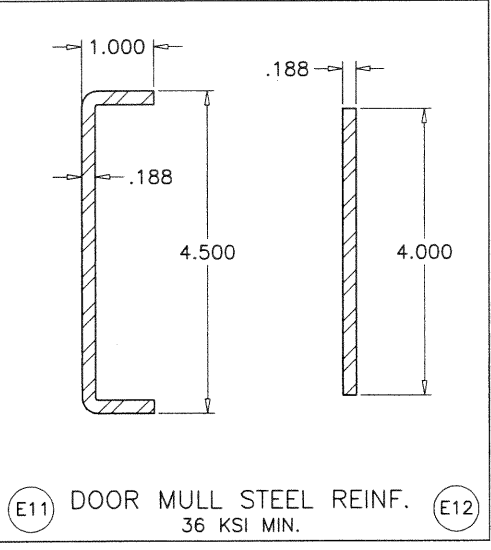
E08 DOOR MULL SNAP-IN MATE



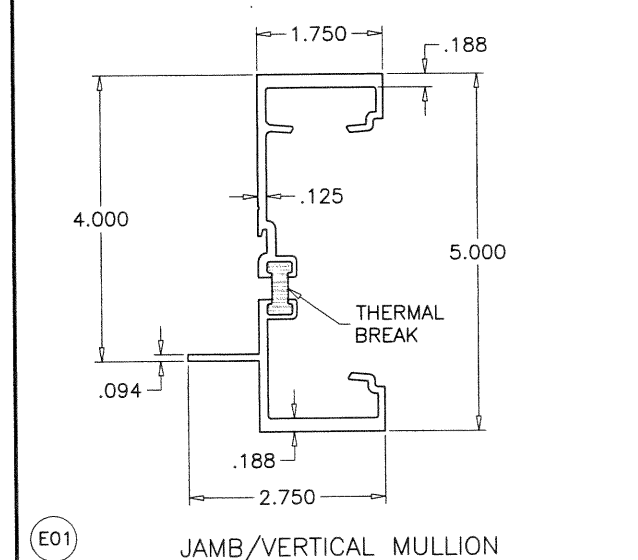
E09 DOOR MULL SNAP-IN PLATE



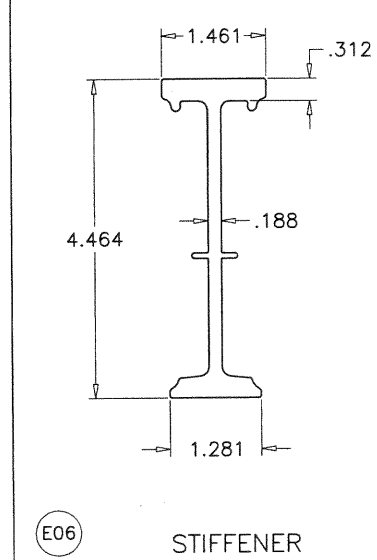
E10 DOOR MULL STIFFENER



E11 DOOR MULL STEEL REINF. 36 KSI MIN. E12



E01 JAMB/VERTICAL MULLION

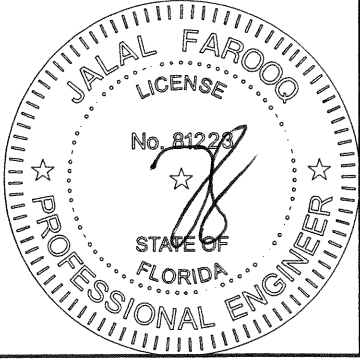


E06 STIFFENER

ITEM #	PART #	REQ'D	DESCRIPTION	MATERIAL	MANF. / SUPPLIER / REMARKS
E01	ES-8000T-001	AS REQD.	JAMB AND VERTICAL MULLION	6005-T5	-
E02	ES-8000T-002	AS REQD.	SNAP-IN MATE	6005-T5	-
E03	ES-8000T-003	AS REQD.	HEAD/SILL/JAMB SNAP-IN PLATE	6005-T5	-
E04	ES-8000T-004	AS REQD.	FRAME HEAD/SILL/INTERMEDIATE	6005-T5	-
E04A	ES-8000T-007	AS REQD.	FRAME HEAD/SILL/JAMB (GLASS TYPE GL3)	6005-T5	-
E05	ES-8000T-005	AS REQD.	GLAZING BEAD	6063-T5	-
E06	ES-8000T-006	AS REQD.	STIFFENER	6005-T5	-
E07	-	AS REQD.	DOOR MULLION	6005-T5	-
E08	ES-8000T-002	AS REQD.	DOOR MULLION SNAP-IN MATE	6005-T5	-
E09	ES-8000T-003	AS REQD.	DOOR MULL SNAP-IN PLATE	6005-T5	-
E10	-	AS REQD.	DOOR MULLION STIFFENER	6005-T5	-
E11	-	AS REQD.	DOOR MULLION REINFORCING CHANNEL	STEEL	-
E12	-	AS REQD.	DOOR MULLION REINFORCING BAR	STEEL	-
M01	#12 X 1-1/2"	AS REQD.	ASSEMBLY FASTENERS	ST. STEEL	PH SMS
M02	ES-8010	AS REQD.	INTERIOR GLAZING GASKET	EPDM	DUROMETER 60±5 SHORE A
M03	ES-8011A	AS REQD.	1/4" GLASS SPACER	SILICONE	DUROMETER 85±5 SHORE A
M04	ES-7530-B01A	2/ LITE	SETTING BLOCKS AT 1/4 POINTS	EPDM	DUROMETER 80±5 SHORE A
M05	1/4" X 2-1/8"	AS REQD.	MULLION FASTENERS	ST. STEEL	BOLT WITH NUT

THERMAL BREAK:
FRAME MEMBERS FILLED AND DEBRIDGED USING
'BAYDUR TB 100-30' MANUFACTURED BY
'BAYER MATERIALSCIENCE, LLC.

PRODUCT REVISED
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Miami-Dade Product Control
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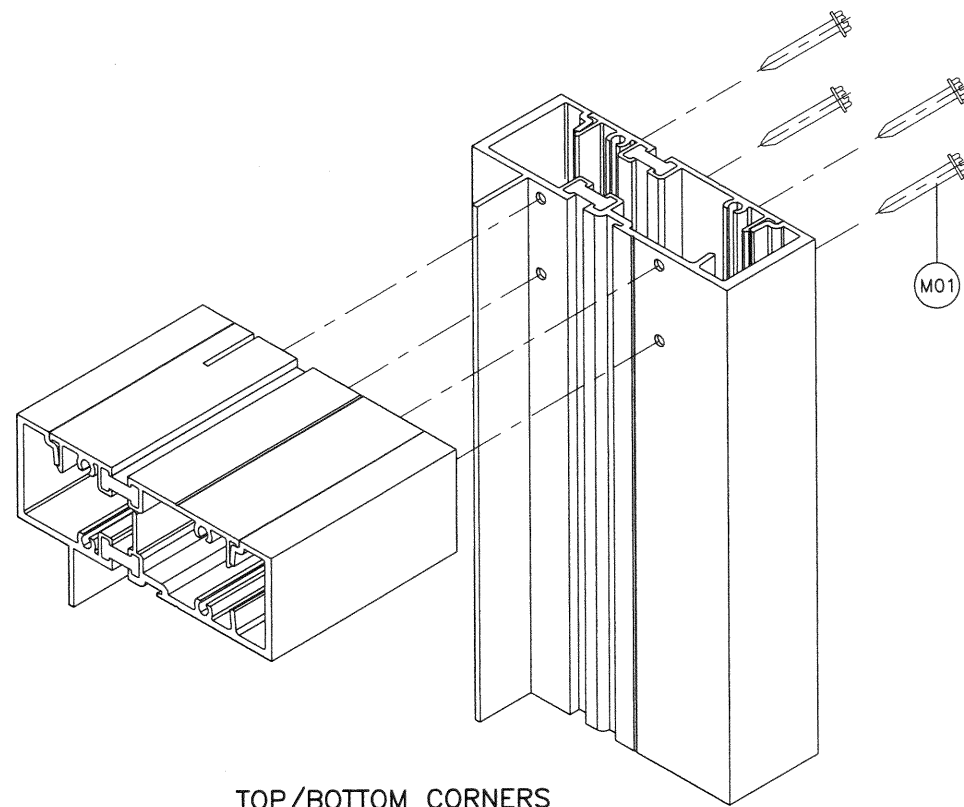
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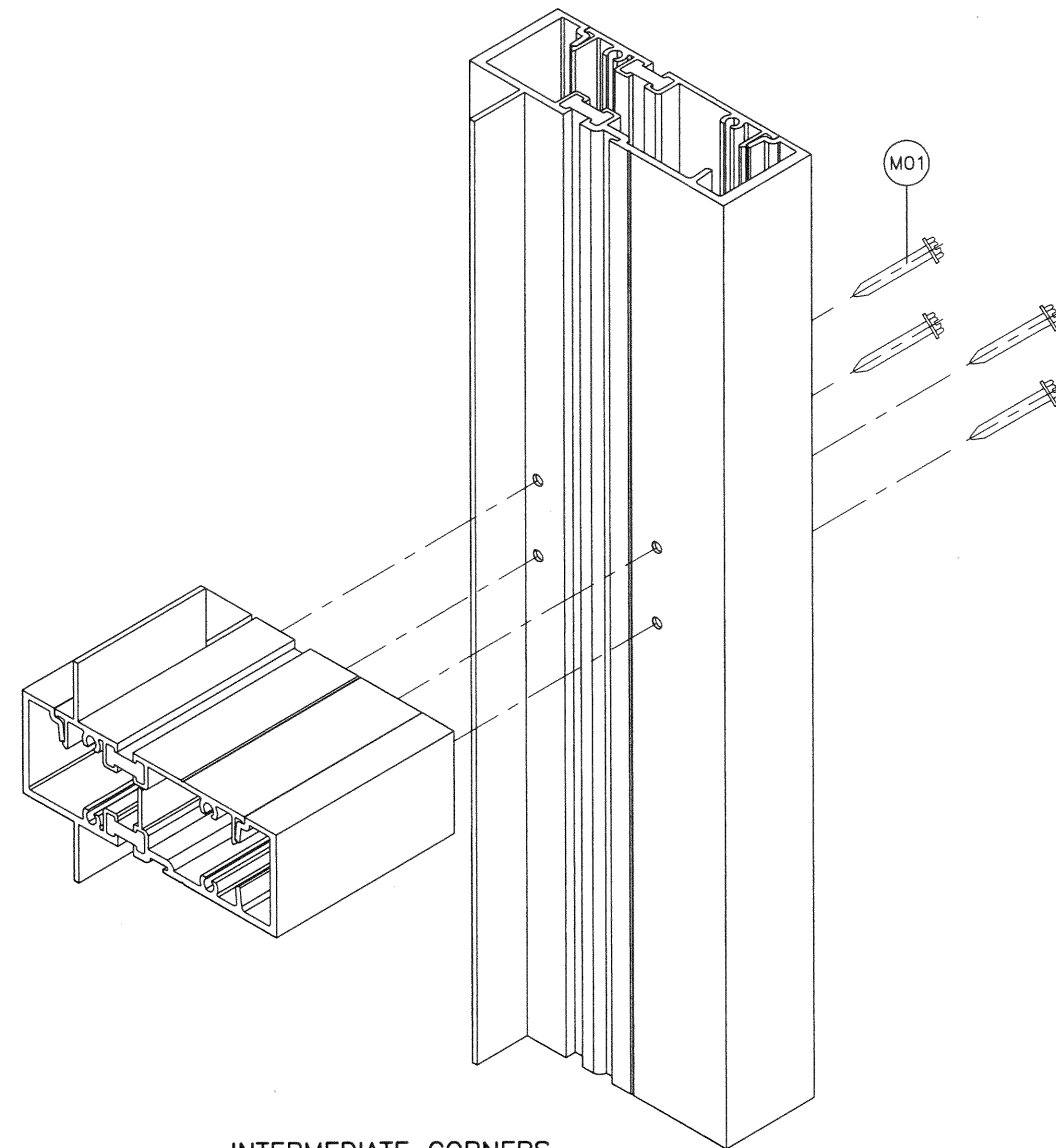
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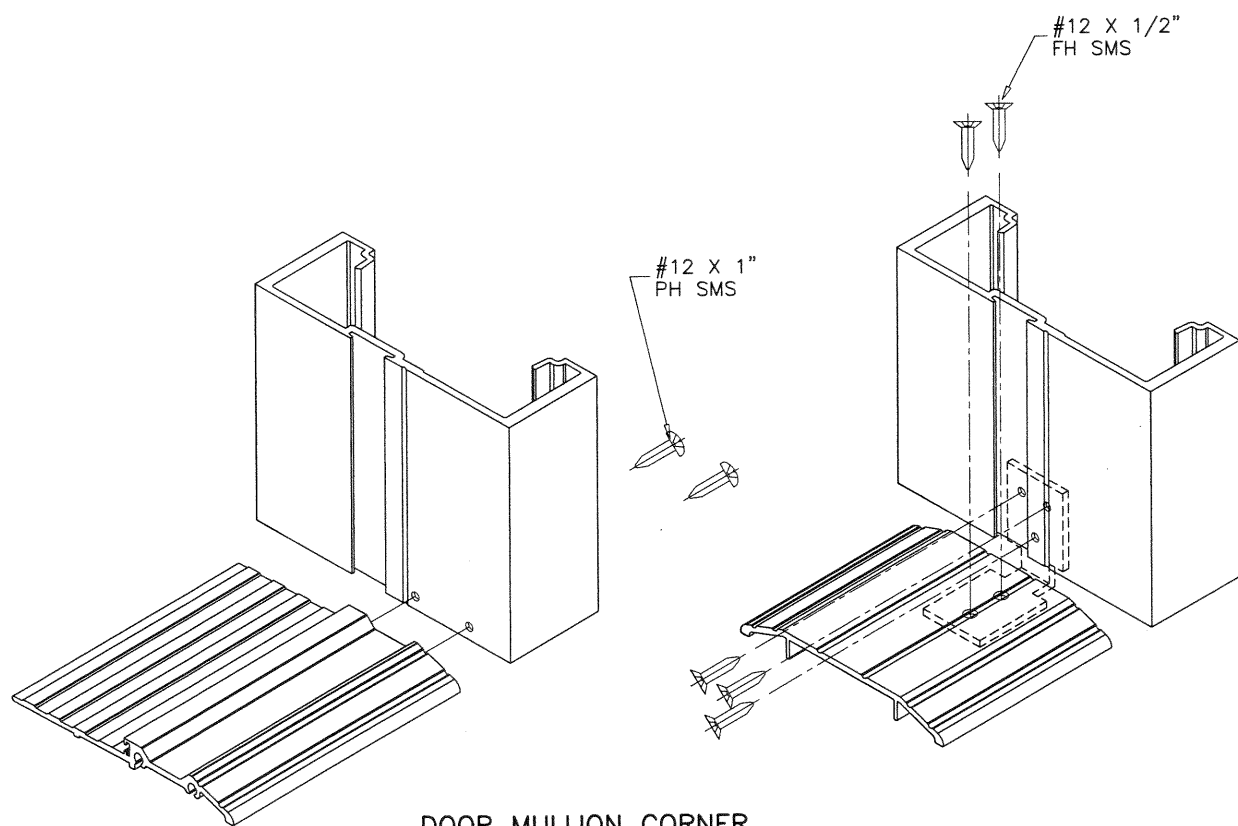
COMP-ANL W14-38ES



TOP/BOTTOM CORNERS



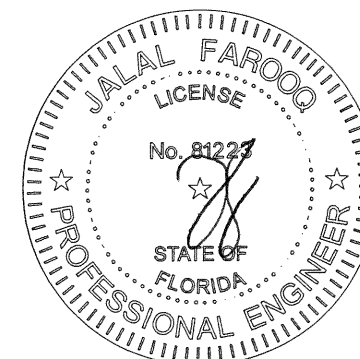
INTERMEDIATE CORNERS



DOOR MULLION CORNER

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

ES-8000T ALUM WINDOW WALL SYSTEM (L.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	08.22.17		GENERAL REVISION
D	04.05.18		NO CHANGE THIS SHEET
E	02.20.19		JAMB/MULLION REV.
F	11.12.20		UPDATED TO 2020 FBC

date:	10-01-14
scale:	3/8" = 1"
dr. by:	TARIO
chk. by:	

drawing no.
W14-38

sheet 13 of 13

COMP-ANL\W14-38ES