



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

NOTICE OF ACCEPTANCE (NOA)

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

www.miamidade.gov/building

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

SCOPE:

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

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

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

DESCRIPTION: Series "ES-8000" Aluminum Window Wall System – L.M.I.

APPROVAL DOCUMENT: Drawing No. **W07-60**, titled "Series 8000 Alum. Window Wall System (L.M.I.)", sheets 1, 1.1, 2, 3, 4, 4.1, 5, 5.1, 5.2, 6, 6.1, 6.2, 7, 7.1, 8, 9, 9.1, 10, 11 and 12 of 12, dated 08/03/07, with revision **I** dated 07/18/2023, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

MISSILE IMPACT RATING: Large and Small Missile Impact Resistant

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

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

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

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

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

This NOA **revises NOA No. 22-1227.03** and consists of this page 1 and evidence pages E-1, E-2, E-3 and E-4, as well as approval document mentioned above.

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



S. Z.
01/11/2024

NOA No. 23-0724.11
Expiration Date: April 03, 2028
Approval Date: September 14, 2023
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's

A. DRAWINGS

1. Manufacturer's die drawings and sections.
(Submitted under NOA No. 15-0826.26)
2. Drawing No. **W07-60**, titled "Series 8000 Alum. Window Wall System (L.M.I.)", sheets 1, 1.1, 2, 3, 4, 4.1, 5, 5.1, 5.2, 6, 6.1, 6.2, 7, 7.1, 8, 9, 9.1, 10, 11 and 12 of 12, dated 08/03/07, with revision **H** dated 05/10/21, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0517.02)

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) Forced Entry Test, per FBC 2411.3.2.1 and AAMA 1304-02
5) Large Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of a Series ES-8000 MK-20-001, prepared by Blackwater Testing, Inc., Test Report No. **BT-ESW-20-036A**, dated 12/18/20, signed and sealed by Michael D. Caldwell, P.E.
(Submitted under NOA No. 21-0517.02)
2. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Forced Entry Test, per FBC 2411.3.2.1 and AAMA 1304-02
5) Large Missile Impact Test per FBC, TAS 201-94
6) Cyclic Wind Pressure Loading per FBC, TAS 203-94
along with marked-up drawings and installation diagram of a Series ES-9000 aluminum outswing door, prepared by Blackwater Testing, Inc., Test Report No. **BT-ESW-18-004**, dated 05/17/18, signed and sealed by Constantin Bortes, P.E.
(Submitted under NOA No. 19-1029.08)
3. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Drop Load Test, per ANSI Z97.1 (400 foot-pound impact)
along with marked-up drawings and installation diagram of an aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-9605**, dated 08/16/17, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 18-0129.05)



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.11

Expiration Date: April 03, 2028
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

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

B. TESTS (CONTINUED)

- 4.** 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 Report No. **FTL-8372**, dated 03/24/16, signed and sealed by Idalmis Ortega, P.E.
(Submitted under NOA No. 17-0227.08)
- 5.** Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94
3) Water Resistance Test, per FBC, TAS 202-94
4) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Drop Load Test, per CPSC 16 CFR 1201 (400 foot-pound impact)
along with marked-up drawings and installation diagram of an aluminum window wall system, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-5447**, dated 12/19/07, signed and sealed by Michael R. Wenzel, P.E.
(Submitted under NOA No. 08-0204.06)

C. CALCULATIONS

- 1.** Anchor verification calculations and structural analysis, complying with **FBC 6th Edition (2017)**, dated 08/30/17 and 09/12/18, and further updated to comply with **FBC 7th Edition (2020)**, prepared by Al-Farooq Corporation, dated 11/16/20 and 05/07/21, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0517.02)
- 2.** Glazing complies with **ASTM E1300-09**

D. QUALITY ASSURANCE

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



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.11
Expiration Date: April 03, 2028
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NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

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

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **20-0915.19** issued to **Kuraray America, Inc.** for their “**SentryGlas® (Clear and White) Glass Interlayers**” dated 11/19/20, expiring on 07/04/23.
2. Notice of Acceptance No. **20-0915.22** issued to **Kuraray America, Inc.** for their “**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**” dated 11/19/20, expiring on 07/08/24.

F. STATEMENTS (CONTINUED)

1. Statement letter of conformance, complying with **FBC 7th Edition (2020)**, and of no financial interest, dated May 7, 2021, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.
(Submitted under NOA No. 21-0517.02)
2. Distributor Agreement between ES Windows-Energia Solar, S.A., Barranquilla, Columbia, S.A. and E.S. Windows, LLC, Miami, Florida, dated 09/12/13, signed by Ms. Adriana Montoya, Manager and Andres Chamorro, General Manager respectively on behalf of the companies.
(Submitted under NOA No. 12-0308.36)
3. Private Labeling Agreement document in conformance to Product Control guidelines dated 04/09/09 signed by Jose Nuñez.
(Submitted under NOA No. 12-0308.36)
4. Laboratory compliance letter for Test Report No. **FTL-5447**, issued by Fenestration Testing Laboratory, Inc., dated 12/19/07, signed and sealed by Michael R. Wenzel, P.E.
(Submitted under NOA No. 08-0204.06)
5. Testing Proposal issued by the Product Control Section, dated 10/16/14, signed by Jaime Gascon, P.E.
(Submitted under NOA No. 17-0227.08)

G. OTHERS

1. Notice of Acceptance No. **21-0517.02**, issued to E.S. Windows, LLC for their Series “ES-8000” Aluminum Window Wall System – L.M.I., approved on 07/01/21 and expiring on 04/03/23.



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.11
Expiration Date: April 03, 2028
Approval Date: September 14, 2023

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

1. NEW EVIDENCE SUBMITTED

A. DRAWINGS

1. Drawing No. **W07-60**, titled “Series 8000 Alum. Window Wall System (L.M.I.)”, sheets 1, 1.1, 2, 3, 4, 4.1, 5, 5.1, 5.2, 6, 6.1, 6.2, 7, 7.1, 8, 9, 9.1, 10, 11 and 12 of 12, dated 08/03/07, with revision **I** dated 07/18/2023, prepared by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

B. TESTS

1. None.

C. CALCULATIONS

1. None.

D. QUALITY ASSURANCE

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

E. MATERIAL CERTIFICATIONS

1. Notice of Acceptance No. **22-1116.01** issued to **Kuraray America, Inc.** for their “**SentryGlas® (Clear and White) Glass Interlayers**” dated 12/15/22, expiring on 07/04/28.
2. Notice of Acceptance No. **20-0915.22** issued to **Kuraray America, Inc.** for their “**Trosifol® Ultraclear, Clear and Color PVB Glass Interlayers**” dated 11/19/20, expiring on 07/08/24.

F. STATEMENTS

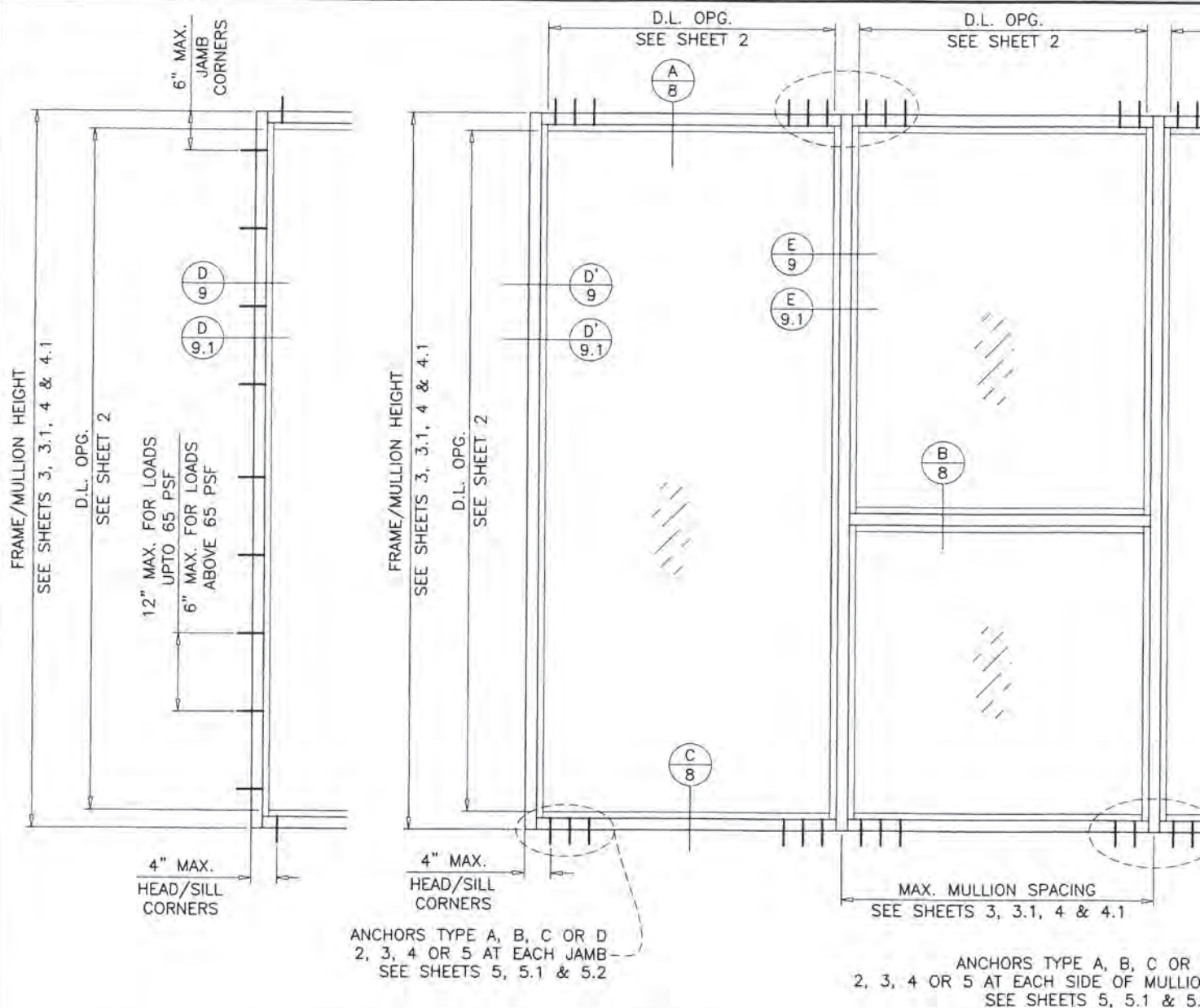
1. Statement letter of conformance, complying with **FBC 7th Edition (2020) and FBC 8th Edition (2023)**, and of no financial interest, dated July 19, 2023, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

G. OTHERS

1. Notice of Acceptance No. **22-1227.03**, issued to E.S. Windows, LLC for their Series “**ES-8000**” Aluminum Window Wall System – L.M.I., approved on 01/19/2023 and expiring on 04/03/28.



Sifang Zhao, P.E.
Product Control Examiner
NOA No. 23-0724.11
Expiration Date: April 03, 2028
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SERIES 8000 ALUMINUM WINDOW WALL SYSTEM

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

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

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

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

A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.
ALL SHIMS TO BE HIGH IMPACT, NON-METALLIC AND NON-COMPRESSIBLE.

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

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

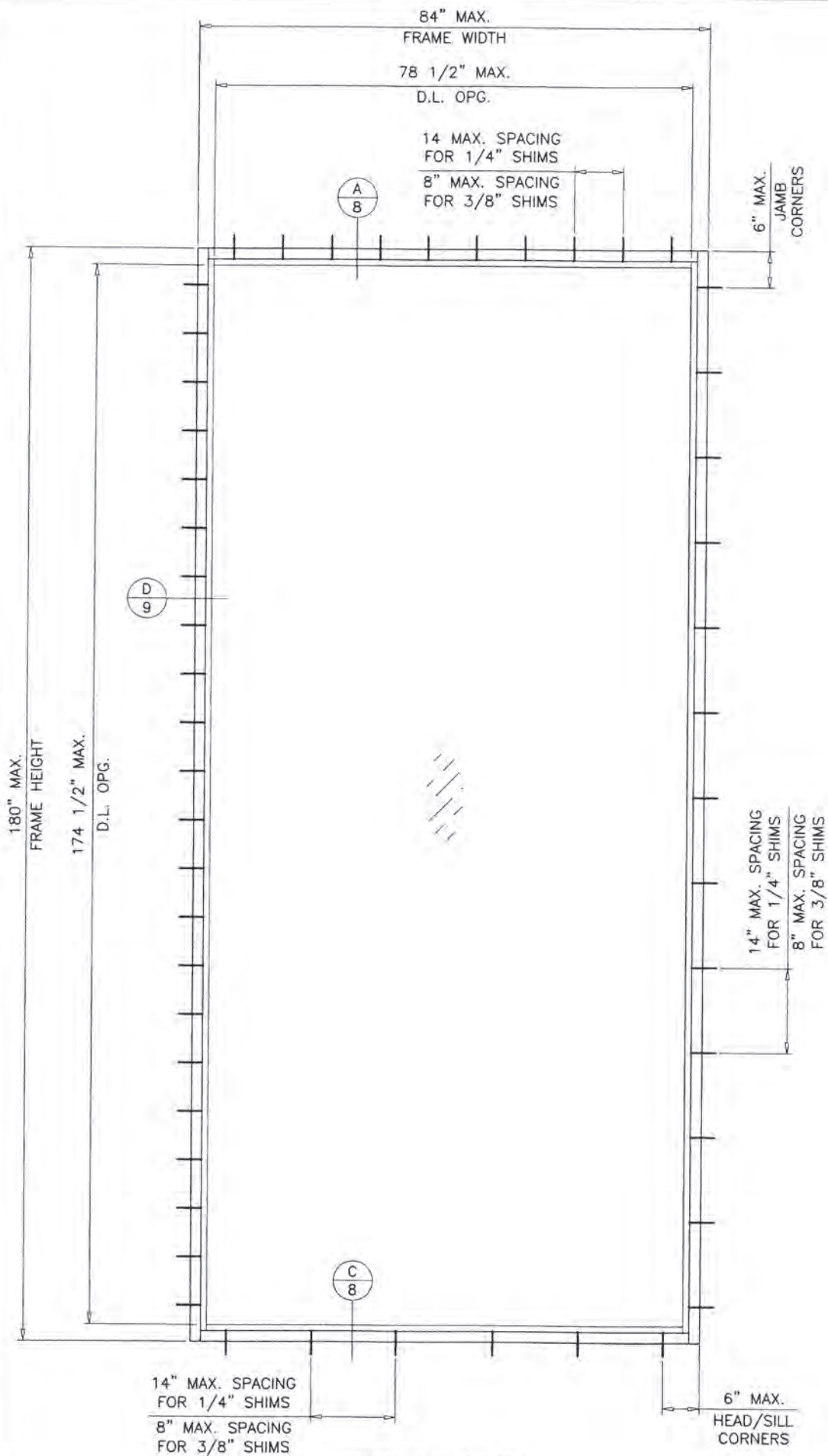
DESIGN LOADS SHOWN ARE BASED ON 'ALLOWABLE STRESS DESIGN (ASD)'.

TYPICAL ELEVATION

INSTRUCTIONS:

USE CHARTS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN WIND LOAD R, WIND VELOCITY, BLDG. HEIGHT, W, APPLICABLE ASCE 7 STANDARD.
- STEP 2** SEE CHARTS ON SHEET 2 FOR D OF DESIRED GLASS SIZE.
- STEP 3** CHECK MULLION CAPACITY FOR A HEIGHT USING CHARTS ON SHEET WINDOW WALL MULLION AND SHEET DOOR MULLION THE CAPACITY SHOULD EXCEED T
- STEP 4** CHECK ANCHOR CAPACITY FOR W USING CHARTS ON SHEETS 5 THE FOR DOOR MULLION ANCHOR CAP ON SHEET 7. THE CAPACITY SHOULD EXCEED T
- STEP 5** THE LOWEST VALUE RESULTING F 4 SHALL APPLY TO ENTIRE SYSTEM



**TYPICAL ELEVATION
SINGLE (O) PANEL**

**GLASS TYPE 'B1' ONLY
MAXIMUM DESIGN LOAD**

(ONLY FOR SINGLE UNITS SHOW)

D.L.O. HEIGHT

GLASS LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPE 'A'	GLASS TYPE 'B'
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)/INT.(-)	EXT.(+)/INT.(-)
28"	84-1/2"	80.0	130.0
32"		80.0	130.0
36"		80.0	130.0
40"		80.0	130.0
44-1/4"		80.0	130.0
48"		80.0	130.0
52"		80.0	130.0
56-1/4"		80.0	130.0
60-1/2"		-	63.6
66-1/2"		-	58.3
28"	90-1/2"	80.0	130.0
32"		80.0	130.0
36"		80.0	130.0
40"		80.0	130.0
44-1/4"		80.0	130.0
48"		80.0	130.0
52"		80.0	130.0
54-1/2"		56.0	70.0
60-1/2"		-	63.6
66-1/2"		-	58.3
28"	96-1/2"	80.0	130.0
32"		80.0	130.0
36"		80.0	130.0
40"		80.0	130.0
44-1/4"		80.0	130.0
48"		80.0	130.0
52"		80.0	127.2
54-1/2"		56.0	70.0
60-1/2"		-	63.6
66-1/2"		-	58.3
28"	102-1/2"	80.0	130.0
32"		80.0	130.0
36"		80.0	130.0
40"		80.0	130.0
44-1/4"		80.0	130.0
48"		80.0	128.9
54-1/2"		56.0	70.0
60-1/2"		-	63.6
66-1/2"		-	58.3
28"	108-1/2"	80.0	130.0
32"		80.0	130.0
36"		80.0	130.0
40"		80.0	130.0
44-1/4"		80.0	130.0
48"		62.2	70.0
54-1/2"		56.0	70.0
60-1/2"		-	63.6
66-1/2"		-	58.3

GLASS LOAD CAPACITY - PSF			
NOMINAL DIMS.		GLASS TYPE 'A'	GLASS TYPE 'B'
D.L.O. WIDTH	D.L.O. HEIGHT	EXT.(+)/INT.(-)	EXT.(+)/INT.(-)
28"	114-1/2"	80.0	130.0
32"		80.0	130.0
36"		80.0	130.0
40"		80.0	130.0
44-1/4"		80.0	130.0
48-1/2"		62.2	90.0
51-1/2"		-	90.0
54-1/2"		-	70.0
60-1/2"		-	63.6
66-1/2"		-	58.3
44-1/4"	120-1/2"	70.0	90.0
48"		62.2	90.0
50"		-	90.0
54-1/2"		-	70.0
60-1/2"		-	63.6
42-1/4"	126-1/2"	70.0	90.0
44-1/4"		-	90.0
48"		-	90.0
48-1/2"		-	70.0
54-1/2"		-	70.0
40"	132-1/2"	70.0	90.0
42-1/4"		70.0	90.0
44-1/4"		-	90.0
46"		-	90.0
48-1/2"		-	70.0
54-1/2"		-	70.0
40"	138-1/2"	70.0	90.0
42-1/4"		70.0	90.0
44-1/4"		-	90.0
48-1/2"		-	70.0
54-1/2"		-	70.0

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

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

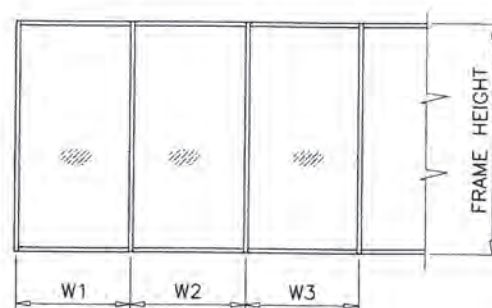
MULLION LOAD CAPACITY - PSF					
MULLIONS WITHOUT INTERMEDIATE HORIZONTALS					
NOMINAL DIMS.		JAMB 'J1'	JAMB 'J1'	JAMB 'J2'	JAMB 'J3'
		MULL 'M1'	MULL 'M2'	MULL 'M3'	MULL 'M4'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)
30"	86-1/2"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		130.0	130.0	130.0	130.0
48"		130.0	130.0	130.0	130.0
54"		130.0	130.0	130.0	130.0
60"		127.3	130.0	130.0	130.0
30"	90"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		130.0	130.0	130.0	130.0
48"		130.0	130.0	130.0	130.0
54"		122.9	130.0	130.0	130.0
60"		114.9	130.0	130.0	130.0
30"	96"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		121.1	130.0	130.0	130.0
48"		108.6	130.0	130.0	130.0
54"		99.4	130.0	125.6	130.0
60"		92.4	130.0	116.3	130.0
30"	98-1/2"	130.0	130.0	130.0	130.0
36"		127.6	130.0	130.0	130.0
42"		111.6	130.0	130.0	130.0
48"		100.0	130.0	130.0	130.0
54"		91.4	130.0	118.6	130.0
58"		86.8	130.0	112.4	130.0
30"	102"	130.0	130.0	130.0	130.0
36"		114.5	130.0	130.0	130.0
42"		100.0	130.0	130.0	130.0
48"		89.5	130.0	120.9	130.0
54"		81.6	130.0	109.8	130.0
56"		79.4	127.7	106.7	130.0
30"	108"	113.5	130.0	130.0	130.0
36"		95.9	130.0	130.0	130.0
42"		83.6	130.0	120.3	130.0
48"		74.6	120.0	107.0	130.0
53"		68.8	110.7	98.4	130.0
30"	110-1/2"	105.9	130.0	130.0	130.0
36"		89.4	130.0	130.0	130.0
42"		77.8	125.2	114.7	130.0
48"		69.4	111.6	101.9	130.0
52"		64.9	104.5	95.1	130.0
30"	114"	96.2	130.0	130.0	130.0
36"		81.2	130.0	123.8	130.0
42"		70.6	113.6	107.4	130.0
48"		62.9	101.1	95.3	130.0
50"		60.8	97.7	92.0	130.0
30"	120"	82.3	130.0	130.0	130.0
36"		69.3	111.5	111.4	130.0
42"		60.2	96.9	96.5	130.0
48"		53.5	86.1	85.5	130.0

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

MULLION LOAD CAPACITY - PSF			
MULLIONS W/O INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J2'	JAMB 'J3'
		MULL 'M4'	MULL 'M4'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)
54"	120"	90.0	90.0
57"		90.0	90.0
60"		-	70.0
66"		-	70.0
72"		-	70.0
30"	126"	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"		-	70.0
66"		-	70.0
30"	132"	90.0	90.0
36"		90.0	90.0
42"		90.0	90.0
48"		90.0	90.0
52"		90.0	90.0
54"		-	70.0
60"		-	70.0
30"	138"	90.0	90.0
36"		90.0	90.0
42"		90.0	90.0
48"		90.0	90.0
50"		86.9	86.9
54"		-	70.0
60"		-	64.9
30"	144"	90.0	90.0
36"		90.0	90.0
42"		89.4	89.4
48"		79.0	79.0
54"		-	65.1
60"		-	59.3

MULLION LOAD CAPACITY - PSF MULLIONS WITHOUT INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1A'	JAMB 'J1A'
		MULL 'M1A'	MULL 'M2A'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)
30"	86-1/2"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"		60.0	70.0
60"		60.0	70.0
30"	90"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"		60.0	70.0
60"		60.0	70.0
30"	96"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"		55.6	70.0
60"		51.5	70.0
30"	98-1/2"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		57.6	70.0
54"		52.4	70.0
30"	102"	60.0	70.0
36"		60.0	70.0
42"		59.7	70.0
48"		53.2	70.0
54"		48.3	70.0
30"	108"	60.0	70.0
36"		60.0	70.0
42"		52.6	70.0
48"		46.8	70.0
54"		-	70.0
60"		-	70.0
30"	110-1/2"	60.0	70.0
36"		57.1	70.0
42"		49.7	70.0
48"		44.3	70.0
54"		-	70.0
60"		-	70.0
30"	114"	60.0	70.0
36"		51.8	70.0
42"		45.1	70.0
48"		40.1	70.0
54"		-	70.0
30"	120"	52.5	70.0
36"		44.3	70.0
42"		38.5	70.0
48"		34.2	66.7
54"		-	60.4
57"		-	57.8

MULLION LOAD CAPACITY - PSF MULLIONS WITHOUT INTERMEDIATE HORIZONTALS				UNANCHORED JAMB OPTIONS MULL OPTIONS
NOMINAL DIMS.		JAMB 'J1A'	JAMB 'J1A'	
		MULL 'M1A'	MULL 'M2A'	
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)	
30"	126"	-	70.0	
36"		-	70.0	
42"		-	64.6	
48"		-	57.3	
54"		-	51.8	
30"	132"	-	70.0	
36"		-	64.5	
42"		-	55.9	
48"		-	49.6	
52"		-	46.2	
30"	138"	-	67.1	
36"		-	56.3	
42"		-	48.8	
48"		-	43.2	
50"		-	41.6	
30"	144"	-	58.9	
36"		-	49.5	
42"		-	42.8	
48"		-	37.8	



WIDTH (W) = W1
AT FRAME JAMB

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

NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.

MULLION LOAD CAPACITY - PSF MULLIONS WITH INTERMEDIATE HORIZONTALS					
NOMINAL DIMS.		JAMB 'J1'	JAMB 'J1'	JAMB 'J2'	JAMB 'J3'
		MULL 'M1'	MULL 'M2'	MULL 'M3'	MULL 'M4'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)	EXT. (+) INT. (-)
30"	78"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		130.0	130.0	130.0	130.0
48"		130.0	130.0	130.0	130.0
54"		130.0	130.0	130.0	130.0
60"		130.0	130.0	130.0	130.0
30"	86-1/2"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		130.0	130.0	130.0	130.0
48"		130.0	130.0	130.0	130.0
54"		118.9	130.0	130.0	130.0
60"		107.0	130.0	124.8	130.0
30"	90"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		130.0	130.0	130.0	130.0
48"		119.2	130.0	130.0	130.0
54"		105.9	130.0	128.1	130.0
60"		95.3	130.0	115.3	130.0
30"	96"	130.0	130.0	130.0	130.0
36"		130.0	130.0	130.0	130.0
42"		112.2	130.0	130.0	130.0
48"		98.2	130.0	126.7	130.0
54"		87.3	130.0	112.6	130.0
60"		78.5	122.1	101.4	130.0
30"	98-1/2"	130.0	130.0	130.0	130.0
36"		121.2	130.0	130.0	130.0
42"		103.9	130.0	130.0	130.0
48"		90.9	130.0	120.3	130.0
54"		80.8	128.9	107.0	130.0
58"		75.2	120.0	99.6	130.0
30"	102"	130.0	130.0	130.0	130.0
36"		109.1	130.0	130.0	130.0
42"		93.6	130.0	128.3	130.0
48"		81.9	130.0	112.2	130.0
54"		72.8	117.0	99.8	130.0
56"		70.2	112.8	96.2	130.0
30"	108"	110.3	130.0	130.0	130.0
36"		91.9	130.0	130.0	130.0
42"		78.8	126.8	114.4	130.0
48"		69.0	110.9	100.1	130.0
53"		62.5	100.4	90.7	130.0
30"	110-1/2"	103.0	130.0	130.0	130.0
36"		85.8	130.0	127.5	130.0
42"		73.6	118.3	109.3	130.0
48"		64.4	103.6	95.6	130.0
52"	114"	59.4	95.6	88.3	130.0
30"		93.8	130.0	130.0	130.0
36"		78.2	125.7	119.8	130.0
42"		67.0	107.8	102.7	130.0
48"	120"	58.6	94.3	89.8	130.0
50"		56.3	90.5	86.2	130.0
30"		80.4	129.4	129.7	130.0
36"		67.0	107.8	108.1	130.0
42"	120"	57.5	92.4	92.7	130.0
48"		50.3	80.9	81.1	130.0

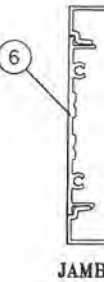
MULLION LOAD CAPACITY - PSF MULLIONS WITH INTERMEDIATE HORIZONTALS				
NOMINAL DIMS.		JAMB 'J2'	JAMB 'J3'	UNANCHORED JAMB OPTIONS
		MULL 'M4'	MULL 'M4'	MULL OPTIONS
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)	
54"	120"	90.0	90.0	
57"		90.0	90.0	
30"	126"	90.0	90.0	
36"		90.0	90.0	
42"		90.0	90.0	
48"		90.0	90.0	
54"		90.0	90.0	
60"		-	70.0	
30"	132"	90.0	90.0	
36"		90.0	90.0	
42"		90.0	90.0	
48"		90.0	90.0	
52"		90.0	90.0	
54"		-	70.0	
60"		-	66.6	
30"	138"	90.0	90.0	
36"		90.0	90.0	
42"		90.0	90.0	
48"		86.6	86.6	
50"		83.1	83.1	
54"		-	67.7	
60"		-	60.9	
30"	144"	90.0	90.0	
36"		90.0	90.0	
42"		87.1	87.1	
48"		76.2	76.2	
54"		-	62.2	
60"		-	55.9	

NOTE:
INTERPOLATI

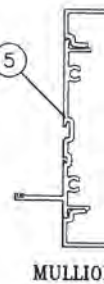
MULLION LOAD CAPACITY - PSF MULLIONS WITH INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1A'	JAMB 'J1A'
		MULL 'M1A'	MULL 'M2A'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)
30"	86-1/2"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"		60.0	70.0
60"		55.9	70.0
30"	90"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"		57.1	70.0
60"		51.4	70.0
30"	96"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		60.0	70.0
54"		56.1	70.0
60"		49.9	70.0
30"	98-1/2"	60.0	70.0
36"		60.0	70.0
42"		60.0	70.0
48"		53.2	70.0
54"		47.2	70.0
60"		—	70.0
30"	102"	60.0	70.0
36"		60.0	70.0
42"		56.4	70.0
48"		49.4	70.0
54"		43.9	70.0
60"		—	70.0
30"	108"	60.0	70.0
36"		58.4	70.0
42"		50.0	70.0
48"		43.8	70.0
54"		—	70.0
60"		—	70.0
30"	110-1/2"	60.0	70.0
36"		54.8	70.0
42"		47.0	70.0
48"		41.1	70.0
54"		—	70.0
60"		—	70.0
30"	114"	59.9	70.0
36"		49.9	70.0
42"		42.8	70.0
48"		37.4	70.0
54"		—	70.0
60"		—	70.0
30"	120"	51.4	70.0
36"		42.8	70.0
42"		36.7	70.0
48"		32.1	66.7
54"		—	60.4
57"		—	57.8

MULLION LOAD CAPACITY - PSF MULLIONS WITH INTERMEDIATE HORIZONTALS			
NOMINAL DIMS.		JAMB 'J1A'	JAMB 'J1A'
		MULL 'M1A'	MULL 'M2A'
WIDTH (W)	FRAME HEIGHT	EXT. (+) INT. (-)	EXT. (+) INT. (-)
30"	126"	—	70.0
36"		—	70.0
42"		—	64.6
48"		—	57.3
54"		—	51.8
30"	132"	—	70.0
36"		—	64.5
42"		—	55.9
48"		—	49.6
52"		—	46.2
30"	138"	—	67.1
36"		—	56.3
42"		—	48.8
48"		—	43.2
50"		—	41.6
30"	144"	—	58.9
36"		—	49.5
42"		—	42.8
48"		—	37.8

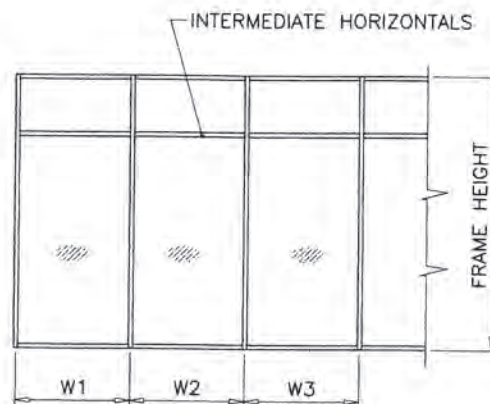
UNANCHORED JAMB OPTIONS
MULL OPTIONS



Ix IN⁴
4.1316



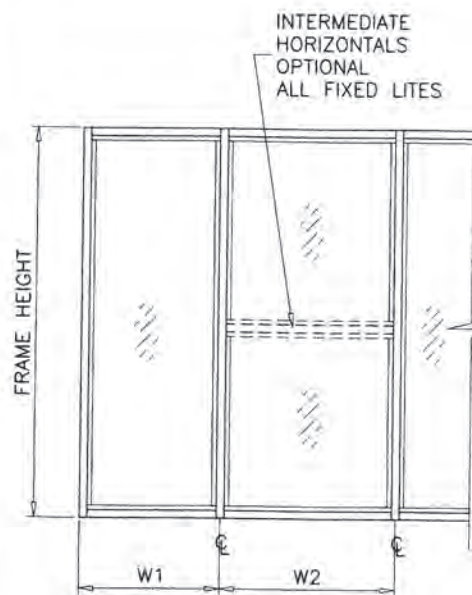
Ix IN⁴
4.2902



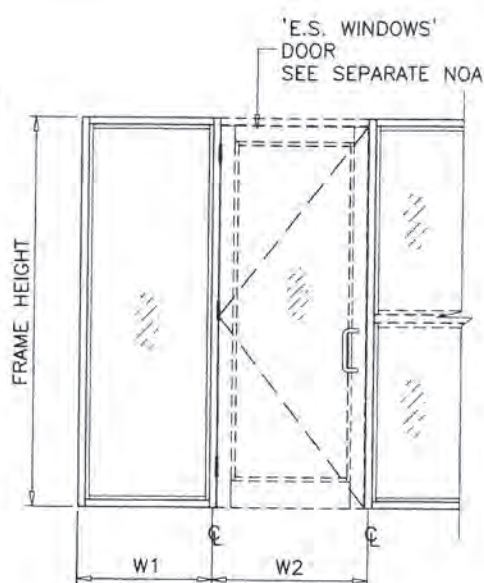
WIDTH (W) = W1
AT FRAME JAMB

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

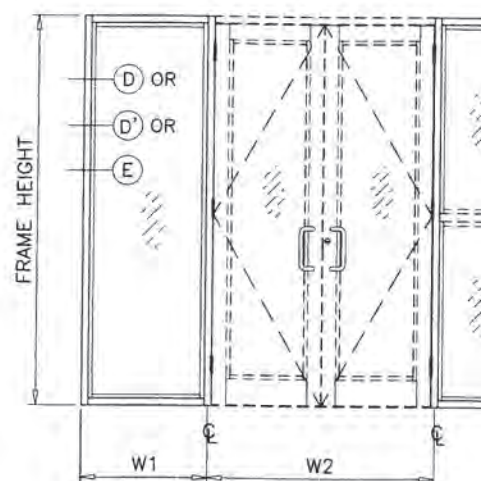
NOTE:
INTERPOLATION BETWEEN WIDTHS ALLOWED.



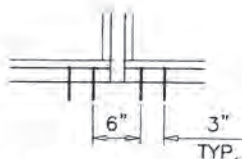
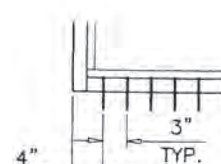
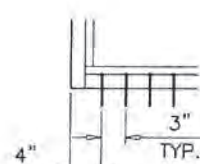
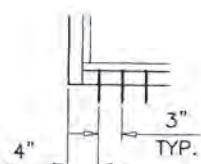
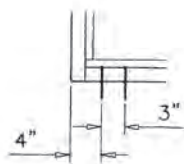
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$



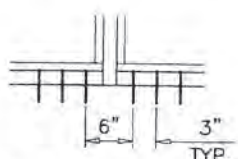
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$



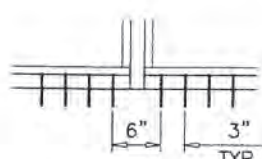
$$\text{WIDTH (W)} = \frac{W1}{2} + \frac{W2}{4}$$



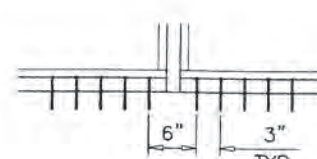
A2, B2, C2, D2



A3, B3, C3, D3



A4, B4, C4, D4



A5, B5, C5

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

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

ALL OTHER ANCHORS TO BE SPACED AS PER ELEVATION.

ANCHOR LOAD CAPACITY – PSF
EXT.(+) & INT.(–)

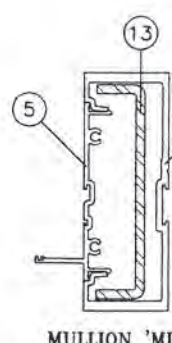
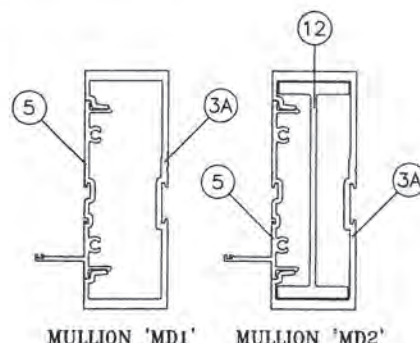
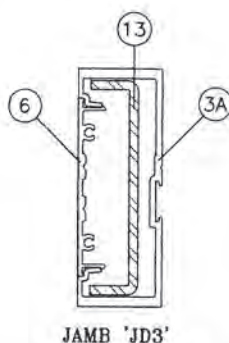
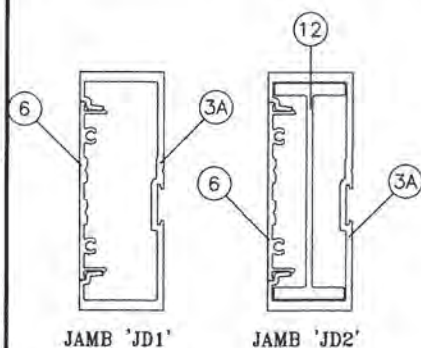
NOMINAL DIMS.		ANCHORS TYPE 'A'								ANCHORS TYPE 'B'							
		3/8" SHIM SPACE				1/2" SHIM SPACE				3/8" SHIM SPACE				1/2" SHIM SPACE			
WIDTH (W)	FRAME HEIGHT	A2	A3	A4	A5	A2	A3	A4	A5	B2	B3	B4	B5	B2	B3	B4	B5
30"	86-1/2"	59.1	88.6	118.2	130.0	46.1	69.2	92.2	115.3	67.9	101.9	130.0	130.0	53.3	79.9	106.5	130.0
36"		49.2	73.9	98.5	123.1	38.4	57.7	76.9	96.1	56.6	84.9	113.2	130.0	44.4	66.6	88.8	113.2
42"		42.2	63.3	84.4	105.5	32.9	49.4	65.9	82.4	48.5	72.8	97.0	121.3	38.1	57.1	76.1	101.4
48"		36.9	55.4	73.9	92.3	28.8	43.2	57.7	72.1	42.5	63.7	84.9	106.1	33.3	49.9	66.6	88.8
54"		32.8	49.2	65.7	82.1	25.6	38.4	51.2	64.1	37.7	56.6	75.5	94.3	29.6	44.4	59.2	76.1
60"		29.5	44.3	59.1	73.9	23.1	34.6	46.1	57.7	34.0	50.9	67.9	84.9	26.6	40.0	53.3	70.0
66"		26.9	40.3	53.7	67.1	21.0	31.4	41.9	52.4	30.9	46.4	61.8	77.3	24.3	36.4	48.5	64.6
72"		24.6	36.9	49.2	61.5	–	28.8	38.4	48.0	28.3	42.5	56.7	70.8	22.2	33.4	44.5	59.2
30"	90"	56.8	85.2	113.6	130.0	44.3	66.5	88.7	110.8	65.3	97.9	130.0	130.0	51.2	76.8	102.4	129.0
36"		47.3	71.0	94.6	118.3	36.9	55.4	73.9	92.4	54.4	81.6	108.8	130.0	42.7	64.0	85.3	108.8
42"		40.6	60.8	81.1	101.4	31.7	47.5	63.3	79.2	46.6	69.9	93.3	116.6	36.6	54.9	73.1	93.3
48"		35.5	53.2	71.0	88.7	27.7	41.6	55.4	69.3	40.8	61.2	81.6	102.0	32.0	48.0	64.0	81.6
54"		31.5	47.3	63.1	78.9	24.6	36.9	49.3	61.6	36.3	54.4	72.5	90.7	28.4	42.7	56.9	70.0
60"		28.4	42.6	56.8	71.0	22.2	33.2	44.3	55.4	32.6	49.0	65.3	81.6	25.6	38.4	51.2	64.6
66"		25.8	38.7	51.6	64.5	20.2	30.2	40.3	50.4	29.7	44.6	59.4	74.3	23.3	35.0	46.6	59.2
72"		23.7	35.5	47.3	59.2	–	27.7	36.9	46.2	27.2	40.9	54.5	68.1	21.4	32.1	42.7	54.4
30"	96"	53.2	79.9	106.5	130.0	41.6	62.3	83.1	103.9	61.2	91.8	122.4	130.0	48.0	72.0	96.0	120.0
36"		44.4	66.6	88.7	110.9	34.6	52.0	69.3	86.6	51.0	76.5	102.0	127.5	40.0	60.0	80.0	102.0
42"		38.0	57.0	76.1	95.1	29.7	44.5	59.4	74.2	43.7	65.6	87.4	109.3	34.3	51.4	68.6	87.4
48"		33.3	49.9	66.6	83.2	26.0	39.0	52.0	64.9	38.3	57.4	76.5	95.6	30.0	45.0	60.0	76.5
54"		29.6	44.4	59.2	73.9	23.1	34.6	46.2	57.7	34.0	51.0	68.0	85.0	26.7	40.0	53.3	68.0
60"		26.6	39.9	53.2	66.6	20.8	31.2	41.6	52.0	30.6	45.9	61.2	76.5	24.0	36.0	48.0	61.2
66"		24.2	36.3	48.4	60.5	–	28.3	37.8	47.2	27.9	41.8	55.7	69.6	21.9	32.8	43.7	55.7
72"		22.2	33.3	44.4	55.5	–	26.0	34.6	43.3	25.5	38.3	51.1	63.8	20.0	30.1	40.1	51.1
30"	98-1/2"	51.9	77.8	103.8	129.7	40.5	60.8	81.0	101.3	59.6	89.5	119.3	130.0	46.8	70.2	93.6	119.3
36"		43.2	64.9	86.5	108.1	33.8	50.6	67.5	84.4	49.7	74.6	99.4	124.3	39.0	58.5	78.0	108.1
42"		37.1	55.6	74.1	92.7	28.9	43.4	57.9	72.3	42.6	63.9	85.2	106.5	33.4	50.1	66.8	85.2
48"		32.4	48.6	64.9	81.1	25.3	38.0	50.6	63.3	37.3	55.9	74.6	93.2	29.2	43.9	58.5	74.6
54"		28.8	43.2	57.7	72.1	22.5	33.8	45.0	56.3	33.1	49.7	66.3	82.8	26.0	39.0	52.0	66.3
60"		25.9	38.9	51.9	64.9	20.3	30.4	40.5	50.6	29.8	44.7	59.6	74.6	23.4	35.1	46.8	59.6
66"		23.6	35.4	47.2	59.0	–	27.6	36.8	46.0	27.1	40.7	54.3	67.9	21.3	31.9	42.6	54.3
72"		21.6	32.4	43.2	54.1	–	25.3	33.8	42.2	24.9	37.3	49.8	62.2	–	29.3	39.0	49.8
30"	102"	50.1	75.2	100.2	125.3	39.1	58.7	78.2	97.8	57.6	86.4	115.2	130.0	45.2	67.8	90.4	115.2
36"		41.8	62.6	83.5	104.4	32.6	48.9	65.2	81.5	48.0	72.0	96.0	120.0	37.6	56.5	75.3	104.4
42"		35.8	53.7	71.6	89.5	27.9	41.9	55.9	69.8	41.1	61.7	82.3	102.9	32.3	48.4	64.5	82.3
48"		31.3	47.0	62.6	78.3	24.4	36.7	48.9	61.1	36.0	54.0	72.0	90.0	28.2	42.4	56.5	72.0
54"		27.8	41.8	55.7	69.6	21.7	32.6	43.5	54.3	32.0	48.0	64.0	80.0	25.1	37.6	50.2	64.0
60"		25.1	37.6	50.1	62.6	–	29.3	39.1	48.9	28.8	43.2	57.6	72.0	22.6	33.9	45.2	57.6
66"		22.8	34.2	45.6	56.9	–	26.7	35.6	44.4	26.2	39.3	52.4	65.5	20.6	30.9	41.1	52.4
72"		20.9	31.3	41.8	52.2	–	24.4	32.6	40.7	24.0	36.0	48.1	60.1	–	28.3	37.7	48.1
30"	108"	47.3	71.0	94.6	118.3	36.9	55.4	73.9	92.4	54.4	81.6	108.8	130.0	42.7	64.0	85.3	108.8
36"		39.4	59.2	78.9	98.6	30.8	46.2	61.6	77.0	45.3	68.0	90.7	113.3	35.6	53.3	71.1	90.7
42"		33.8	50.7	67.6	84.5	26.4	39.6	52.8	66.0	38.9	58.3	77.7	97.1	30.5	45.7	61.0	77.7
48"		29.6	44.4	59.2	73.9	23.1	34.6	46.2	57.7	34.0	51.0	68.0	85.0	26.7	40.0	53.3	68.0
54"		26.3	39.4	52.6	65.7	20.5	30.8	41.0	51.3	30.2	45.3	60.4	75.6	23.7	35.6	47.4	60.4
60"		23.7	35.5	47.3	59.2	–	27.7	36.9	46.2	27.2	40.8	54.4	68.0	21.3	32.0	42.7	54.4
66"		21.5	32.3	43.0	53.8	–	25.2	33.6	42.0	24.8	37.1	49.5	61.9	–	29.1	38.9	49.5
72"		–	29.6	39.4	49.3	–	23.1	30.8	38.5	22.7	34.0	45.4	56.7	–	26.7	35.6	45.4

ANCHOR LOAD CAPACITY – PSF
EXT.(+) & INT.(–)

NOMINAL DIMS.		ANCHORS TYPE 'A'								ANCHORS TYPE 'B'							
		3/8" SHIM SPACE				1/2" SHIM SPACE				3/8" SHIM SPACE				1/2" SHIM SPACE			
WIDTH (W)	FRAME HEIGHT	A2	A3	A4	A5	A2	A3	A4	A5	B2	B3	B4	B5	B2	B3	B4	
30"	110-1/2"	46.3	69.4	92.5	115.6	36.1	54.2	72.2	90.3	53.2	79.8	106.3	130.0	41.7	62.6	83.4	
36"		38.5	57.8	77.1	96.4	30.1	45.1	60.2	75.2	44.3	66.5	88.6	110.8	34.8	52.1	69.5	
42"		33.0	49.6	66.1	82.6	25.8	38.7	51.6	64.5	38.0	57.0	76.0	94.9	29.8	44.7	59.6	
48"		28.9	43.4	57.8	72.3	22.6	33.8	45.1	56.4	33.2	49.8	66.5	83.1	26.1	39.1	52.1	
54"		25.7	38.5	51.4	64.2	20.1	30.1	40.1	50.1	29.5	44.3	59.1	73.8	23.2	34.8	46.3	
60"		23.1	34.7	46.3	57.8	–	27.1	36.1	45.1	26.6	39.9	53.2	66.5	20.9	31.3	41.7	
66"		21.0	31.5	42.0	52.6	–	24.6	32.8	41.0	24.2	36.3	48.4	60.5	–	28.5	38.0	
72"		–	28.9	38.5	48.2	–	22.6	30.1	37.6	22.2	33.3	44.4	55.5	–	26.1	34.8	
30"	114"	44.8	67.3	89.7	112.1	35.0	52.5	70.0	87.5	51.5	77.3	103.1	128.8	40.4	60.6	80.8	
36"		37.4	56.0	74.7	93.4	29.2	43.7	58.3	72.9	42.9	64.4	85.9	107.4	33.7	50.5	67.4	
42"		32.0	48.0	64.0	80.1	25.0	37.5	50.0	62.5	36.8	55.2	73.6	92.0	28.9	43.3	57.7	
48"		28.0	42.0	56.0	70.1	21.9	32.8	43.7	54.7	32.2	48.3	64.4	80.5	25.3	37.9	50.5	
54"		24.9	37.4	49.8	62.3	–	29.2	38.9	48.6	28.6	42.9	57.3	71.6	22.5	33.7	44.9	
60"		22.4	33.6	44.8	56.0	–	26.2	35.0	43.7	25.8	38.7	51.5	64.4	20.2	30.3	40.4	
66"		20.4	30.6	40.8	50.9	–	23.9	31.8	39.8	23.5	35.2	46.9	58.6	–	27.6	36.8	
72"		–	28.0	37.4	46.7	–	21.9	29.2	36.5	21.5	32.3	43.0	53.8	–	25.3	33.7	
30"	120"	42.6	63.9	85.2	106.5	33.2	49.9	66.5	83.1	49.0	73.4	97.9	122.4	38.4	57.6	76.8	
36"		35.5	53.2	71.0	88.7	27.7	41.6	55.4	69.3	40.8	61.2	81.6	102.0	32.0	48.0	64.0	
42"		30.4	45.6	60.8	76.1	23.7	35.6	47.5	59.4	35.0	52.5	69.9	87.4	27.4	41.1	54.9	
48"		26.6	39.9	53.2	66.6	20.8	31.2	41.6	52.0	30.6	45.9	61.2	76.5	24.0	36.0	48.0	
54"		23.7	35.5	47.3	59.2	–	27.7	36.9	46.2	27.2	40.8	54.4	68.0	21.3	32.0	42.7	
60"		21.3	31.9	42.6	53.2	–	24.9	33.2	41.6	24.5	36.8	49.0	61.3	–	28.8	38.5	
66"		–	29.0	38.7	48.4	–	22.7	30.2	37.8	22.3	33.4	44.6	55.7	–	26.2	35.0	
72"		–	26.6	35.5	44.4	–	20.8	27.7	34.6	20.4	30.6	40.9	51.1	–	24.0	32.1	
30"	126"	40.6	60.8	81.1	90.0	31.7	47.5	63.3	79.2	46.6	69.9	90.0	90.0	36.6	54.9	73.1	
36"		33.8	50.7	67.6	84.5	26.4	39.6	52.8	66.0	38.9	58.3	77.7	90.0	30.5	45.7	61.0	
42"		29.0	43.5	57.9	72.4	22.6	33.9	45.2	56.5	33.3	50.0	66.6	83.3	26.1	39.2	52.2	
48"		25.4	38.0	50.7	63.4	–	29.7	39.6	49.5	29.1	43.7	58.3	72.9	22.9	34.3	45.7	
54"		22.5	33.8	45.1	56.3	–	26.4	35.2	44.0	25.9	38.9	51.8	64.8	20.3	30.5	40.6	
60"		20.3	30.4	40.6	50.7	–	23.7	31.7	39.6	23.3	35.0	46.7	58.4	–	27.5	36.6	
30"	132"	38.7	58.1	77.4	90.0	30.2	45.3	60.5	75.6	44.5	66.8	89.0	90.0	34.9	52.4	69.8	
36"		32.3	48.4	64.5	80.7	25.2	37.8	50.4	63.0	37.1	55.6	74.2	90.0	29.1	43.6	58.2	
42"		27.7	41.5	55.3	69.1	21.6	32.4	43.2	54.0	31.8	47.7	63.6	79.5	24.9	37.4	49.9	
48"		24.2	36.3	48.4	60.5	–	28.3	37.8	47.2	27.8	41.7	55.6	69.5	21.8	32.7	43.6	
54"		21.5	32.3	43.0	53.8	–	25.2	33.6	42.0	24.8	37.1	49.5	61.9	–	29.1	38.9	
60"		–	29.0	38.7	48.4	–	22.7	30.2	37.8	22.3	33.4	44.6	55.7	–	26.2	35.0	
30"	138"	37.0	55.6	74.1	92.6	28.9	43.4	57.8	72.3	42.6	63.9	85.1	90.0	33.4	50.1	66.8	
36"		30.9	46.3	61.7	77.2	24.1	36.1	48.2	60.2	35.5	53.2	71.0	88.7	27.8	41.7	55.7	
42"		26.5	39.7	52.9	66.1	20.7	31.0	41.3	51.6	30.4	45.6	60.8	76.0	23.9	35.8	47.7	
48"		23.1	34.7	46.3	57.9	–	27.1	36.1	45.2	26.6	39.9	53.2	66.5	20.9	31.3	41.7	
54"		20.6	30.9	41.2	51.4	–	24.1	32.1	40.2	23.7	35.5	47.4	59.2	–	27.9	37.2	
60"		–	27.8	37.0	46.3	–	21.7	28.9	36.1	21.3	32.0	42.6	53.3	–	25.1	33.4	
30"	144"	35.5	53.2	71.0	88.7	27.7	41.6	55.4	69.3	40.8	61.2	81.6	90.0	32.0	48.0	64.0	
36"		29.6	44.4	59.2	73.9	23.1	34.6	46.2	57.7	34.0	51.0	68.0	85.0	26.7	40.0	53.3	
42"		25.4	38.0	50.7	63.4	–	29.7	39.6	49.5	29.1	43.7	58.3	72.9	22.9	34.3	45.7	
48"		22.2	33.3	44.4	55.5	–	26.0	34.6	43.3	25.5	38.3	51.0	63.8	20.0	30.0	40.0	
54"		–	29.6	39.4	49.3	–	23.1	30.8	38.5	22.7	34.0	45.4	56.7	–	26.7	35.6	
60"		–	26.6	35.5	44.4	–	20.8	27.7	34.6	20.4	30.6	40.9	51.1	–	24.0	32.1	

DOOR MULLION LOAD CAPACITY - PSF								
NOMINAL DIMS.				JAMB 'JD1' MULL 'MD1'	JAMB 'JD1' MULL 'MD2'	JAMB 'JD2' JAMB 'JD3' MULL 'MD3'	JAMB 'JD3' MULL 'MD4'	
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)	
85-3/4	30	96	84	90.0	90.0	90.0	90.0	
	36			90.0	90.0	90.0	90.0	
	42			90.0	90.0	90.0	90.0	
	48			90.0	90.0	90.0	90.0	
	54			90.0	90.0	90.0	90.0	
	60			85.7	90.0	90.0	90.0	
	30	102		90.0	90.0	90.0	90.0	
	36			86.9	90.0	90.0	90.0	
	42			81.5	90.0	90.0	90.0	
	48			76.7	90.0	90.0	90.0	
	54			72.5	90.0	89.0	90.0	
	30			108	74.2	90.0	90.0	90.0
	36	69.5			90.0	89.1	90.0	
	42	65.4			90.0	84.4	90.0	
	48	61.7			90.0	80.2	90.0	
	30	114			60.2	90.0	81.7	90.0
	36				56.6	90.0	77.4	90.0
	42			53.3	85.8	73.4	87.8	
	48			50.5	81.2	69.9	83.5	
	30			120	49.7	80.0	71.9	85.9
	36				46.8	75.3	68.1	81.5
	42	44.2			71.2	64.8	77.4	
	48	41.9			67.5	61.7	73.8	
	85-3/4	30			102	90	90.0	90.0
36		90.0	90.0				90.0	90.0
42		86.6	90.0	90.0			90.0	
48		81.2	90.0	90.0			90.0	
54		76.5	90.0	90.0			90.0	
30		108	79.3	90.0	90.0		90.0	
36			74.0	90.0	90.0		90.0	
42			69.3	90.0	88.9		90.0	
48			65.2	90.0	84.3		90.0	
30			114	63.9	90.0		85.6	90.0
36		59.9		90.0	80.8		90.0	
42		56.3		90.0	76.5		90.0	
48		53.1		85.4	72.7		86.9	
30		120		52.4	84.2		74.5	89.1
36			49.2	79.1	70.5		84.3	
42			46.3	74.5	66.9		80.0	
48			43.8	70.5	63.6		76.1	

DOOR MULLION LOA				
NOMINAL DIMS.				JAMB MULL
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT. INT.
85-3/4	30	108	96	8
	36			7
	42			7
	48			6
	30	114		6
	36			6
	42			5
	48			5
	30	120		5
	36			5
	42			4
	48			4
85-3/4	30	114	102	7
	36			6
	42			6
	48			5
	30	120		5
	36			5
	42			5
	48			4
85-3/4	30	120	110-1/2	6
	36			5
	42			5
	48			5



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

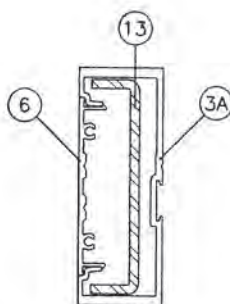
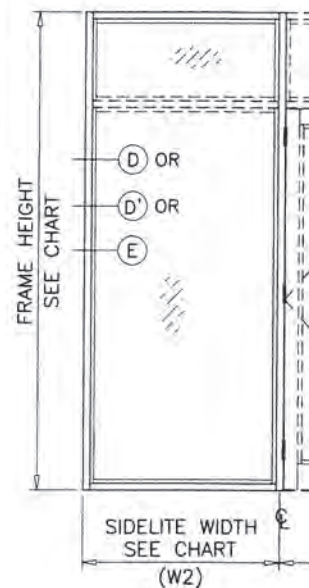
	Ix IN ⁴	Sx IN ³
ALUMINUM	6.570	2.7226
STEEL	2.7506	1.2224
TOTAL		
Ix ALUM + Ix STL X 2.9	14.5467	

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

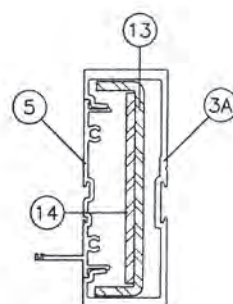
	Ix
ALUMINUM	6.7
STEEL	2.7
TOTAL	
Ix ALUM + Ix STL X 2.9	14.6

DOOR MULLION LOAD CAPACITY - PSF				
NOMINAL DIMS.				JAMB 'JD3' MULL 'MD4'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)
96	30	96	84	90.0
	36			90.0
	42			90.0
	48			90.0
	54			90.0
	60			90.0
	30	102		90.0
	36			90.0
	42			90.0
	48			90.0
	54			90.0
	30	108		90.0
	36			90.0
	42			90.0
	48			89.4
	30	114		90.0
	36			85.5
	42			81.5
	48			77.8
	30	120		79.1
	36			75.3
	42			71.8
	48			68.7
	96	30		102
36		90.0		
42		90.0		
48		90.0		
54		90.0		
30		108	90.0	
36			90.0	
42			90.0	
48			90.0	
30		114	90.0	
36			89.5	
42			85.1	
48			81.1	
30		120	82.1	
36			78.0	
42			74.3	
48			70.9	

DOOR MULLION LOAD CAPACITY - PSF				
NOMINAL DIMS.				JAMB 'JD3' MULL 'MD4'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)
96	30	108	96	90.0
	36			90.0
	42			90.0
	48			90.0
	30	114		90.0
	36			90.0
	42			89.8
	48			85.3
	30	120		86.1
	36			81.6
	42			77.5
	48			73.9
96	30	114	102	90.0
	36			90.0
	42			90.0
	48			90.0
	30	120		90.0
	36			86.3
	42			81.8
	48			77.7
96	30	120	110-1/2	90.0
	36			90.0
	42			90.0
	48			85.1
96	30	144	108	57.0
	36			54.2
	42			51.6
	48			49.2



JAMB 'JD3'



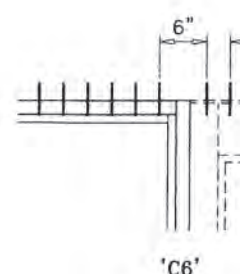
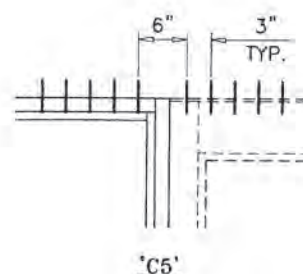
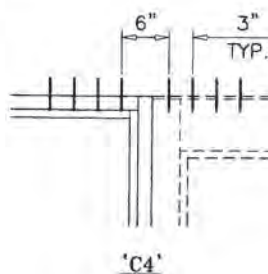
MULLION 'MD4'

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

	Ix IN ⁴	Sx IN ³
ALUMINUM	6.7195	2.6757
STEEL	3.7533	1.668
TOTAL	17.6041	
Ix ALUM + Ix STL X 2.9		

DOOR MULLION HEAD ANCHOR LOAD CAPACITY - PSF						
NOMINAL DIMS.				'C4'	'C5'	'C6'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	30	96	84	89.6	90.0	90.0
	36			85.0	90.0	90.0
	42			80.8	90.0	90.0
	48			77.0	90.0	90.0
	54			73.6	90.0	90.0
	60			70.4	88.0	90.0
	30	102		86.0	90.0	90.0
	36			81.5	90.0	90.0
	42			77.4	90.0	90.0
	48			73.8	90.0	90.0
	54			70.4	88.0	90.0
	30	108		82.7	90.0	90.0
	36			78.3	90.0	90.0
	42			74.3	90.0	90.0
	48			70.8	88.4	90.0
	30	114		79.7	90.0	90.0
	36			75.4	90.0	90.0
	42			71.5	89.4	90.0
	48			68.0	85.0	90.0
	30	120		76.9	90.0	90.0
36	72.6		90.0	90.0		
42	68.9		86.1	90.0		
48	65.4		81.8	90.0		
85-3/4	30	102	90	84.1	90.0	90.0
	36			79.7	90.0	90.0
	42			75.8	90.0	90.0
	48			72.3	90.0	90.0
	54			69.1	86.4	90.0
	30	108		80.9	90.0	90.0
	36			76.7	90.0	90.0
	42			72.9	90.0	90.0
	48			69.4	86.8	90.0
	30	114		78.0	90.0	90.0
	36			73.9	90.0	90.0
	42			70.1	87.7	90.0
	48			66.8	83.5	90.0
	30	120		75.3	90.0	90.0
	36			71.2	89.1	90.0
	42			67.6	84.5	90.0
	48			64.3	80.4	90.0

DOOR MULLION HEAD ANCHOR LOAD CAPACITY					
NOMINAL DIMS.				'C4'	'C5'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)
85-3/4	30	108	96	79.2	90.0
	36			75.1	90.0
	42			71.5	88.0
	48			68.1	88.0
	30	114		76.4	90.0
	36			72.4	90.0
	42			68.8	88.0
	48			65.6	88.0
	30	120		73.8	90.0
	36			69.9	88.0
	42			66.4	88.0
	48			63.2	87.0
85-3/4	30	114	102	74.9	90.0
	36			71.0	88.0
	42			67.6	88.0
	48			64.4	88.0
	30	120		72.4	90.0
	36			68.6	88.0
	42			65.2	88.0
	48			62.1	87.0
85-3/4	30	120	110-1/2	70.4	88.0
	36			66.8	88.0
	42			63.6	79.0
	48			60.7	79.0



ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION

C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

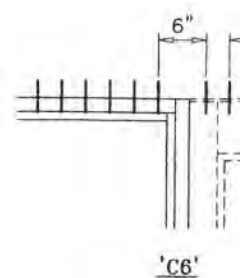
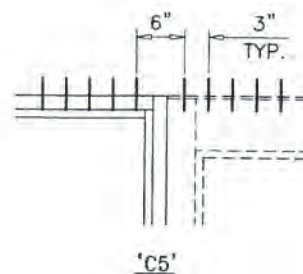
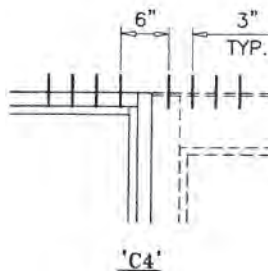
C5 = (5) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

C6 = (6) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

ALL OTHER ANCHORS TO BE SPACED AS PER ELEVATION.

DOOR MULLION HEAD ANCHOR LOAD CAPACITY - PSF						
NOMINAL DIMS.				'C4'	'C5'	'C6'
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EXT.(+) INT.(-)	EXT.(+) INT.(-)
96	30	96	84	82.4	90.0	90.0
	36			78.5	90.0	90.0
	42			74.9	90.0	90.0
	48			71.7	89.6	90.0
	54			68.7	85.8	90.0
	60			65.9	82.4	90.0
	30	102		79.2	90.0	90.0
	36			75.3	90.0	90.0
	42			71.8	89.8	90.0
	48			68.7	85.8	90.0
	54			65.8	82.2	90.0
	30	108		76.2	90.0	90.0
	36			72.4	90.0	90.0
	42			69.0	86.3	90.0
	48			65.9	82.4	90.0
	30	114		73.4	90.0	90.0
	36			69.8	87.2	90.0
	42			66.4	83.0	90.0
	48			63.4	79.2	90.0
	30	120		70.9	88.6	90.0
	36			67.3	84.1	90.0
	42			64.0	80.0	90.0
	48			61.0	76.3	90.0
	96	30		102	90	77.3
36		73.7	90.0			90.0
42		70.3	87.9			90.0
48		67.3	84.1			90.0
54		64.5	80.6			90.0
30		108	74.5	90.0		90.0
36			70.9	88.6		90.0
42			67.6	84.5		90.0
48			64.6	80.8		90.0
30		114	71.8	89.8		90.0
36			68.3	85.4		90.0
42			65.1	81.4		90.0
48			62.2	77.7		90.0
30		120	69.4	86.7		90.0
36			65.9	82.4		90.0
42			62.8	78.5		90.0
48			59.9	74.9		89.9

DOOR MULLION HEAD ANCHOR LOAD CAPACITY					
NOMINAL DIMS.				'C4'	
WIDTH (W1) INCHES	WIDTH (W2) INCHES	FRAME HEIGHT INCHES	DOOR HEIGHT INCHES	EXT.(+) INT.(-)	EX IN
96	30	108	96	72.8	90
	36			69.4	88
	42			66.3	86
	48			63.4	84
	30	114		70.3	88
	36			66.9	86
	42			63.8	84
	48			61.0	82
	30	120		68.0	86
	36			64.6	84
	42			61.6	82
	48			58.9	80
96	30	114	102	68.8	86
	36			65.6	84
	42			62.6	82
	48			59.9	80
	30	120		66.6	84
	36			63.4	82
	42			60.5	80
	48			57.8	78
96	30	120	110-1/2	64.7	82
	36			61.7	80
	42			58.9	78
	48			56.4	76
96	30	144	108	57.8	78
	36			54.9	76
	42			52.3	74
	48			49.9	72



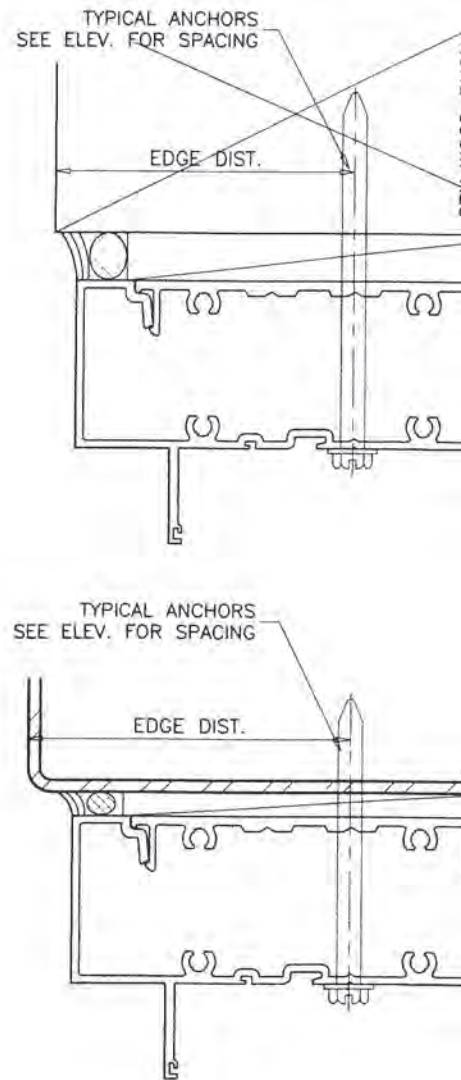
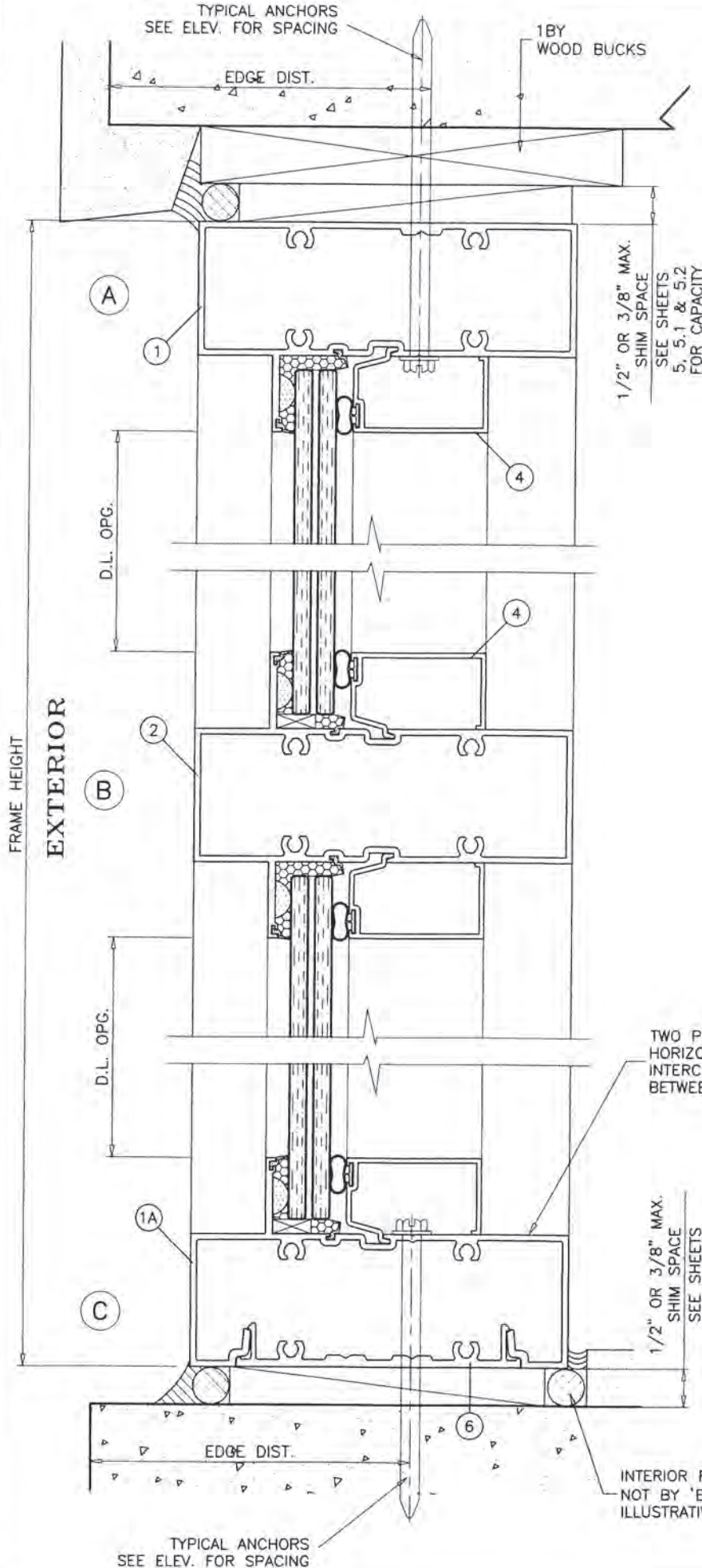
ANCHORS TYPES: SEE SHEET 8 FOR DESCRIPTION

C4 = (4) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

C5 = (5) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

C6 = (6) ANCHORS TYPE 'C' AT EACH SIDE OF DOOR MULLION

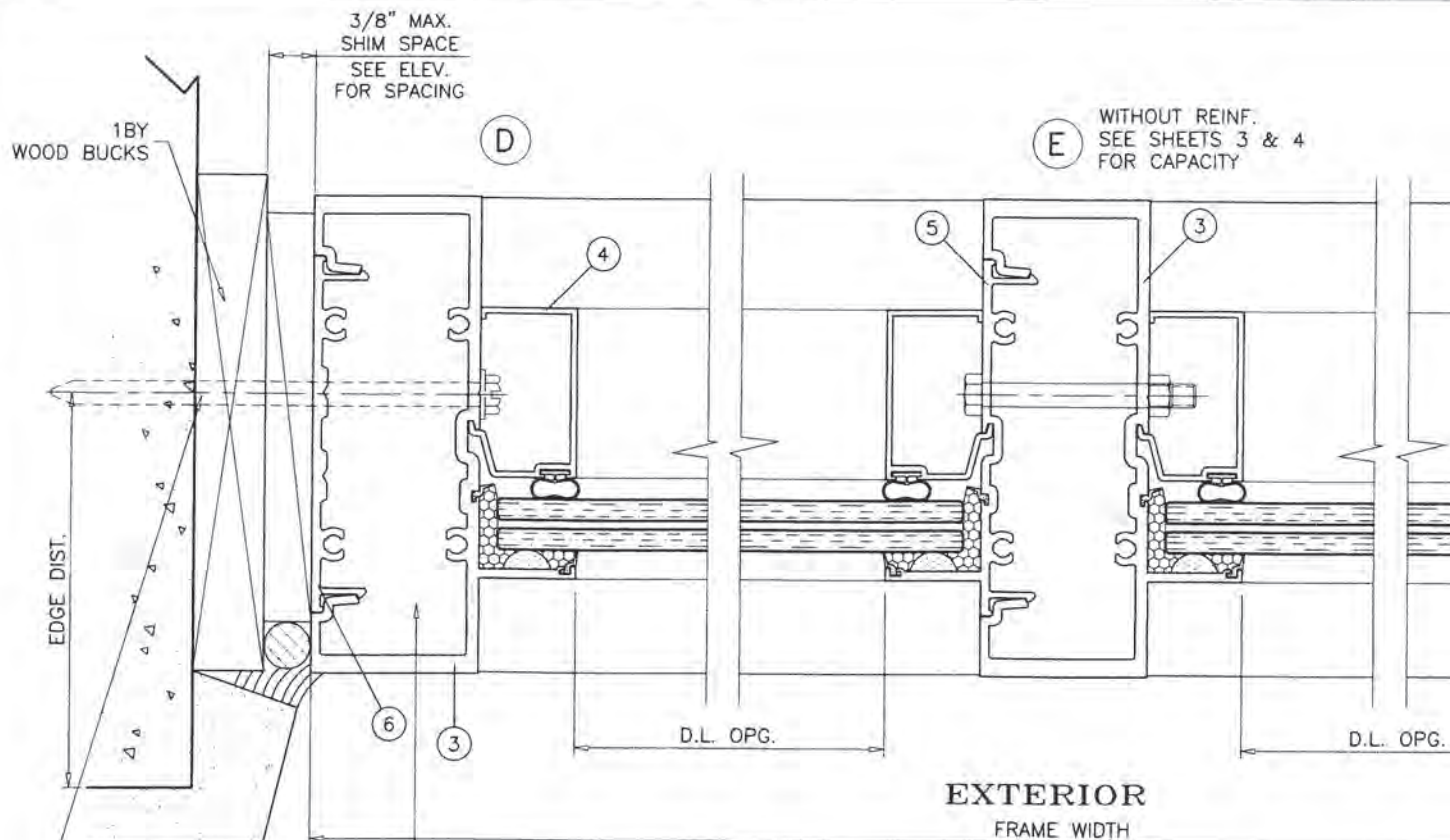
ALL OTHER ANCHORS TO BE SPACED AS PER ELEVATION.



SEALANTS:

ALL FRAME CORNERS, JOINTS
GLAZING BEAD TO FRAME

WOOD BUCKS AND METAL
MUST SUPPORT LOADS
TRANSFER THEM TO THE



JAMB ANCHORS
OPTIONAL
SEE ELEVATIONS
FOR SPACING

ANCHORED JAMBS
DO NOT REQUIRE REINFORCING

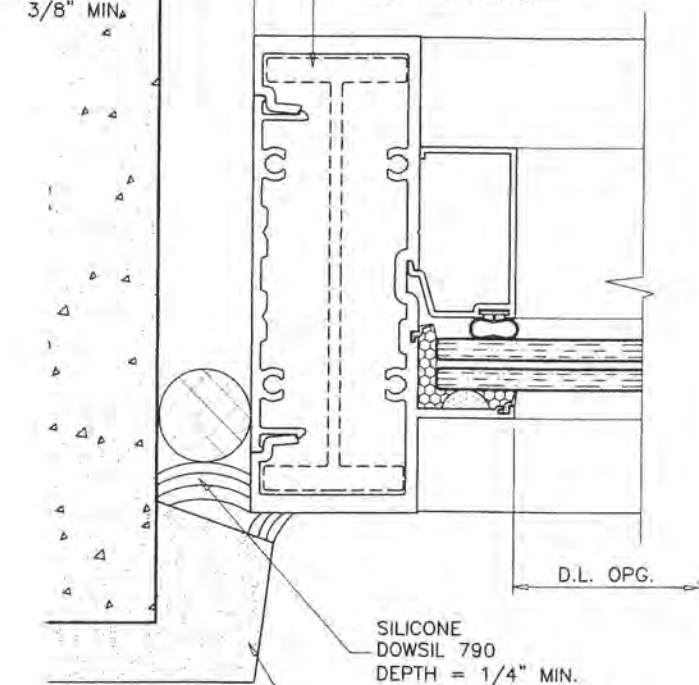
UNANCHORED JAMBS
MAY REQUIRE REINFORCING
SEE CHARTS

GAP
1-1/8" MAX.
3/8" MIN.

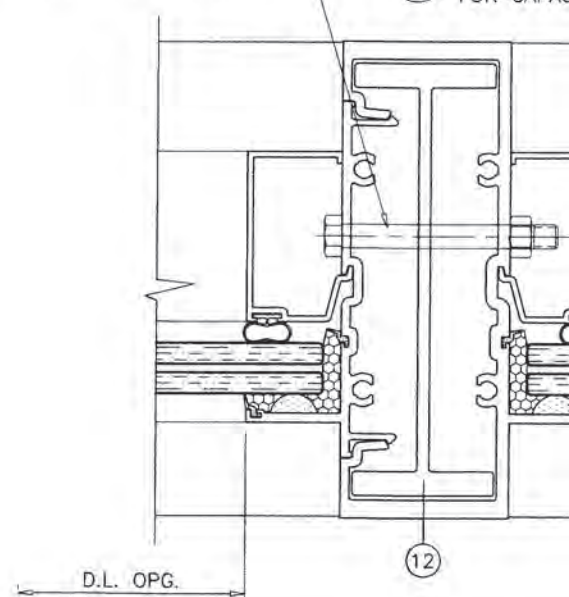
D' ALUM. REINF.
SEE SHEETS 3 & 4
FOR CAPACITY

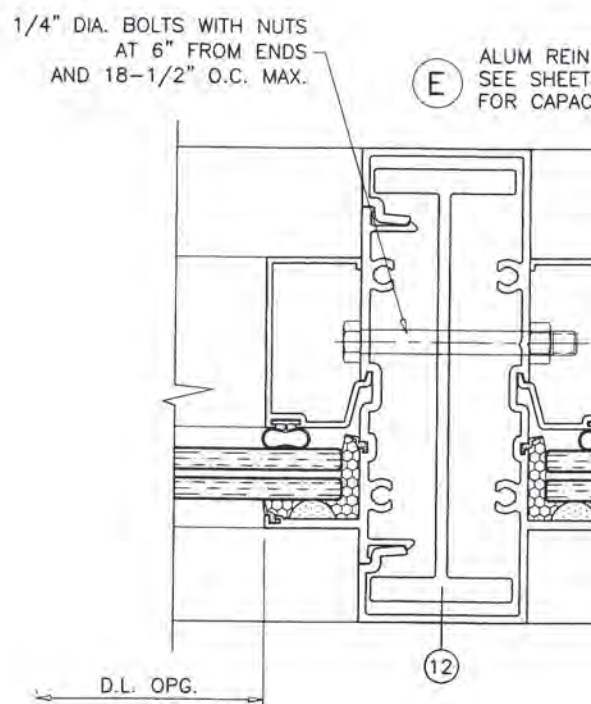
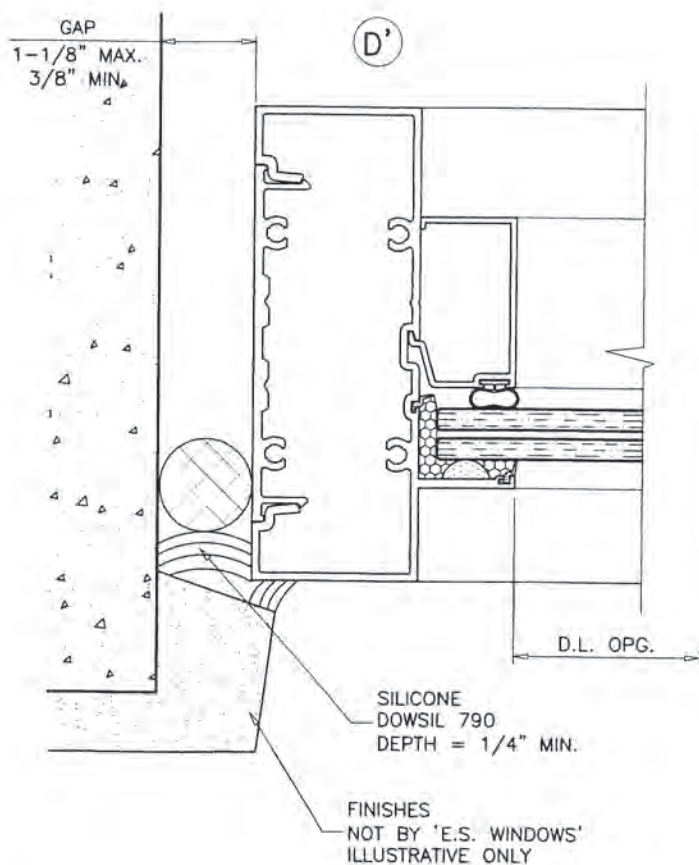
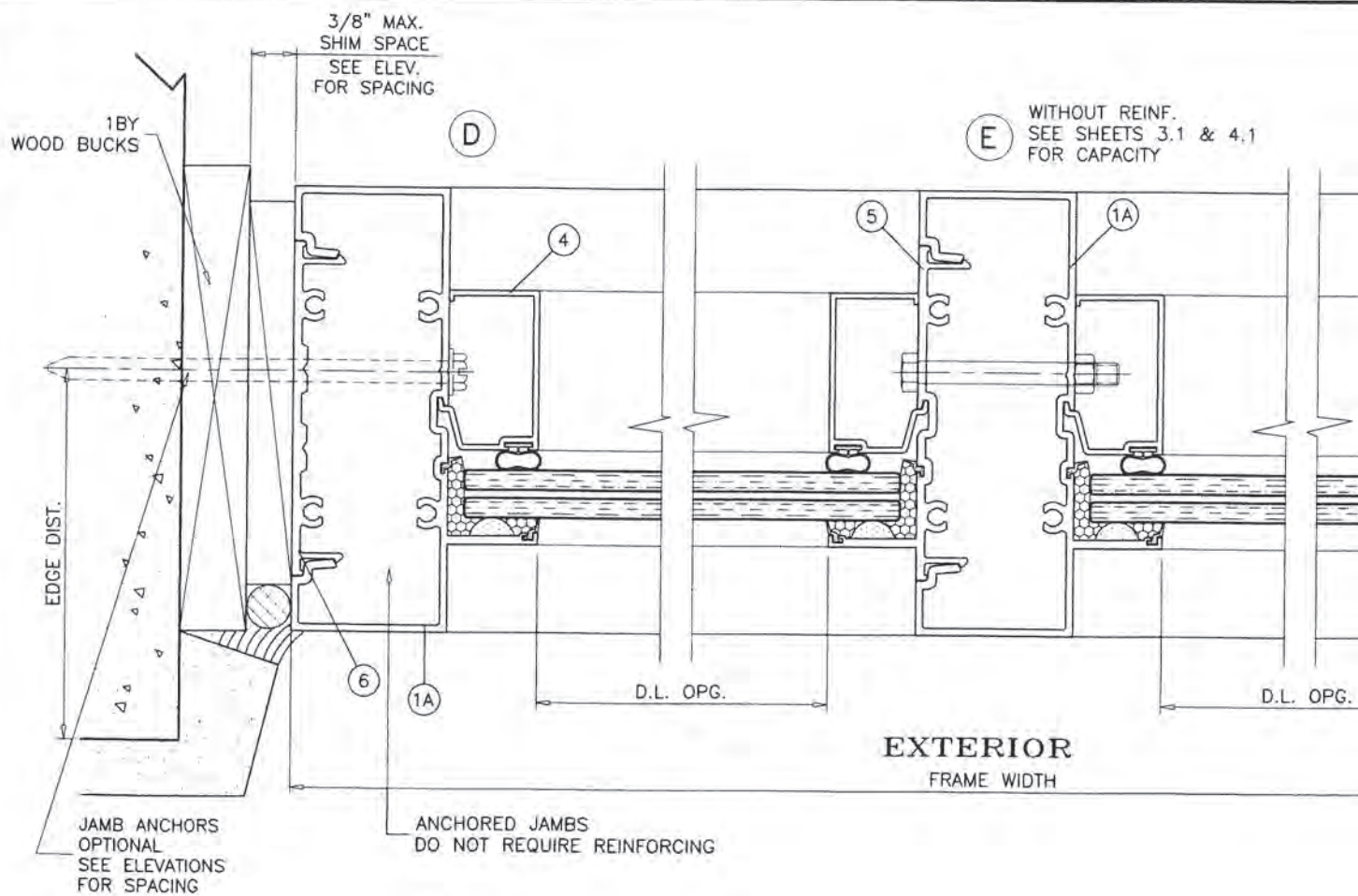
1/4" DIA. BOLTS WITH NUTS
AT 6" FROM ENDS
AND 18-1/2" O.C. MAX.

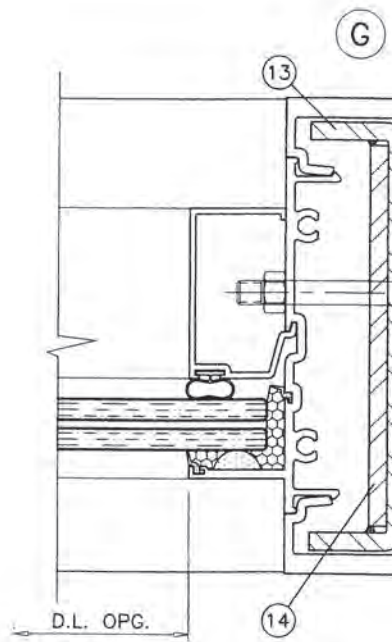
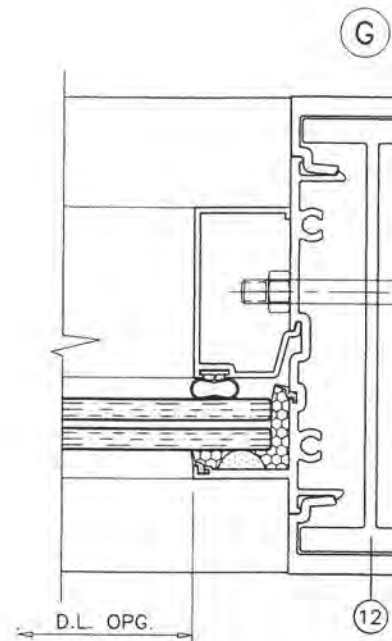
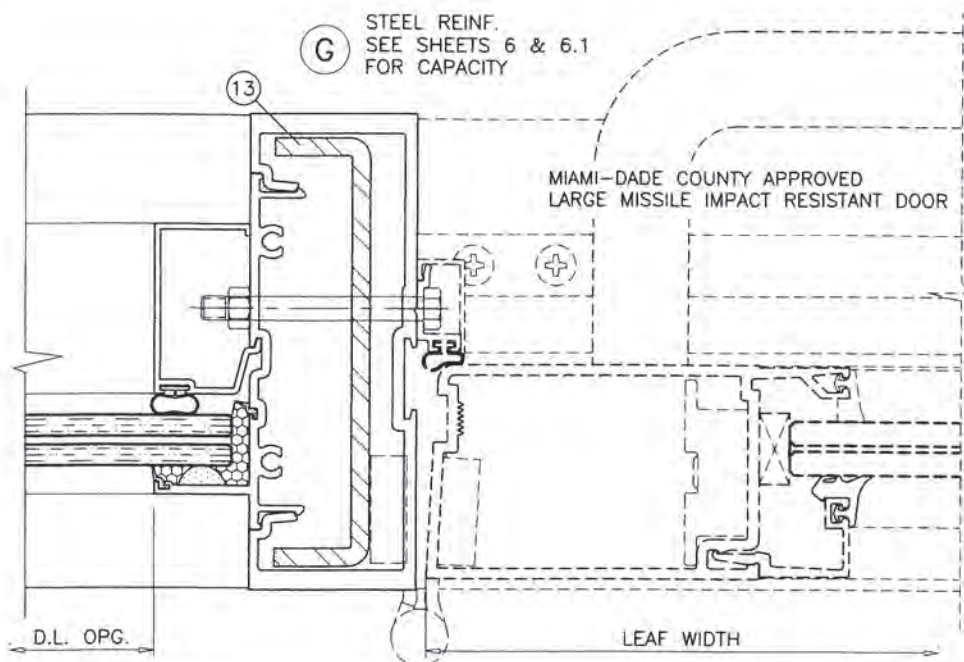
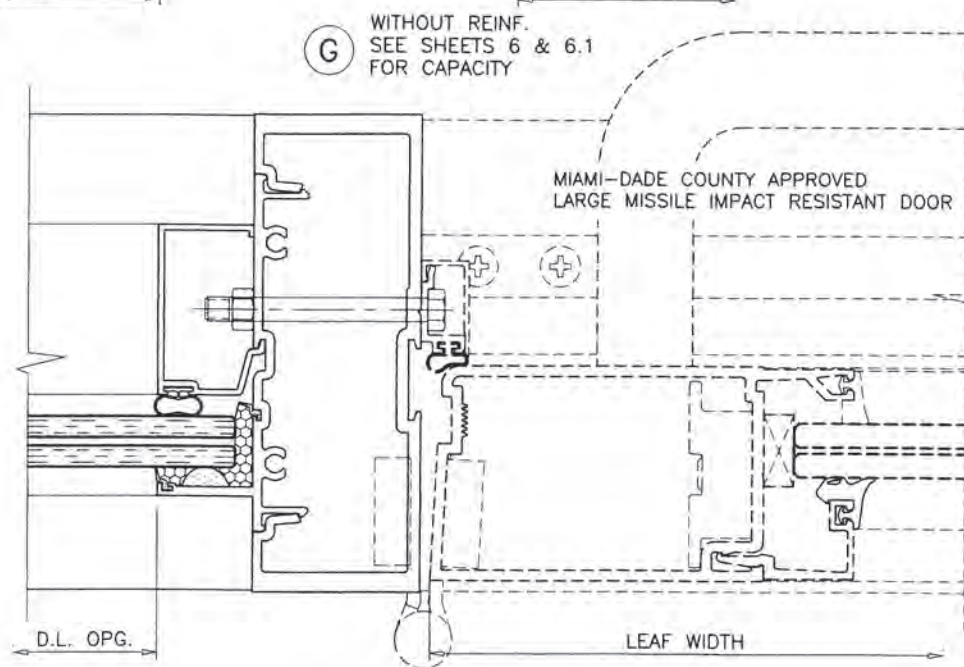
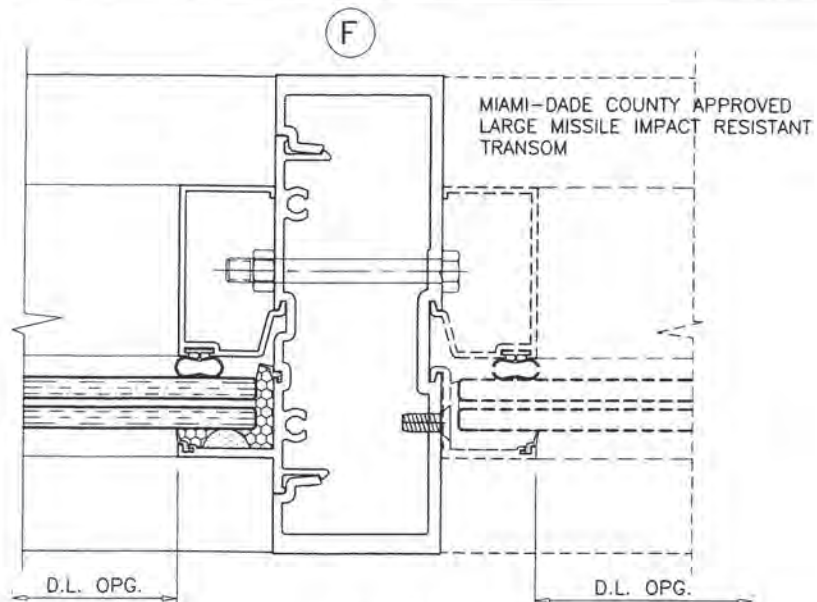
E ALUM. REINF.
SEE SHEET
FOR CAPAC



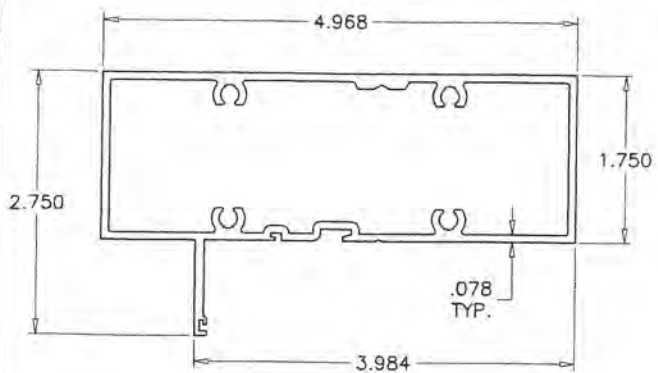
FINISHES
NOT BY 'E.S. WINDOWS'
ILLUSTRATIVE ONLY





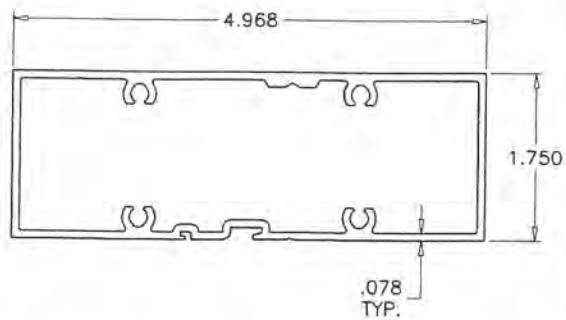


ITEM NO.	DESCRIPTION
1	
1.1	
1A	
2	
3	
3.1	
3A	
4	
5	
6	
7	
8	
8A	
9	
10	
11	#
12	
13	
14	
15	

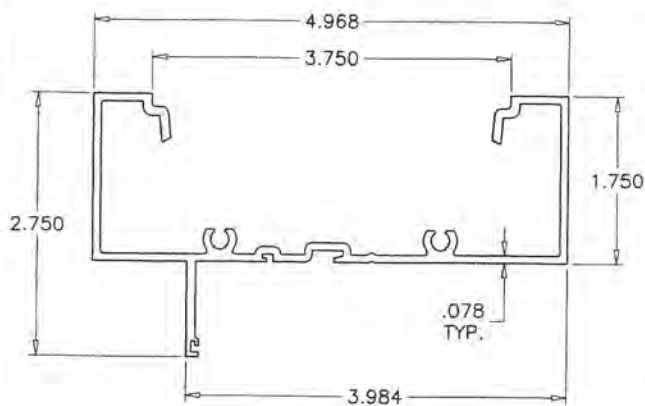


①

HOLLOW FRAME HEAD/SILL

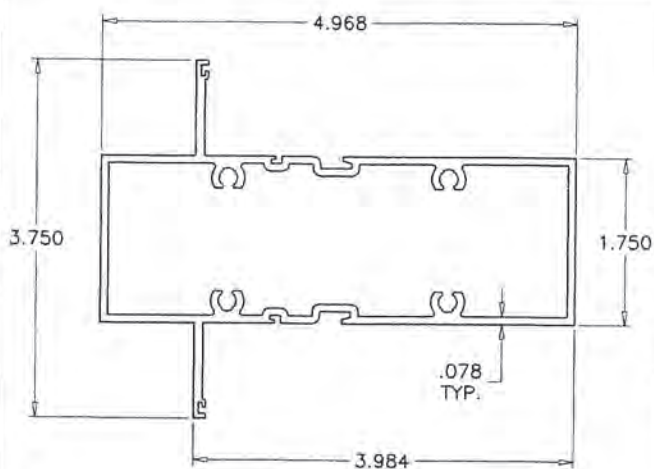


①.1



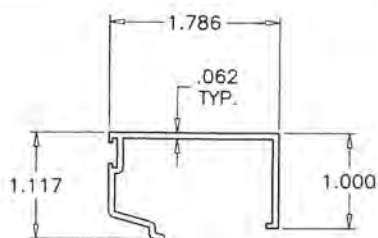
①A

FRAME HEAD/SILL/JAMB/MULLION



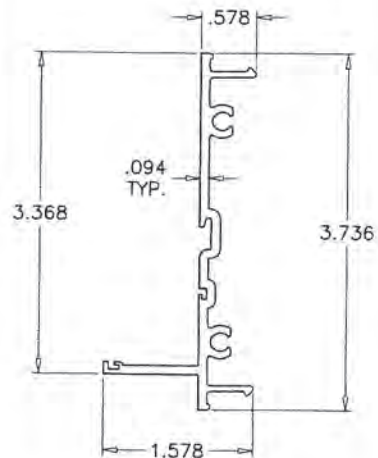
②

INTERMEDIATE HORIZONTAL



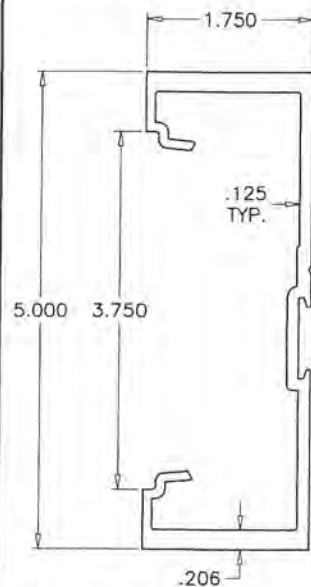
④

GLASS STOP



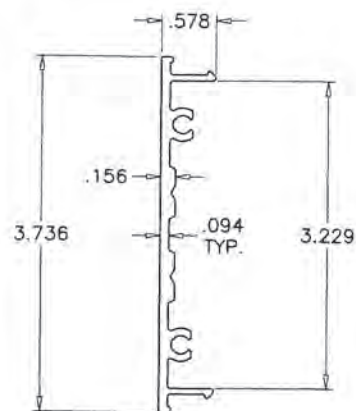
⑤

MULLION SNAP-IN MATE



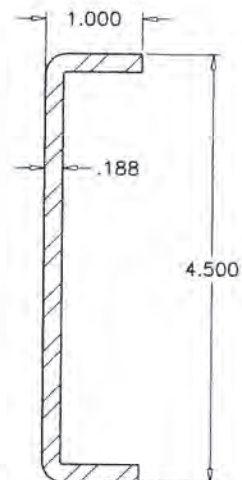
③A

DOOR MULLION



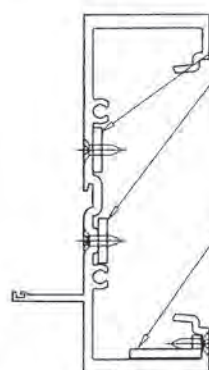
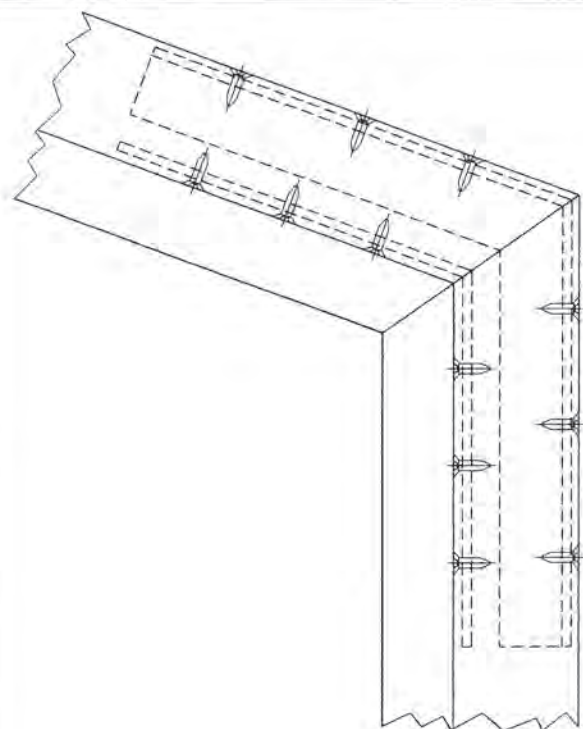
⑥

SHEAR CLIP



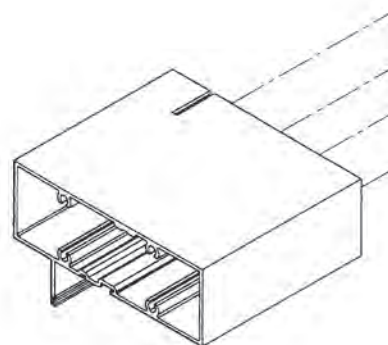
⑬

STEEL REINFORCING
36 KSI MIN.

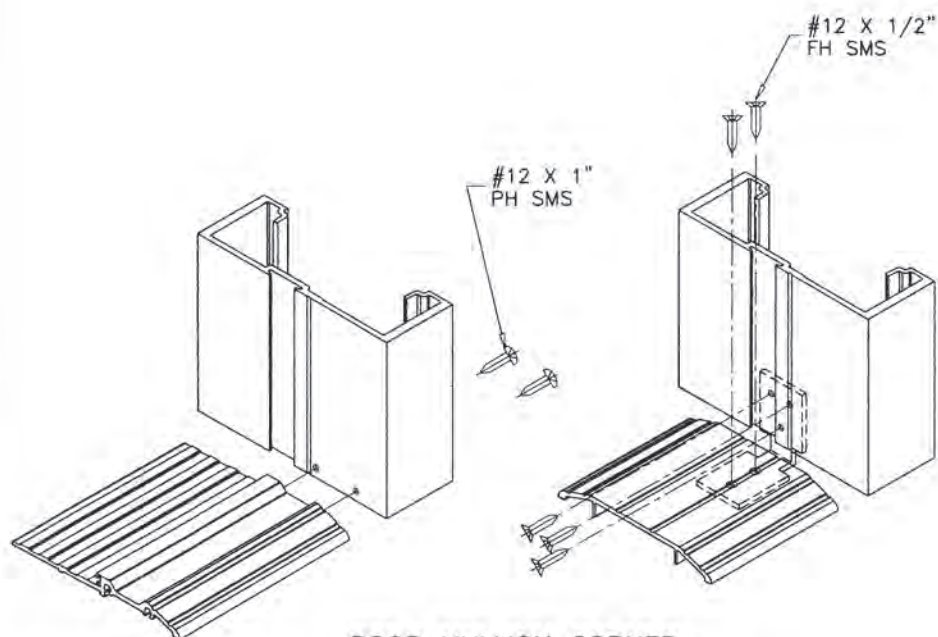


5/8" X 1/8"
ALUM PLATE
BENT TO MATCH JOINT
SECURED WITH #8 SMS
(3) PER SIDE OF JOINT

5/16 X 1 X 1/8"
ALUM ANGLE
BENT TO MATCH JOINT
SECURED WITH #8 SMS
(3) PER SIDE OF JOINT

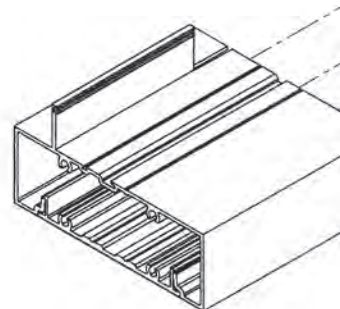


CIRCULAR OR ANGLED CORNERS



#12 X 1"
PH SMS

#12 X 1/2"
FH SMS



DOOR MULLION CORNER

RECT. O