



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/economy](http://www.miamidade.gov/economy)

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

**NOTICE OF ACCEPTANCE (NOA)**

**Enviralum Industries, Inc.**  
 5100 NW 72<sup>nd</sup> Avenue, Bldg. C  
 Miami, FL 33166

**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 "ENV-450" Aluminum Window Wall System – L.M.I.**

**APPROVAL DOCUMENT:** Drawing No. **W12-29**, titled "Series ENV-450 Alum Window Wall Sys. (L.M.I.)", sheets 1 through 12 of 12, dated 06/04/12, with revision B dated 09/24/12, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, 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, city, state, 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 supersedes** NOA# 12-0702.01 and consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

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



*MP*  
 10/18/12

NOA No. 12-1003.01  
 Expiration Date: September 06, 2017  
 Approval Date: October 25, 2012  
 Page 1

**Enviralum Industries, Inc.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. Manufacturer's die drawings and sections.
2. Drawing No. **W12-29**, titled "Series ENV-450 Alum. Window Wall Sys. (L.M.I.)" sheets 1 through 12 of 12, dated 06/04/12, with revision B dated 09/24/12, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

**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 Test per ANSI Z97.1-2009along with marked-up drawings and installation diagram of an aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-6678**, dated 03/20/12, and addendum letter dated 08/23/12, all signed and sealed by Marlin D. Brinson, P.E.  
*(Submitted under previous NOA# 12-0702.01)*

**C. CALCULATIONS**

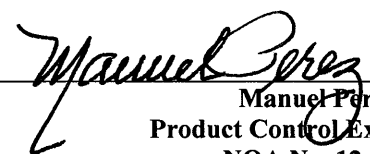
1. Anchor verification calculations and structural analysis, complying with FBC-2010, prepared by Al-Farooq Corporation, dated 06/13/12, 08/30/12 and revised on 09/22/12, signed and sealed by Javad Ahmad, P.E.  
*(Partially submitted under previous NOA# 12-0702.01)*
2. Glazing complies with ASTM E1300-04

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. Notice of Acceptance No. **11-0624.02** issued to **E.I. DuPont DeNemours & Co., Inc.** for their "**DuPont SentryGlas® Interlayer**" dated 08/25/11, expiring on 01/14/17.
2. Notice of Acceptance No. **11-0624.01** issued to **E.I. DuPont DeNemours & Co., Inc.** for their "**DuPont Butacite® PVB Interlayer**" dated 09/08/11, expiring on 12/11/16.



Manuel Perez, P.E.  
Product Control Examiner  
NOA No. 12-1003.01

Expiration Date: September 06, 2017

Approval Date: October 25, 2012

**Enviralum Industries, Inc.**

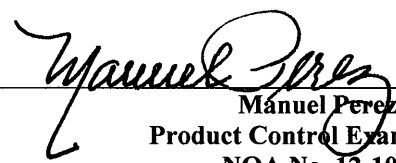
**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

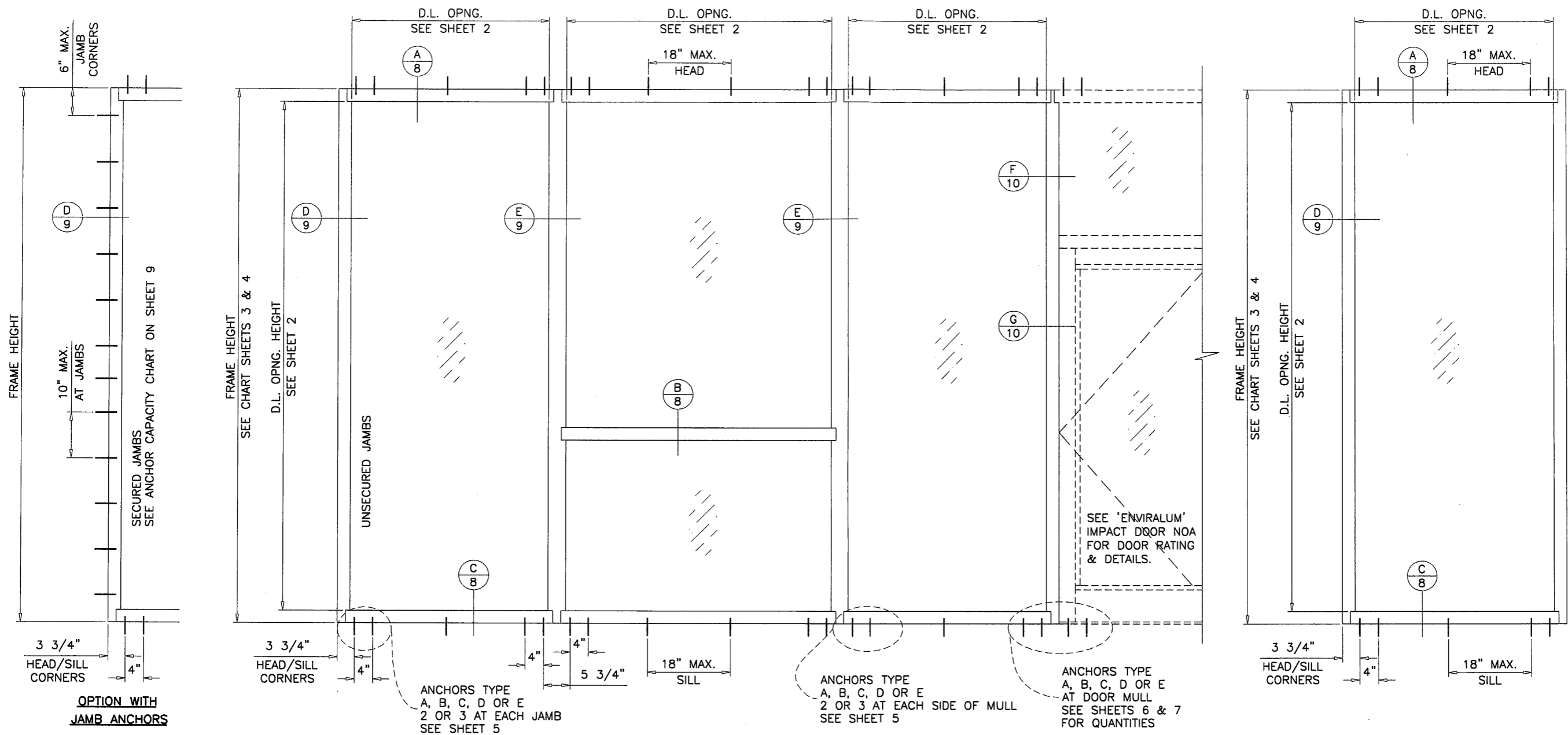
**F. STATEMENTS**

1. Statement letter of conformance, complying with FBC-2010, and of no financial interest, dated June 09, 2012, issued by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.  
*(Submitted under previous NOA# 12-0702.01)*
2. Testing Proposal No. **10-1236** issued by Product Control, dated 12/20/10, revised on 01/05/11, signed by Manuel Perez, P.E.  
*(Submitted under previous NOA# 12-0702.01)*

**G. OTHER**

1. Notice of Acceptance No. **12-0702.01**, issued to Enviralum Industries, Inc. for their Series "ENV-450" Aluminum Window Wall System – L.M.I., approved on 09/06/12 and expiring on 09/06/17.

  
\_\_\_\_\_  
Manuel Perez, P.E.  
Product Control Examiner  
NOA No. 12-1003.01  
Expiration Date: September 06, 2017  
Approval Date: October 25, 2012



**SERIES ENV-450 ALUMINUM WINDOWALL SYSTEM**

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

CODE REQUIREMENTS FOR SAFEGUARDS MUST BE OBSERVED.

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).

WOOD BUCKS BY OTHERS, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE.

ANCHORS SHALL BE AS LISTED, SPACED AS SHOWN ON DETAILS, ANCHORS EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.

ANCHORING OR LOADING CONDITIONS NOT SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.

A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.

MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE FLORIDA BLDG. CODE SECTION 2003.8.4.

**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 SHEET 3 & 4 FOR STOREFRONT MULLION AND SHEET 6 & 7 FOR DOOR MULLION. THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.
- STEP 4** USING CHART ON SHEETS 5 SELECT ANCHOR OPTION WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** THE LOWEST VALUE RESULTING FROM STEPS 2, 3 AND 4 SHALL APPLY TO ENTIRE SYSTEM.

PRODUCT COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

THIS SYSTEM IS RATED FOR LARGE & SMALL MISSILE IMPACT. SHUTTERS ARE NOT REQUIRED. WINDOW WALL FRAMES MAY BE WITH OR WITHOUT THERMAL BREAK.

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

*J.A.*  
SEP 26 2012

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-1003.01  
Expiration Date Sept. 6, 2017

By *Manuel Perez*  
Miami Dade Product Control

**afC**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL\W12-29ENV

SERIES ENV-450 ALUM WINDOWALL SYS. (L.M.I.)  
**ENVIRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

no	date	by	description
A	08.22.12		REV. PER RER COMMENTS
B	09.24.12		NO CHANGE THIS SHEET

revisions:

date: 06-04-12  
scale: 1/2"=1'-0"  
dr. by: HAMID  
chk. by:

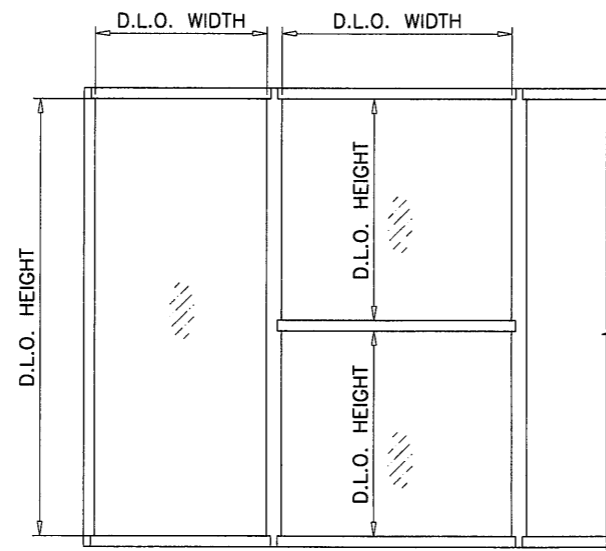
drawing no.  
**W12-29**

sheet 1 of 12

GLASS LOAD CAPACITY - PSF					
NOMINAL DIMS.		GLASS TYPES 'A' & 'A1'		GLASS TYPES 'B' & 'B1'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	78"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		90.0	90.0	100.0	131.0
54"		90.0	90.0	100.0	131.0
60"		90.0	90.0	100.0	131.0
66-1/2"		65.0	65.0	100.0	131.0
30"	84"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		90.0	90.0	100.0	131.0
54"		90.0	90.0	100.0	131.0
60"		90.0	90.0	100.0	131.0
66-1/2"		65.0	65.0	100.0	126.7
30"	90"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		90.0	90.0	100.0	131.0
54"		90.0	90.0	100.0	131.0
60"		65.0	65.0	100.0	126.0
66-1/2"		65.0	65.0	100.0	116.8
30"	96"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		90.0	90.0	100.0	131.0
54"		65.0	65.0	100.0	126.8
60"		65.0	65.0	100.0	116.4
30"	102"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		90.0	90.0	100.0	129.4
54"		65.0	65.0	100.0	118.5
60"		-	-	100.0	109.2
30"	108"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		65.0	65.0	100.0	125.6
54"		65.0	65.0	100.0	111.8
57"		-	-	100.0	106.4
30"	114"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		65.0	65.0	100.0	119.5
54"		-	-	100.0	105.6
30"	120"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		90.0	90.0	100.0	131.0
48"		65.0	65.0	100.0	114.1
51"		-	-	100.0	106.6

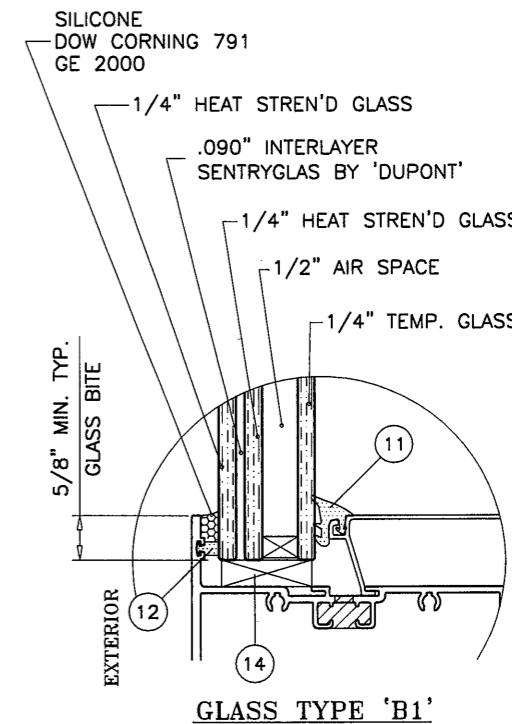
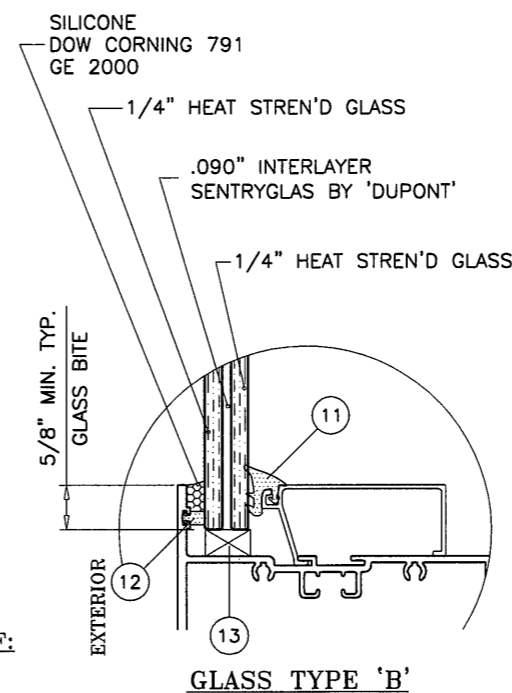
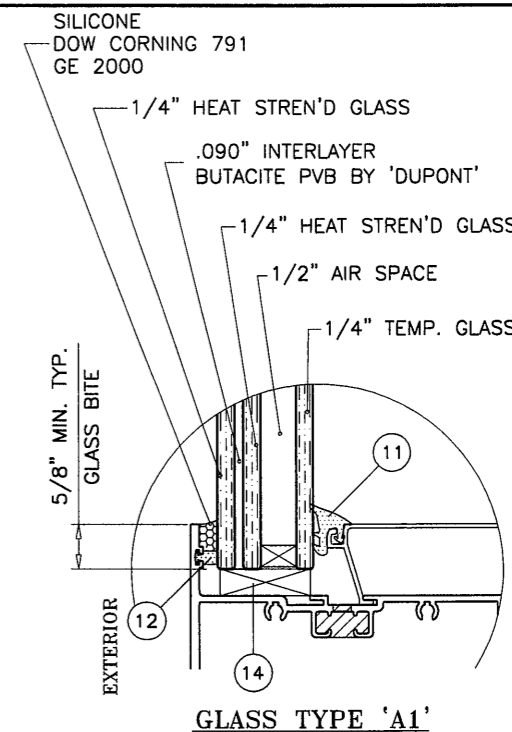
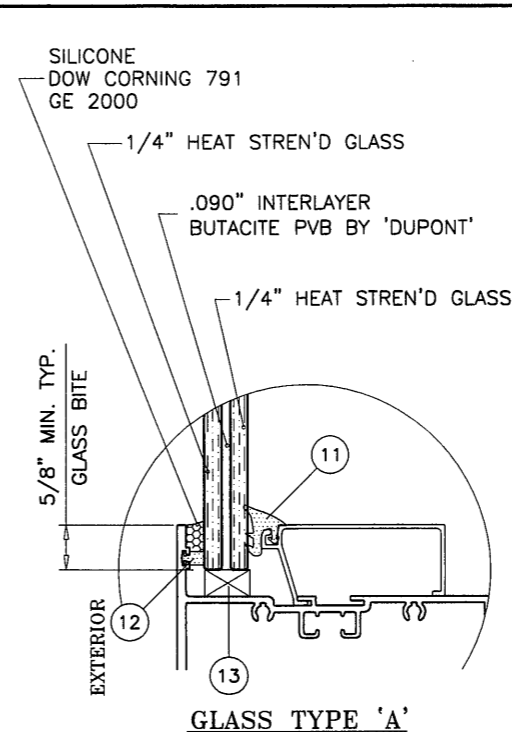
GLASS LOAD CAPACITY - PSF					
NOMINAL DIMS.		GLASS TYPES 'A' & 'A1'		GLASS TYPES 'B' & 'B1'	
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	126"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		65.0	65.0	100.0	129.7
48"		65.0	65.0	100.0	109.7
49"		-	-	100.0	107.1
30"	132"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		65.0	65.0	100.0	128.5
47"		-	-	100.0	108.9
30"	138"	90.0	90.0	100.0	131.0
36"		90.0	90.0	100.0	131.0
42"		65.0	65.0	100.0	127.2
45"		-	-	100.0	112.5
30"	144"	90.0	90.0	100.0	131.0
36"		65.0	65.0	100.0	131.0
42"		65.0	65.0	100.0	126.1
43"		-	-	100.0	120.8

NOTE:  
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.



1/2" AIR SPACE CONSISTING OF:  
SPACER:  
ALUMINUM BOX SPACER AROUND  
THE PERIMETER OF THE GLASS.  
PERIMETER SEALANT:  
SILICONE  
DOW CORNING 791  
GE 2000

NOTE:  
GLASS CAPACITIES ON THIS SHEET ARE  
BASED ON ASTM E1300-04 (3 SEC. GUSTS).



GLAZING OPTIONS

GLASS

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 12-1003.01  
Expiration Date Sept 6, 2017  
By *Manuel Perez*  
Miami Dade Product Control

SEP 26 2012

**afC**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL\W12-29ENV

SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)  
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TEL. (786) 251-0204 FAX. (305) 385-7749

no	date	description
A	08.22.12	REV. PER REF COMMENTS
B	09.24.12	GLASS CHART REVISED

revisions:

date: 06-04-12  
scale: 3/8" = 1"  
dr. by: HAMID  
chk. by:

drawing no.  
**W12-29**

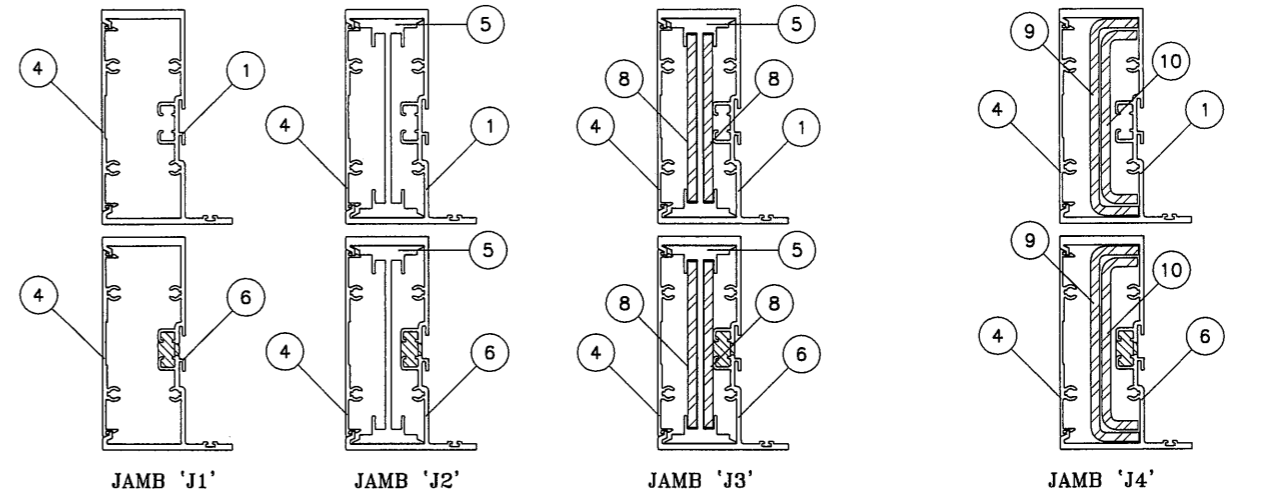
sheet 2 of 12

DESIGN LOAD CAPACITY - PSF UNSECURED JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS									
NOMINAL DIMS.		JAMB 'J1'		JAMB 'J2'		JAMB 'J3'		JAMB 'J4'	
WIDTH (W)	FRAME HEIGHT	MULLION 'M1'	MULLION 'M2'	MULL 'M3'	MULL 'M4'	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	72"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
60"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
66"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
72"	-	-	85.0	85.0	90.0	90.0	100.0	131.0	
30"	78"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
60"	-	-	85.0	85.0	90.0	90.0	100.0	131.0	
30"	84"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
60"	-	-	85.0	85.0	90.0	90.0	100.0	131.0	
30"	90"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
60"	-	-	-	-	90.0	90.0	100.0	131.0	
30"	96"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
60"	-	-	-	-	90.0	90.0	100.0	131.0	
30"	102"	-	-	85.0	85.0	90.0	90.0	100.0	131.0
36"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
42"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
48"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
54"		-	-	-	-	90.0	90.0	100.0	125.1
30"	108"	-	-	85.0	85.0	90.0	90.0	100.0	131.0
36"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
42"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
48"		-	-	85.0	85.0	90.0	90.0	100.0	121.9
54"		-	-	-	-	90.0	90.0	100.0	110.4
30"	114"	-	-	-	-	90.0	90.0	100.0	131.0
36"		-	-	-	-	90.0	90.0	100.0	131.0
42"		-	-	-	-	90.0	90.0	100.0	122.4
48"		-	-	-	-	90.0	90.0	100.0	108.6
54"		-	-	-	-	-	-	65.0	65.0
30"	120"	-	-	-	-	90.0	90.0	100.0	131.0
36"		-	-	-	-	90.0	90.0	100.0	126.9
42"		-	-	-	-	90.0	90.0	100.0	110.0
48"		-	-	-	-	87.9	87.9	97.4	97.4
54"		-	-	-	-	-	-	65.0	65.0
30"	126"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	65.0	65.0
54"		-	-	-	-	-	-	65.0	65.0
30"	132"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"	-	-	-	-	-	-	65.0	65.0	

DESIGN LOAD CAPACITY - PSF UNSECURED JAMB/MULLION WITHOUT INTERMEDIATE HORIZONTALS									
NOMINAL DIMS.		JAMB 'J1'		JAMB 'J2'		JAMB 'J3'		JAMB 'J4'	
WIDTH (W)	FRAME HEIGHT	MULLION 'M1'	MULLION 'M2'	MULL 'M3'	MULL 'M4'	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	138"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	65.0	65.0
30"	144"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	65.0	65.0

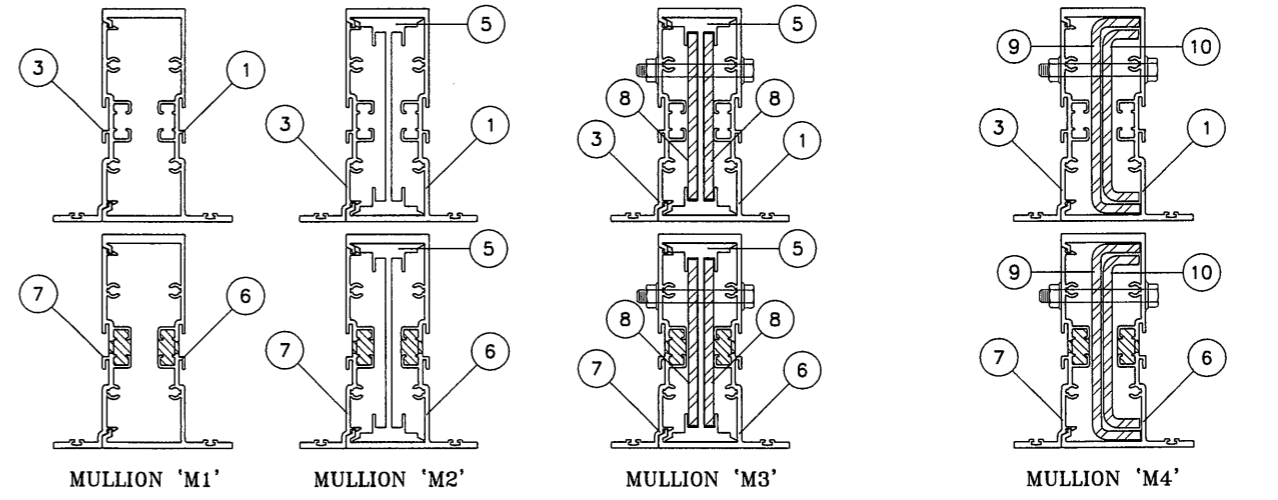
FOR SECURED JAMBS CONDITION  
SEE SHEET 9 OF 12.

UNSECURED JAMBS



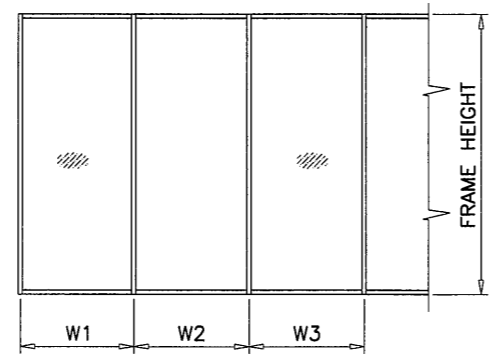
	$I_x$ IN <sup>4</sup>	$S_x$ IN <sup>3</sup>
ALUMINUM	6.2170	2.6925
STEEL	1.3650	.7746
TOTAL	10.1755	
$I_x$ ALUM + $I_x$ STL X 2.9		

	$I_x$ IN <sup>4</sup>	$S_x$ IN <sup>3</sup>
ALUMINUM	4.5110	1.9537
STEEL	3.5210	1.7072
TOTAL	14.7219	
$I_x$ ALUM + $I_x$ STL X 2.9		



	$I_x$ IN <sup>4</sup>	$S_x$ IN <sup>3</sup>
ALUMINUM	7.8700	3.2427
STEEL	1.3650	.7746
TOTAL	11.8285	
$I_x$ ALUM + $I_x$ STL X 2.9		

	$I_x$ IN <sup>4</sup>	$S_x$ IN <sup>3</sup>
ALUMINUM	5.1380	2.1170
STEEL	3.5210	1.7072
TOTAL	15.3489	
$I_x$ ALUM + $I_x$ STL X 2.9		



WIDTH (W) = W1  
AT FRAME JAMB

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

MULLIONS

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-1003.01  
Expiration Date Sept. 6, 2017

By *Manuel Perez*  
Miami/Dade Product Control

**af c**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL\W12-29ENV

SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)  
**ENVIRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

no	date	description
A	08.22.12	REV. PER RER COMMENTS
B	09.24.12	NO CHANGE THIS SHEET

revisions:

date: 06-04-12  
scale: -  
dr. by: HAMID  
chk. by:

drawing no.  
**W12-29**

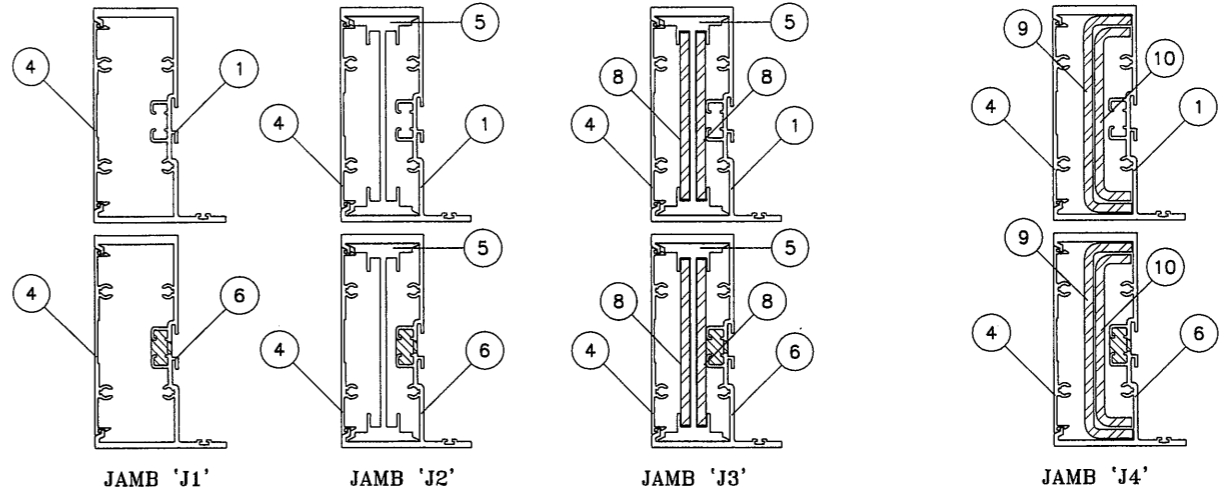
sheet 3 of 12

DESIGN LOAD CAPACITY - PSF UNSECURED JAMB/MULLION WITH INTERMEDIATE HORIZONTALS									
NOMINAL DIMS.		JAMB 'J1'		JAMB 'J2'		JAMB 'J3'		JAMB 'J4'	
WIDTH (W)	FRAME HEIGHT	MULLION 'M1'	MULLION 'M2'	MULL 'M3'	MULL 'M4'	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	72"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
60"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
66"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
72"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
30"	78"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
60"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
30"	84"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
60"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
30"	90"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
54"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
60"		-	-	-	-	90.0	90.0	100.0	131.0
30"	96"	80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
36"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
42"		80.0	80.0	85.0	85.0	90.0	90.0	100.0	131.0
48"		74.3	74.3	85.0	85.0	90.0	90.0	100.0	131.0
54"		-	-	85.0	85.0	90.0	90.0	100.0	128.3
60"		-	-	-	-	90.0	90.0	100.0	115.5
30"	102"	-	-	85.0	85.0	90.0	90.0	100.0	131.0
36"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
42"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
48"		-	-	85.0	85.0	90.0	90.0	100.0	127.9
54"		-	-	-	-	90.0	90.0	100.0	113.7
30"	108"	-	-	85.0	85.0	90.0	90.0	100.0	131.0
36"		-	-	85.0	85.0	90.0	90.0	100.0	131.0
42"		-	-	85.0	85.0	90.0	90.0	100.0	130.3
48"		-	-	85.0	85.0	90.0	90.0	100.0	114.1
54"		-	-	-	-	90.0	90.0	100.0	101.4
30"	114"	-	-	-	-	90.0	90.0	100.0	131.0
36"		-	-	-	-	90.0	90.0	100.0	131.0
42"		-	-	-	-	90.0	90.0	100.0	117.0
48"		-	-	-	-	90.0	90.0	100.0	102.4
54"		-	-	-	-	-	-	65.0	65.0
30"	120"	-	-	-	-	90.0	90.0	100.0	131.0
36"		-	-	-	-	90.0	90.0	100.0	123.2
42"		-	-	-	-	90.0	90.0	100.0	105.6
48"		-	-	-	-	83.3	83.3	92.4	92.4
54"		-	-	-	-	-	-	65.0	65.0
30"	126"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	65.0	65.0
54"		-	-	-	-	-	-	65.0	65.0
30"	132"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	65.0	65.0

DESIGN LOAD CAPACITY - PSF UNSECURED JAMB/MULLION WITH INTERMEDIATE HORIZONTALS									
NOMINAL DIMS.		JAMB 'J1'		JAMB 'J2'		JAMB 'J3'		JAMB 'J4'	
WIDTH (W)	FRAME HEIGHT	MULLION 'M1'	MULLION 'M2'	MULL 'M3'	MULL 'M4'	EXT.(+)	INT.(-)	EXT.(+)	INT.(-)
30"	138"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	65.0	65.0
30"	144"	-	-	-	-	-	-	65.0	65.0
36"		-	-	-	-	-	-	65.0	65.0
42"		-	-	-	-	-	-	65.0	65.0
48"		-	-	-	-	-	-	64.2	64.2

FOR SECURED JAMBS CONDITION  
SEE SHEET 9 OF 12.

UNSECURED JAMBS



JAMB 'J1'

Ix IN^4	Sx IN^3
4.5110	1.9537

JAMB 'J2'

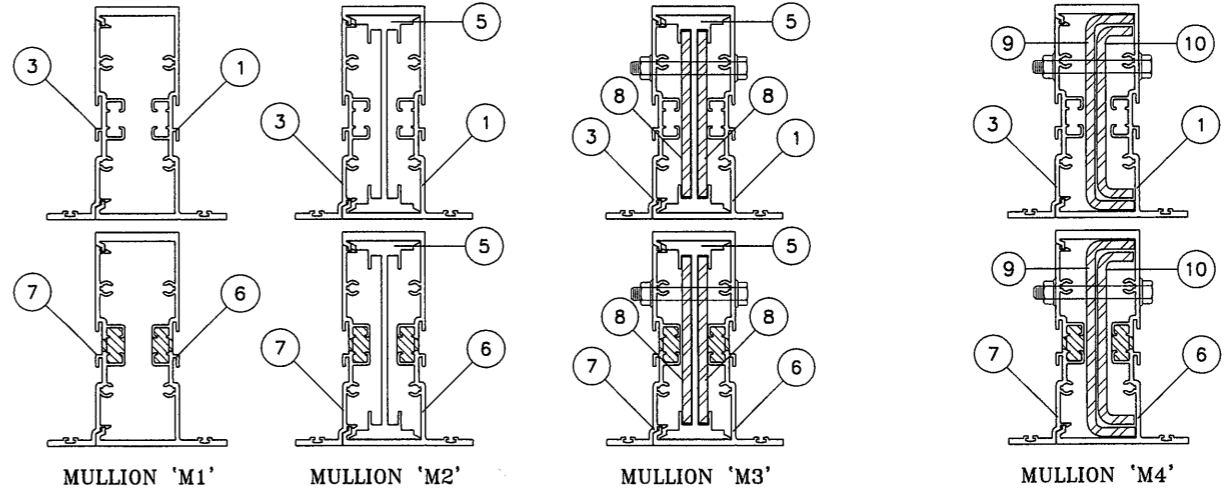
Ix IN^4	Sx IN^3
6.2170	2.6925

JAMB 'J3'

ALUMINUM	Ix IN^4	Sx IN^3
	6.2170	2.6925
STEEL	1.3650	.7746
TOTAL		
Ix ALUM + Ix STL X 2.9	10.1755	

JAMB 'J4'

ALUMINUM	Ix IN^4	Sx IN^3
	4.5110	1.9537
STEEL	3.5210	1.7072
TOTAL		
Ix ALUM + Ix STL X 2.9	14.7219	



MULLION 'M1'

Ix IN^4	Sx IN^3
5.1380	2.1170

MULLION 'M2'

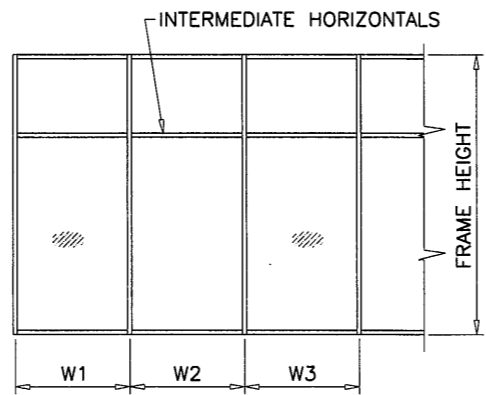
Ix IN^4	Sx IN^3
7.8700	3.2427

MULLION 'M3'

ALUMINUM	Ix IN^4	Sx IN^3
	7.8700	3.2427
STEEL	1.3650	.7746
TOTAL		
Ix ALUM + Ix STL X 2.9	11.8285	

MULLION 'M4'

ALUMINUM	Ix IN^4	Sx IN^3
	5.1380	2.1170
STEEL	3.5210	1.7072
TOTAL		
Ix ALUM + Ix STL X 2.9	15.3489	



WIDTH (W) = W1  
AT FRAME JAMB

WIDTH (W) = (W2 + W3) / 2  
AT FRAME MULLION

MULLIONS

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

SEP 26 2012

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-1003-01  
Expiration Date SEP 6, 2017

By *Maurice Rose*  
Miami/Dade Product Control

**afC**

**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 262-6978  
COMP-ANL\W12-29ENV

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SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)

**ENVIRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

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no	date	description
A	08.22.12	REV. PER RER COMMENTS
B	09.24.12	NO CHANGE THIS SHEET

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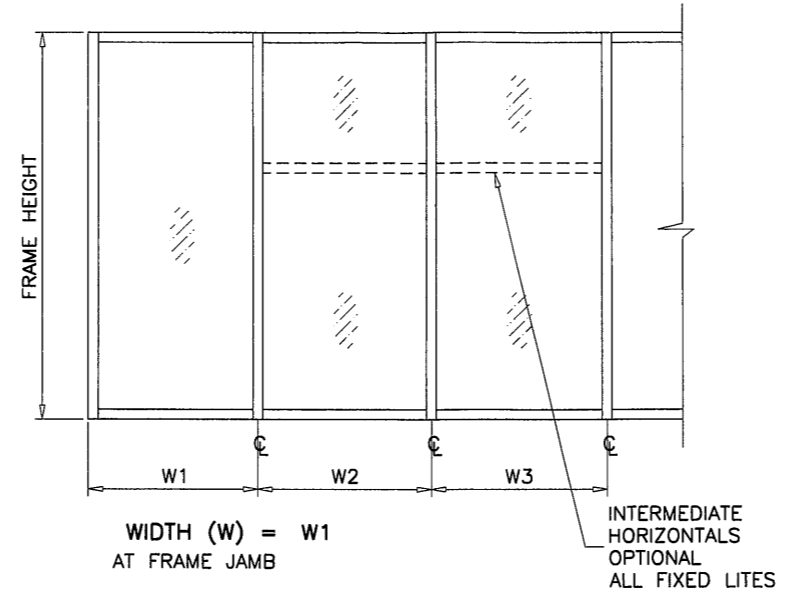
date: 06-04-12	scale: -	dr. by: HAMID	chk. by:
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drawing no. **W12-29**  
sheet 4 of 12

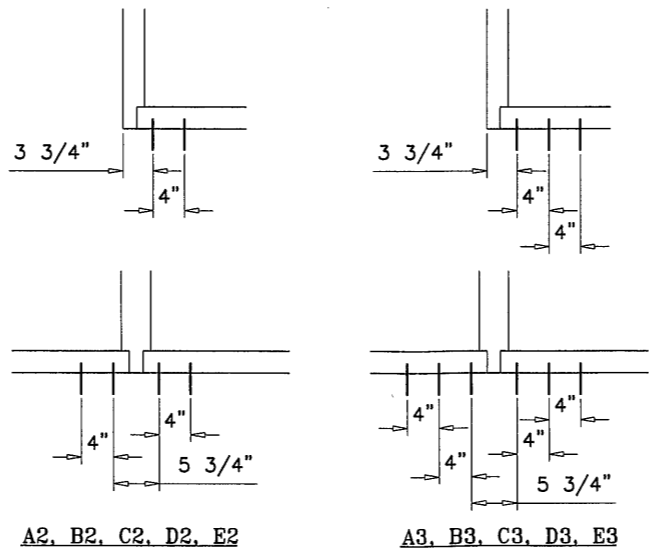
ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS.		ANCHORS 'A' & 'B'		ANCHORS TYPE 'C'		ANCHORS TYPE 'D'		ANCHORS TYPE 'E'	
WIDTH (W)	FRAME HEIGHT	A2/B2	A3/B3	C2	C3	D2	D3	E2	E3
30"	72"	114.3	131.0	131.0	131.0	131.0	131.0	131.0	131.0
36"		95.2	131.0	128.0	131.0	131.0	131.0	110.7	131.0
42"		81.6	122.5	109.7	131.0	131.0	131.0	94.9	131.0
48"		71.4	107.2	96.0	131.0	131.0	131.0	83.0	124.5
54"		63.5	95.3	85.3	128.0	117.9	131.0	73.8	110.7
60"		57.1	85.7	76.8	115.2	106.1	131.0	66.4	99.6
66"		51.9	77.9	69.8	104.7	96.4	131.0	60.4	90.5
72"		47.6	71.4	64.0	96.0	88.4	131.0	55.3	83.0
30"	78"	105.5	131.0	131.0	131.0	131.0	131.0	122.6	131.0
36"		87.9	131.0	118.2	131.0	131.0	131.0	102.2	131.0
42"		75.3	113.1	101.3	131.0	131.0	131.0	87.6	131.0
48"		65.9	98.9	88.6	131.0	122.4	131.0	76.6	114.9
54"		58.6	87.9	78.8	118.2	108.8	131.0	68.1	102.2
60"		52.7	79.1	70.9	106.3	97.9	131.0	61.3	91.9
30"	84"	97.9	131.0	131.0	131.0	131.0	131.0	113.8	131.0
36"		81.6	122.5	109.7	131.0	131.0	131.0	94.9	131.0
42"		70.0	105.0	94.0	131.0	129.9	131.0	81.3	122.0
48"		61.2	91.9	82.3	123.4	113.6	131.0	71.1	106.7
54"		54.4	81.7	73.1	109.7	101.0	131.0	63.2	94.9
60"		49.0	73.5	65.8	98.7	90.9	131.0	56.9	85.4
30"	90"	91.4	131.0	122.9	131.0	131.0	131.0	106.2	131.0
36"		76.2	114.3	102.4	131.0	131.0	131.0	88.5	131.0
42"		65.3	98.0	87.8	131.0	121.2	131.0	75.9	113.8
48"		57.1	85.7	76.8	115.2	106.1	131.0	66.4	99.6
54"		50.8	76.2	68.3	102.4	94.3	131.0	59.0	88.5
60"		45.7	68.6	61.4	92.2	84.9	127.3	53.1	79.7
30"	96"	85.7	128.6	115.2	131.0	131.0	131.0	99.6	131.0
36"		71.4	107.2	96.0	131.0	131.0	131.0	83.0	124.5
42"		61.2	91.9	82.3	123.4	113.6	131.0	71.1	106.7
48"		53.6	80.4	72.0	108.0	99.4	131.0	62.3	93.4
54"		47.6	71.4	64.0	96.0	88.4	131.0	55.3	83.0
60"		42.9	64.3	57.6	86.4	79.6	119.3	49.8	74.7
30"	102"	80.7	121.0	108.4	131.0	131.0	131.0	93.7	131.0
36"		67.2	100.9	90.4	131.0	124.8	131.0	78.1	117.2
42"		57.6	86.5	77.4	116.2	107.0	131.0	67.0	100.4
48"		50.4	75.6	67.8	101.6	93.6	131.0	58.6	87.9
54"		44.8	67.2	60.2	90.4	83.2	124.8	52.1	78.1
60"		40.3	60.5	54.2	81.3	74.9	112.3	46.9	70.3
30"	108"	76.2	114.3	102.4	131.0	131.0	131.0	88.5	131.0
36"		63.5	95.3	85.3	128.0	117.9	131.0	73.8	110.7
42"		54.4	81.7	73.1	109.7	101.0	131.0	63.2	94.9
48"		47.6	71.4	64.0	96.0	88.4	131.0	55.3	83.0
54"		42.3	63.5	56.9	85.3	78.6	117.8	49.2	73.8
60"		38.1	57.2	51.2	76.8	70.7	106.0	44.3	66.4
30"	114"	72.2	108.3	97.0	131.0	131.0	131.0	83.9	125.8
36"		60.1	90.2	80.8	121.3	111.6	131.0	69.9	104.8
42"		51.5	77.4	69.3	103.9	95.7	131.0	59.9	89.9
48"		45.1	67.7	60.6	90.9	83.7	125.6	52.4	78.6
54"		40.1	60.2	53.9	80.8	74.4	111.6	46.6	69.9
60"		36.1	54.1	48.5	72.8	67.0	100.5	41.9	62.9
30"	120"	68.6	102.9	92.2	131.0	127.3	131.0	79.7	119.5
36"		57.1	85.7	76.8	115.2	106.1	131.0	66.4	99.6
42"		49.0	73.5	65.8	98.7	90.9	131.0	56.9	85.4
48"		42.9	64.3	57.6	86.4	79.6	119.3	49.8	74.7
54"		38.1	57.2	51.2	76.8	70.7	106.0	44.3	66.4
60"		33.8	51.9	46.2	70.4	64.8	100.4	40.3	60.5
30"	126"	65.3	98.0	87.8	131.0	121.2	131.0	75.9	113.8
36"		54.4	81.7	73.1	109.7	101.0	131.0	63.2	94.9
42"		46.6	70.0	62.7	94.0	86.6	129.9	54.2	81.3
48"		40.8	61.2	54.9	82.3	75.8	113.6	47.4	71.1
54"		36.3	54.4	48.8	73.1	67.3	101.0	42.2	63.2
60"		32.0	49.0	43.4	67.8	62.3	99.6	38.1	57.2
30"	132"	62.3	93.5	83.8	125.7	115.7	131.0	72.4	108.7
36"		51.9	77.9	69.8	104.7	96.4	131.0	60.4	90.5
42"		44.5	66.8	59.8	89.8	82.6	123.9	51.7	77.6
48"		39.0	58.5	52.4	78.5	72.3	108.5	45.3	67.9

ANCHOR LOAD CAPACITY - PSF EXT.(+) & INT.(-)									
NOMINAL DIMS.		ANCHORS 'A' & 'B'		ANCHORS TYPE 'C'		ANCHORS TYPE 'D'		ANCHORS TYPE 'E'	
WIDTH (W)	FRAME HEIGHT	A2/B2	A3/B3	C2	C3	D2	D3	E2	E3
30"	138"	59.6	89.5	80.1	120.2	110.7	131.0	69.3	103.9
36"		49.7	74.6	66.8	100.2	92.2	131.0	57.7	86.6
42"		42.6	63.9	57.2	85.9	79.1	118.6	49.5	74.2
48"		37.3	55.9	50.1	75.1	69.2	103.7	43.3	65.0
30"	144"	57.1	85.7	76.8	115.2	106.1	131.0	66.4	99.6
36"		47.6	71.4	64.0	96.0	88.4	131.0	55.3	83.0
42"		40.8	61.2	54.9	82.3	75.8	113.6	47.4	71.1
48"		35.7	53.6	48.0	72.0	66.3	99.4	41.5	62.3



WIDTH (W) = W1  
AT FRAME JAMB

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



- ANCHORS TYPES:**
- A2 = (2) ANCHORS TYPE 'A' AT EACH SIDE OF JAMB AND MULLION  
B2 = (2) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION  
C2 = (2) ANCHORS TYPE 'C' AT EACH SIDE OF JAMB AND MULLION  
D2 = (2) ANCHORS TYPE 'D' AT EACH SIDE OF JAMB AND MULLION  
E2 = (2) ANCHORS TYPE 'E' AT EACH SIDE OF JAMB AND MULLION
- 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  
E3 = (3) ANCHORS TYPE 'E' AT EACH SIDE OF JAMB AND MULLION

WOOD BUCKS AND METAL STRUCTURE NOT BY ENVIRALUM  
MUST SUSTAIN 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 'ELCO'** (Fu=177 KSI, Fy=155 KSI)  
INTO 2BY WOOD BUCKS OR WOOD STRUCTURES  
WITH 1-1/2" MIN. PENETRATION INTO WOOD  
THRU 1BY WOOD BUCKS INTO CONCRETE  
WITH 1-1/4" MIN. EMBED INTO CONCRETE
- TYPE 'B' - 1/4" DIA ULTRACON BY 'ELCO'** (Fu=177 KSI, Fy=155 KSI)  
DIRECTLY INTO CONCRETE OR MASONRY  
WITH 1-1/4" MIN. EMBED INTO CONC. OR MASONRY
- ANCHOR EDGE DISTANCES**  
INTO CONCRETE AND MASONRY = 2-1/2" MIN.  
INTO WOOD STRUCTURE = 1" MIN.
- TYPE 'C' - 5/16" DIA ULTRACON BY 'ELCO'** (Fu=177 KSI, Fy=155 KSI)  
INTO WOOD STRUCTURES  
WITH 1-7/8" MIN. PENETRATION INTO WOOD  
THRU 1BY OR 2BY WOOD BUCKS INTO CONCRETE  
WITH 1-1/4" MIN. EMBED INTO CONCRETE
- TYPE 'D' - 5/16" DIA ULTRACON BY 'ELCO'** (Fu=177 KSI, Fy=155 KSI)  
DIRECTLY INTO CONCRETE OR MASONRY  
WITH 1-1/4" MIN. EMBED INTO CONC. OR MASONRY
- ANCHOR EDGE DISTANCES**  
INTO CONCRETE AND MASONRY = 3" MIN.  
INTO WOOD STRUCTURE = 1-1/4" MIN.
- TYPE 'E' - #14 SELF DRILLING SCREWS ST/ST** (GRADE 5 CRS)  
INTO METAL STRUCTURES  
STEEL : 12 GA. MIN. (Fy = 36 KSI MIN.)  
ALUMINUM : 1/8" THK. MIN. (6063-T5 MIN.)  
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)
- ANCHOR EDGE DISTANCES**  
INTO METAL STRUCTURE = 1/2" MIN.

CONCRETE AT HEAD, SILL OR JAMBS f'c = 3000 PSI MIN.  
C-90 HOLLOW/FILLED BLOCK AT JAMBS f'm = 2000 PSI MIN.

ANCHORS

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

SEP 26 2012

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-1003.01  
Expiration Date Sep 26, 2017

By *Manuel Perez*  
Miami Dade Product Control

**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL W12-29ENV

SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)  
**ENVIRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

no.	date	description
A	08.22.12	NO CHANGE THIS SHEET
B	09.24.12	NO CHANGE THIS SHEET

revisions:

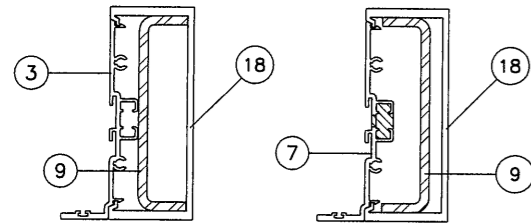
date: 06-04-12  
scale: -  
dr. by: HAMID  
chk. by:

drawing no.  
**W12-29**

sheet 5 of 12



DOOR MULLION LOAD CAPACITY			
NOMINAL DIMS.		WITH REINF.	
WIDTH (W)	FRAME HEIGHT	EXT.(+)	INT.(-)
40-3/4"	102"	75.0	75.0
43-3/4"		75.0	75.0
46-3/4"		75.0	75.0
49-3/4"		75.0	75.0
52-3/4"		75.0	75.0
55-3/4"		75.0	75.0
40-3/4"	108"	75.0	75.0
43-3/4"		75.0	75.0
46-3/4"		75.0	75.0
49-3/4"		75.0	75.0
52-3/4"		75.0	75.0
40-3/4"	114"	75.0	75.0
43-3/4"		75.0	75.0
46-3/4"		75.0	75.0
49-3/4"		75.0	75.0
40-3/4"	120"	75.0	75.0
43-3/4"		75.0	75.0
46-3/4"		72.2	72.2
49-3/4"		67.9	67.9

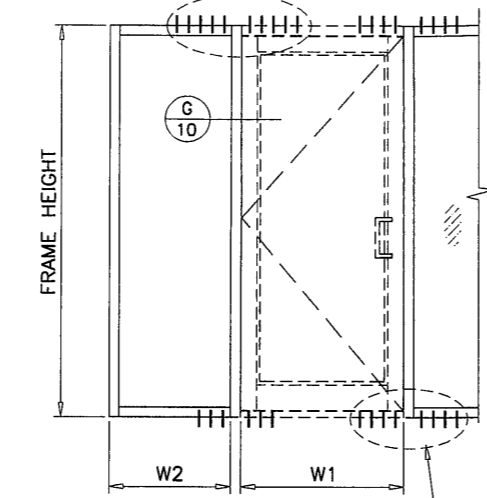


DOOR MULLION WITH REINF.

	Ix IN <sup>4</sup>	Sx IN <sup>3</sup>
ALUMINUM	5.0950	2.0993
STEEL	2.2740	1.1025
TOTAL Ix ALUM + Ix STL X 2.9	11.6896	

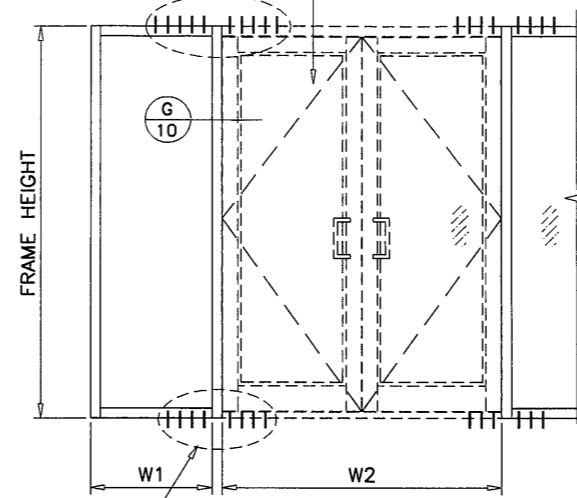
ANCHOR TYPES	TOTAL NO. OF ANCHORS AT DOOR MULLION HEAD
A	10
B	8
C	8
D	8
E	8

ANCHOR TYPES	TOTAL NO. OF ANCHORS AT DOOR MULLION HEAD
A	10
B	8
C	8
D	8
E	8

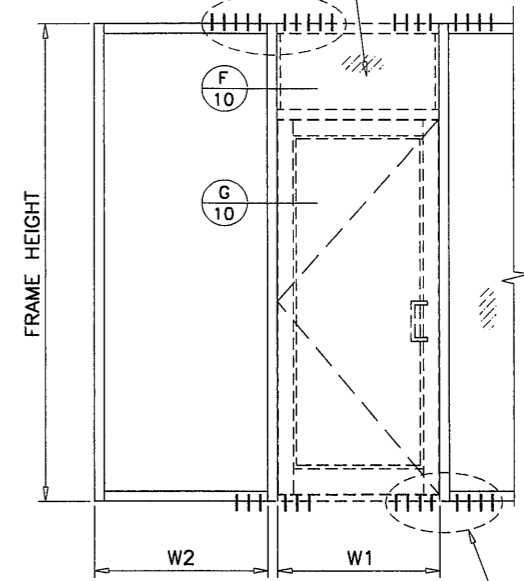


$$\text{WIDTH (W)} = \frac{W1 + W2}{2} + 1.750$$

ANCHOR TYPES	TOTAL NO. OF ANCHORS AT DOOR MULLION BOTTOM
B	8
D	6



$$\text{WIDTH (W)} = \frac{W1}{2} + \frac{W2}{4} + 1.750$$



$$\text{WIDTH (W)} = \frac{W1 + W2}{2} + 1.750$$

ANCHOR TYPES	TOTAL NO. OF ANCHORS AT DOOR MULLION BOTTOM
B	8
D	6

ENVIRALUM ENTRANCE DOORS SEE SEPARATE NOA

ENVIRALUM ENTRANCE DOORS SEE SEPARATE NOA

**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL W12-29ENV

SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)  
**ENVIRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

revisions:	no	date	by	description
	A	08.22.12		REV. PER PER COMMENTS
	B	09.24.12		NO CHANGE THIS SHEET

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

*JH*  
SEP 26 2012

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-1003.01  
Expiration Date Sept. 6, 2017

By *Manuel Perez*  
Miami/Dade Product Control

DOOR MULLION

date: 06-04-12  
scale: -  
dr. by: HAMID  
chk. by:

drawing no.  
W12-29

sheet 6 of 12

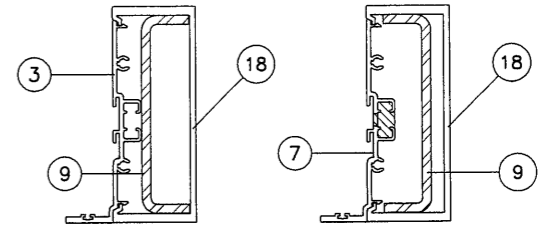
DOOR MULLION LOAD CAPACITY - PSF					
NOMINAL DIMS.				WITH REINF.	
FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	WIDTH (W1) INCHES	WIDTH (W2) INCHES	EXT. (+) INT. (-)	
102	80	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		84	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
	96	30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	108	80	60	30	75.0
				36	75.0
				42	75.0
				48	75.0
			72	30	75.0
				36	75.0
		42		75.0	
		48		72.6	
84		30	75.0		
		36	75.0		
		42	75.0		
		48	72.6		
	96	30	75.0		
		36	74.2		
42		70.5			
48		67.2			
114	80	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
	42		72.9		
	48		69.0		
	84	30	74.2		
		36	70.1		
		42	66.5		
		48	63.2		
96		30	67.5		
		36	64.1		
	42	61.1			
	48	58.3			
120	80	60	30	75.0	
			36	75.0	
			42	71.0	
			48	66.9	
		72	30	72.0	
			36	67.8	
	42		64.0		
	48		60.6		
	84	30	64.7		
		36	61.3		
		42	58.2		
		48	55.4		
96		30	58.8		
		36	56.0		
	42	53.4			
	48	51.1			

DOOR MULLION LOAD CAPACITY - PSF					
NOMINAL DIMS.				WITH REINF.	
FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	WIDTH (W1) INCHES	WIDTH (W2) INCHES	EXT. (+) INT. (-)	
102	84	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		84	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
	96	30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	108	84	60	30	75.0
				36	75.0
				42	75.0
				48	75.0
			72	30	75.0
				36	75.0
		42		75.0	
		48		75.0	
84		30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	96	30	75.0		
		36	74.2		
42		73.0			
48		69.4			
114	84	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
	42		75.0		
	48		70.8		
	84	30	75.0		
		36	72.4		
		42	68.5		
		48	65.0		
96		30	70.0		
		36	66.3		
	42	63.1			
	48	60.1			
120	84	60	30	75.0	
			36	75.0	
			42	72.8	
			48	68.4	
		72	30	74.2	
			36	69.7	
	42		65.7		
	48		62.2		
	84	30	66.8		
		36	63.2		
		42	59.9		
		48	56.9		
96		30	60.8		
		36	57.8		
	42	55.0			
	48	52.5			

DOOR MULLION LOAD CAPACITY - PSF					
NOMINAL DIMS.				WITH REINF.	
FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	WIDTH (W1) INCHES	WIDTH (W2) INCHES	EXT. (+) INT. (-)	
102	90	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		84	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
	96	30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	108	90	60	30	75.0
				36	75.0
				42	75.0
				48	75.0
			72	30	75.0
				36	75.0
		42		75.0	
		48		75.0	
84		30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	96	30	75.0		
		36	75.0		
42		75.0			
48		75.0			
114	90	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
	42		75.0		
	48		73.7		
	84	30	75.0		
		36	75.0		
		42	71.8		
		48	67.9		
96		30	74.0		
		36	69.9		
	42	66.2			
	48	62.9			
120	90	60	30	75.0	
			36	75.0	
			42	75.0	
			48	70.8	
		72	30	75.0	
			36	72.8	
	42		68.4		
	48		64.5		
	84	30	70.2		
		36	66.2		
		42	62.5		
		48	59.3		
96		30	64.0		
		36	60.6		
	42	57.6			
	48	54.8			

DOOR MULLION LOAD CAPACITY - PSF					
NOMINAL DIMS.				WITH REINF.	
FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	WIDTH (W1) INCHES	WIDTH (W2) INCHES	EXT. (+) INT. (-)	
102	96	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		84	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
	96	30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	108	96	60	30	75.0
				36	75.0
				42	75.0
				48	75.0
			72	30	75.0
				36	75.0
		42		75.0	
		48		75.0	
84		30	75.0		
		36	75.0		
		42	75.0		
		48	75.0		
	96	30	75.0		
		36	75.0		
42		75.0			
48		75.0			
114	96	60	30	75.0	
			36	75.0	
			42	75.0	
			48	75.0	
		72	30	75.0	
			36	75.0	
	42		75.0		
	48		73.7		
	84	30	75.0		
		36	75.0		
		42	75.0		
		48	71.0		
96		30	75.0		
		36	73.7		
	42	69.6			
	48	66.0			
120	96	60	30	75.0	
			36	75.0	
			42	75.0	
			48	73.3	
		72	30	75.0	
			36	75.0	
	42		71.3		
	48		67.1		
	84	30	73.9		
		36	69.3		
		42	65.4		
		48	61.8		
96		30	67.5		
		36	63.7		
	42	60.4			
	48	57.3			

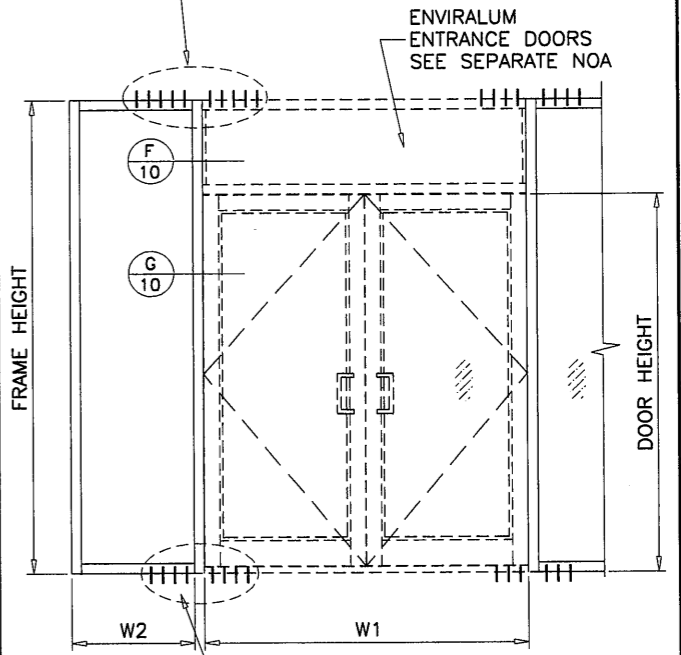
# DOOR MULLION



DOOR MULLION WITH REINF.

	Ix IN <sup>4</sup>	Sx IN <sup>3</sup>
ALUMINUM	5.0950	2.0993
STEEL	2.2740	1.1025
TOTAL Ix ALUM + Ix STL X 2.9	11.6896	

ANCHOR TYPES	TOTAL NO. OF ANCHORS AT DOOR MULLION HEAD
A	10
B	8
C	8
D	8
E	8



ANCHOR TYPES	TOTAL NO. OF ANCHORS AT DOOR MULLION BOTTOM
B	8
D	6

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

SEP 26 2012

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-1003-01  
Expiration Date Sept. 6, 2017

By *Manuel Perez*  
Miami Made Product Control

**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL \ W12-29ENV

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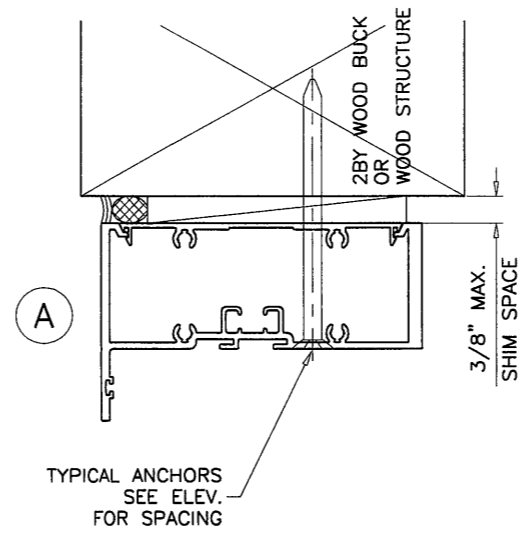
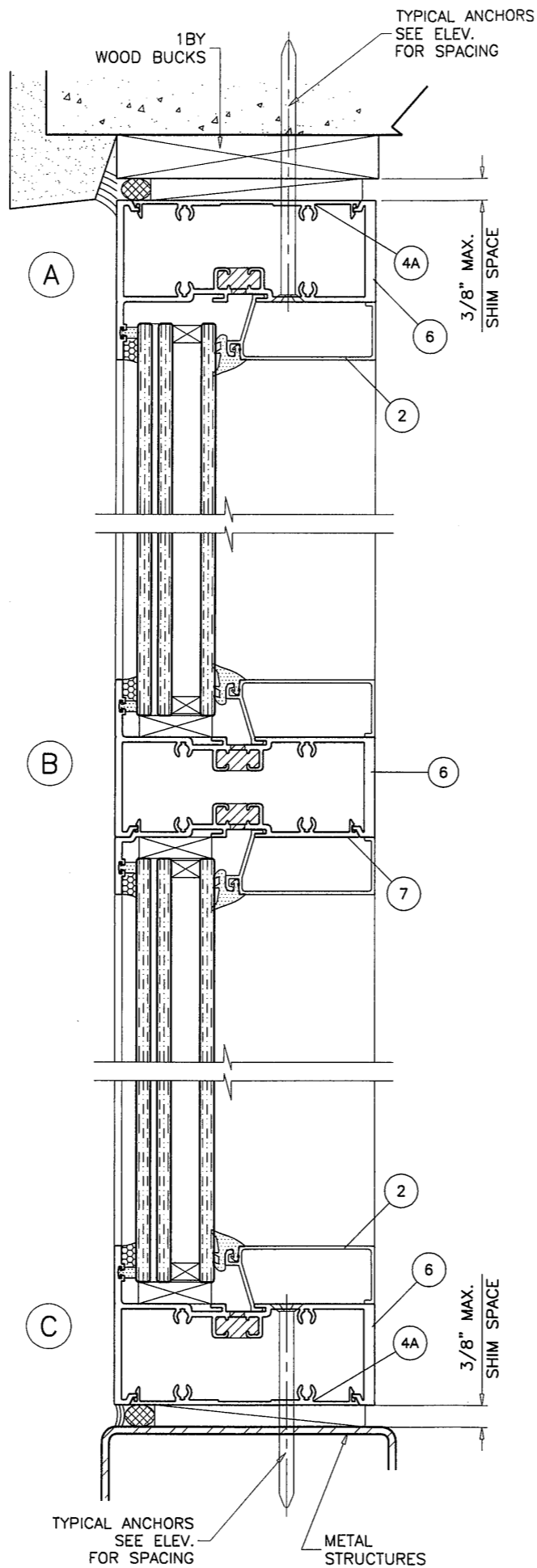
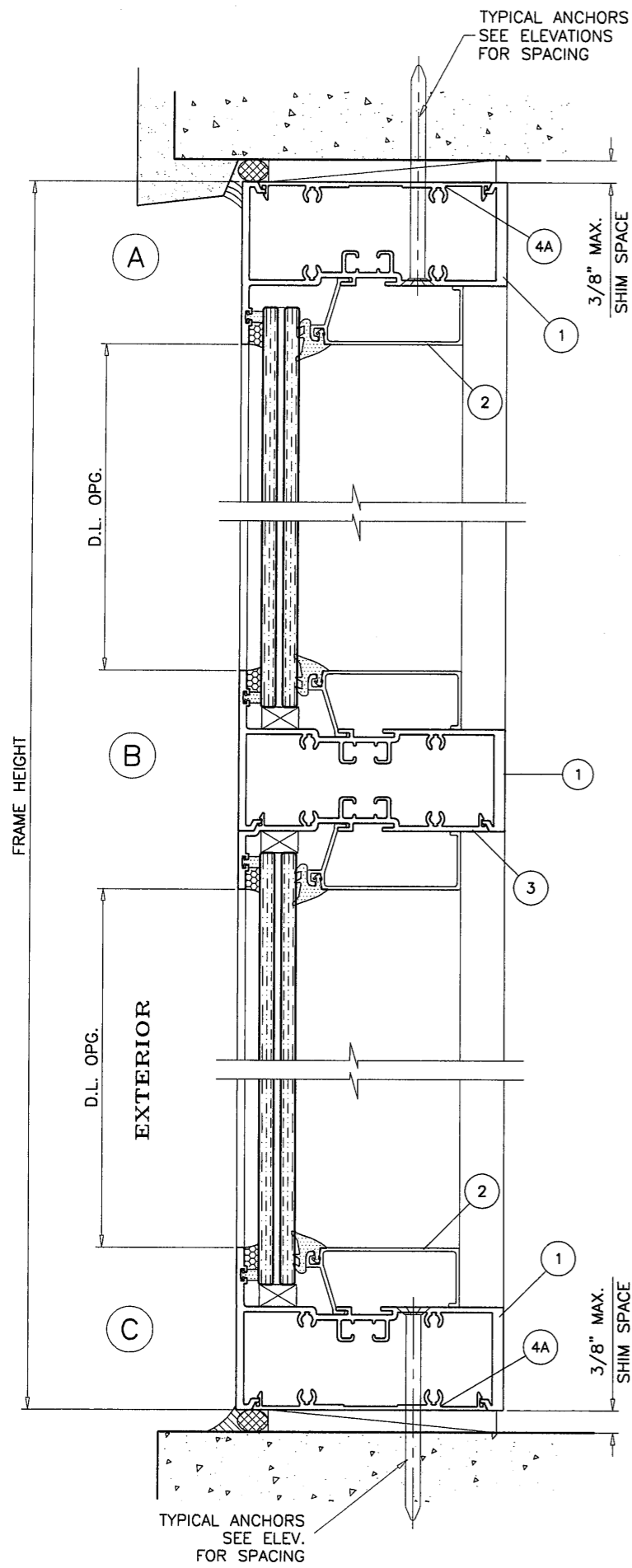
SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)

**ENVIRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

no	date	description
A	08.22.12	REV. PER RER COMMENTS
B	09.24.12	NO CHANGE THIS SHEET

date: 06-04-12  
scale: -  
dr. by: HAMID  
chk. by:

drawing no. **W12-29**  
sheet 7 of 12



Engr: JAVAD AHMAD  
 CIVIL  
 FLA. PE # 70592  
 C.A.N. 3538

*J*  
 SEP 26 2012

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No 12-1003.01  
 Expiration Date Sept. 6, 2017

By *Manuel Perez*  
 Miami Dade Product Control

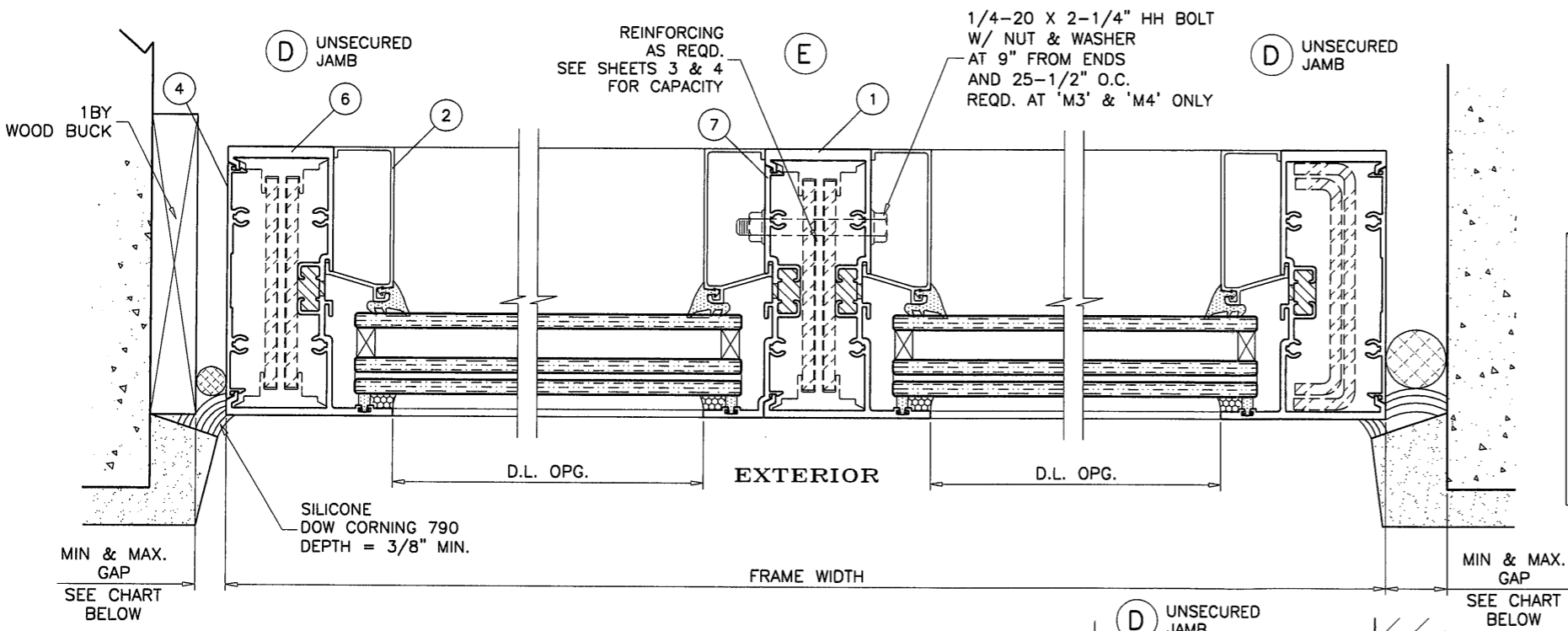
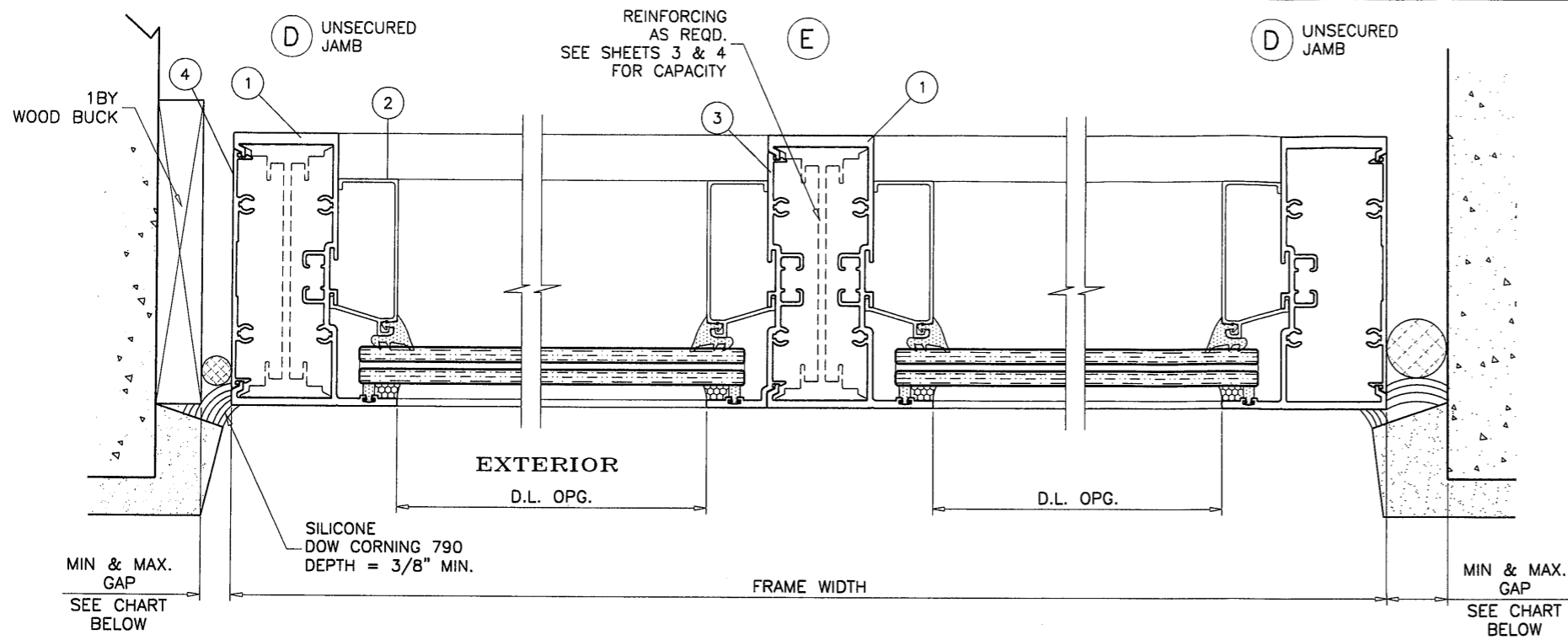
**afc**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL (305) 264-8100 FAX (305) 262-6978  
 COMP-ANL \ W12-29ENV

SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)  
**ENVIRALUM INDUSTRIES INC.**  
 5110 N.W. 72 AVENUE BLDG. C  
 MIAMI, FL. 33166  
 TEL. (786) 251-0204 FAX. (305) 385-7749

no	date	by	description
A	08.22.12	REV. PER RER COMMENTS	
B	09.24.12	NO CHANGE THIS SHEET	

date: 06-04-12  
 scale: 3/8" = 1"  
 dr. by: HAMID  
 chk. by:

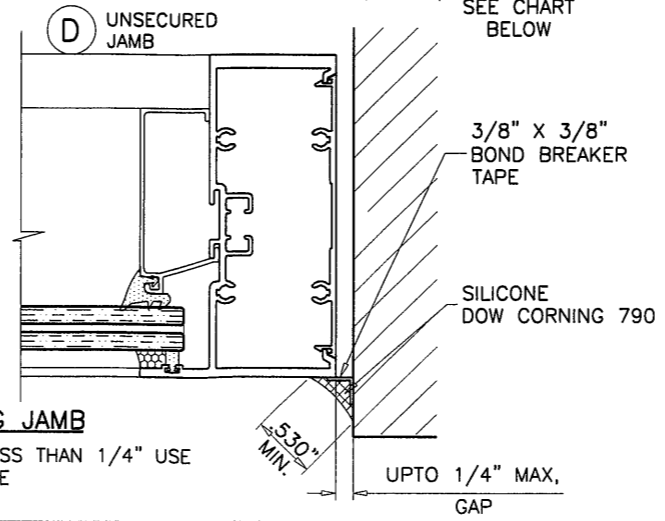
drawing no.  
**W12-29**  
 sheet 8 of 12



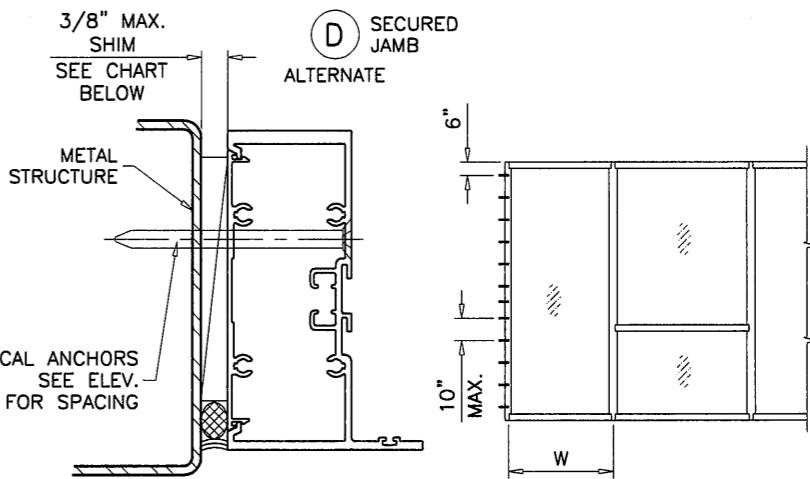
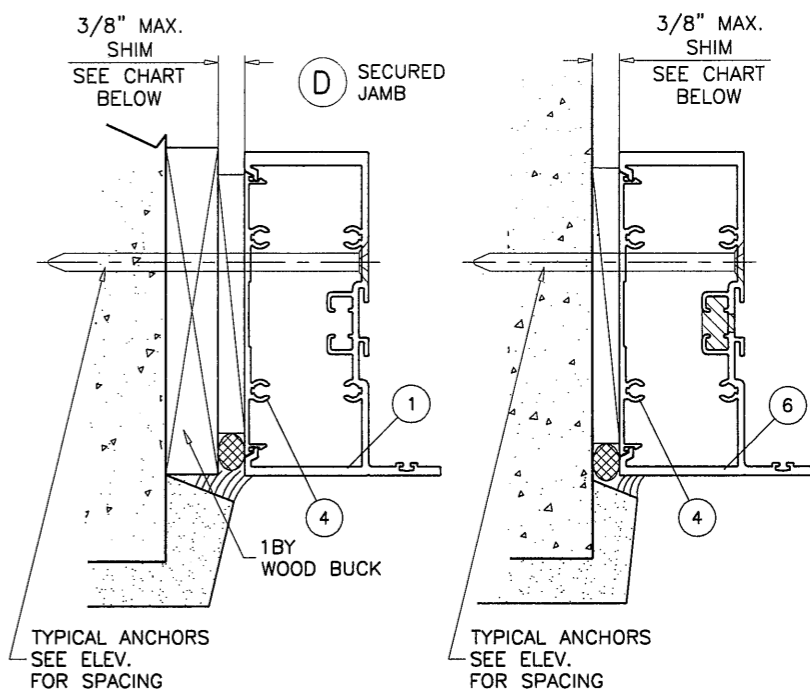
MAX. FRAME HEIGHT	GAP	
	MIN.	MAX.
84"	1/4"	1"
96"	5/16"	1"
120"	3/8"	1"
144"	1/2"	1"

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

**UNSECURED JAMBS  
FREE STANDING**



**FREE STANDING JAMB**  
FOR JOINTS GAP LESS THAN 1/4" USE BOND BREAKER TAPE SEE DETAIL ABOVE



WIDTH (W)	JAMB ANCHORS DESIGN LOAD CAPACITY - PSF							
	3/8" MAX. SHIM SPACE				1/4" MAX. SHIM SPACE			
	TYPE 'A' & 'B'	TYPE 'C'	TYPE 'D'	TYPE 'E'	TYPE 'A'	TYPE 'B'	TYPE 'C'	TYPE 'D' & 'E'
42"	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0	EXT.(+) 131.0 INT.(-) 131.0
48"	129.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
54"	114.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
60"	103.0	131.0	131.0	119.0	123.0	131.0	131.0	131.0
66"	94.0	126.0	131.0	109.0	112.0	131.0	126.0	131.0
72"	86.0	115.0	131.0	100.0	102.0	127.0	115.0	131.0

**SECURED JAMBS  
(REINFORCING NOT REQUIRED)**

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538

SEP 26 2012

PRODUCT REVISED  
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Acceptance No 12-1003.01  
Expiration Date Sept 6, 2017

By *Manuel Perez*  
Miami Dade Product Control

**af c**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
COMP-ANL\W12-29ENV

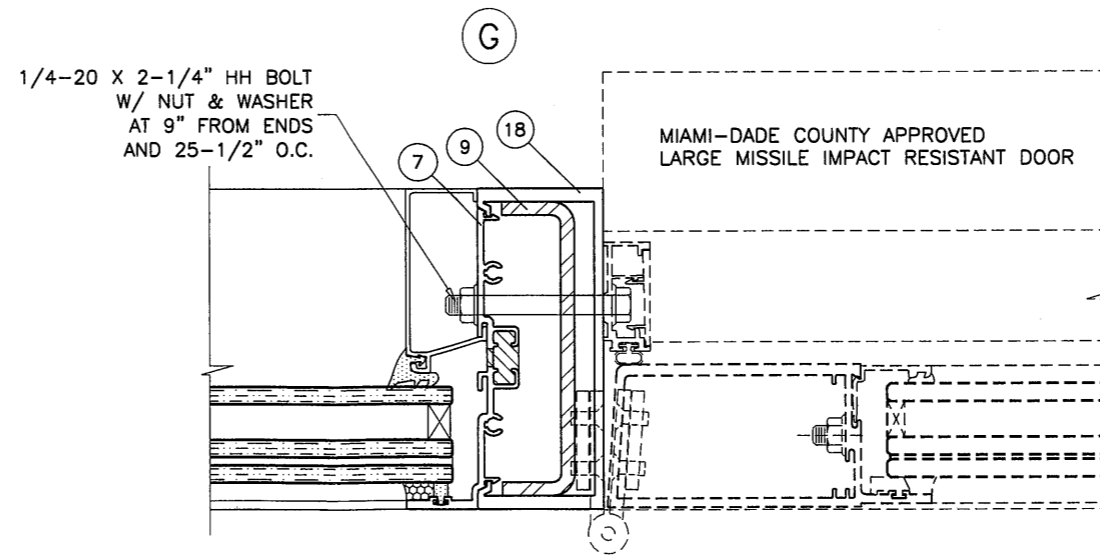
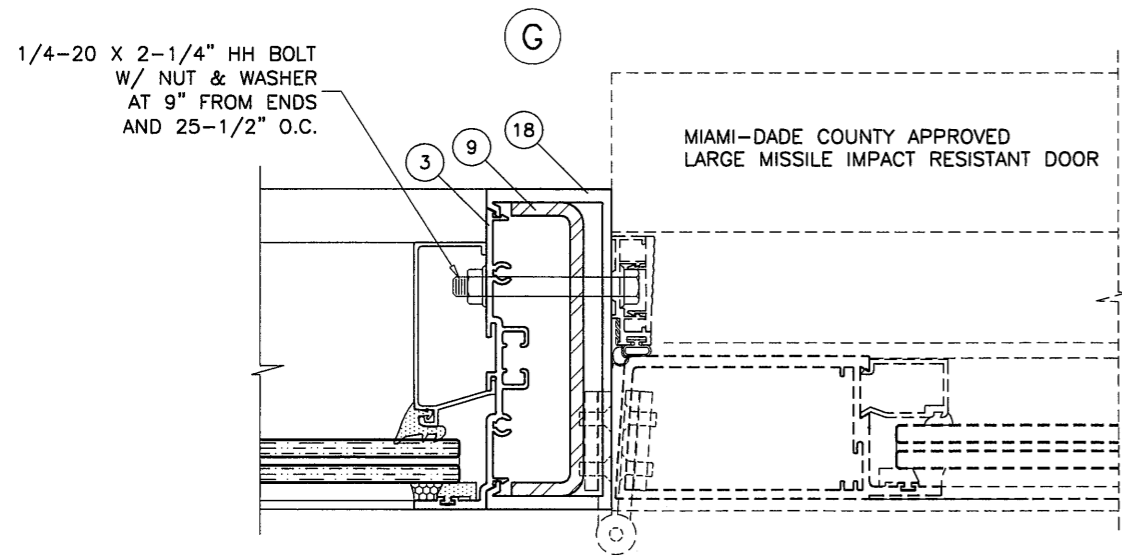
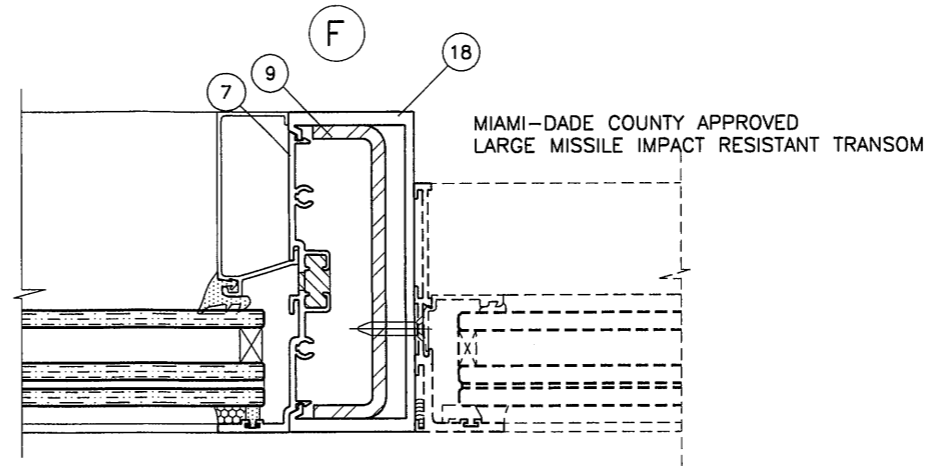
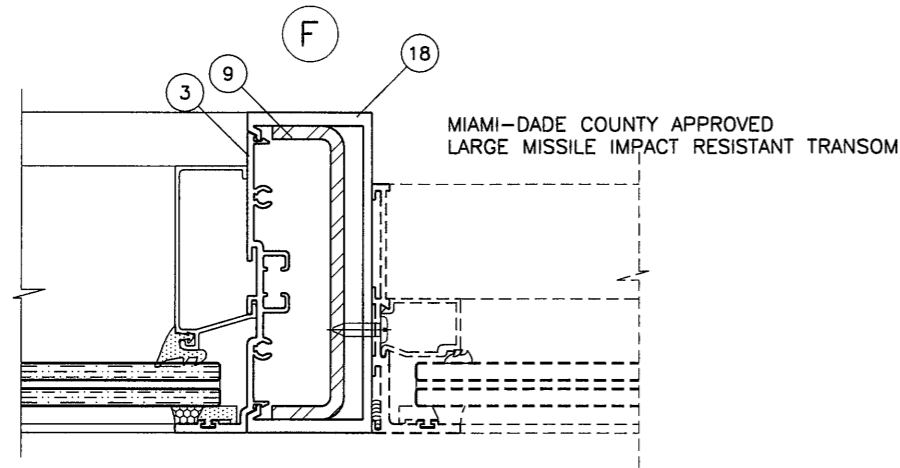
SERIES ENV-450 ALUM WINDOW WALL SYS. (L.M.I.)  
**ENVRALUM INDUSTRIES INC.**  
5110 N.W. 72 AVENUE BLDG. C  
MIAMI, FL. 33166  
TEL. (786) 251-0204 FAX. (305) 385-7749

revisions:	no	date	description
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	B	09.24.12	NO CHANGE THIS SHEET

date: 06-04-12  
scale: 3/8" = 1"  
dr. by: HAMID  
chk. by:

drawing no.  
**W12-29**  
sheet 9 of 12

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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 CIVIL  
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*J.A.*  
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By *Mameel*  
 Miami/Dade Product Control



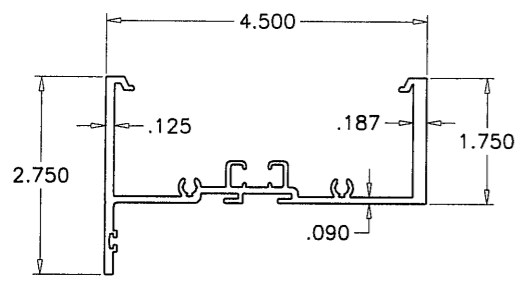
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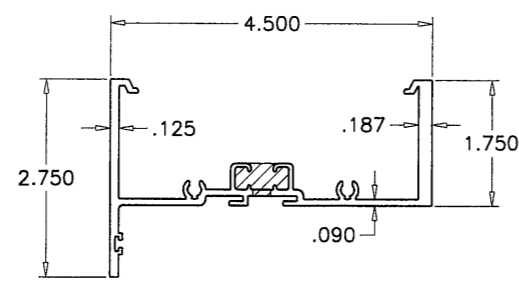
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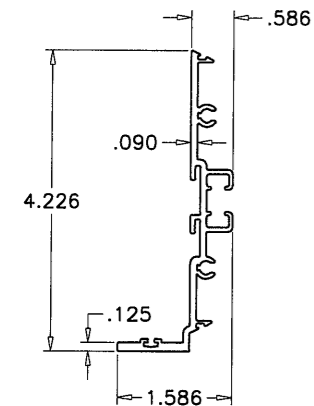
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 sheet 10 of 12



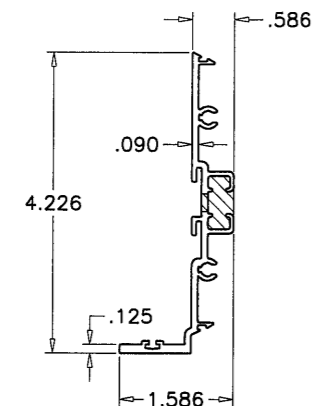
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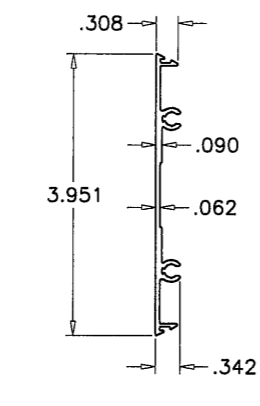
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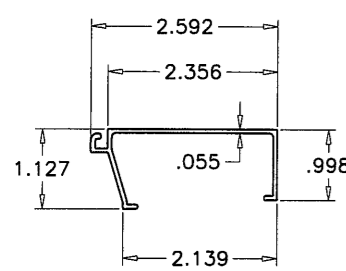
3 FIN SNAP



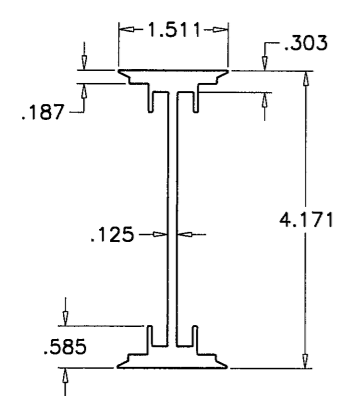
7 FIN SNAP



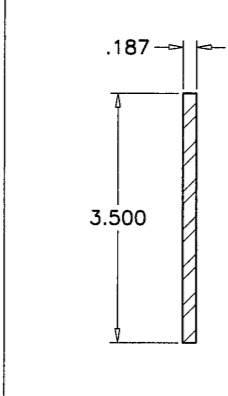
4 FLAT SNAP



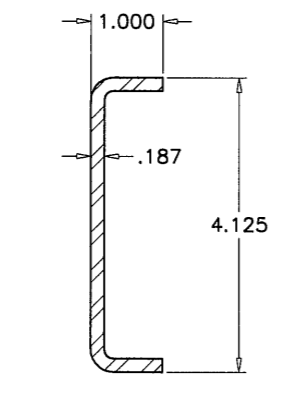
2 GLASS STOP



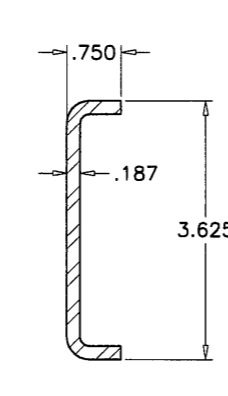
5 ALUM REINF.



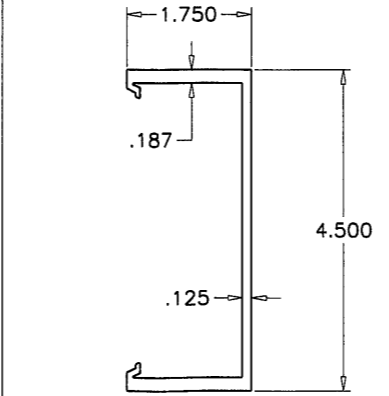
8 STEEL BAR REINF.



9 STEEL CHANNEL REINF.



10



18 DOOR MULLION

ITEM NO.	PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
1	ENV-451	AS REQD.	HEAD/SILL/JAMB & INTERMEDIATE	6063-T6	ENVIRALUM
2	ENV-452	AS REQD.	GLASS STOP	6063-T6	ENVIRALUM
3	ENV-453	AS REQD.	FIN SNAP	6063-T6	ENVIRALUM
4	ENV-454	1/ FREE STANDING JAMB	FLAT SNAP FULL LENGTH OF VERTICAL	6063-T6	ENVIRALUM
4A	ENV-454-3	1/ INSTALL SCREW	FLAT SNAP, 3" LONG	6063-T6	ENVIRALUM
4B	ENV-454-7	1/ CORNER	FLAT SNAP, 7" LONG	6063-T6	ENVIRALUM
5	ENV-455	AS REQD.	ALUMINUM REINFORCEMENT	6063-T6	ENVIRALUM
6	ENV-451T	AS REQD.	HEAD/SILL/JAMB & INTERMEDIATE (THERMAL)	6063-T6	ENVIRALUM
7	ENV-453T	AS REQD.	FIN SNAP (THERMAL)	6063-T6	ENVIRALUM
8	ENV-ST1	AS REQD.	3/16" X 3-1/2' BAR	STEEL	ENVIRALUM
9	ENV-ST2	AS REQD.	1" X 4-1/8" X 1" X 3/16" THK. CHANNEL	STEEL	ENVIRALUM
10	ENV-ST3	AS REQD.	3/4" X 3-5/8" X 3/4" X 3/16" THK. CHANNEL	STEEL	ENVIRALUM
11	ENV-G01	AS REQD.	INTERIOR GASKET	EPDM	GLAZING RUBBER PRODUCTS
12	ENV-G03	AS REQD.	SPACER GASKET	EPDM	GLAZING RUBBER PRODUCTS
13	ENV-SB01	1/ QUARTER POINT	3/8" X 1/2" X 2" SETTING BLOCKS, DUROMETER 70±5	EPDM	FRANK LOWE RUBBER
14	ENV-SB02	1/ QUARTER POINT	3/8" X 1-1/4" X 2" SETTING BLOCKS, DUROMETER 70±5	EPDM	FRANK LOWE RUBBER
15	DOW 791	AS REQD.	GLAZING COMPOUND	SILICONE	DOW CORNING
16	GE SCS2000	AS REQD.	GLAZING COMPOUND	SILICONE	GE MOMENTIVE
17	#12 X 1-1/2	4/ CORNER	FRAME ASSEMBLY SCREWS	ST. STEEL	HWH SMS
18	ENV-355	AS REQD.	DOOR MULLION	6063-T6	-

**SEALANTS:**

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

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By *Mameel Sero*  
Miami Dade Product Control

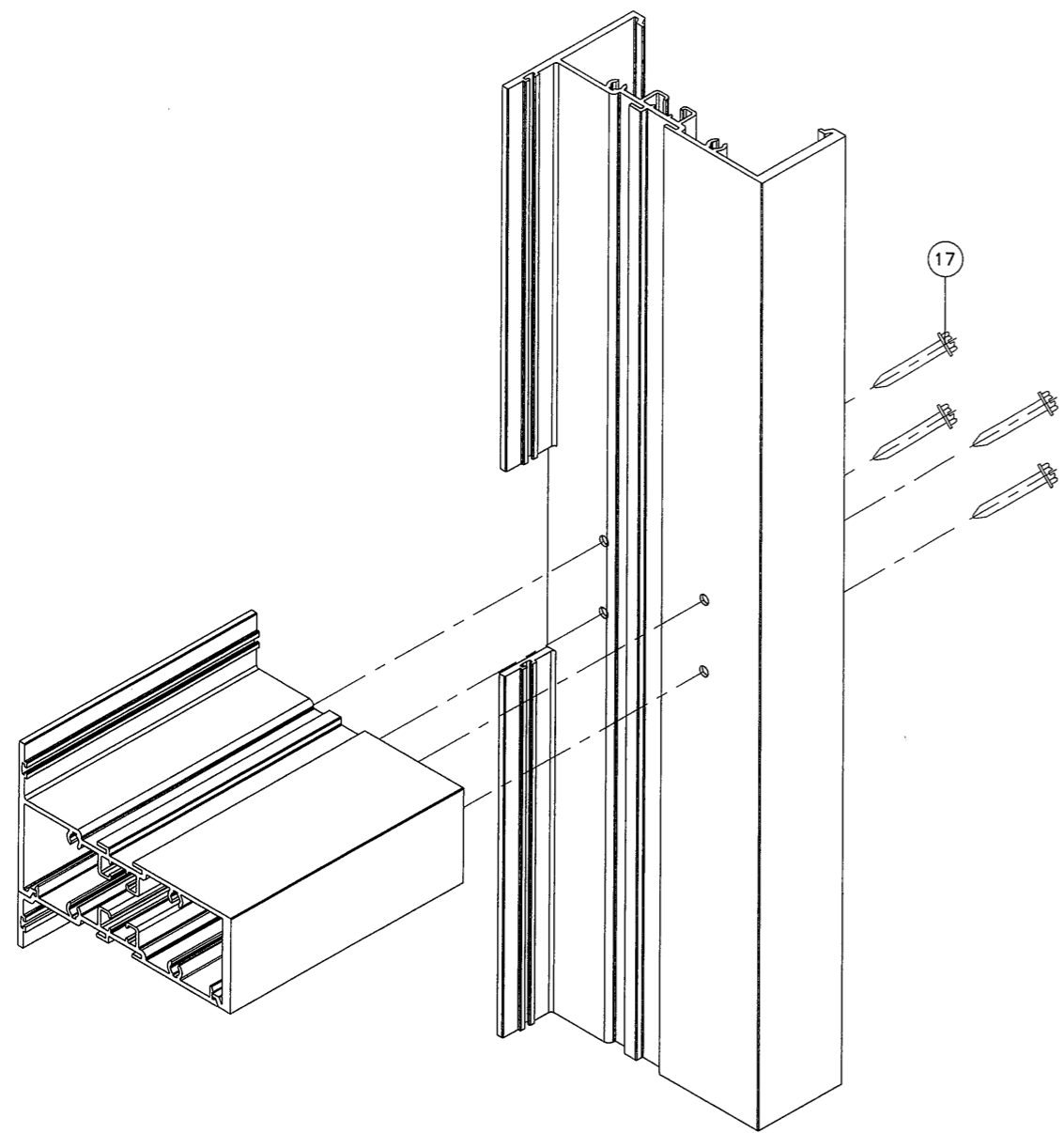
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**AL-FAROOQ CORPORATION**  
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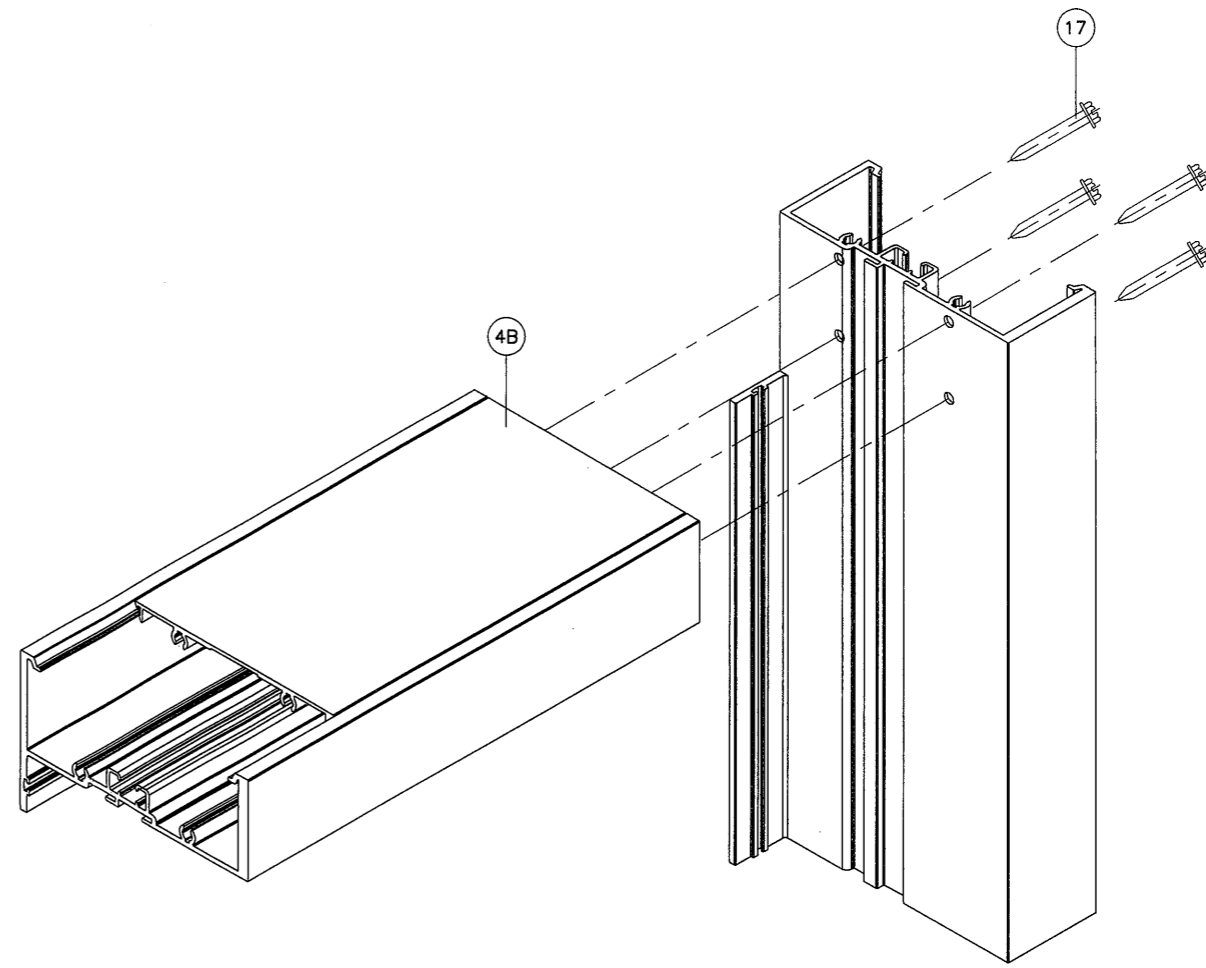
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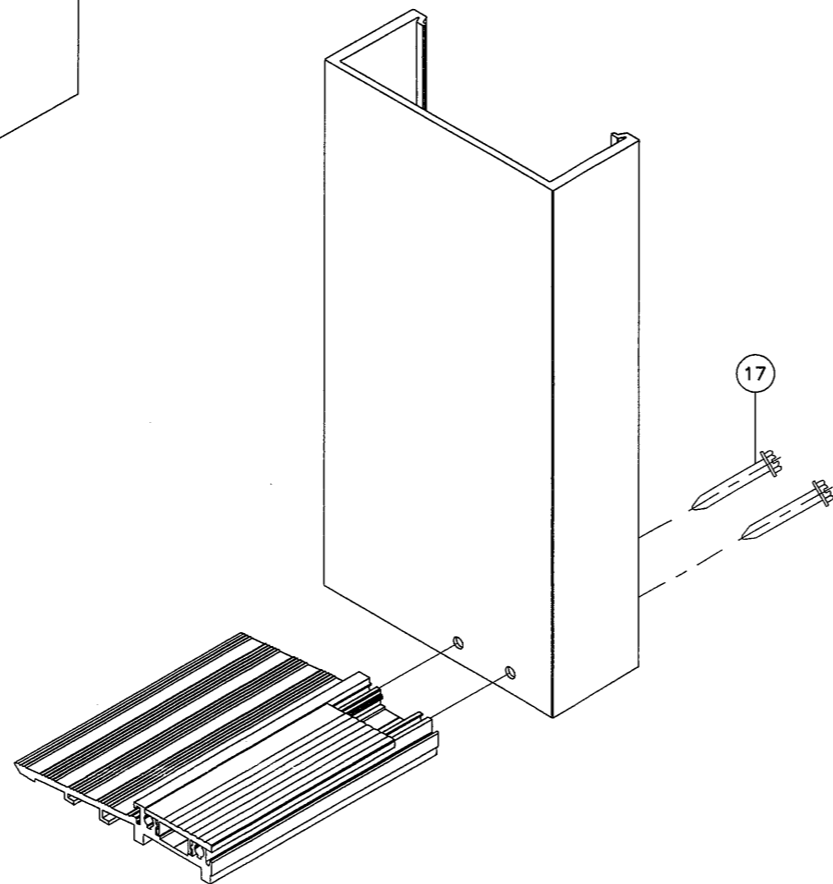
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**W12-29**  
sheet 11 of 12



INTERMEDIATE CORNERS



TOP/BOTTOM CORNERS



DOOR MULLION BOTTOM CORNER

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