MIAMI-DADE COUNTY
DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY AFFAIRS (PERA)
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI–DADE COUNTY, FLORIDA
PRODUCT CONTROL SECTION
11805 SW 26 Street, Room 208
Miami, Florida 33175–2474
T (786) 315–2590 F (786) 315–2599
www.miamidade.gov/pera/

NOTICE OF ACCEPTANCE (NOA)

ES Windows, LLC
10653 N.E. Quaybridge Ct.
Miami, FL 33138

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 PERA–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. PERA 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 "9500" Aluminum Window Wall System – L. M. I.

APPROVAL DOCUMENT: Drawing No. **W09–25**, titled "Series 9500 Alum. Window Wall System (L.M.I.)", sheets 1, 2, 3, 3.1, 4, 5, 6, 7, 8, 8.1, 9, 9.1, 10, 10.1, 11, 11.1, 12 and 12.1 of 18, dated 04/16/09 with revision "**C**" dated 03/13/12, 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.

LIMITATIONS: Glass Lites Wider Than 36" Shall Have Two (2) Setting Blocks Per FBC Requirements.

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, **Barranquilla, Colombia**, models/ 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 NOA No. 10–0603.14** and consists of this page 1, evidence pages E–1 and E–2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Jaime D. Gascon, P. E.**

MIAMI-DADE COUNTY APPROVED

J. Gascon 5/24/12

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

F. STATEMENTS (CONTINUED)

2. Laboratory compliance letter for Test Reports No.'s **FTL–6129, FTL–5991** and **FTL–5546**, issued by Fenestration Testing Laboratory, Inc., dated 03/10/10, 10/02/09 and 01/09/09, all signed and sealed by Jorge A. Causo, P. E. and by Michael R. Wenzel, P. E.
   (Submitted under previous NOA No.09–0623.01)
3. Distributor Agreement between, E.S. Windows – Energia Solar S.A., Barranquilla, Colombia and E.S. Windows, LLC, Miami, Florida, U.S.A., dated 10/20/10, signed by Carla Garcia Torrente and by Andres Chamorro, respectively.
   (Submitted under previous NOA No.09–0623.01)

G. OTHERS

1. Notice of Acceptance No. **10–0603.14**, issued to ES Windows, LLC, for their Series "**9500 Aluminum Fixed Window – L.M.I.**", approved on 12/09/10 and expiring on 12/09/15.

Jaime D. Gascon, P. E.
Product Control Section Supervisor
NOA No. 12–0404.04
Expiration Date: December 09, 2015
Approval Date: May 31, 2012

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS

1. Manufacturer's die drawings and sections.
   (Submitted under previous NOA No. 09–0623.01)
2. Drawing No. **W09–25**, titled "Series 9500 Alum. Window Wall System (L.M.I.)", sheets 1, 2, 3, 3.1, 4, 5, 6, 7, 8, 8.1, 9, 9.1, 10, 10.1, 11, 11.1, 12 and 12.1 of 18, dated 04/16/09 with revision "**C**" dated 03/13/12, 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

   along with marked–up drawings and installation diagram of an Aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Reports No.'s **FTL–6129**, **FTL–5991** and **FTL–5546**, dated 03/10/10, 10/02/09 and 01/09/09, all signed and sealed by Jorge A. Causo, P. E. and by Michael R. Wenzel, P. E.
   (Submitted under previous NOA No. 09–0623.01)

C. CALCULATIONS

1. Anchor verification calculations and structural analysis, complying with **FBC–2010**, prepared by Al–Farooq Corporation, dated 03/20/12, signed and sealed by Javad Ahmad, P. E.
2. **Glazing complies with ASTM E1300–04**

D. QUALITY ASSURANCE

1. Miami–Dade Department of Permitting, Environment, and Regulatory Affairs (PERA).

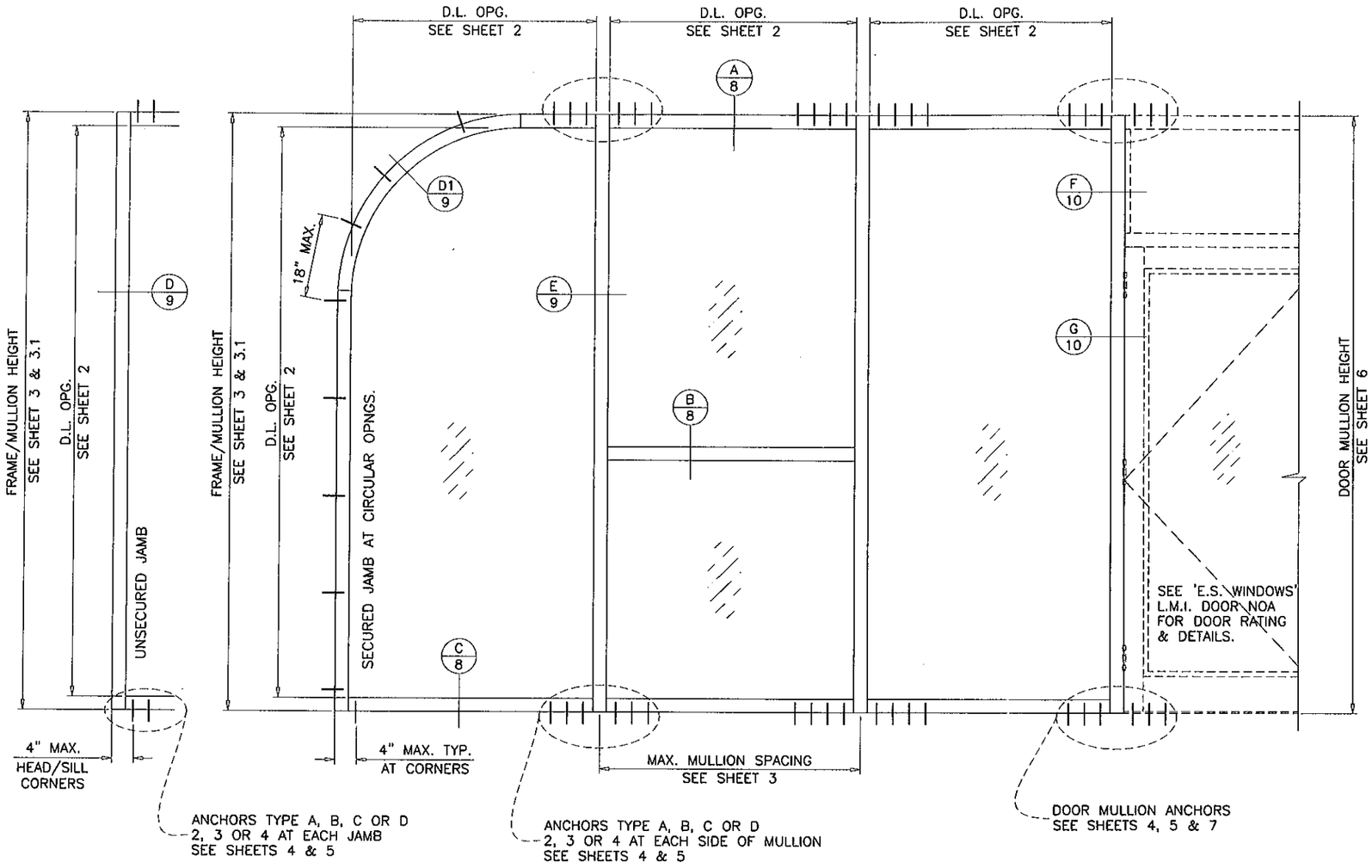
E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **11–0624.02** issued to E.I. DuPont DeNemours & Co., Inc. for their "**DuPont Sentry Glass® Interlayer**" dated 05/26/2010, 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 09/08/2011, expiring on 12/11/2016.

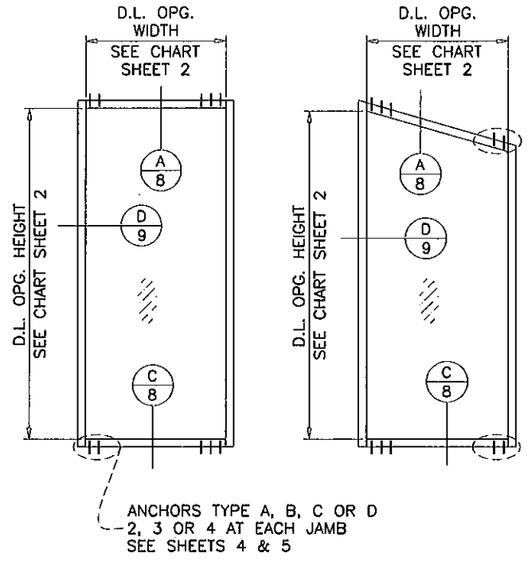
F. STATEMENTS

1. Statement letter of no financial interest, conformance and compliance with the **FBC–2010**, dated 03/08/12, signed and sealed by Javad Ahmad, P. E.

Jaime D. Gascon, P. E.
Product Control Section Supervisor
NOA No. 12–0404.04
Expiration Date: December 09, 2015
Approval Date: May 31, 2012



TYPICAL ELEVATION



TYPICAL ELEVATIONS SINGLE LITE

SERIES 9500 ALUMINUM WINDOW WALL SYSTEM

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

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 SHEETS 3, 3.1 AND 6 THE CAPACITY SHOULD EXCEED THE DESIGN LOAD.

STEP 4 USING CHARTS ON SHEETS 4, 5 & 7 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. THIS VALUE SHOULD MEET OR EXCEED THE DESIGN WIND LOAD REQUIREMENT OBTAINED IN STEP 1 ABOVE.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0404.04
Expiration Date 12/09/2015
By
Miami Dade Product Control

WINDOW WALL SYSTEM WITH GLASS TYPES 'A' & 'B' COMPLIES WITH REQUIREMENTS OF ANSI Z97.1.

LAMINATED GLASS
INSUL. LAM. GLASS
LARGE MISSILE IMPACT

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

MAR 20 2012

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

STORE\W09-25ES

SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

E.S. WINDOWS, LLC
5220 N.W. 72 AVE. BAY #4
MIAMI, FL. 33166
TEL. (305) 624-7775 FAX. (305) 624-7777

revisions:			
no	date	by	description
A	08.28.09		REV. PER BCCO COMMENTS
B	03.16.10		INSUL. GLASS OPTION ADDED
C	03.13.12		UPDATED TO 2010 FBC

date: 04-16-09
scale: 1/2"=1'-0"
dr. by: HAMID
chk. by:

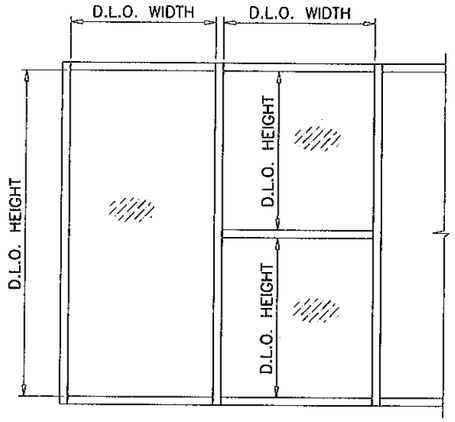
drawing no.
W09-25

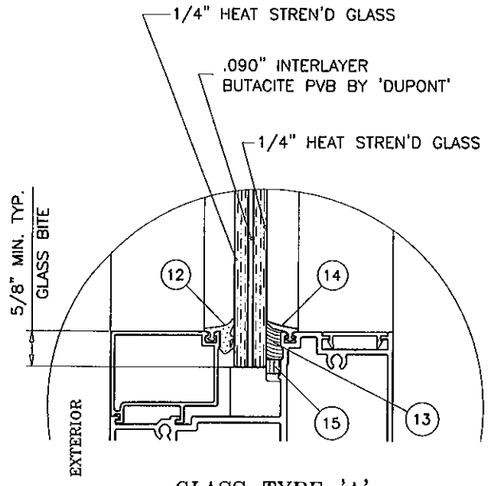
sheet 1 of 12

CHART #1

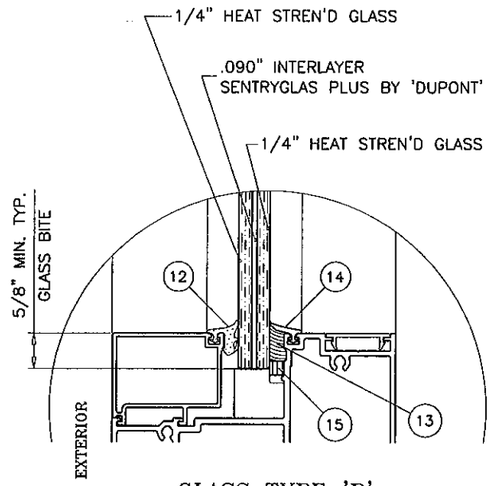
GLASS LOAD CAPACITY - PSF				
NOMINAL DIMS.		GLASS TYPE 'A'	GLASS TYPE 'B'	GLASS TYPES 'A1' & 'B1'
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)/INT.(−)	EXT.(+)/INT.(−)	EXT.(+)/INT.(−)
28"	91"	65.0	120.0	90.0
32"		65.0	120.0	90.0
36"		65.0	120.0	90.0
40"		65.0	120.0	90.0
45-1/2"		65.0	120.0	90.0
48"		65.0	120.0	90.0
52"		65.0	120.0	90.0
57-1/4"		65.0	120.0	90.0
28"	93-1/2"	65.0	120.0	90.0
32"		65.0	120.0	90.0
36"		65.0	120.0	90.0
40"		65.0	120.0	90.0
45-1/2"		65.0	120.0	90.0
48"		65.0	120.0	90.0
52"		65.0	120.0	90.0
28"	97-1/2"	65.0	120.0	90.0
32"		65.0	120.0	90.0
36"		65.0	120.0	90.0
40"		65.0	120.0	90.0
45-1/2"		65.0	120.0	90.0
48"		65.0	120.0	90.0
52"		65.0	120.0	90.0
28"	105"	65.0	120.0	90.0
32"		65.0	120.0	90.0
36"		65.0	120.0	90.0
40"		65.0	120.0	90.0
45-1/2"		65.0	120.0	90.0
48"		65.0	120.0	90.0
28"	109"	65.0	120.0	90.0
32"		65.0	120.0	90.0
36"		65.0	120.0	90.0
40"		65.0	120.0	90.0
45-1/2"		65.0	120.0	90.0
48"		65.0	120.0	90.0
28"	115"	65.0	120.0	90.0
32"		65.0	120.0	90.0
36"		65.0	120.0	90.0
40"		65.0	120.0	90.0
45-1/2"		65.0	120.0	90.0

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

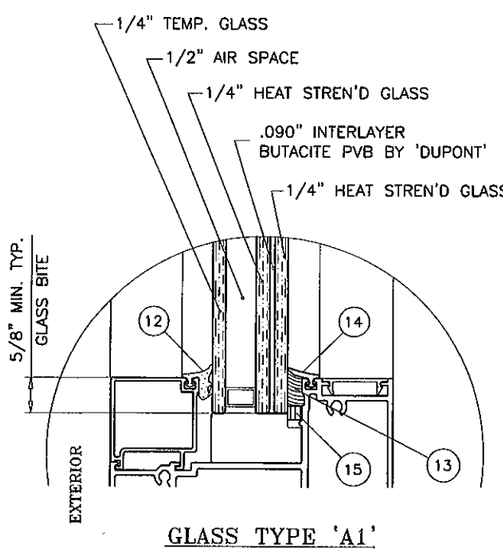




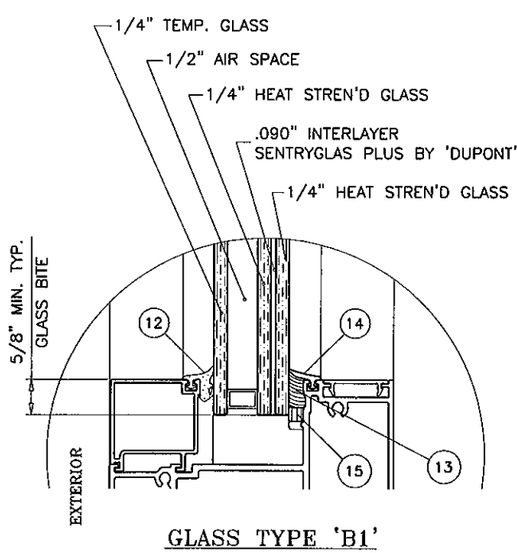
GLASS TYPE 'A'
9/16" OVERALL LAMINATED GLASS



GLASS TYPE 'B'
9/16" OVERALL LAMINATED GLASS



GLASS TYPE 'A1'
1-5/16" OVERALL INSUL. LAM. GLASS



GLASS TYPE 'B1'
1-5/16" OVERALL INSUL. LAM. GLASS

GLAZING OPTIONS

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0404.04
Expiration Date 12/09/2015
By
Miami Dade Product Control

GLASS

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

MAR 20 2012

afc

AL-FAROOQ CORPORATION
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revisions:

no	date	by	description
A	08.28.09		REV. PER BCCO COMMENTS
B	03.16.10		INSUL. GLASS OPTION ADDED
C	03.13.12		NO CHANGE THIS SHEET

date: 04-16-09
scale: 3/8" = 1"
dr. by: HAMID
chk. by:

drawing no.
W09-25

CHART #2

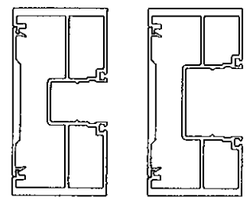
MULLION LOAD CAPACITY - PSF MULLIONS WITHOUT INTERMEDIATE HORIZONTALS		
NOMINAL DIMS.		JAMB 'J1' MULL 'M1'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (−)
30"	72"	100.0
36"		100.0
42"		100.0
48"		100.0
54"		100.0
60"		100.0
30"	78"	100.0
36"		100.0
42"		100.0
48"		100.0
54"		100.0
59"		100.0
60"		65.0
30"	86−1/2"	100.0
36"		100.0
42"		100.0
48"		100.0
53"		100.0
54"		65.0
60"		65.0
30"	90"	100.0
36"		100.0
42"		100.0
48"		100.0
51"		100.0
54"		65.0
60"		65.0
30"	96"	100.0
36"		100.0
42"		100.0
48"		100.0
54"		65.0
60"		65.0
30"	98−1/2"	65.0
36"		65.0
42"		65.0
48"		65.0
54"		65.0
58"		65.0
30"	102"	65.0
36"		65.0
42"		65.0
48"		65.0
54"		65.0
56"		65.0

MULLION LOAD CAPACITY - PSF MULLIONS WITHOUT INTERMEDIATE HORIZONTALS		
NOMINAL DIMS.		JAMB 'J1' MULL 'M1'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (−)
30"	108"	65.0
36"		65.0
42"		65.0
48"		65.0
53"		65.0
30"	110−1/2"	65.0
36"		65.0
42"		65.0
48"		65.0
52"		65.0
30"	114"	65.0
36"		65.0
42"		65.0
48"		65.0
50"		65.0
30"	120"	65.0
36"		65.0
42"		65.0
48"		65.0

CHART #3

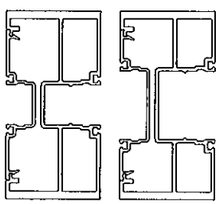
MULLION LOAD CAPACITY - PSF MULLIONS WITHOUT INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1' MULL 'M2'	JAMB 'J1' MULL 'M3'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (−)	EXT. (+) INT. (−)
30"	72"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		90.0	120.0
60"		90.0	120.0
30"	78"	90.0	120.0
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"	86−1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
53"		90.0	120.0
60"		90.0	120.0
30"	90"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
51"		90.0	120.0
60"		90.0	120.0
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
58"		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
54"		90.0	120.0
56"		90.0	120.0
30"	108"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
53"		90.0	112.4

MULLION LOAD CAPACITY - PSF MULLIONS WITHOUT INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1' MULL 'M2'	JAMB 'J1' MULL 'M3'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (−)	EXT. (+) INT. (−)
30"	110−1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	116.4
52"		90.0	108.7
30"	114"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	108.9
50"		90.0	105.1
30"	120"	90.0	120.0
36"		90.0	120.0
42"		90.0	110.3
48"		90.0	97.7



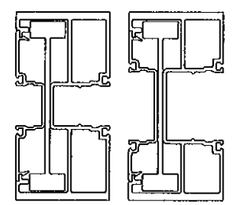
JAMB 'J1'
NO REINF.

J1	ALUM
Ix IN^4	8.7605
Sx IN^3	3.5042



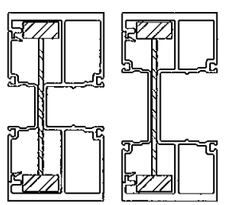
MULLION 'M1'
NO REINF.

M1	ALUM
Ix IN^4	8.7132
Sx IN^3	3.4853



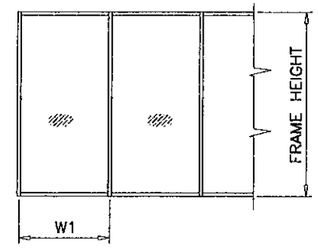
MULLION 'M2'
ALUM REINF.

M2	ALUM
Ix IN^4	12.6724
Sx IN^3	5.069

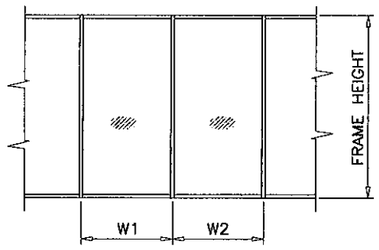


MULLION 'M3'
STEEL REINF.

M3	ALUM	STEEL
Ix IN^4	8.7132	2.7858
Sx IN^3	3.4853	1.2381



WIDTH (W) = W1
AT FRAME JAMB



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

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0404.04
Expiration Date 12/09/2015
By
Miami Dade Product Control

MULLIONS

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

MAR 20 2012

afc
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
1235 S.W. 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
STORE\W09-25ES

SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

E.S. WINDOWS, LLC
5220 N.W. 72 AVE. BAY #4
MIAMI, FL. 33166
TEL. (305) 624-7775 FAX. (305) 624-7777

revisions:			
no	date	by	description
A	08.28.09		REV. PER BCCO COMMENTS
B	03.16.10		INSUL. GLASS OPTION ADDED
C	03.13.12		NO CHANGE THIS SHEET

date: 04-16-09
scale: -
dr. by: HAMID
chk. by:

drawing no.
W09-25

sheet 3 of 12

CHART #4

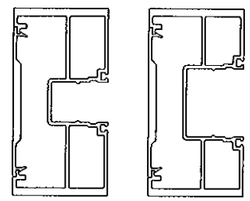
MULLION LOAD CAPACITY – PSF MULLIONS WITH INTERMEDIATE HORIZONTALS		
NOMINAL DIMS.		JAMB 'J1' MULL 'M1'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (–)
30"	72"	100.0
36"		100.0
42"		100.0
48"		100.0
54"		100.0
60"		100.0
30"	78"	100.0
36"		100.0
42"		100.0
48"		100.0
54"		100.0
59"		100.0
60"		65.0
30"	86–1/2"	100.0
36"		100.0
42"		100.0
48"		100.0
53"		100.0
54"		65.0
60"		65.0
30"	90"	100.0
36"		100.0
42"		100.0
48"		100.0
51"		100.0
54"		65.0
60"		65.0
30"	96"	100.0
36"		100.0
42"		100.0
48"		100.0
54"		65.0
60"		65.0
30"	98–1/2"	65.0
36"		65.0
42"		65.0
48"		65.0
54"		65.0
58"		65.0
30"	102"	65.0
36"		65.0
42"		65.0
48"		65.0
54"		65.0
56"		65.0

MULLION LOAD CAPACITY – PSF MULLIONS WITH INTERMEDIATE HORIZONTALS		
NOMINAL DIMS.		JAMB 'J1' MULL 'M1'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (–)
30"	108"	65.0
36"		65.0
42"		65.0
48"		65.0
53"		65.0
30"	110–1/2"	65.0
36"		65.0
42"		65.0
48"		65.0
52"		65.0
30"	114"	65.0
36"		65.0
42"		65.0
48"		65.0
50"		65.0
30"	120"	65.0
36"		65.0
42"		65.0
48"		64.5

CHART #5

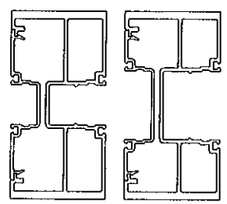
MULLION LOAD CAPACITY – PSF MULLIONS WITH INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1' MULL 'M2'	JAMB 'J1' MULL 'M3'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (–)	EXT. (+) INT. (–)
30"	72"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		90.0	120.0
60"		90.0	120.0
30"	78"	90.0	120.0
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"	86–1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
53"		90.0	120.0
60"		90.0	120.0
30"	90"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
51"		90.0	120.0
60"		90.0	120.0
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	115.8
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
58"		90.0	113.8
30"	102"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	120.0
54"		90.0	114.0
56"		90.0	109.9
30"	108"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	114.4
53"		90.0	103.6

MULLION LOAD CAPACITY – PSF MULLIONS WITH INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1' MULL 'M2'	JAMB 'J1' MULL 'M3'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (–)	EXT. (+) INT. (–)
30"	110–1/2"	90.0	120.0
36"		90.0	120.0
42"		90.0	120.0
48"		90.0	109.3
52"		90.0	100.9
30"	114"	90.0	120.0
36"		90.0	120.0
42"		90.0	117.3
48"		90.0	102.7
50"		90.0	98.5
30"	120"	90.0	120.0
36"		90.0	120.0
42"		90.0	105.9
48"		90.0	92.6



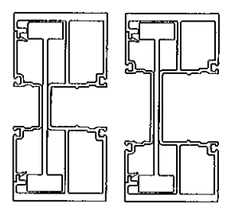
JAMB 'J1'
NO REINF.

J1	ALUM
Ix IN^4	8.7605
Sx IN^3	3.5042



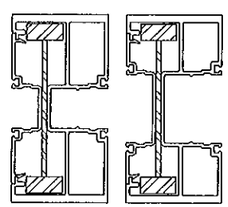
MULLION 'M1'
NO REINF.

M1	ALUM
Ix IN^4	8.7132
Sx IN^3	3.4853



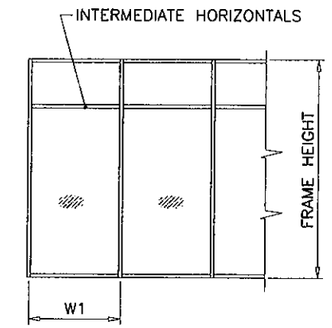
MULLION 'M2'
ALUM REINF.

M2	ALUM
Ix IN^4	12.6724
Sx IN^3	5.069

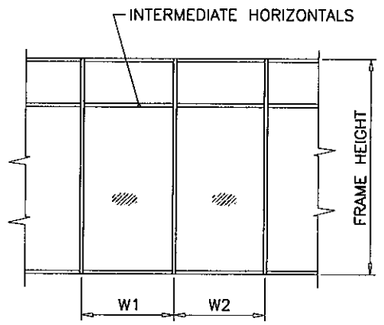


MULLION 'M3'
STEEL REINF.

M3	ALUM	STEEL
Ix IN^4	8.7132	2.7858
Sx IN^3	3.4853	1.2381



WIDTH (W) = W1
AT FRAME JAMB



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

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

Engr: JAVAD AHMAD
CIVIL
FLA. PE # 70592
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Acceptance No 12-0404.04
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MAR 20 2012

MULLIONS

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STORE\W09-25ES

SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

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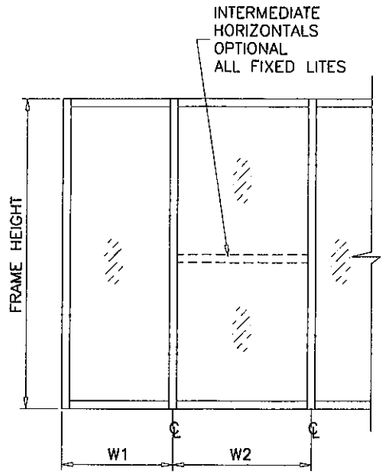
revisions:			
no	date	by	description
A	08.28.09		REV. PER BCCO COMMENTS
B	03.16.10		INSUL. GLASS OPTION ADDED
C	03.13.12		NO CHANGE THIS SHEET

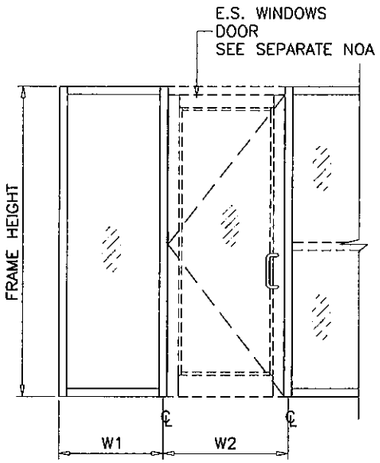
date: 04-16-09
scale: -
dr. by: HAMID
chk. by:

drawing no.
W09-25

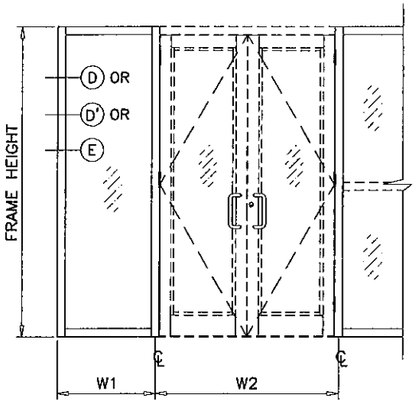
CHART #6	ANCHOR LOAD CAPACITY – PSF (3/8" MAX. SHIM SPACE) EXT.(+) & INT.(–)												
NOMINAL DIMS.		ANCHORS TYPE 'A'			ANCHORS TYPE 'B'			ANCHORS TYPE 'C'			ANCHORS TYPE 'D'		
WIDTH (W)	FRAME HEIGHT	A2	A3	A4	B2	B3	B4	C2	C3	C4	D2	D3	D4
30"	72"	102.9	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
36"		85.8	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	112.9	120.0	120.0
42"		73.5	110.3	120.0	113.5	120.0	120.0	120.0	120.0	120.0	96.8	120.0	120.0
48"		64.3	96.5	120.0	99.3	120.0	120.0	105.3	120.0	120.0	84.7	120.0	120.0
54"		57.2	85.8	114.4	88.3	120.0	120.0	93.6	120.0	120.0	75.3	112.9	120.0
60"		51.5	77.2	102.9	79.5	119.2	120.0	84.3	120.0	120.0	67.7	101.6	120.0
30"	78"	95.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
36"		79.2	118.8	120.0	120.0	120.0	120.0	120.0	120.0	120.0	104.2	120.0	120.0
42"		67.9	101.8	120.0	104.8	120.0	120.0	111.1	120.0	120.0	89.3	120.0	120.0
48"		59.4	89.1	118.8	91.7	120.0	120.0	97.2	120.0	120.0	78.2	117.2	120.0
54"		52.8	79.2	105.6	81.5	120.0	120.0	86.4	120.0	120.0	69.5	104.2	120.0
60"		47.5	71.3	95.0	73.4	110.0	120.0	77.8	116.7	120.0	62.5	93.8	120.0
30"	86–1/2"	85.7	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	112.8	120.0	120.0
36"		71.4	107.1	120.0	110.2	120.0	120.0	116.9	120.0	120.0	94.0	120.0	120.0
42"		61.2	91.8	120.0	94.5	120.0	120.0	100.2	120.0	120.0	80.5	120.0	120.0
48"		53.5	80.3	107.1	82.7	120.0	120.0	87.7	120.0	120.0	70.5	105.7	120.0
54"		47.6	71.4	95.2	73.5	110.2	120.0	77.9	116.9	120.0	62.6	94.0	120.0
60"		42.8	64.3	85.7	66.1	99.2	120.0	70.1	105.2	120.0	56.4	84.6	112.8
30"	90"	82.3	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	108.4	120.0	120.0
36"		68.6	102.9	120.0	106.0	120.0	120.0	112.4	120.0	120.0	90.3	120.0	120.0
42"		58.8	88.2	117.6	90.8	120.0	120.0	96.3	120.0	120.0	77.4	116.1	120.0
48"		51.5	77.2	102.9	79.5	119.2	120.0	84.3	120.0	120.0	67.7	101.6	120.0
54"		45.7	68.6	91.5	70.6	106.0	120.0	74.9	112.4	120.0	60.2	90.3	120.0
60"		41.2	61.8	82.3	63.6	95.4	120.0	67.4	101.1	120.0	54.2	81.3	108.4
30"	96"	77.2	115.8	120.0	119.2	120.0	120.0	120.0	120.0	120.0	101.6	120.0	120.0
36"		64.3	96.5	120.0	99.3	120.0	120.0	105.3	120.0	120.0	84.7	120.0	120.0
42"		55.1	82.7	110.3	85.1	120.0	120.0	90.3	120.0	120.0	72.6	108.9	120.0
48"		48.3	72.4	96.5	74.5	111.8	120.0	79.0	118.5	120.0	63.5	95.3	120.0
54"		42.9	64.3	85.8	66.2	99.3	120.0	70.2	105.3	120.0	56.4	84.7	112.9
60"		38.6	57.9	77.2	59.6	89.4	119.2	63.2	94.8	120.0	50.8	76.2	101.6
30"	98–1/2"	75.2	112.9	120.0	116.2	120.0	120.0	120.0	120.0	120.0	99.0	120.0	120.0
36"		62.7	94.1	120.0	96.8	120.0	120.0	102.7	120.0	120.0	82.5	120.0	120.0
42"		53.7	80.6	107.5	83.0	120.0	120.0	88.0	120.0	120.0	70.7	106.1	120.0
48"		47.0	70.5	94.1	72.6	108.9	120.0	77.0	115.5	120.0	61.9	92.8	120.0
54"		41.8	62.7	83.6	64.5	96.8	120.0	68.4	102.7	120.0	55.0	82.5	110.0
30"	102"	72.7	109.0	120.0	112.2	120.0	120.0	119.0	120.0	120.0	95.6	120.0	120.0
36"		60.5	90.8	120.0	93.5	120.0	120.0	99.1	120.0	120.0	79.7	119.5	120.0
42"		51.9	77.8	103.8	80.1	120.0	120.0	85.0	120.0	120.0	68.3	102.5	120.0
48"		45.4	68.1	90.8	70.1	105.2	120.0	74.4	111.5	120.0	59.8	89.6	119.5
54"		40.4	60.5	80.7	62.3	93.5	120.0	66.1	99.1	120.0	53.1	79.7	106.2
30"	108"	68.6	102.9	120.0	106.0	120.0	120.0	112.4	120.0	120.0	90.3	120.0	120.0
36"		57.2	85.8	114.4	88.3	120.0	120.0	93.6	120.0	120.0	75.3	112.9	120.0
42"		49.0	73.5	98.0	75.7	113.5	120.0	80.3	120.0	120.0	64.5	96.8	120.0
48"		42.9	64.3	85.8	66.2	99.3	120.0	70.2	105.3	120.0	56.4	84.7	112.9
30"	110–1/2"	67.1	100.6	120.0	103.6	120.0	120.0	109.8	120.0	120.0	88.3	120.0	120.0
36"		55.9	83.8	111.8	86.3	120.0	120.0	91.5	120.0	120.0	73.6	110.3	120.0
42"		47.9	71.9	95.8	74.0	111.0	120.0	78.4	117.7	120.0	63.0	94.6	120.0
48"		41.9	62.9	83.8	64.7	97.1	120.0	68.6	103.0	120.0	55.2	82.8	110.3
30"	114"	65.0	97.5	120.0	100.4	120.0	120.0	106.4	120.0	120.0	85.6	120.0	120.0
36"		54.2	81.3	108.4	83.6	120.0	120.0	88.7	120.0	120.0	71.3	106.9	120.0
42"		46.4	69.7	92.9	71.7	107.5	120.0	76.0	114.0	120.0	61.1	91.7	120.0
48"		40.6	60.9	81.3	62.7	94.1	120.0	66.5	99.8	120.0	53.5	80.2	106.9
30"	120"	61.8	92.6	120.0	95.4	120.0	120.0	101.1	120.0	120.0	81.3	120.0	120.0
36"		51.5	77.2	102.9	79.5	119.2	120.0	84.3	120.0	120.0	67.7	101.6	120.0
42"		44.1	66.2	88.2	68.1	102.2	120.0	72.2	108.3	120.0	58.1	87.1	116.1
48"		38.6	57.9	77.2	59.6	89.4	119.2	63.2	94.8	120.0	50.8	76.2	101.6



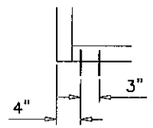
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

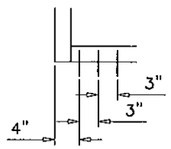


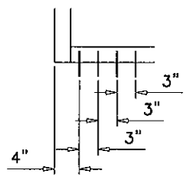
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

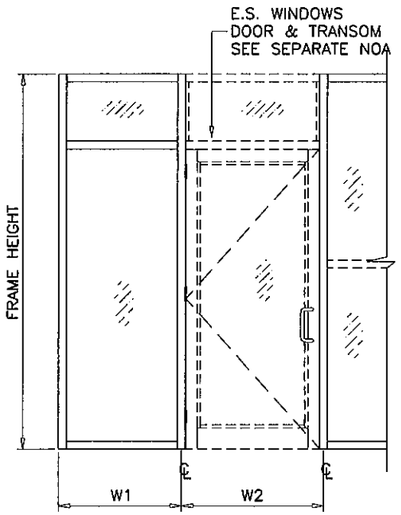


$$\text{WIDTH (W)} = \frac{W1}{2} + \frac{W2}{4}$$

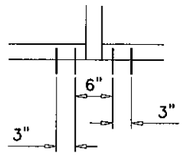




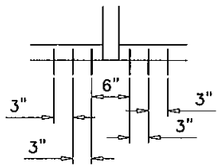




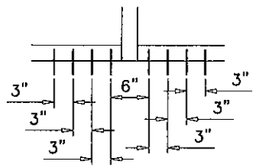
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$



A2, B2, C2



A3, B3, C3



A4, B4, C4

ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION

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

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

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

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No. 12-0404.04
Expiration Date 12/09/2015
By
Miami Dade Product Control

NOTE:
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

ANCHORS
3/8" MAX. SHIM SPACE

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

MAR 20 2012

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

STORE\ W09-25ES

SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

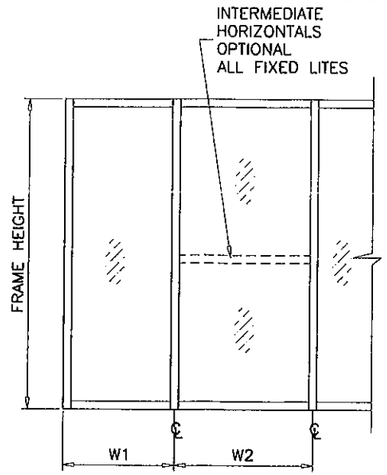
E.S. WINDOWS, LLC
5220 N.W. 72 AVE. BAY #4
MIAMI, FL. 33166
TEL. (305) 624-7775 FAX. (305) 624-7777

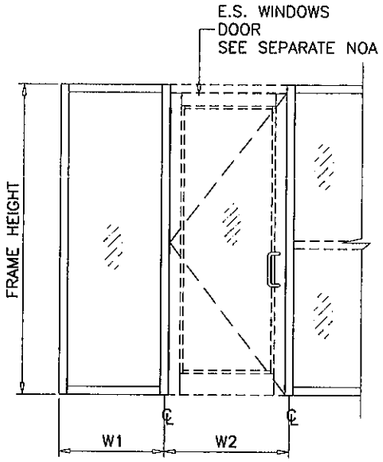
revisions:			
no	date	by	description
A	08.28.09		NO CHANGE THIS SHEET
B	03.16.10		NO CHANGE THIS SHEET
C	03.13.12		UPDATED TO 2010 FBC

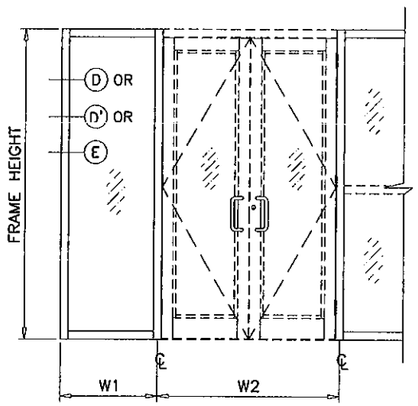
date: 04-16-09
scale: -
dr. by: HAMID
chk. by:

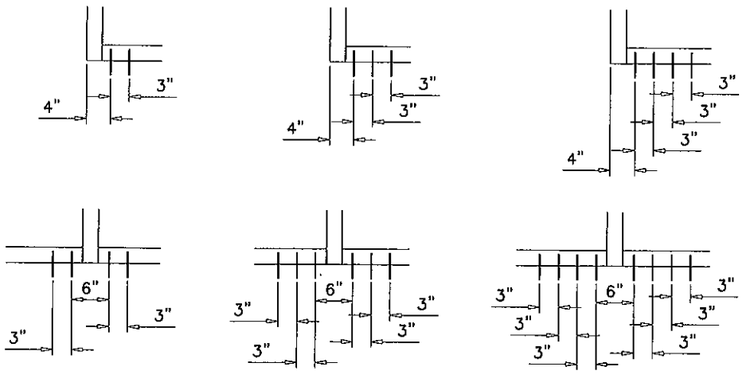
drawing no.
W09-25

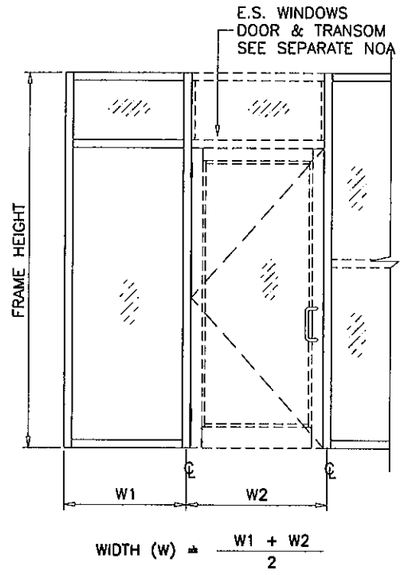
ANCHOR LOAD CAPACITY – PSF (1/2" MAX. SHIM SPACE) EXT.(+) & INT.(–)								CHART #7
NOMINAL DIMS.		ANCHORS TYPE 'B'			ANCHORS TYPE 'C'			
WIDTH (W)	FRAME HEIGHT	B2	B3	B4	C2	C3	C4	
30"	72"	120.0	120.0	120.0	120.0	120.0	120.0	
36"		107.1	120.0	120.0	120.0	120.0	120.0	
42"		91.8	120.0	120.0	120.0	120.0	120.0	
48"		80.3	120.0	120.0	105.3	120.0	120.0	
54"		71.4	107.1	120.0	93.6	120.0	120.0	
60"		64.3	96.4	120.0	84.3	120.0	120.0	
30"	78"	118.6	120.0	120.0	120.0	120.0	120.0	
36"		98.9	120.0	120.0	120.0	120.0	120.0	
42"		84.7	120.0	120.0	111.1	120.0	120.0	
48"		74.2	111.2	120.0	97.2	120.0	120.0	
54"		65.9	98.9	120.0	86.4	120.0	120.0	
60"		59.3	89.0	118.6	77.8	116.7	120.0	
30"	86–1/2"	107.0	120.0	120.0	120.0	120.0	120.0	
36"		89.2	120.0	120.0	116.9	120.0	120.0	
42"		76.4	114.6	120.0	100.2	120.0	120.0	
48"		66.9	100.3	120.0	87.7	120.0	120.0	
54"		59.4	89.2	118.9	77.9	116.9	120.0	
60"		53.5	80.2	107.0	70.1	105.2	120.0	
30"	90"	102.8	120.0	120.0	120.0	120.0	120.0	
36"		85.7	120.0	120.0	112.4	120.0	120.0	
42"		73.4	110.2	120.0	96.3	120.0	120.0	
48"		64.3	96.4	120.0	84.3	120.0	120.0	
54"		57.1	85.7	114.3	74.9	112.4	120.0	
60"		51.4	77.1	102.8	67.4	101.1	120.0	
30"	96"	96.4	120.0	120.0	120.0	120.0	120.0	
36"		80.3	120.0	120.0	105.3	120.0	120.0	
42"		68.9	103.3	120.0	90.3	120.0	120.0	
48"		60.3	90.4	120.0	79.0	118.5	120.0	
54"		53.6	80.3	107.1	70.2	105.3	120.0	
60"		48.2	72.3	96.4	63.2	94.8	120.0	
30"	98–1/2"	94.0	120.0	120.0	120.0	120.0	120.0	
36"		78.3	117.4	120.0	102.7	120.0	120.0	
42"		67.1	100.7	120.0	88.0	120.0	120.0	
48"		58.7	88.1	117.4	77.0	115.5	120.0	
54"		52.2	78.3	104.4	68.4	102.7	120.0	
30"	102"	90.7	120.0	120.0	119.0	120.0	120.0	
36"		75.6	113.4	120.0	99.1	120.0	120.0	
42"		64.8	97.2	120.0	85.0	120.0	120.0	
48"		56.7	85.1	113.4	74.4	111.5	120.0	
54"		50.4	75.6	100.8	66.1	99.1	120.0	
30"	108"	85.7	120.0	120.0	112.4	120.0	120.0	
36"		71.4	107.1	120.0	93.6	120.0	120.0	
42"		61.2	91.8	120.0	80.3	120.0	120.0	
48"		53.6	80.3	107.1	70.2	105.3	120.0	
30"	110–1/2"	83.8	120.0	120.0	109.8	120.0	120.0	
36"		69.8	104.7	120.0	91.5	120.0	120.0	
42"		59.8	89.7	119.6	78.4	117.7	120.0	
48"		52.3	78.5	104.7	68.6	103.0	120.0	
30"	114"	81.2	120.0	120.0	106.4	120.0	120.0	
36"		67.6	101.5	120.0	88.7	120.0	120.0	
42"		58.0	87.0	116.0	76.0	114.0	120.0	
48"		50.7	76.1	101.5	66.5	99.8	120.0	
30"	120"	77.1	115.7	120.0	101.1	120.0	120.0	
36"		64.3	96.4	120.0	84.3	120.0	120.0	
42"		55.1	82.6	110.2	72.2	108.3	120.0	
48"		48.2	72.3	96.4	63.2	94.8	120.0	











ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION

B2 = (2) ANCHORS TYPE 'B' AT EACH SIDE OF JAMB AND MULLION
C2 = (2) ANCHORS TYPE 'C' 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

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

ANCHORS
1/2" MAX. SHIM SPACE

PRODUCT REVISED
as complying with the Florida Building Code
Acceptance No 12-0404.04
Expiration Date 12/09/2015
By
Miami Dade Product Control

NOTE:
INTERPOLATION BETWEEN WIDTHS OR HEIGHTS ALLOWED.

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

MAR 20 2012

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SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

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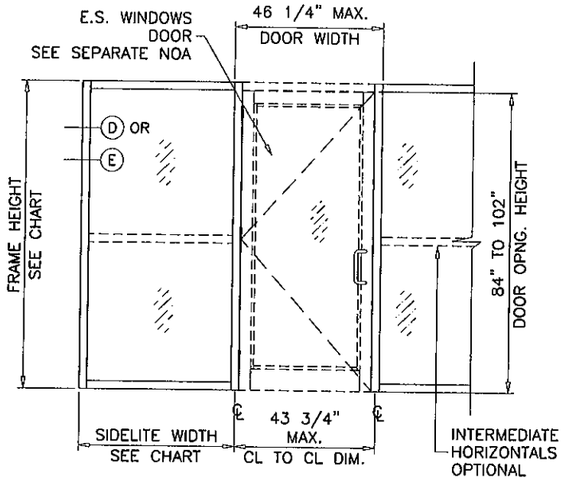
revisions:			
no	date	by	description
A	08.28.09		NO CHANGE THIS SHEET
B	03.16.10		NO CHANGE THIS SHEET
C	03.13.12		UPDATED TO 2010 FBC

date: 04-16-09
scale: –
dr. by: HAMID
chk. by:

drawing no. W09-25

sheet 5 of 12



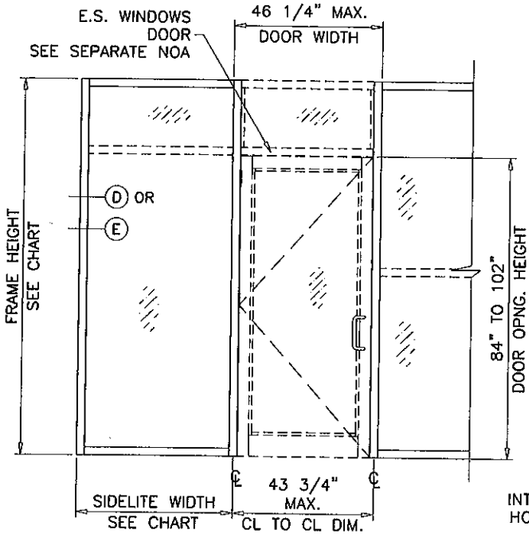


CHART #8

DOOR MULLION LOAD CAPACITY–PSF			
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	MULL 'MD1' EXT. (+) INT. (–)	MULL 'MD2' EXT. (+) INT. (–)
32	86–1/2"	120.0	120.0
36		120.0	120.0
42		120.0	120.0
48		120.0	120.0
54		120.0	120.0
60		120.0	120.0
32	98–1/2"	120.0	120.0
36		120.0	120.0
42		120.0	120.0
48		120.0	120.0
54		117.3	120.0
58		109.2	120.0
32	110–1/2"	120.0	120.0
36		120.0	120.0
42		107.5	120.0
48		94.1	120.0
52		86.8	120.0
32	114"	120.0	120.0
36		114.2	120.0
42		97.9	120.0
48		85.7	120.0
50		82.2	120.0
32	120"	110.2	120.0
36		97.9	120.0
42		83.9	120.0
48		73.4	115.6

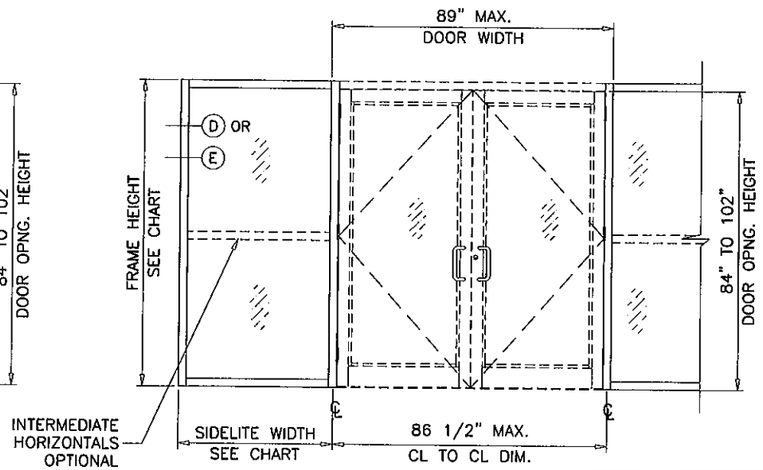
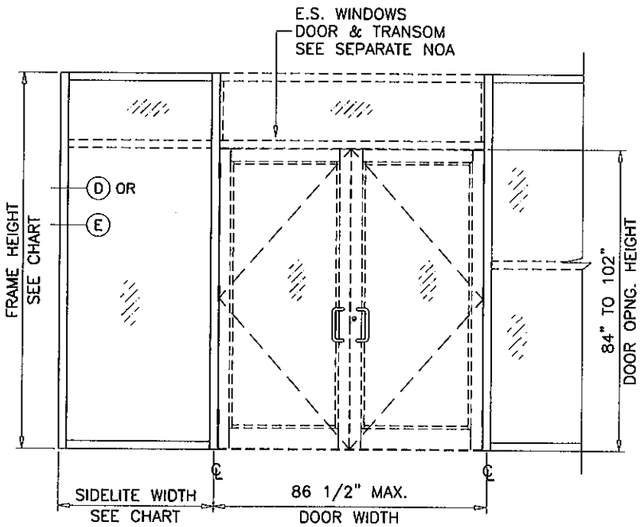
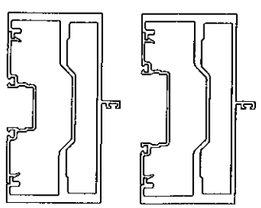


CHART #9

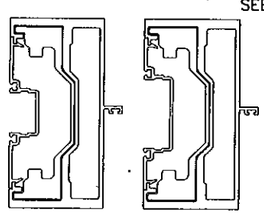
DOOR MULLION LOAD CAPACITY–PSF			
SIDELITE WIDTH INCHES	FRAME HEIGHT INCHES	MULL 'MD1' EXT. (+) INT. (–)	MULL 'MD2' EXT. (+) INT. (–)
30	96	90.0	90.0
36		90.0	90.0
42		90.0	90.0
48		90.0	90.0
54		90.0	90.0
60		90.0	90.0
30	102	90.0	90.0
36		90.0	90.0
42		90.0	90.0
48		90.0	90.0
54		90.0	90.0
30	108	90.0	90.0
36		90.0	90.0
42		90.0	90.0
48		85.7	90.0
30	114	83.8	90.0
36		79.0	90.0
42		74.7	90.0
48		70.8	90.0
30	120	70.0	90.0
36		66.1	90.0
42		62.5	90.0
48		59.4	90.0





MULLION 'MD1'
NO REINF.

MD1	ALUM
Ix IN^4	9.9140
Sx IN^3	3.9615



MULLION 'MD2'
ALUM REINF.

MD2	ALUM
Ix IN^4	15.5994
Sx IN^3	6.2333

DOOR–WINDOW WALL
TRANSITION MULLION

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

PRODUCT REVISED
as complying with the Florida
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Acceptance No 12-0404.04
Expiration Date 12/09/2015
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MAR 20 2012

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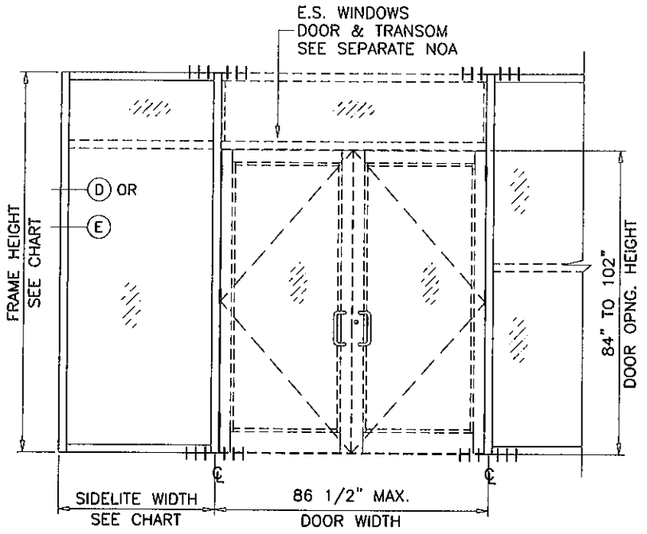
SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

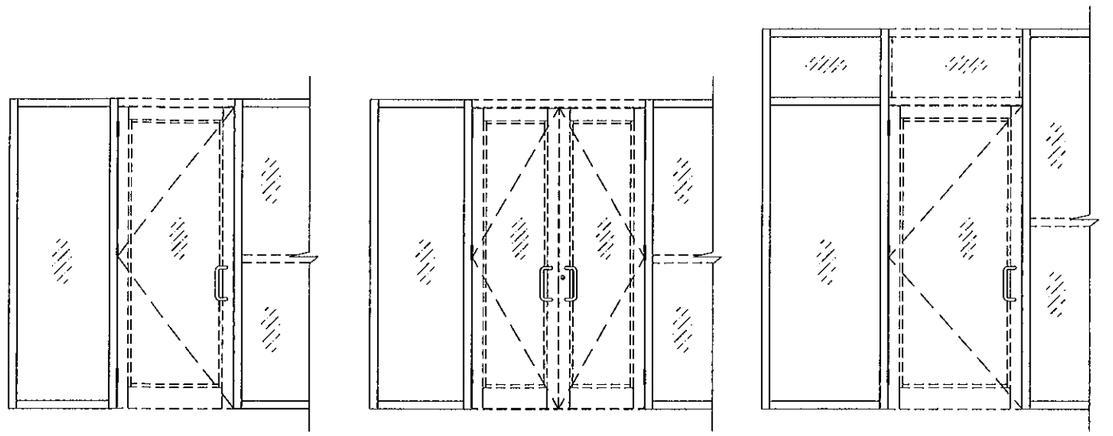
revisions:			
no	date	by	description
A	08.28.09		REV. PER BCCO COMMENTS
B	03.16.10		INSUL. GLASS OPTION ADDED
C	03.13.12		NO CHANGE THIS SHEET

date: 04-16-09
scale: –
dr. by: HAMID
chk. by:

drawing no.
W09–25

sheet 6 of 12





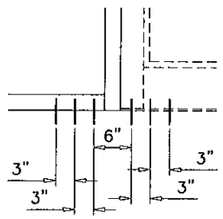
FOR ANCHOR CAPACITIES FOR THE ABOVE CASES
SEE SHEETS 4 & 5.

CHART #10

ANCHOR LOAD CAPACITY - PSF (3/8" MAX. SHIM SPACE) EXT.(+) & INT.(-)					
NOMINAL DIMS.		ANCHORS TYPE 'A3'	ANCHORS TYPE 'B3'	ANCHORS TYPE 'C3'	ANCHORS TYPE 'D3'
WIDTH (W)	FRAME HEIGHT				
30	96	62.5	96.6	120.0	82.3
36		59.3	91.6	120.0	78.1
42		56.4	87.2	120.0	74.3
48		53.8	83.1	118.5	70.8
54		51.4	79.4	105.3	67.7
60		49.2	76.0	94.8	64.8
30	102	60.1	92.7	120.0	79.1
36		56.9	87.9	120.0	74.9
42		54.1	83.5	120.0	71.2
48		51.5	79.6	111.5	67.8
54		49.2	76.0	99.1	64.8
30	108	57.8	89.2	120.0	76.0
36		54.7	84.5	120.0	72.0
42		51.9	80.2	120.0	68.4
48		49.5	76.4	105.3	65.1
30	114	55.7	85.9	120.0	73.3
36		52.7	81.3	120.0	69.3
42		50.0	77.1	114.0	65.7
48		47.5	73.4	99.8	62.5
30	120	53.7	82.9	120.0	70.7
36		50.8	78.4	120.0	66.8
42		48.1	74.3	108.3	63.3
48		45.7	70.6	94.8	60.2

ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION

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



TRANSITION MULLION ANCHORS
DOUBLE DOOR WITH TRANSOM

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0404.04
Expiration Date 7/09/2015
By
Miami Dade Product Control

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

MAR 20 2012

afc

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
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SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

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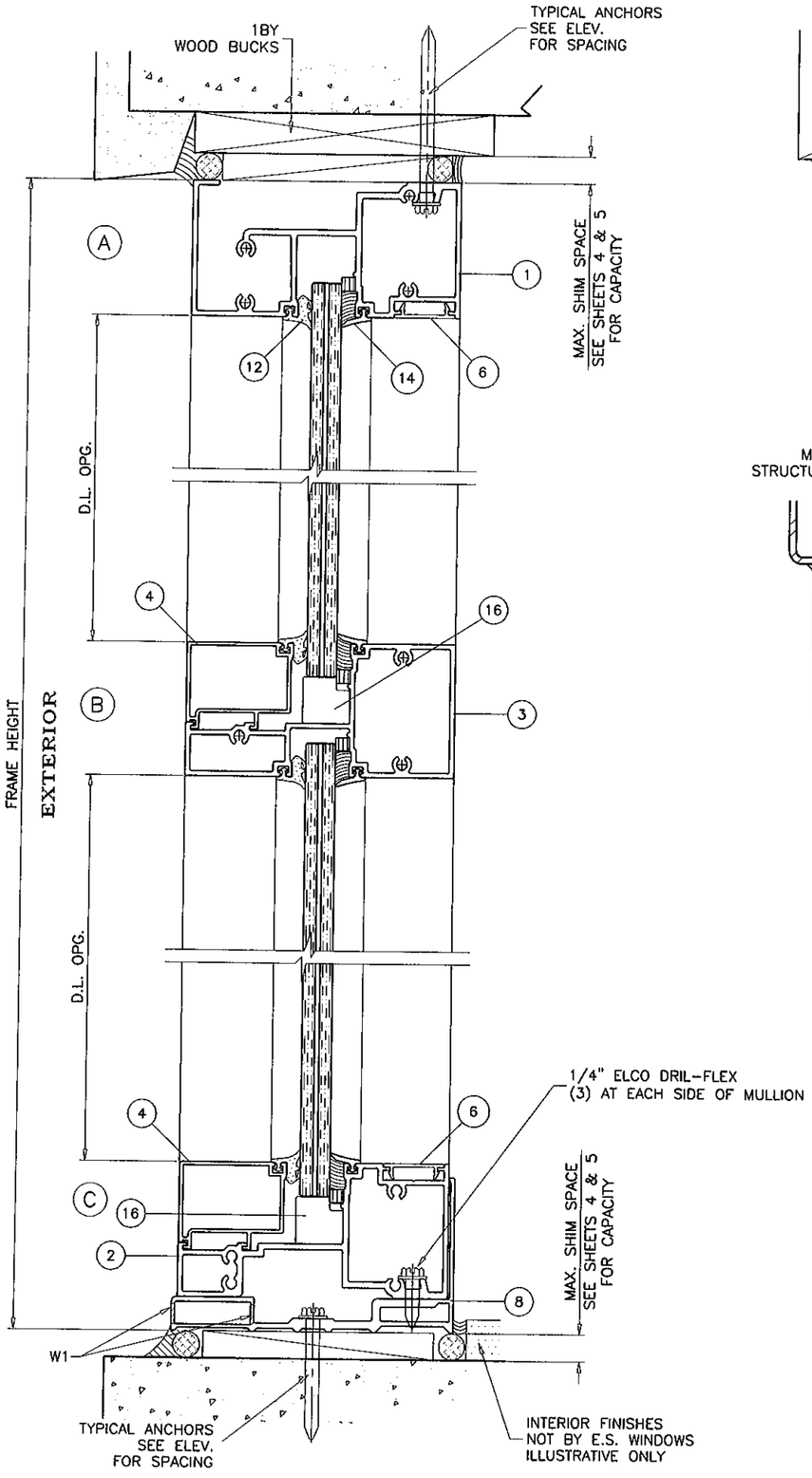
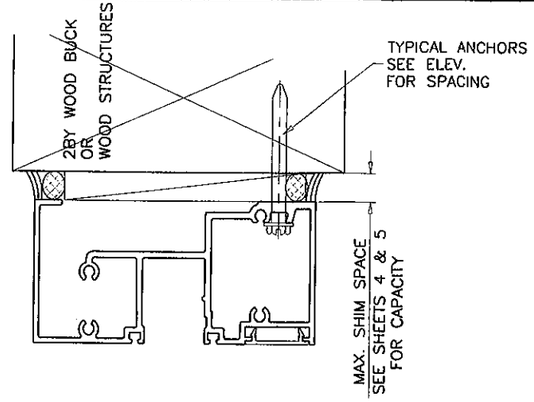
revisions:

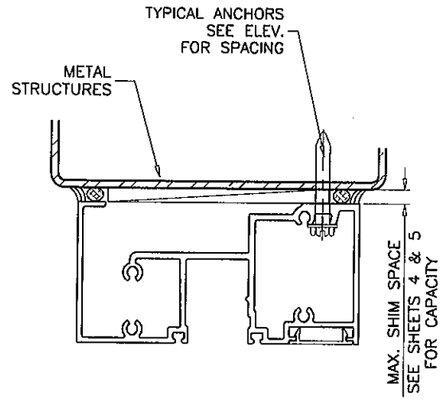
no	date	by	description
A	08.28.09		NO CHANGE THIS SHEET
B	03.16.10		NO CHANGE THIS SHEET
C	03.13.12		UPDATED TO 2010 FBC

date: 04-16-09
scale: -
dr. by: HAMID
chk. by:

drawing no.
W09-25







TYPICAL ANCHORS: SEE ELEV. FOR SPACING

TYPE 'A'

1/4" DIA ULTRACON BY 'ELCO'

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
WITH 1-3/8" MIN. PENETRATION INTO WOOD

THRU 1BY WOOD BUCKS INTO CONCRETE
WITH 1-1/4" MIN. EMBED INTO CONCRETE

DIRECTLY INTO CONCRETE
WITH 1-1/4" MIN. EMBED INTO CONC.

ANCHOR EDGE DISTANCES

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

TYPE 'B'

1/4" DIA HILTI KWIK CON II BY 'HILTI'

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

DIRECTLY INTO CONCRETE
WITH 1-1/4" MIN. EMBED INTO CONC.

ANCHOR EDGE DISTANCES

INTO CONCRETE AND MASONRY = 3" MIN.
INTO WOOD STRUCTURE = 1" MIN.

TYPE 'C'

5/16" DIA ULTRACON BY 'ELCO'

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

DIRECTLY INTO CONCRETE
WITH 1-1/4" MIN. EMBED INTO CONC.

ANCHOR EDGE DISTANCES

INTO CONCRETE AND MASONRY = 3" MIN.
INTO WOOD STRUCTURE = 1" MIN.

TYPE 'D'

#14 SMS OR SELF DRILLING SCREWS ST/ST

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.

WEEP HOLES:

W1 = 3/8" WEEP HOLES
(1) AT 3" FROM EACH END
(2) AT EACH MULLION AT 3" FROM MULLION CENTERLINE.

SEALANTS:

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

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

LAMINATED GLASS

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

PRODUCT REVISED
as complying with the Florida
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Miami Dade Product Control

MAR 20 2012

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

STORE\W09-25ES

SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

E.S. WINDOWS, LLC
5220 N.W. 72 AVE. BAY #4
MIAMI, FL. 33166
TEL. (305) 624-7775 FAX. (305) 624-7777

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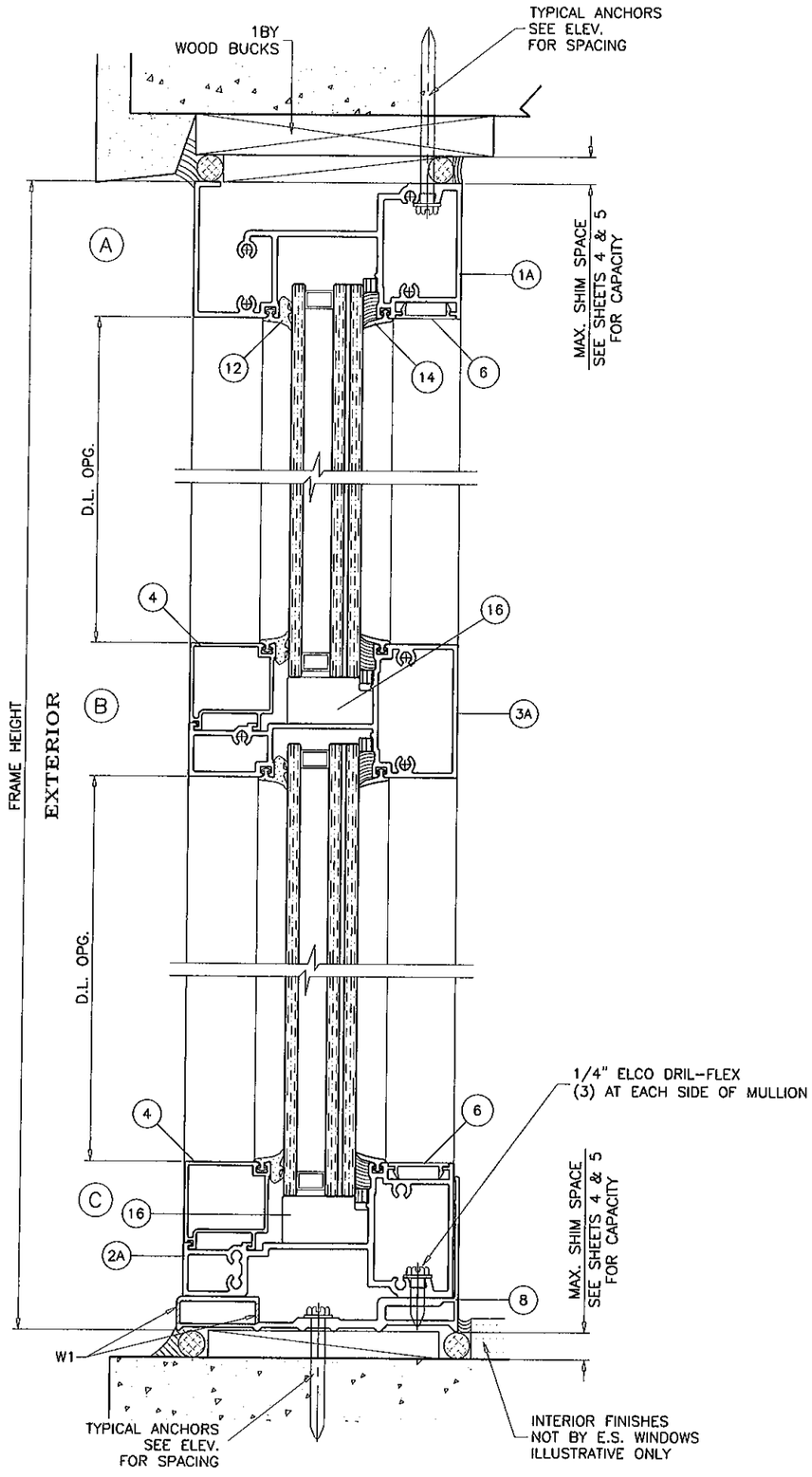
scale: 3/8" = 1"
dr. by: HAMID
chk. by:

drawing no.
W09-25

sheet 8 of 12



INSUL. LAM. GLASS

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afc

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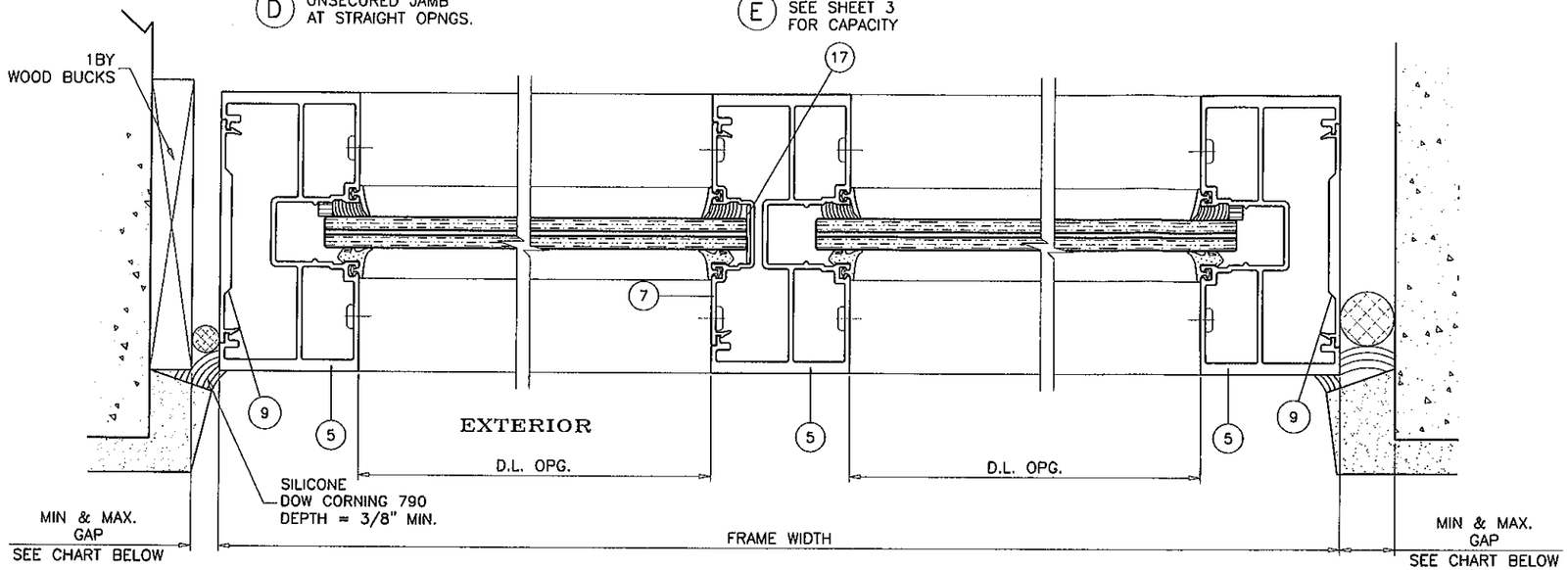
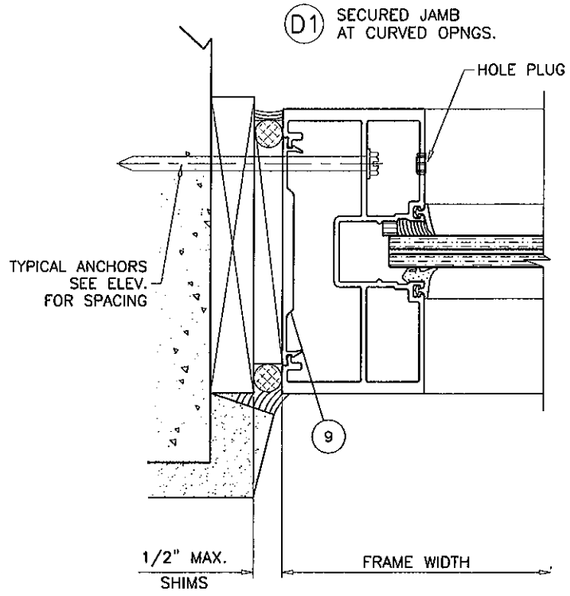
(D) UNSECURED JAMB AT STRAIGHT OPNGS.



(E) WITHOUT REINF. SEE SHEET 3 FOR CAPACITY

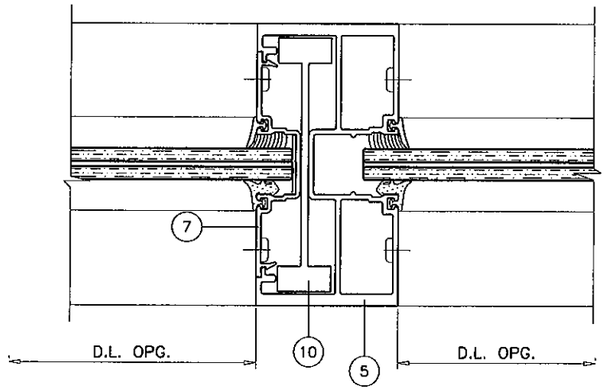
(D1) SECURED JAMB AT CURVED OPNGS.



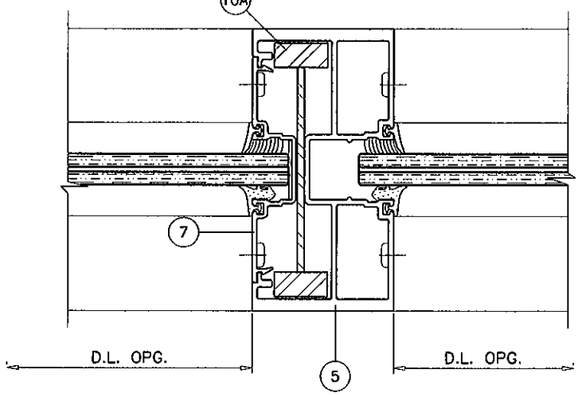
MAX. FRAME HEIGHT	GAP	
	MIN.	MAX.
60"	3/16"	3/4"
72"	3/16"	3/4"
84"	3/16"	3/4"
96"	3/16"	3/4"
108"	5/16"	3/4"
120"	3/8"	3/4"

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

(E) ALUM REINF. SEE SHEET 3 FOR CAPACITY



(E) STEL REINF. SEE SHEET 3 FOR CAPACITY



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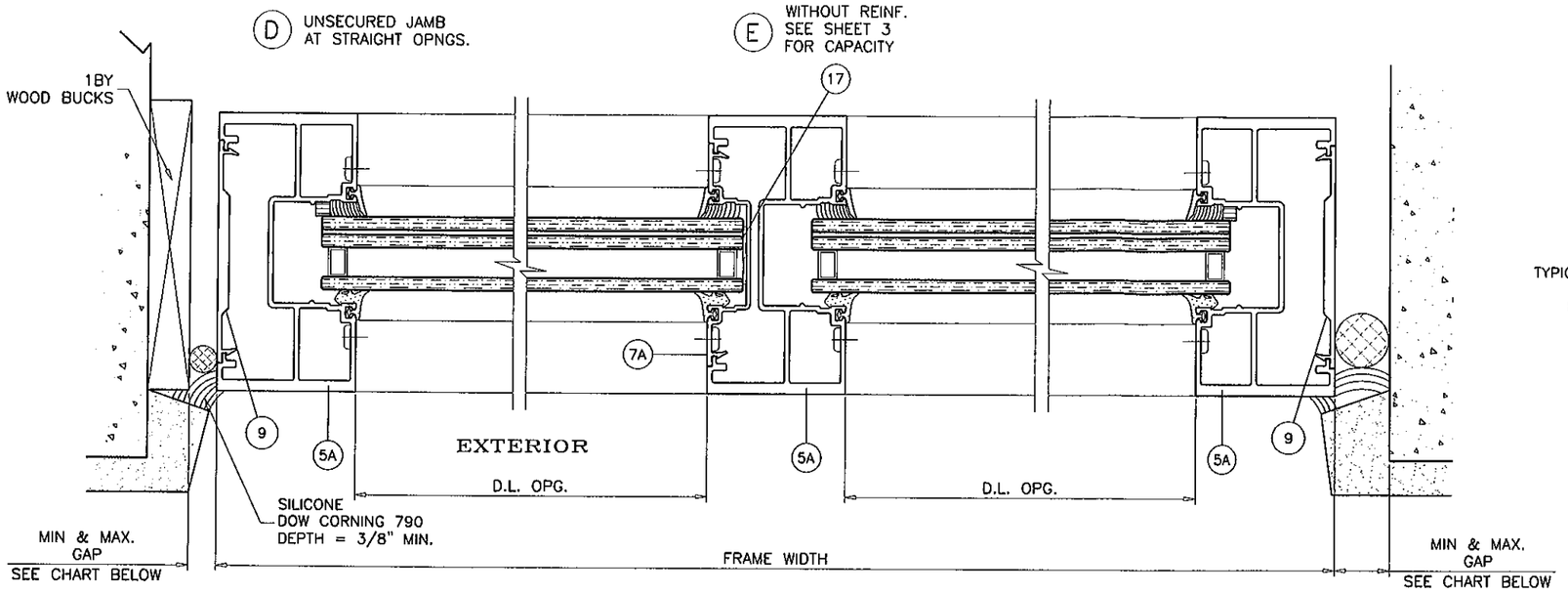

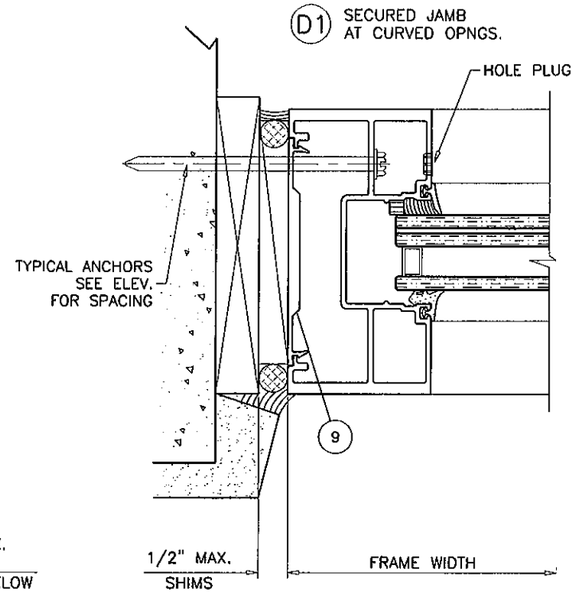

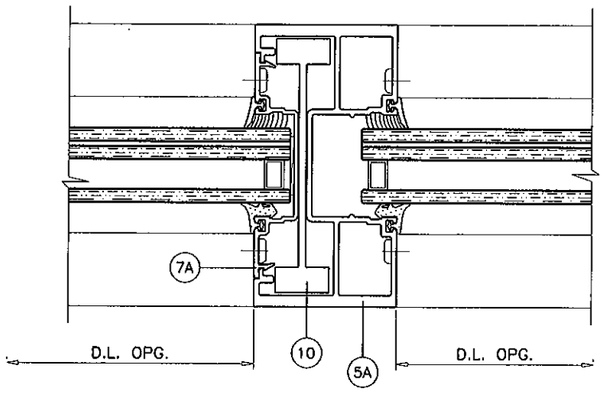

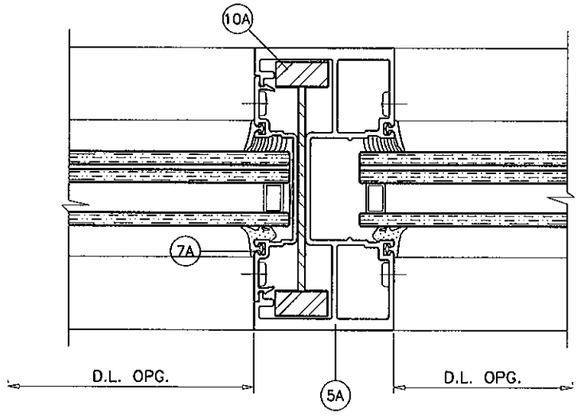

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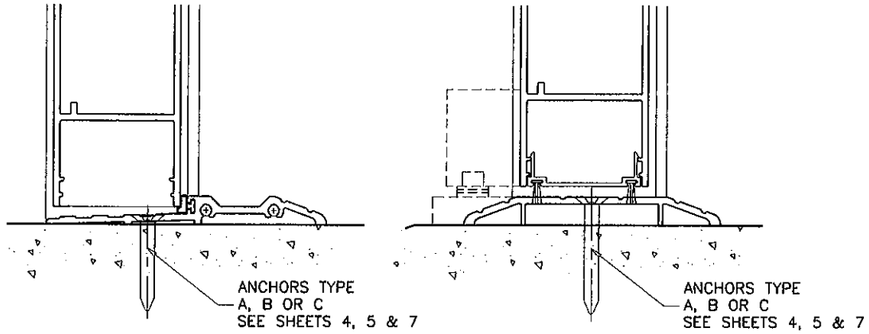
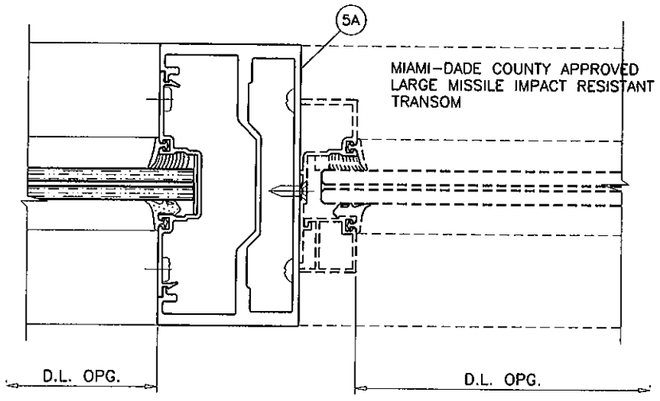


SEE SEPARATE NOA FOR DESIGN LOAD CAPACITY OF DOORS AND DOOR ANCHORS.

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

(F) WITHOUT REINF.
SEE SHEETS 6
FOR CAPACITY



EXTERIOR

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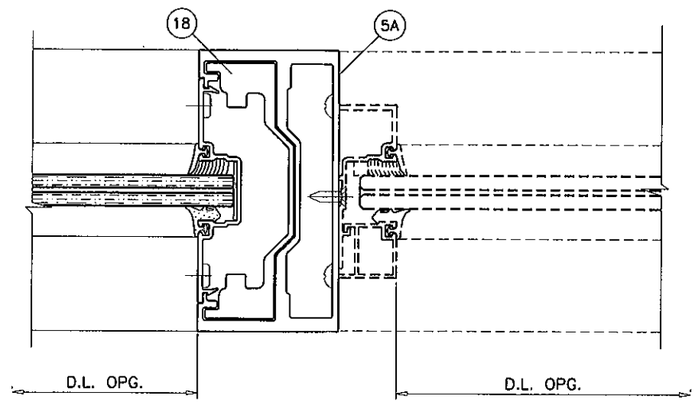

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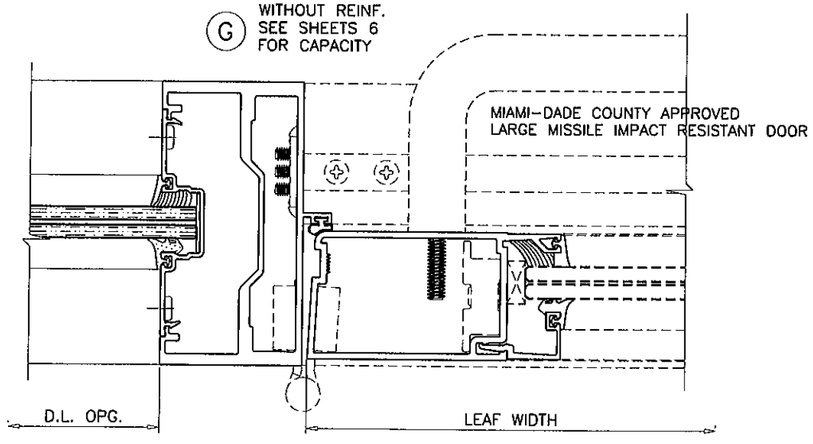

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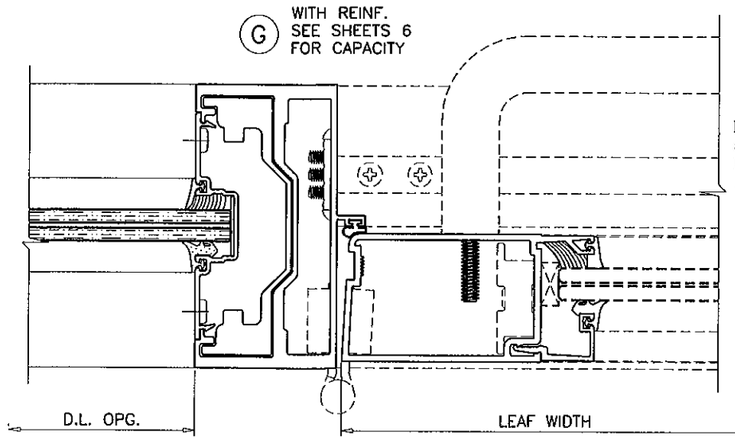

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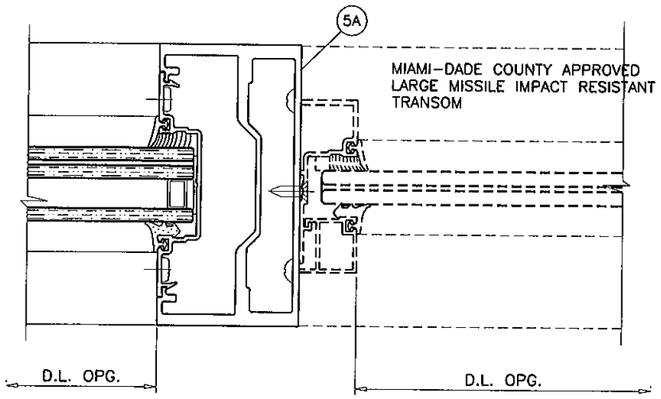

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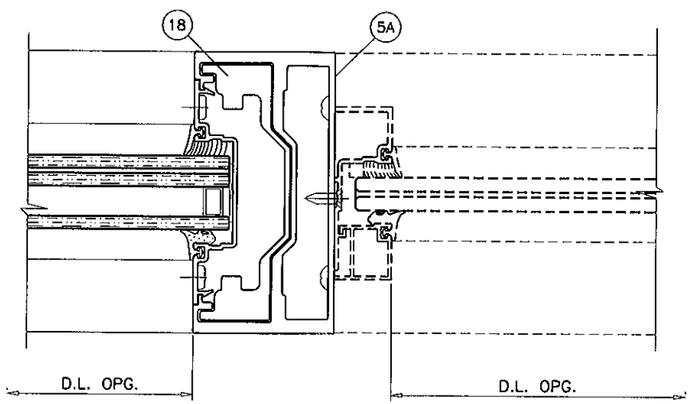

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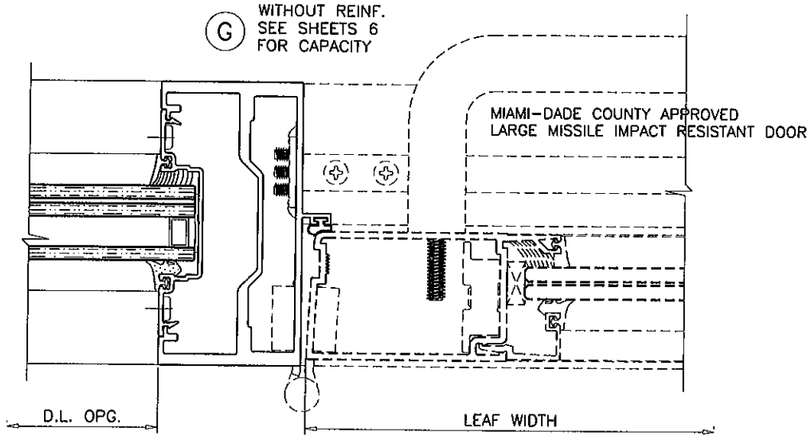

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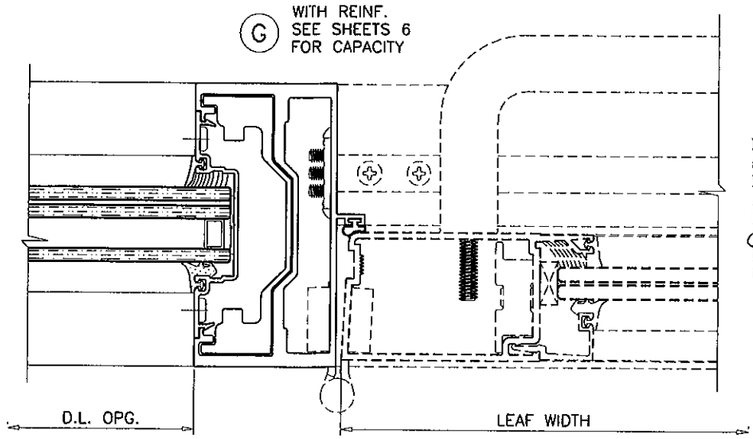

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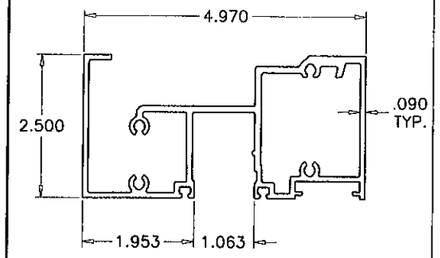
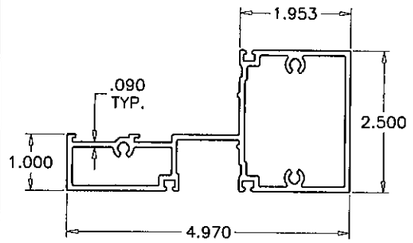
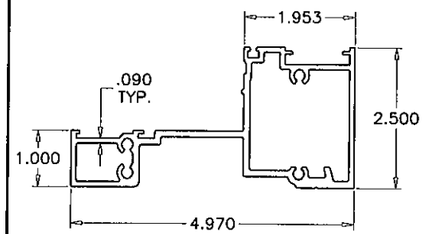


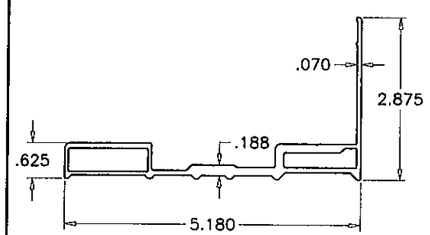
1 FRAME HEAD



3 FRAME HORIZONTAL



2 FRAME SILL



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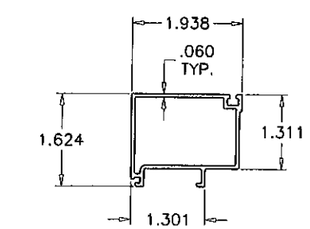

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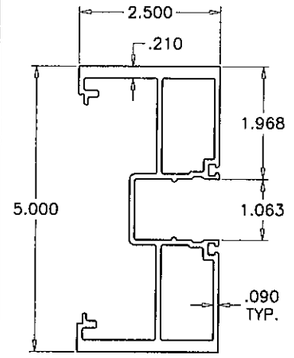
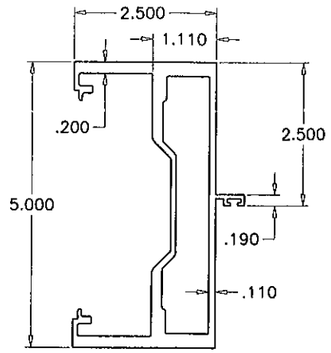
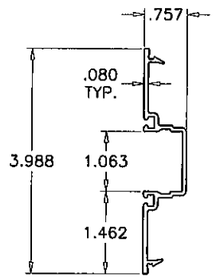


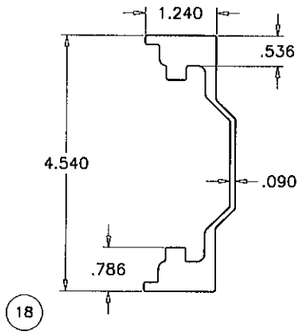
5 FRAME JAMB/MULLION



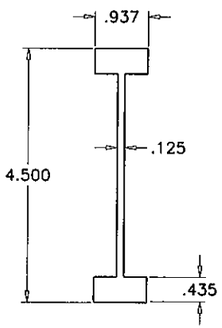
5A DOOR MULLION



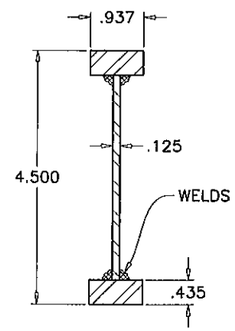
7 POCKET FILLER



18 DOOR MULLION REINFORCING



10 MULLION REINFORCING



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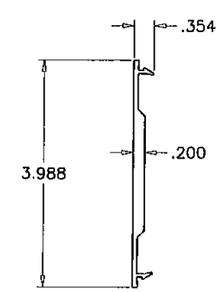
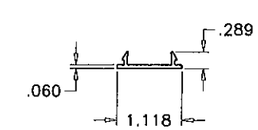


9 JAMB FILLER



6 FRAME COVER

ITEM NO.	PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
1	ES9506	AS REQD.	FRAME HEAD (LAM. GLASS)	6063-T6	–
2	ES9503	AS REQD.	FRAME SILL (LAM. GLASS)	6063-T6	–
3	ES9505	AS REQD.	FRAME HORIZONTAL (LAM. GLASS)	6063-T5	–
4	ES9504	AS REQD.	GLAZING STOP (LAM. GLASS)	6063-T5	–
5	ES9507	AS REQD.	FRAME JAMB/MULLION (LAM. GLASS)	6063-T6	–
5A	ES9013	AS REQD.	DOOR MULLION	6063-T6	–
6	ES9502	AS REQD.	FRAME COVER	6063-T5	–
7	ES9508	AS REQD.	POCKET FILLER (LAM. GLASS)	6063-T6	–
8	ES9501	AS REQD.	SILL FLASHING	6063-T5	–
9	ES9016	AS REQD.	JAMB FILLER	6063-T6	–
10	ES9510	AS REQD.	MULLION REINFORCING	6063-T6	–
10A	–	AS REQD.	MULLION REINFORCING	STEEL	–
11	#12 X 1"	AS REQD.	FRAME ASSEMBLY SCREWS	ST/ST	P.H. SMS
12	–	AS REQD.	WEDGE GASKET	EPDM	–
13	–	AS REQD.	GLAZING COMPOUND	SILICONE	DOW CORNING 795/983
14	–	AS REQD.	TRIM GASKET	EPDM	–
15	–	AS REQD.	INTERIOR SPACER 1/4" X 1/4"	EPDM	–
16	–	AS REQD.	SETTING BLOCK (LAM. GLASS)	EPDM	–
17	–	AS REQD.	SIDE BLOCK	EPDM	–
18	ES9017	AS REQD.	DOOR MULLION REINFORCING	6063-T6	–

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CIVIL
FLA. PE # 70592
C.A.N. 3538

MAR 20 2012

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

STORE\W09-25ES

SERIES 9500 ALUM WINDOW WALL SYSTEM (L.M.I.)

E.S. WINDOWS, LLC
5220 N.W. 72 AVE. BAY #4
MIAMI, FL. 33166
TEL. (305) 624-7775 FAX. (305) 624-7777

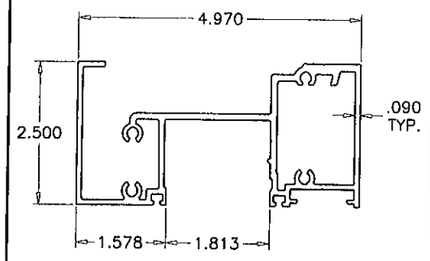
revisions:

no	date	by	description
A	08.28.09		NO CHANGE THIS SHEET
B	03.16.10		INSUL. GLASS OPTION ADDED
C	03.13.12		UPDATED TO 2010 FBC

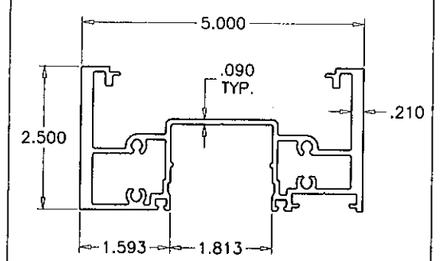
date: 04-16-09
scale: 3/8" = 1"
dr. by: HAMID
chk. by:

drawing no.
W09-25

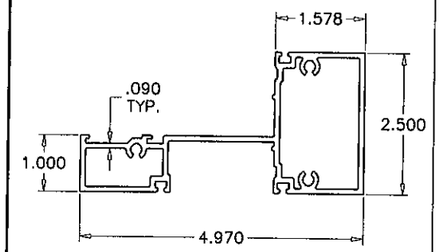
sheet 11 of 12



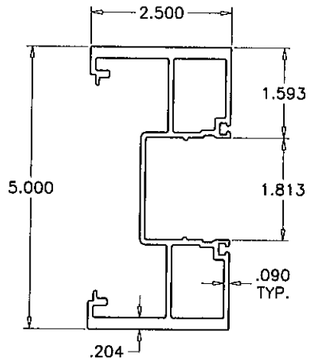
1A FRAME HEAD



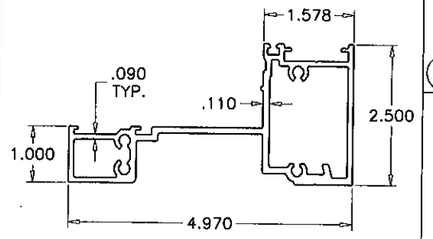
1.1 ALT. FRAME HEAD



3A FRAME HORIZONTAL

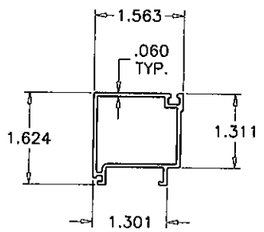


5A FRAME JAMB/MULLION



2A FRAME SILL

7A POCKET FILLER



4A GLAZING STOP

ITEM NO.	PART NUMBER	QUANTITY	DESCRIPTION	MATERIAL	MANF./SUPPLIER/REMARKS
1A	ES-9554	AS REQD.	FRAME HEAD (INSUL. LAM. GLASS)	6063-T6	-
1.1	ES-9558	AS REQD.	ALT. FRAME HEAD (INSUL. LAM. GLASS)	6063-T6	-
2A	ES-9551	AS REQD.	FRAME SILL (INSUL. LAM. GLASS)	6063-T6	-
3A	ES-9553	AS REQD.	FRAME HORIZONTAL (INSUL. LAM. GLASS)	6063-T5	-
4A	ES-9552	AS REQD.	GLAZING STOP (INSUL. LAM. GLASS)	6063-T5	-
5A	ES-9555	AS REQD.	FRAME JAMB/MULLION (INSUL. LAM. GLASS)	6063-T6	-
7A	ES-9556	AS REQD.	POCKET FILLER (INSUL. LAM. GLASS)	6063-T6	-
16A	-	AS REQD.	SETTING BLOCK (INSUL. LAM. GLASS)	EPDM	-

PRODUCT REVISED
as complying with the Florida
Building Code
Acceptance No 12-0404.04
Expiration Date 12/09/2015
By
Miami Dade Product Control

Engr: JAVAD AHMAD
CIVIL
FLA. PE # 70592
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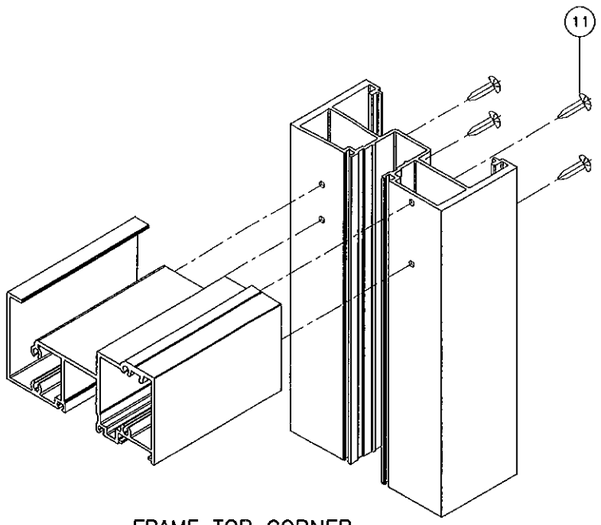
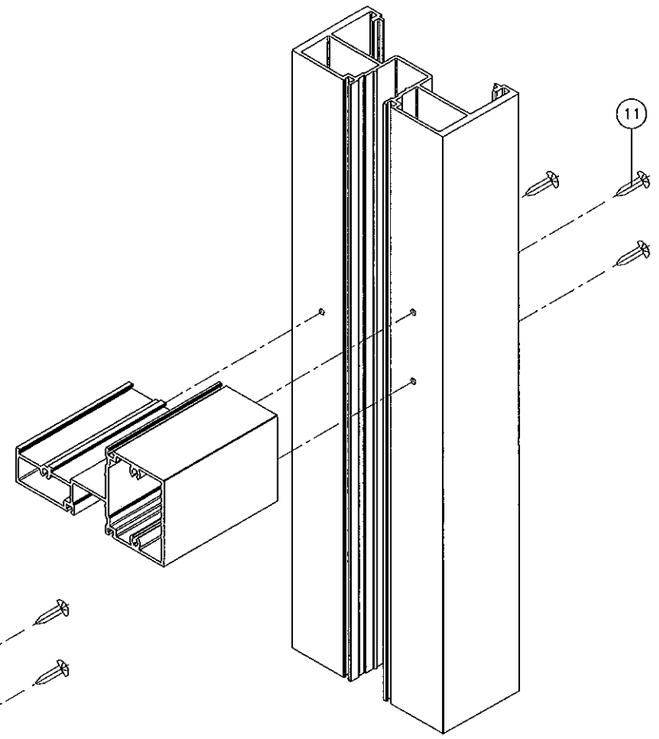
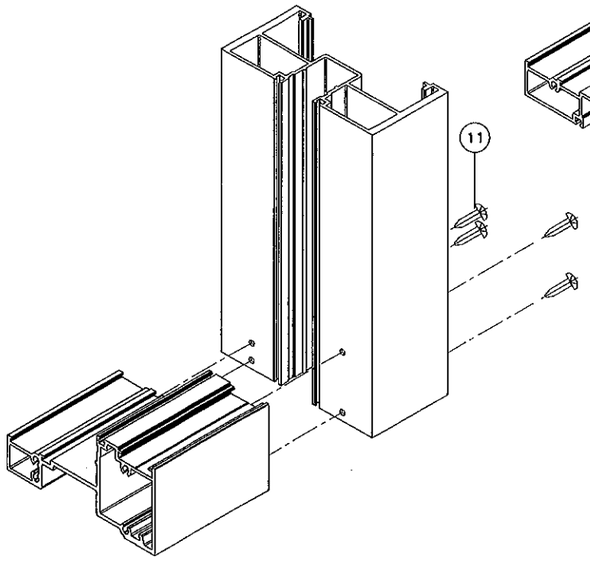


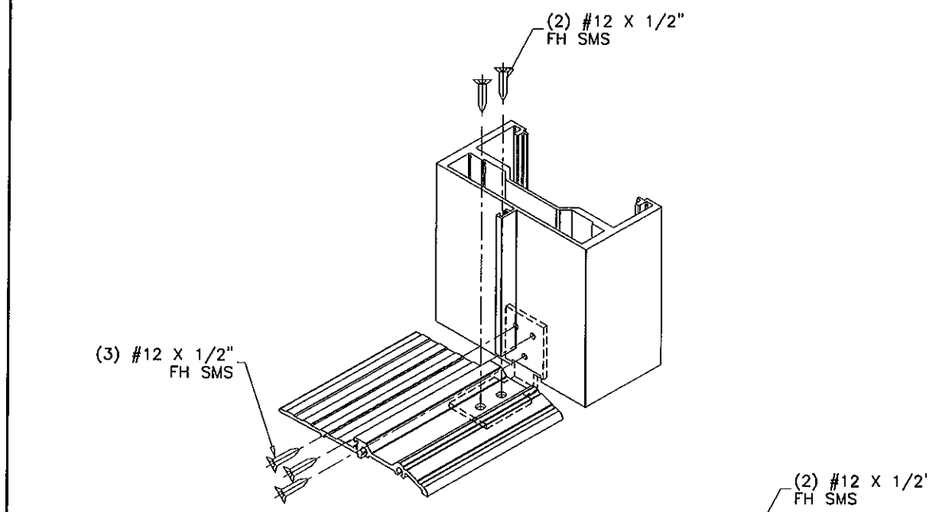
FRAME TOP CORNER

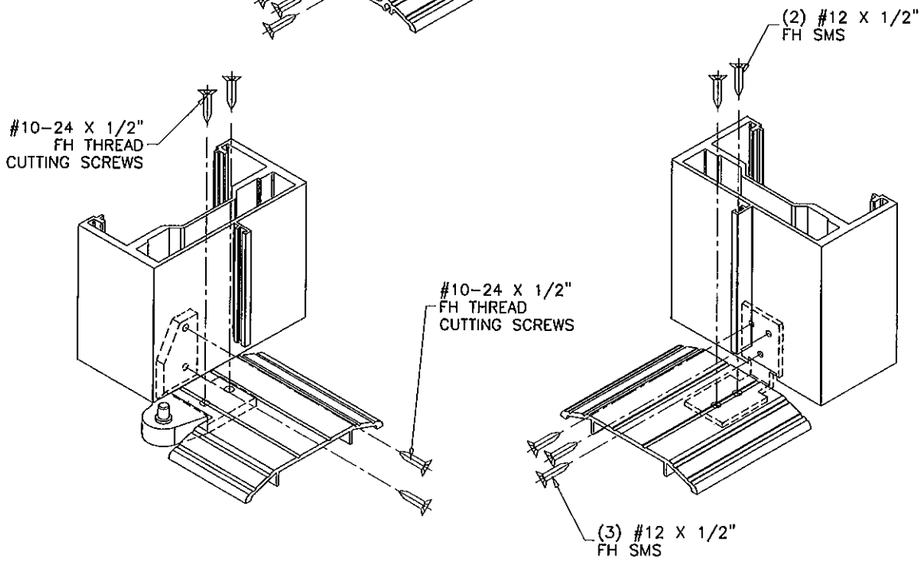


HORIZONTAL CORNER



FRAME BOTTOM CORNER





DOOR MULLION CORNER

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afc

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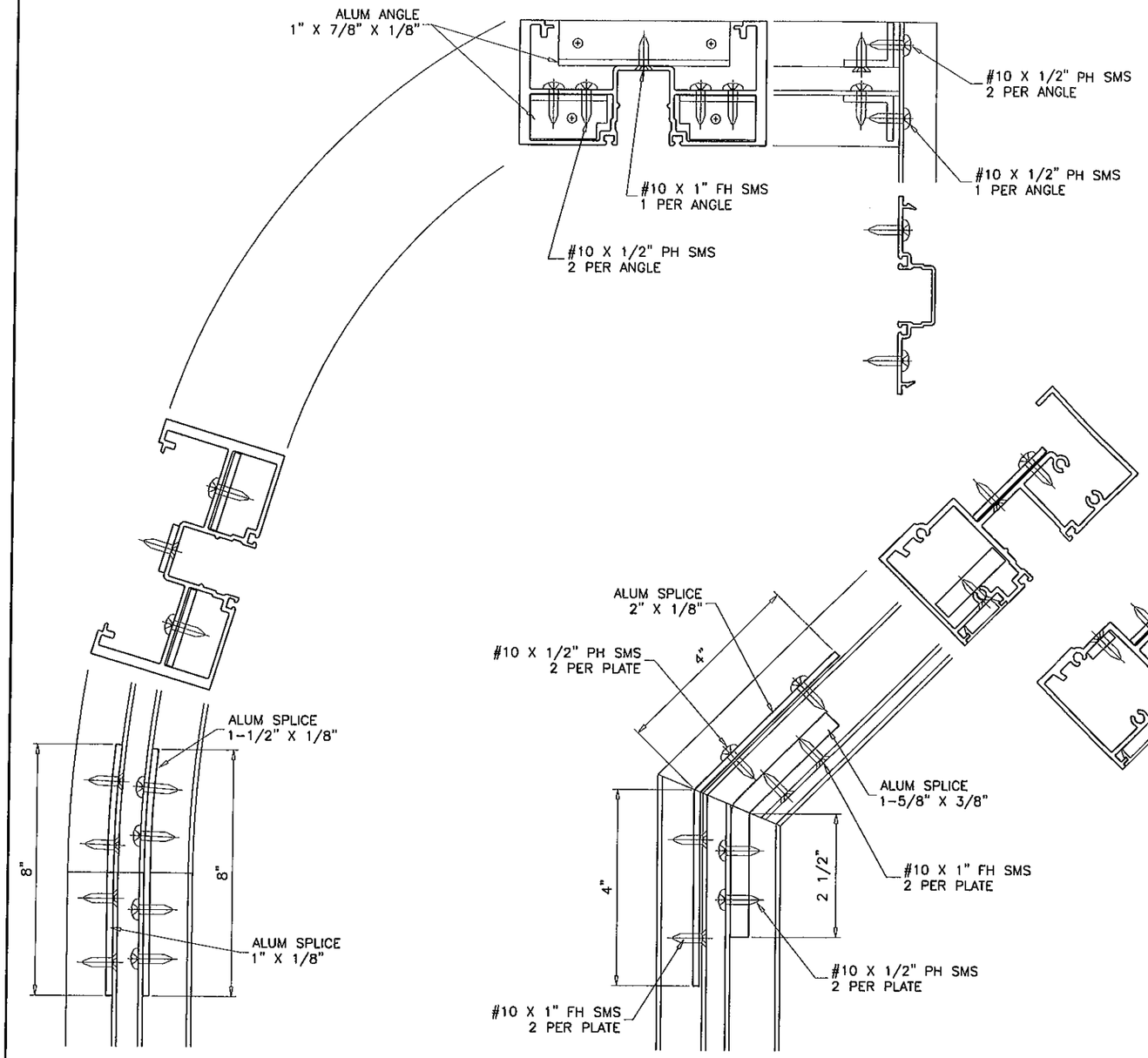
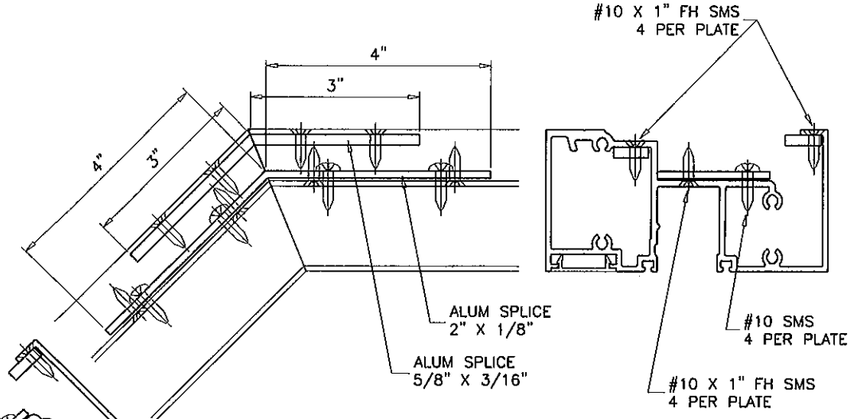


JAMB AT CIRCULAR JOINT

JAMB & HEAD AT ANGLE JOINT



HEAD & HEAD AT ANGLE JOINT

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