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Product Approval
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OFFICE OF THE SECRETARY

FL #	FL31169-R2								
Application Type	Revision								
Code Version	2023								
Application Status	Approved								
Comments									
Archived	<input type="checkbox"/>								
Product Manufacturer	Sunshine Windows Manufacturing Inc.								
Address/Phone/Email	1745 West 33rd Place Hialeah, FL 33012 (305) 364-9952 Ext 109 noel_m_2001@yahoo.com								
Authorized Signature	Jalal Farooq veronica@afceng.com								
Technical Representative									
Address/Phone/Email									
Quality Assurance Representative									
Address/Phone/Email									
Category	Windows								
Subcategory	Mullions								
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer <input type="checkbox"/> Evaluation Report - Hardcopy Received								
Florida Engineer or Architect Name who developed the Evaluation Report	Jalal Farooq								
Florida License	PE-81223								
Quality Assurance Entity	Keystone Certifications, Inc.								
Quality Assurance Contract Expiration Date	02/28/2029								
Validated By	Abel Carrasco, PE <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received								
Certificate of Independence	FL31169 R2 COI SS - Certificate of Independence.pdf								
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>TAS 201</td> <td>1994</td> </tr> <tr> <td>TAS 202</td> <td>1994</td> </tr> <tr> <td>TAS 203</td> <td>1994</td> </tr> </tbody> </table>	Standard	Year	TAS 201	1994	TAS 202	1994	TAS 203	1994
Standard	Year								
TAS 201	1994								
TAS 202	1994								
TAS 203	1994								
Equivalence of Product Standards Certified By									
Sections from the Code									

Product Approval Method

Method 1 Option D

Date Submitted

07/28/2023

Date Validated

07/30/2023

Date Pending FBC Approval

08/02/2023

Date Approved

10/18/2023

Summary of Products

FL #	Model, Number or Name	Description
31169.1	Clipped, Extruded Aluminum Tube Mullion	Large missile impact resistant aluminum tube mullion.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +140/-140 Other: See drawings 19-119F for span vs load combinations and installation details.		Installation Instructions FL31169_R2_II_SS - Alum Tube Mullions (LMI) - DWG 19-119F (2023).pdf Verified By: Jalal Farooq PE 81223 Created by Independent Third Party: Yes Evaluation Reports FL31169_R2_AE_SS - CLIPPED EXTRUDED MULLION (LMI) - PAE 2023.pdf Created by Independent Third Party: Yes

[Back](#)

[Next](#)

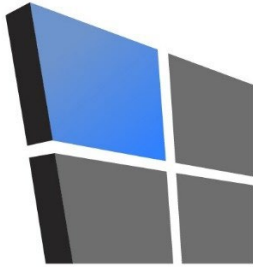
[Contact Us :: 2601 Blair Stone Road, Tallahassee FL 32399 Phone: 850-487-1824](#)

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Product Approval Accepts:





AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

August 11, 2020

Product Approval Administrator
Building Codes & Standards Section
Department of Business & Professional Regulations
1940 North Monroe Street, Suite 90
Tallahassee, FL 32399-2100

To whom it may concern,

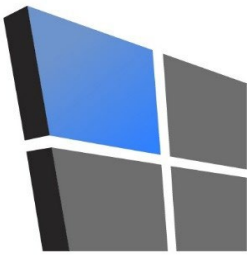
As the design engineer retained to prepare the product approval(s) associated with this letter as shown below on this same web page, I do hereby declare that I do not have and will not have any financial interest in any company manufacturing or distributing the referenced product(s), nor do I have or will have any financial interest with any other entity involved in the approval process of the referenced product(s).

Sincerely,



Sealed 8-11-2020

Jalal Farooq, P.E.
CFO



AL-FAROOQ CORPORATION

CONSULTING ENGINEERS & PRODUCT DEVELOPMENT

PRODUCT APPROVAL EVALUATION RULE CHAPTER #61G20-3 • METHOD 1 OPTION D

FL 31169

Date: 07/28/2023

Detailed Product Description:

Manufacturer: SUNSHINE WINDOWS MANUFACTURING, INC.

Manufacturer Address: 1785 W 33 PLACE, HIALEAH, FL 33012

Model Name: CLIPPED, EXTRUDED ALUMINUM TUBE MULLION

Maximum Load: +140 PSF, -140 PSF (Large Missile Impact)

Installation Drawings # 19-119F

This product complies with the High Velocity Hurricane Zone (HVHZ) testing requirements.

For maximum sizes, combination of span vs loads and anchor type refer to installation drawings.

Comparative analysis used Yes X No

Mandatory Tests (Tested in accordance with AAMA 101/I.S.2/NAFS/TAS-202)

Test	Description	Test Location	Test Report Date	Test Report #	Test Sealed By
ASTM E283	Air Infiltration Leakage	Fenestration Testing Laboratory, Inc.	10/10/2012	FTL-7067	Marlin Brinson, P.E.
ASTM E330 & TAS 202	Uniform Static Air Pressure	Fenestration Testing Laboratory, Inc.	10/10/2012	FTL-7067	Marlin Brinson, P.E.

Supplemental Tests (Tested in accordance with TAS-201 and TAS-203)

Test	Description	Test Location	Test Report Date	Test Report#	Test Sealed By
FBC 1626.2 (TAS 201 & 203)	Large Missile Impact & Cyclic	Fenestration Testing Laboratory, Inc.	10/10/2012	FTL-7067	Marlin Brinson, P.E.

Under the limitations of the attached installation drawings, to the best of my knowledge and ability, the above product conforms to the requirements of the 2023 Florida Building Code.

Evaluation Report Engineer:

Jalal Farooq PE # 81223
Al-Farooq Corporation EB # 3538



Sealed: 7/28/2023

INSTRUCTIONS:

USE CHARTS AND GRAPHS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN LOAD REQUIRED PER ASCE 7 FOR PARTICULAR OPENING.
- STEP 2** USE F.B.C. APPROVED GLAZING PRODUCTS MEETING ABOVE LOAD REQUIREMENTS.
- STEP 3** USE GLAZING PRODUCT CONNECTION TO MULLION AS AS PER PRODUCT APPROVAL.
- STEP 4** USING CHARTS ON SHEET 3 & 3.1 SELECT MULLION SIZE WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** USING ANCHOR TYPES AND ANCHOR CAPACITY CHARTS ON SHEETS 4 THRU 18, SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.

EXTRUDED ALUMINUM TUBE MULLIONS USING MULLION PROPERTIES ONLY

MULLION SYSTEM IS RATED FOR LARGE MISSILE IMPACT. SEE SEPARATE APPROVAL'S FOR WINDOWS/DOORS IMPACT AND LOAD RATINGS. LOWER VALUES FROM MULLION APPROVAL OR WINDOW/DOOR APPROVAL WILL APPLY TO ENTIRE SYSTEM.

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

ALL GLAZING PRODUCTS USED WITH THESE MULLIONS MUST MEET THE APPLICABLE BUILDING CODE REQUIREMENTS I.E: WIND LOAD, WATER INFILTRATION, FORCED ENTRY RESISTANCE, SAFEGUARDS ETC.

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.

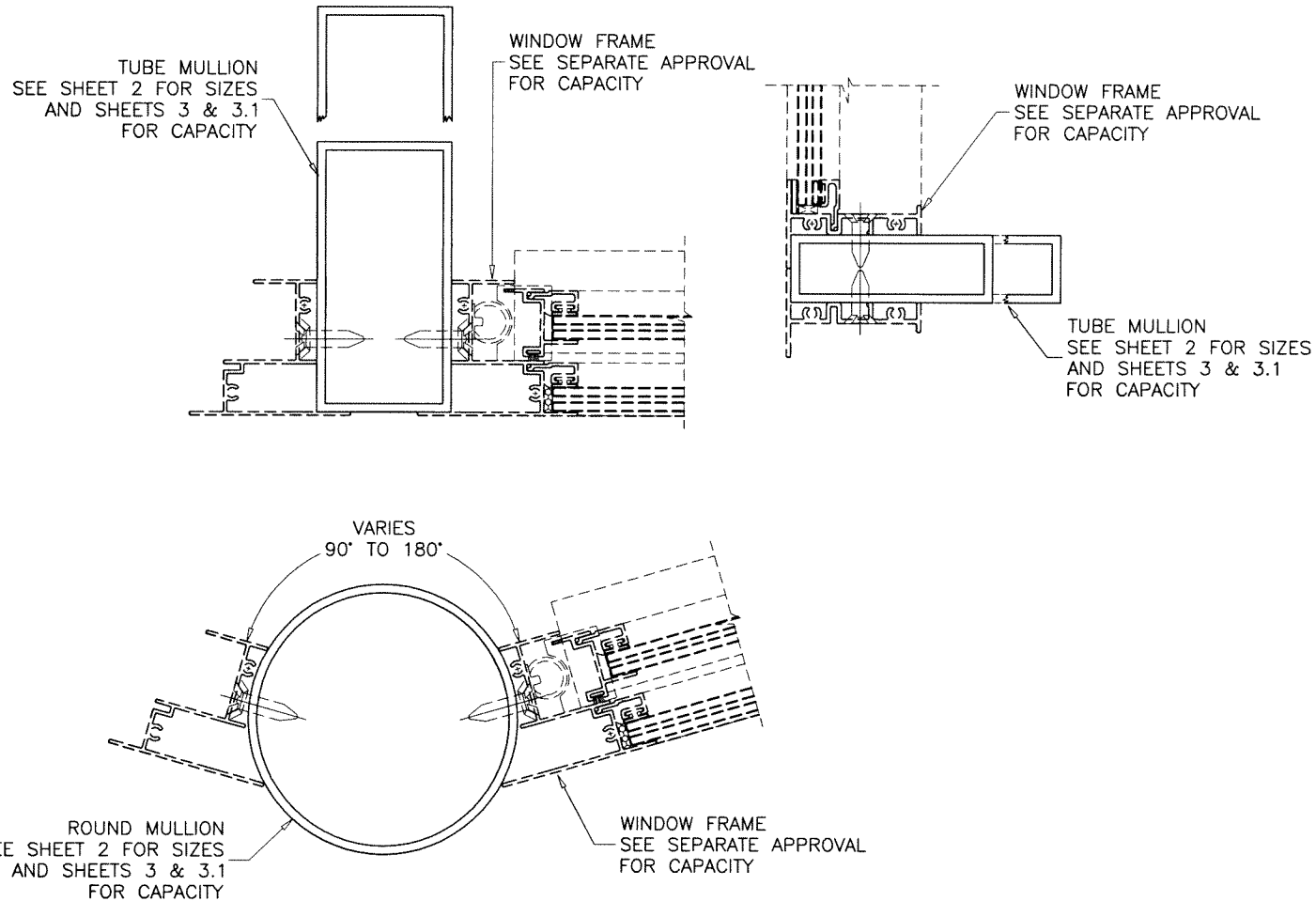
A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.

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)'. MANUFACTURER'S LABEL SHALL BE LOCATED ON A READILY VISIBLE LOCATION IN ACCORDANCE WITH SECTION 1709.9.3 OF FLORIDA BUILDING CODE. LABELING TO COMPLY WITH SECTION 1709.9.2.



MULLIONS CONTAINING TYPICAL GLAZING PRODUCTS HORIZONTAL OR VERTICAL

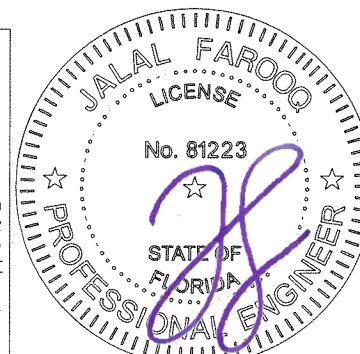
SEE WINDOW OR DOOR APPROVAL FOR FASTENERS SIZES AND SPACING

THESE MULLIONS CAN ONLY BE USED WITH 'SUNSHINE WINDOWS' GLAZING PRODUCTS

Sealed: 7/26/2023

FL #31169

- A- CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION OF THIS PRODUCT BASED ON THIS PRODUCT EVALUATION PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT.
- B- THIS PRODUCT EVALUATION DOCUMENT WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.
- C- SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL BE RESPONSIBLE FOR THE PROPER USE OF THE P.E.D. ENGINEER OF RECORD, ACTING AS A DELEGATED ENGINEER TO THE P.E.D. ENGINEER SHALL SUBMIT TO THIS LATTER THE SITE SPECIFIC DRAWINGS FOR REVIEW.
- D- THIS P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.



afc

AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978
MULLION\19-119F-SWM

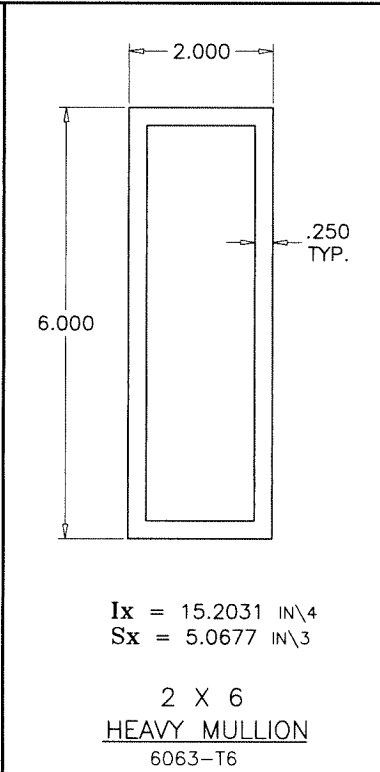
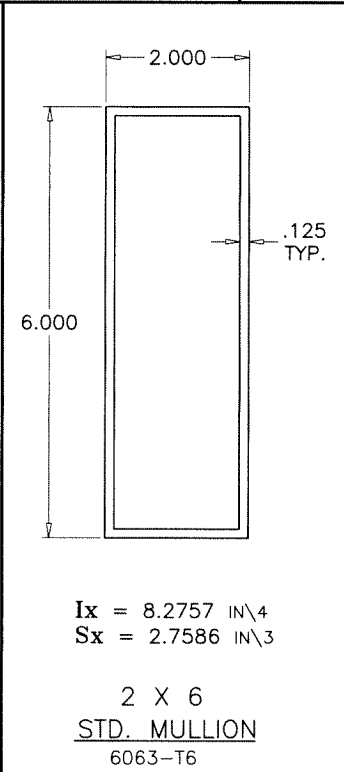
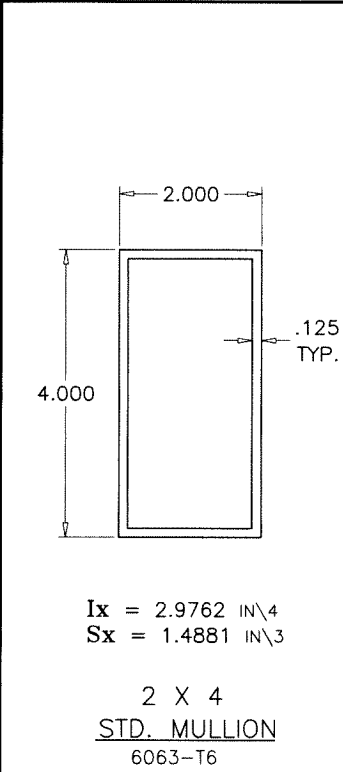
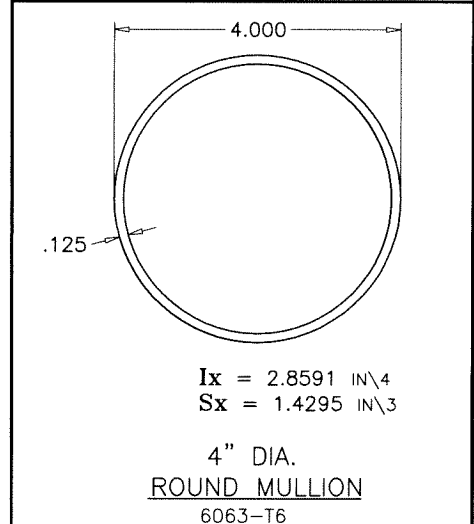
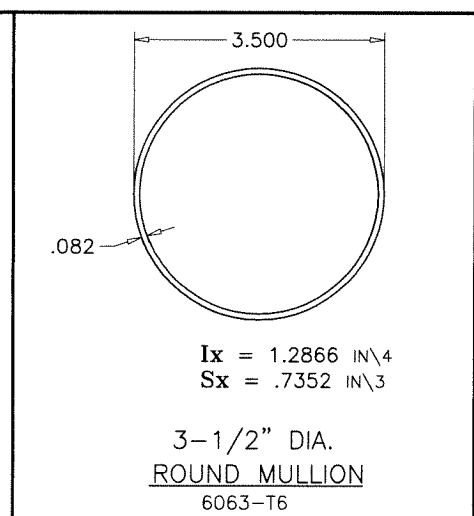
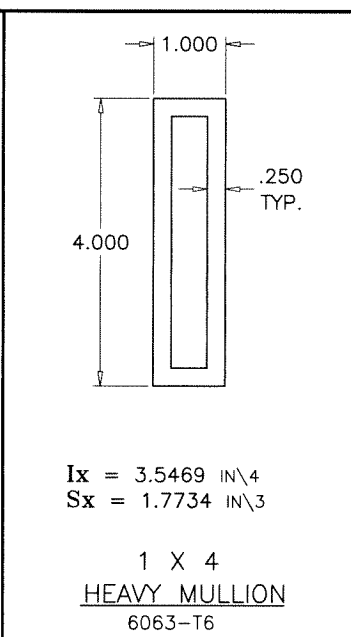
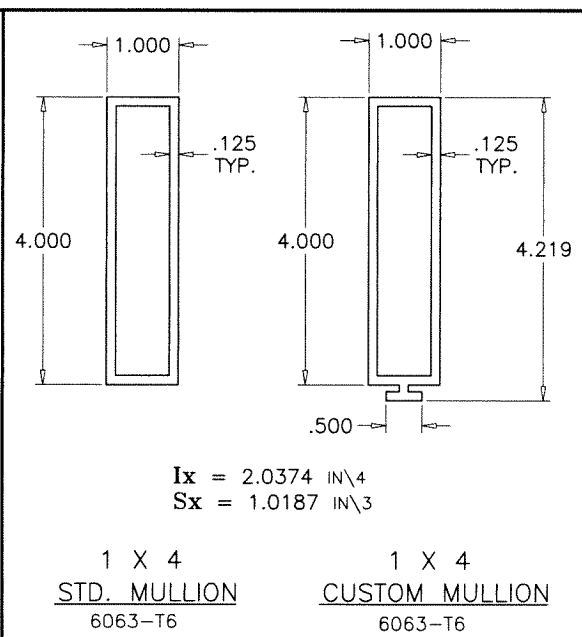
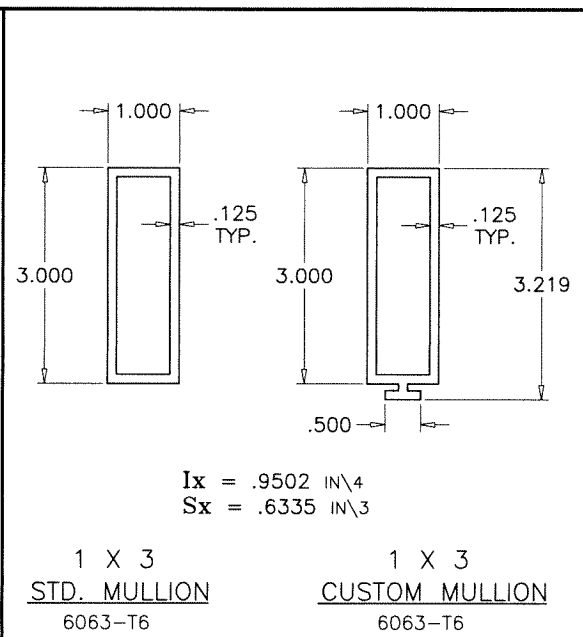
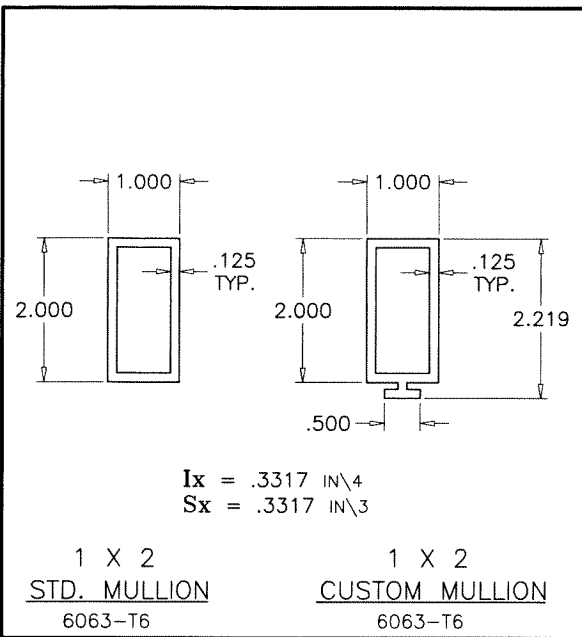
EXTRUDED ALUMINUM TUBE MULLIONS

Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL. 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

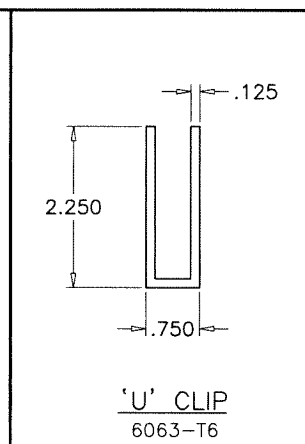
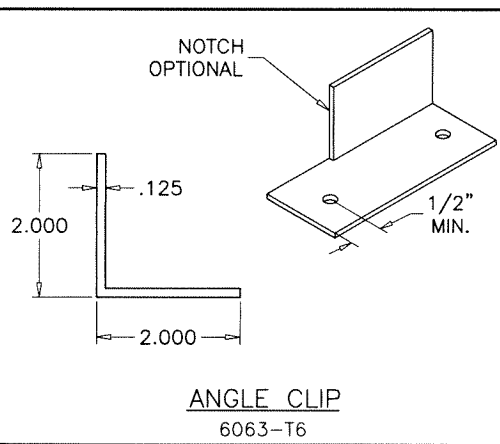
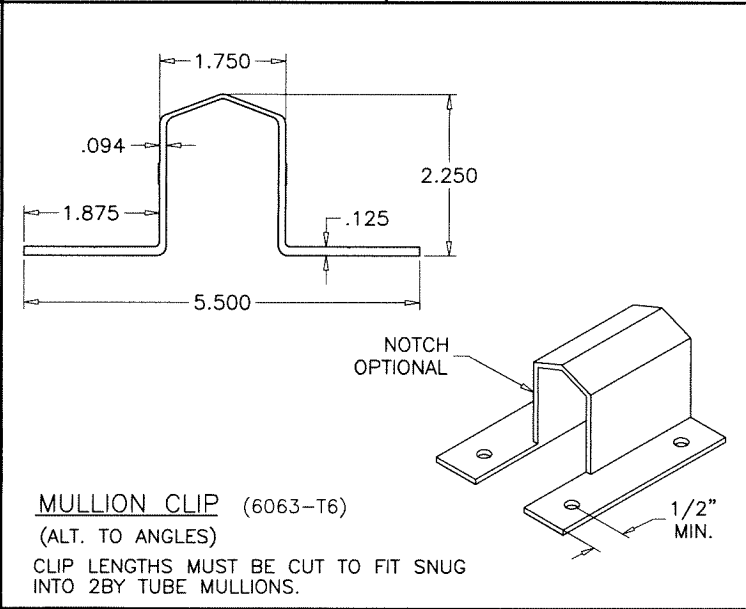
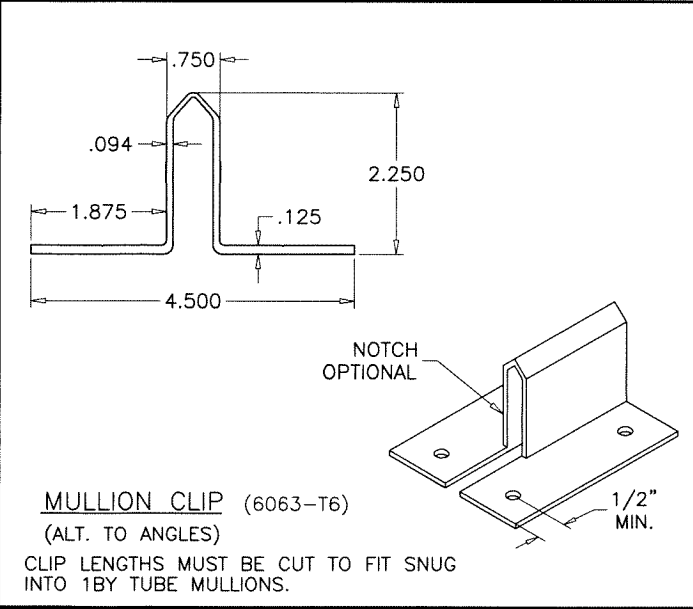
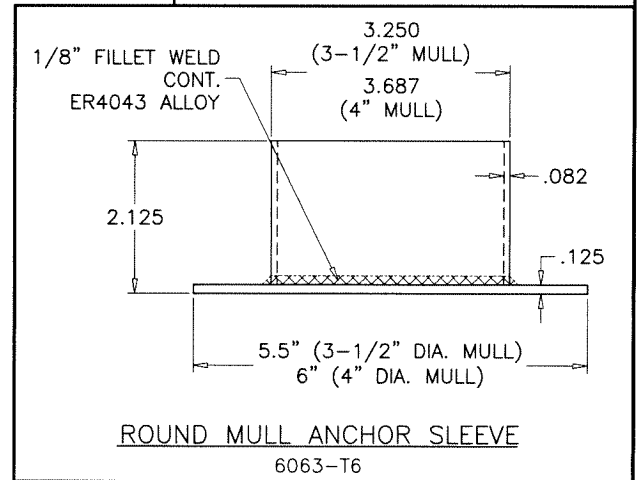
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B	07.21.23	UPDATED TO 2023 FBC	

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

drawing no. **19-119F**
sheet 1 of 16

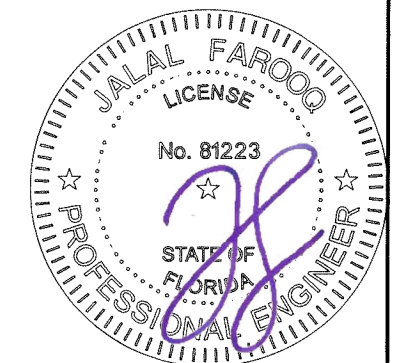


THESE MULLIONS CAN ONLY BE USED WITH 'SUNSHINE WINDOWS' GLAZING PRODUCTS



Sealed: 7/26/2023

FL #31169



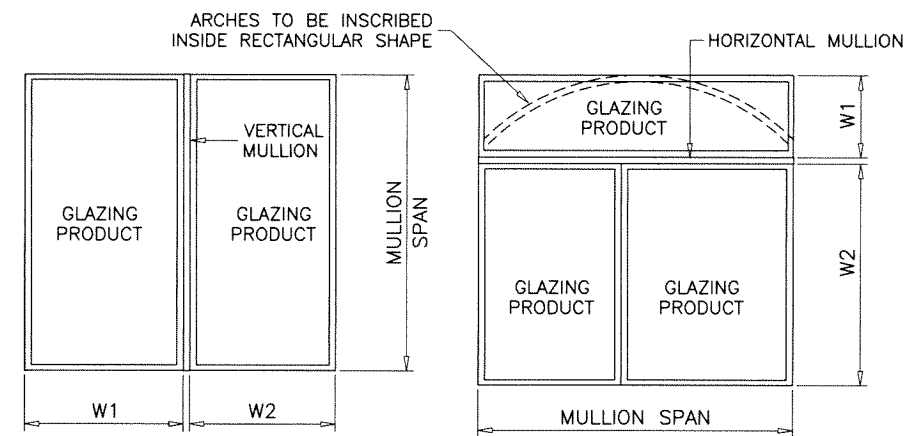
af c
AL-FAROOQ CORPORATION
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9360 SUNSET DRIVE, SUITE 220
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MULLION\19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL. 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	by	description
date:	11-12-19			
scale:	3/8" = 1"			
dr. by:	TARIQ			
chk. by:				
drawing no.	19-119F			
sheet	2 of 16			

DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS)								
WINDOW DIMS.		1 X 2	1 X 3	1 X 4	1 X 4	2 X 4	2 X 6	2 X 6
WIDTH (W)	MULL SPAN	STD. CUSTOM	STD. CUSTOM	STD. CUSTOM	HEAVY	STD.	STD.	HEAVY
19-1/8"	38-3/8"	140.0	140.0	140.0	140.0	140.0	140.0	140.0
26-1/2"		137.4	140.0	140.0	140.0	140.0	140.0	140.0
30"		121.4	140.0	140.0	140.0	140.0	140.0	140.0
37"		98.4	140.0	140.0	140.0	140.0	140.0	140.0
42"		86.7	140.0	140.0	140.0	140.0	140.0	140.0
48"		75.9	140.0	140.0	140.0	140.0	140.0	140.0
54"		67.4	127.8	140.0	140.0	140.0	140.0	140.0
60"		60.7	115.0	140.0	140.0	140.0	140.0	140.0
66"		55.2	104.5	140.0	140.0	140.0	140.0	140.0
72"	50.6	95.8	140.0	140.0	140.0	140.0	140.0	
19-1/8"	50-5/8"	83.0	140.0	140.0	140.0	140.0	140.0	140.0
26-1/2"		59.9	140.0	140.0	140.0	140.0	140.0	140.0
30"		52.9	130.4	140.0	140.0	140.0	140.0	140.0
37"		42.9	105.7	140.0	140.0	140.0	140.0	140.0
42"		37.8	93.1	140.0	140.0	140.0	140.0	140.0
48"		33.1	81.5	128.6	140.0	140.0	140.0	140.0
54"		29.4	72.4	114.3	140.0	140.0	140.0	140.0
60"		26.4	65.2	102.9	140.0	140.0	140.0	140.0
66"		24.0	59.3	93.5	140.0	139.8	140.0	140.0
72"	22.0	54.3	85.7	140.0	128.2	140.0	140.0	
19-1/8"	63"	43.0	123.3	140.0	140.0	140.0	140.0	140.0
26-1/2"		31.1	89.0	140.0	140.0	140.0	140.0	140.0
30"		27.4	78.6	130.9	140.0	140.0	140.0	140.0
37"		22.2	63.7	106.2	140.0	140.0	140.0	140.0
42"		-	56.1	93.5	140.0	140.0	140.0	140.0
48"		-	49.1	81.8	138.5	122.7	140.0	140.0
54"		-	43.7	72.7	123.1	109.1	140.0	140.0
60"		-	39.3	65.5	110.8	98.2	140.0	140.0
66"		-	35.7	59.5	100.7	89.2	140.0	140.0
72"	-	32.8	54.6	92.3	81.8	140.0	140.0	
19-1/8"	74-1/4"	26.3	75.3	140.0	140.0	140.0	140.0	140.0
26-1/2"		-	54.4	105.4	140.0	140.0	140.0	140.0
30"		-	48.0	93.1	140.0	140.0	140.0	140.0
37"		-	38.9	75.5	127.5	113.5	140.0	140.0
42"		-	34.3	66.5	112.3	100.0	140.0	140.0
48"		-	30.0	58.2	98.2	87.5	140.0	140.0
54"		-	26.7	51.7	87.3	77.8	139.9	140.0
60"		-	24.0	46.6	78.6	70.0	125.9	140.0
66"		-	21.8	42.3	71.5	63.6	114.5	140.0
72"	-	20.0	38.8	65.5	58.3	105.0	140.0	
19-1/8"	76"	24.5	70.2	139.2	140.0	140.0	140.0	140.0
26-1/2"		-	50.7	100.5	140.0	140.0	140.0	140.0
30"		-	44.8	88.7	140.0	133.4	140.0	140.0
37"		-	36.3	71.9	121.4	108.2	140.0	140.0
42"		-	32.0	63.4	106.9	95.3	140.0	140.0
48"		-	28.0	55.5	93.6	83.4	140.0	140.0
54"		-	24.9	49.3	83.2	74.1	133.3	140.0
60"		-	22.4	44.4	74.9	66.7	120.0	140.0
66"		-	20.4	40.3	68.0	60.7	109.1	140.0
72"	-	-	37.0	62.4	55.6	100.0	140.0	

DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS)								
WINDOW DIMS.		1 X 2	1 X 3	1 X 4	1 X 4	2 X 4	2 X 6	2 X 6
WIDTH (W)	MULL SPAN	STD. CUSTOM	STD. CUSTOM	STD. CUSTOM	HEAVY	STD.	STD.	HEAVY
19-1/8"	84"	-	52.0	111.5	140.0	140.0	140.0	140.0
26-1/2"		-	37.5	80.5	137.4	117.6	140.0	140.0
30"		-	33.2	71.1	121.3	103.9	140.0	140.0
37"		-	26.9	57.7	98.4	84.2	140.0	140.0
42"		-	23.7	50.8	86.7	74.2	139.2	140.0
48"		-	20.7	44.4	75.8	64.9	121.8	140.0
54"		-	-	39.5	67.4	57.7	108.3	140.0
60"		-	-	35.6	60.7	51.9	97.4	140.0
66"		-	-	32.3	55.2	47.2	88.6	140.0
72"	-	-	29.6	50.6	43.3	81.2	140.0	
19-1/8"	96"	-	34.8	74.7	130.1	109.1	140.0	140.0
26-1/2"		-	25.1	53.9	93.9	78.8	140.0	140.0
30"		-	22.2	47.6	82.9	69.6	140.0	140.0
37"		-	-	38.6	67.2	56.4	119.6	140.0
42"		-	-	34.0	59.2	49.7	105.3	140.0
48"		-	-	29.8	51.8	43.5	92.2	140.0
54"		-	-	26.5	46.1	38.7	81.9	140.0
60"		-	-	23.8	41.5	34.8	73.7	130.9
66"		-	-	21.7	37.7	31.6	67.0	119.0
72"	-	-	-	34.6	29.0	61.4	109.1	
19-1/8"	108"	-	24.5	52.5	91.4	76.7	140.0	140.0
26-1/2"		-	-	37.9	65.9	55.3	130.5	140.0
30"		-	-	33.5	58.2	48.9	115.2	140.0
37"		-	-	27.1	47.2	39.6	93.4	140.0
42"		-	-	23.9	41.6	34.9	82.3	140.0
48"		-	-	20.9	36.4	30.5	72.0	127.6
54"		-	-	-	32.4	27.1	64.0	113.4
60"		-	-	-	29.1	24.4	57.6	102.1
66"		-	-	-	26.5	22.2	52.4	92.8
72"	-	-	-	24.3	20.4	48.0	85.0	
19-1/8"	120"	-	-	38.3	66.6	55.9	140.0	140.0
26-1/2"		-	-	27.6	48.1	40.3	104.6	140.0
30"		-	-	24.4	42.5	35.6	92.4	140.0
37"		-	-	-	34.4	28.9	74.9	132.3
42"		-	-	-	30.3	25.4	66.0	116.6
48"		-	-	-	26.5	22.3	57.7	102.0
54"		-	-	-	23.6	-	51.3	90.7
60"		-	-	-	21.2	-	46.2	81.6
66"		-	-	-	-	-	42.0	74.2
72"	-	-	-	-	-	38.5	68.0	
19-1/8"	132"	-	-	28.7	50.0	42.0	116.7	140.0
26-1/2"		-	-	20.7	36.1	30.3	84.3	140.0
30"		-	-	-	31.9	26.8	74.4	133.2
37"		-	-	-	25.9	21.7	60.3	108.0
42"		-	-	-	22.8	-	53.2	95.1
48"		-	-	-	-	-	46.5	83.3
54"		-	-	-	-	-	41.3	74.0
60"		-	-	-	-	-	37.2	66.6
66"		-	-	-	-	-	33.8	60.5
72"	-	-	-	-	-	31.0	55.5	
19-1/8"	144"	-	-	22.1	38.5	32.3	89.9	140.0
26-1/2"		-	-	-	27.8	23.3	64.9	119.2
30"		-	-	-	24.6	20.6	57.3	105.3
37"		-	-	-	19.9	-	46.5	85.4
42"		-	-	-	-	-	40.9	75.2
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54"		-	-	-	-	-	31.8	58.5



TYPICAL MULLION ARRANGEMENTS

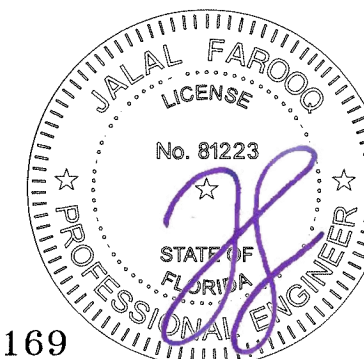
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

NOTE:
MULLIONS RATED IN THESE CHARTS MAY BE ORIENTED
VERTICALLY OR HORIZONTALLY.
(INTERPOLATION BETWEEN WIDTHS ALLOWED)

ALL LOADS ARE EXT.(+)/INT.(-).

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FL #31169



AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978
MULLION \ 19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS

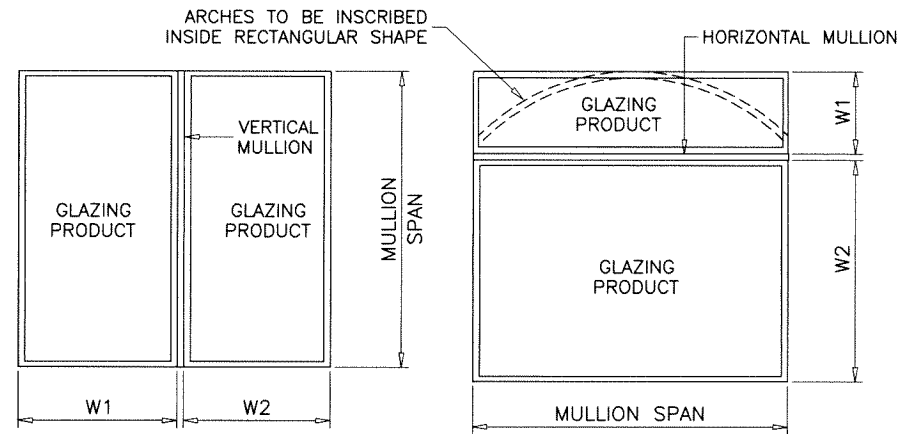
Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	by	description

date: 11-12-19
scale: -
dr. by: TARIQ
chk. by:

drawing no.
19-119F
sheet 3 of 16

DESIGN LOAD CAPACITY - PSF (ROUND MULLIONS)			
WINDOW DIMS.		3-1/2" DIA.	4" DIA.
WIDTH (W)	MULL SPAN		
19-1/8"	38-3/8"	140.0	140.0
26-1/2"		140.0	140.0
30"		140.0	140.0
37"		140.0	140.0
42"		140.0	140.0
48"		140.0	140.0
54"		140.0	140.0
60"		137.8	140.0
66"		125.2	140.0
72"		114.8	140.0
19-1/8"	50-5/8"	140.0	140.0
26-1/2"		140.0	140.0
30"		140.0	140.0
37"		127.3	140.0
42"		112.2	140.0
48"		98.2	140.0
54"		87.3	140.0
60"		78.5	140.0
66"		71.4	137.6
72"		65.4	126.1
19-1/8"	63"	140.0	140.0
26-1/2"		114.0	140.0
30"		100.7	140.0
37"		81.6	140.0
42"		71.9	138.4
48"		62.9	121.1
54"		55.9	107.7
60"		50.3	96.9
66"		45.8	88.1
72"		42.0	80.8
19-1/8"	74-1/4"	102.0	140.0
26-1/2"		73.6	140.0
30"		65.0	138.6
37"		52.7	112.3
42"		46.4	99.0
48"		40.6	86.6
54"		36.1	77.0
60"		32.5	69.3
66"		29.6	63.0
72"		27.1	57.7
19-1/8"	76"	95.1	140.0
26-1/2"		68.6	140.0
30"		60.6	132.1
37"		49.2	107.1
42"		43.3	94.4
48"		37.9	82.6
54"		33.7	73.4
60"		30.3	66.1
66"		27.6	60.1
72"		25.3	55.0



TYPICAL MULLION ARRANGEMENTS

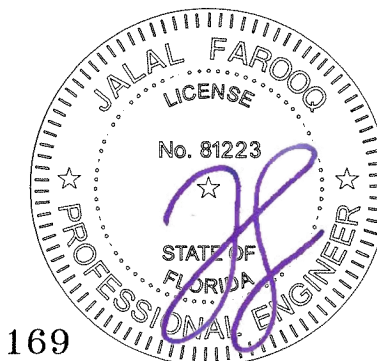
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NOTE:
MULLIONS RATED IN THESE CHARTS MAY BE ORIENTED VERTICALLY OR HORIZONTALLY.
(INTERPOLATION BETWEEN WIDTHS ALLOWED)

ALL LOADS ARE EXT.(+)/INT.(-).

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FL #31169



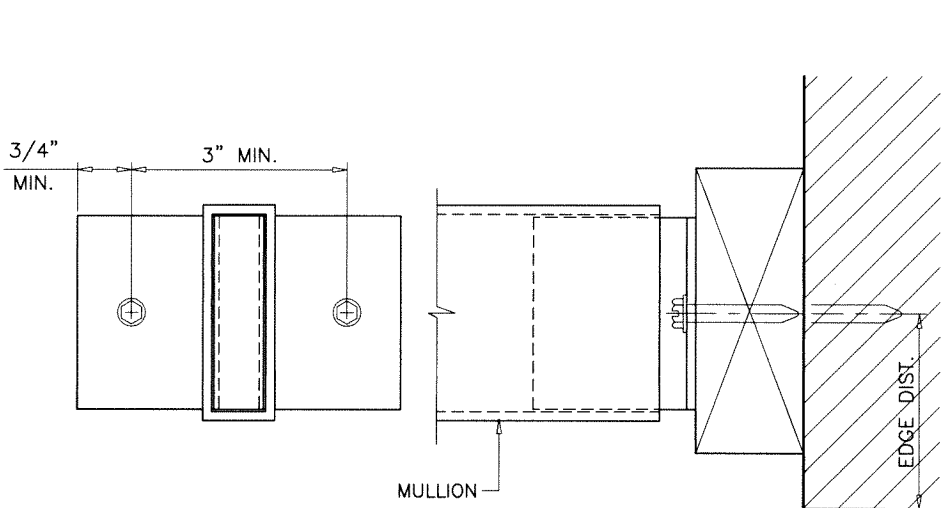
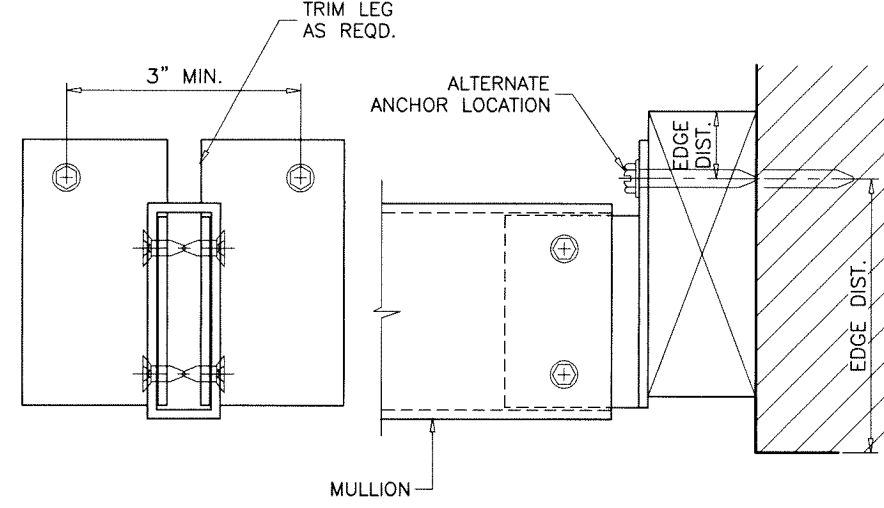
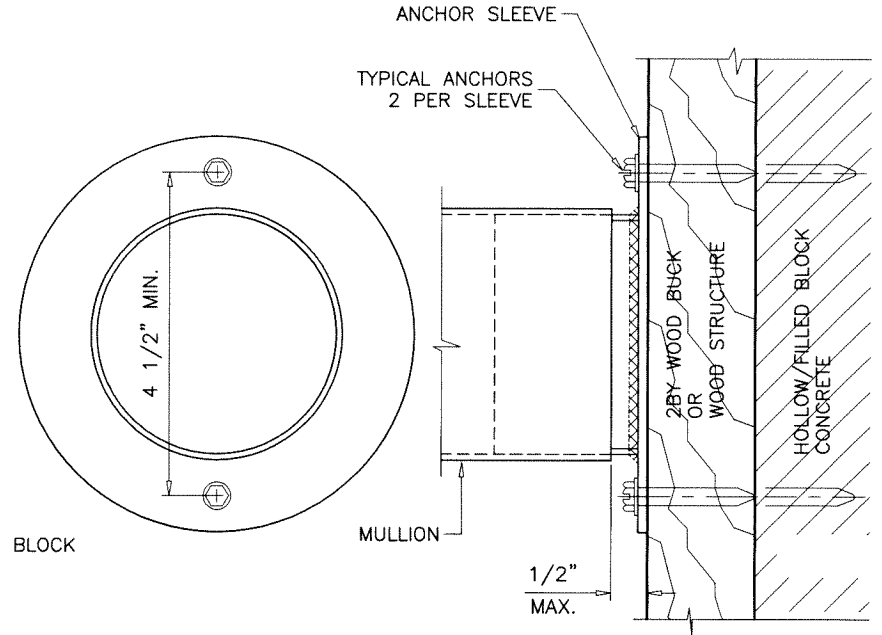
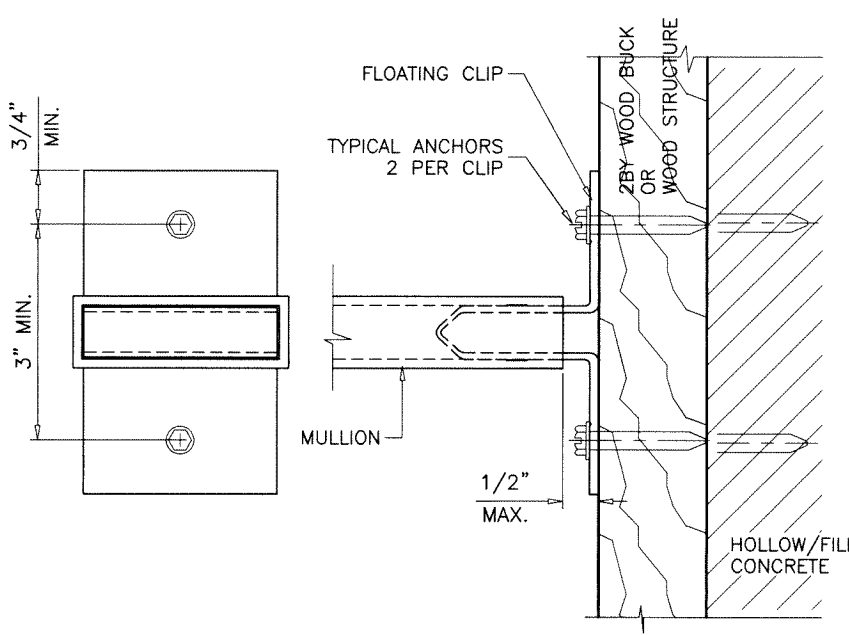
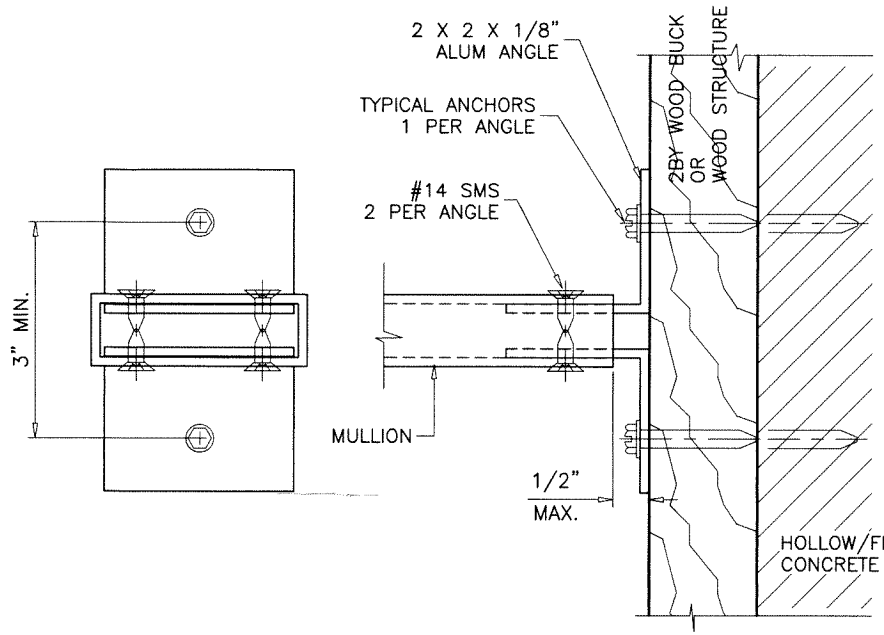
afc
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL: (305) 264-8100 FAX: (305) 262-6978
MULLION\19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL. 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	by	description

date: 11-12-19
scale: -
dr. by: TARIQ
chk. by:

drawing no.
19-119F
sheet 4 of 16



TYPICAL ANCHORS TYPE 'W2'

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
THRU 1BY BUCKS INTO CONC. OR MASONRY

SEE SHEET 7 FOR ANCHOR CAPACITIES

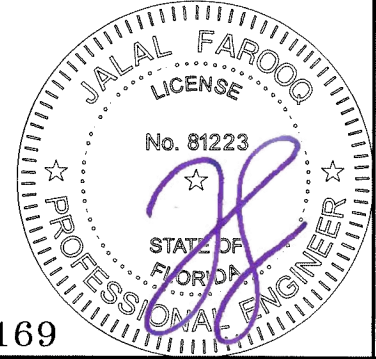
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AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220 (C.A.N. 3558)
 MIAMI, FLORIDA 33173 TEL. (305) 262-6978
 FAX. (305) 264-8100

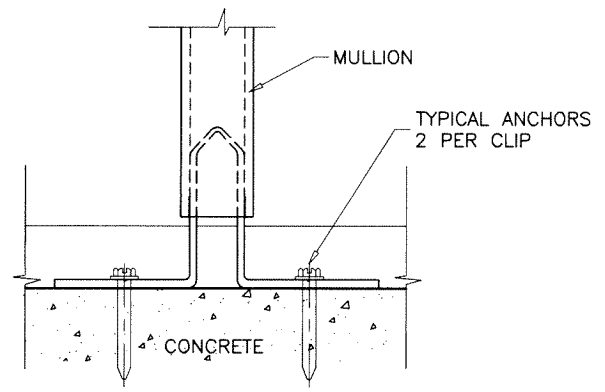
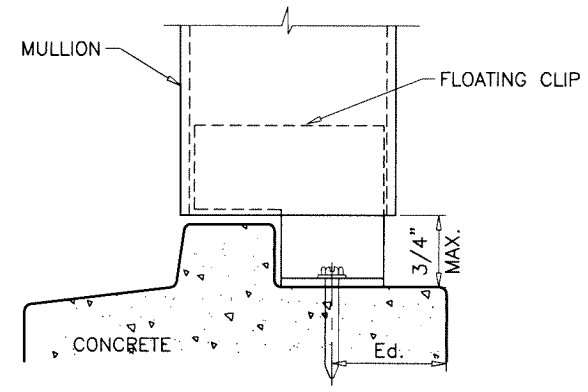
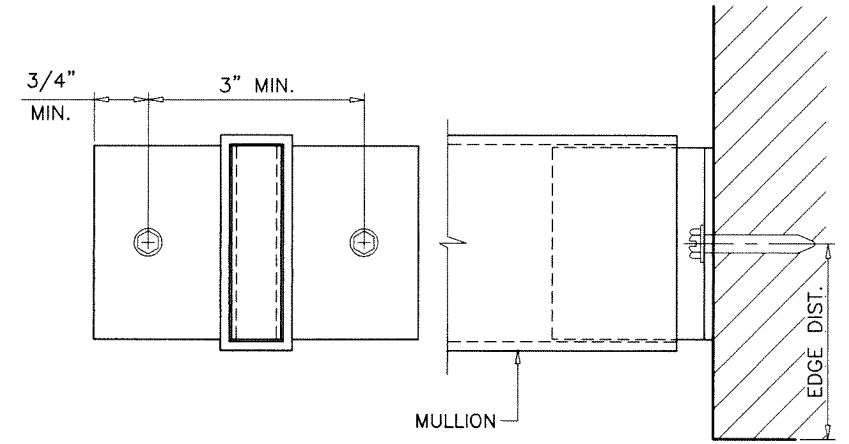
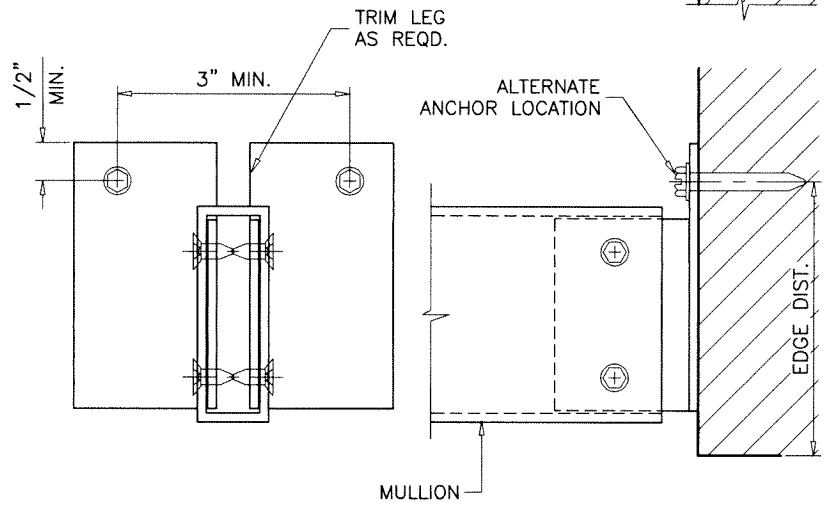
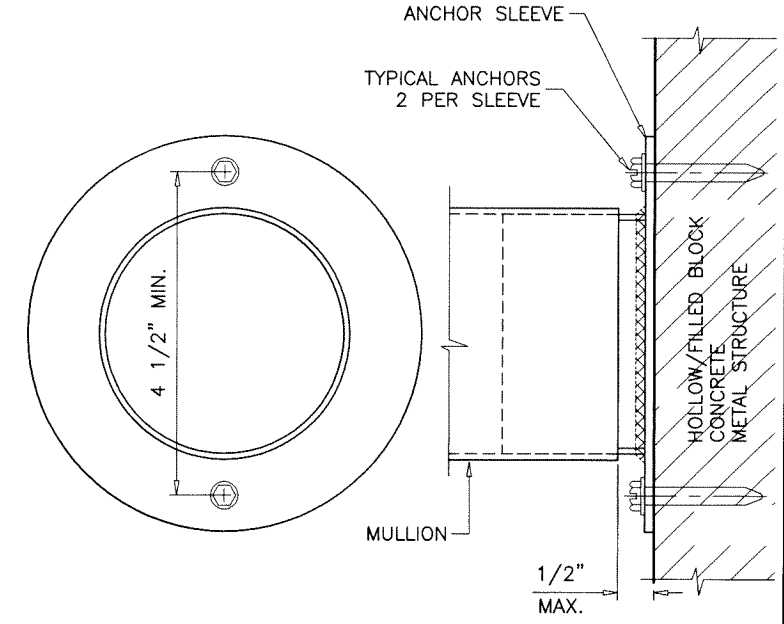
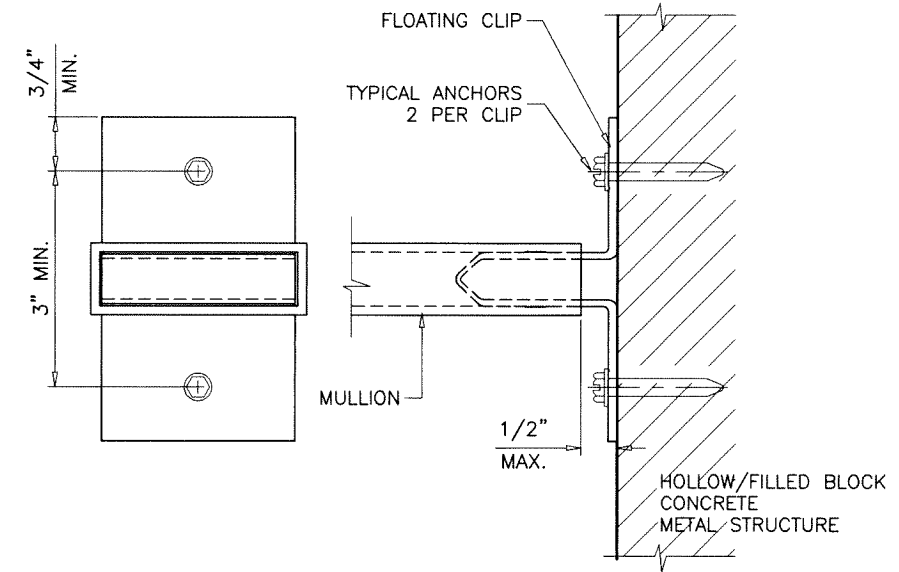
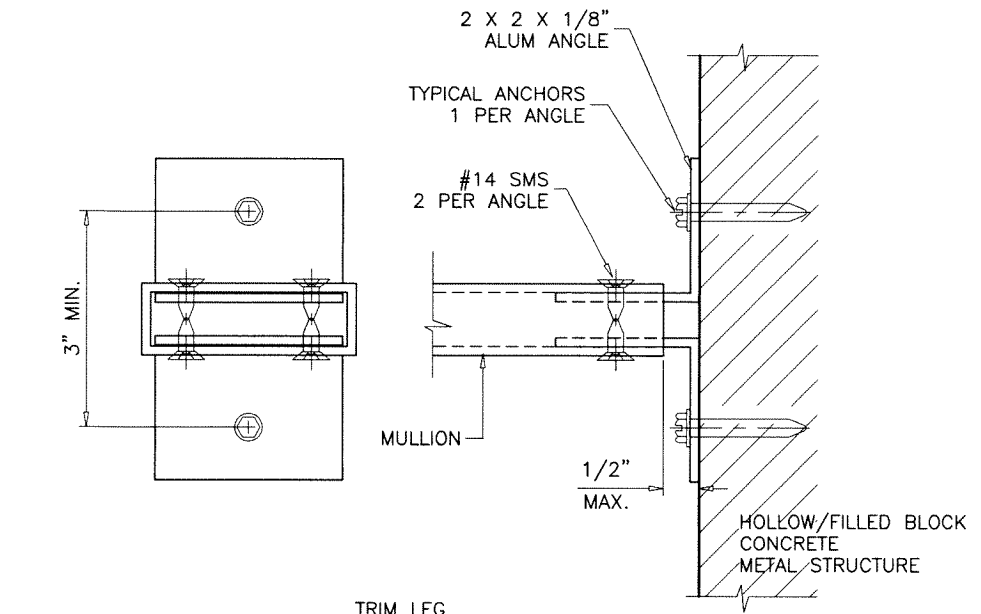
EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
 1785 West 33rd Place
 Hialeah, FL. 33012
 Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	by	description
date:	11-12-19	scale:	3/8" = 1"	
dr. by:	TARIQ	chk. by:		
drawing no.	19-119F			
sheet	5 of 16			

Sealed: 7/26/2023

FL #31169





TYPICAL ANCHORS TYPE 'B2', 'C2', 'M2'

DIRECTLY INTO HOLLOW/FILLED BLOCK
 DIRECTLY INTO CONCRETE
 INTO METAL STRUCTURES

SEE SHEET 7 FOR ANCHOR CAPACITIES

af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 MULLION\19-119F-SWM

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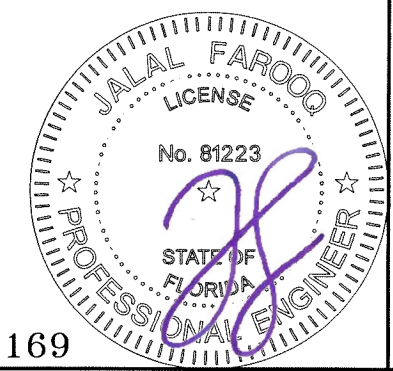
revisions:	no	date	by	description

date: 11-12-19
 scale: 3/8" = 1"
 dr. by: TARIQ
 chk. by:

drawing no.
19-119F
 sheet 6 of 16

Sealed: 7/26/2023

FL #31169



DESIGN LOAD CAPACITY - PSF					
WINDOW DIMS.		ANCHORS TYPE			
WIDTH (W)	MULL SPAN	W2	B2	C2	M2
19-1/8"	38-3/8"	140.0	117.7	140.0	140.0
26-1/2"		140.0	85.0	140.0	140.0
30"		132.1	75.0	139.4	140.0
37"		107.1	60.9	113.0	140.0
42"		94.3	53.6	99.6	139.7
48"		82.6	46.9	87.1	122.3
54"		73.4	41.7	77.4	108.7
60"		66.0	37.5	69.7	97.8
66"		60.0	34.1	63.4	88.9
72"		55.0	31.3	58.1	81.4
19-1/8"	50-5/8"	140.0	89.2	140.0	140.0
26-1/2"		113.3	64.4	119.6	140.0
30"		100.1	56.9	105.7	140.0
37"		81.2	46.1	85.7	120.2
42"		71.5	40.6	75.5	105.9
48"		62.6	35.6	66.0	92.7
54"		55.6	31.6	58.7	82.4
60"		50.1	28.4	52.8	74.1
66"		45.5	25.9	48.0	67.4
72"		41.7	23.7	44.0	61.8
19-1/8"	63"	126.2	71.7	133.2	140.0
26-1/2"		91.1	51.8	96.1	134.9
30"		80.5	45.7	84.9	119.2
37"		65.2	37.1	68.8	96.6
42"		57.5	32.7	60.6	85.1
48"		50.3	28.6	53.1	74.5
54"		44.7	25.4	47.2	66.2
60"		40.2	22.9	42.4	59.6
66"		36.6	20.8	38.6	54.2
72"		33.5	-	35.4	49.7
19-1/8"	74-1/4"	107.1	60.8	113.0	140.0
26-1/2"		77.3	43.9	81.5	114.5
30"		68.3	38.8	72.0	101.1
37"		55.4	31.4	58.4	82.0
42"		48.8	27.7	51.5	72.2
48"		42.7	24.2	45.0	63.2
54"		37.9	21.5	40.0	56.2
60"		34.1	-	36.0	50.6
66"		31.0	-	32.7	46.0
72"		28.4	-	30.0	42.1

DESIGN LOAD CAPACITY - PSF					
WINDOW DIMS.		ANCHORS TYPE			
WIDTH (W)	MULL SPAN	W2	B2	C2	M2
19-1/8"	76"	104.6	59.4	110.4	140.0
26-1/2"		75.5	42.9	79.7	111.8
30"		66.7	37.9	70.4	98.8
37"		54.1	30.7	57.1	80.1
42"		47.6	27.1	50.3	70.6
48"		41.7	23.7	44.0	61.7
54"		37.1	21.1	39.1	54.9
60"		33.3	-	35.2	49.4
66"		30.3	-	32.0	44.9
72"		27.8	-	29.3	41.2
19-1/8"	84"	94.7	53.8	99.9	140.0
26-1/2"		68.3	38.8	72.1	101.2
30"		60.3	34.3	63.7	89.4
37"		48.9	27.8	51.6	72.5
42"		43.1	24.5	45.5	63.8
48"		37.7	21.4	39.8	55.9
54"		33.5	-	35.4	49.7
60"		30.2	-	31.8	44.7
66"		27.4	-	28.9	40.6
72"		25.1	-	26.5	37.2
19-1/8"	96"	82.8	47.1	87.4	122.7
26-1/2"		59.8	34.0	63.1	88.5
30"		52.8	30.0	55.7	78.2
37"		42.8	24.3	45.2	63.4
42"		37.7	21.4	39.8	55.9
48"		33.0	-	34.8	48.9
54"		29.3	-	31.0	43.4
60"		26.4	-	27.9	39.1
66"		24.0	-	25.3	35.5
72"		22.0	-	23.2	32.6
19-1/8"	108"	73.6	41.8	77.7	109.0
26-1/2"		53.1	30.2	56.1	78.7
30"		46.9	26.7	49.5	69.5
37"		38.1	21.6	40.2	56.4
42"		33.5	-	35.4	49.7
48"		29.3	-	31.0	43.4
54"		26.1	-	27.5	38.6
60"		23.5	-	24.8	34.8
66"		21.3	-	22.5	31.6
72"		-	-	20.6	29.0

DESIGN LOAD CAPACITY - PSF					
WINDOW DIMS.		ANCHORS TYPE			
WIDTH (W)	MULL SPAN	W2	B2	C2	M2
19-1/8"	120"	66.3	37.6	69.9	98.1
26-1/2"		47.8	27.2	50.5	70.8
30"		42.2	24.0	44.6	62.6
37"		34.2	-	36.1	50.7
42"		30.2	-	31.8	44.7
48"		26.4	-	27.9	39.1
54"		23.5	-	24.8	34.8
60"		21.1	-	22.3	31.3
66"		-	-	20.3	28.4
72"		-	-	-	26.1
19-1/8"	132"	60.2	34.2	63.6	89.2
26-1/2"		43.5	24.7	45.9	64.4
30"		38.4	21.8	40.5	56.9
37"		31.1	-	32.9	46.1
42"		27.4	-	28.9	40.6
48"		24.0	-	25.3	35.5
54"		21.3	-	22.5	31.6
60"		-	-	20.3	28.4
66"		-	-	-	25.9
72"		-	-	-	23.7
19-1/8"	144"	55.2	31.4	58.3	81.8
26-1/2"		39.8	22.6	42.0	59.0
30"		35.2	20.0	37.1	52.1
37"		28.5	-	30.1	42.3
42"		25.1	-	26.5	37.2
48"		22.0	-	23.2	32.5
54"		-	-	20.6	29.0

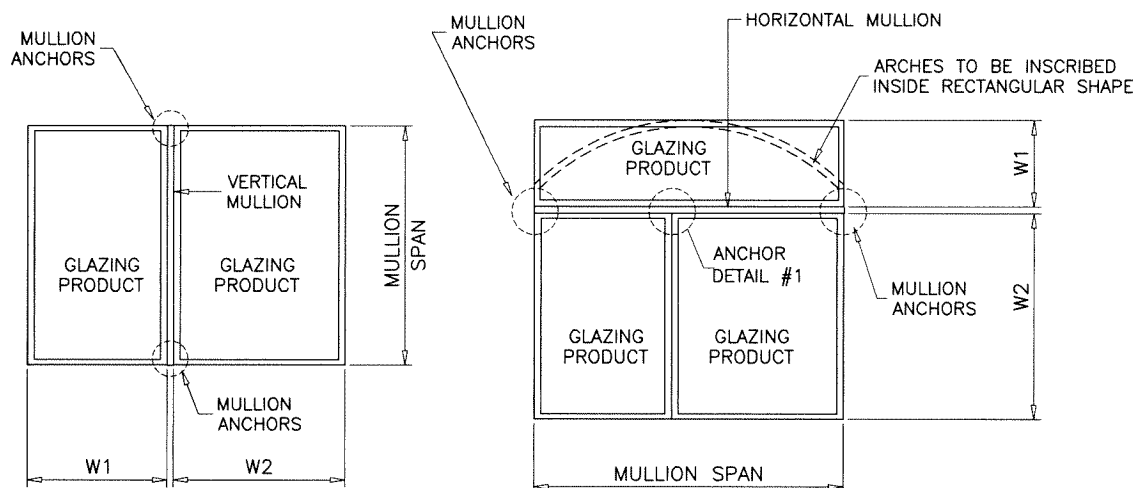
TYPICAL ANCHORS:

- 1/4" DIA. ULTRACON+ BY 'DEWALT'** (Fu=164 KSI, Fy=148 KSI)
 - W2: INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/2" MIN. PENETRATION INTO WOOD
 - W2: THRU 1BY BUCKS INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE
 - B2: THRU 1BY BUCKS INTO BLOCKS OR DIRECTLY INTO BLOCKS
1-1/4" MIN. EMBED INTO BLOCKS
 - C2: DIRECTLY INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE
 - 1/4" DIA. TEKS OR SELF DRILLING SCREWS**
 - M2: INTO METAL STRUCTURES
(3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)
- TYPICAL EDGE DISTANCE**
- INTO CONCRETE AND BLOCKS = 2-1/2" MIN.
 - INTO WOOD STRUCTURE = 1" MIN.
 - INTO METAL STRUCTURE = 3/4" MIN.
- WOOD AT HEAD, SILL OR JAMBS SG = 0.55 MIN.**
CONCRETE AT HEAD, SILL OR JAMBS f'c = 3000 PSI MIN.
C-90 HOLLOW/FILLED NORMAL WEIGHT BLOCK AT JAMBS f'm = 2000 PSI MIN.

ALL LOADS ARE EXT.(+)/INT.(-).

NOTE:
ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS AT HEAD, SILL OR JAMB ENDS.
SEE SHEETS 5 & 6 FOR ANCHOR DETAILS.

(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

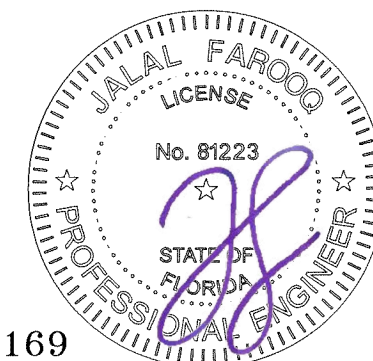


TYPICAL MULLION ARRANGEMENTS

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

Sealed: 7/26/2023

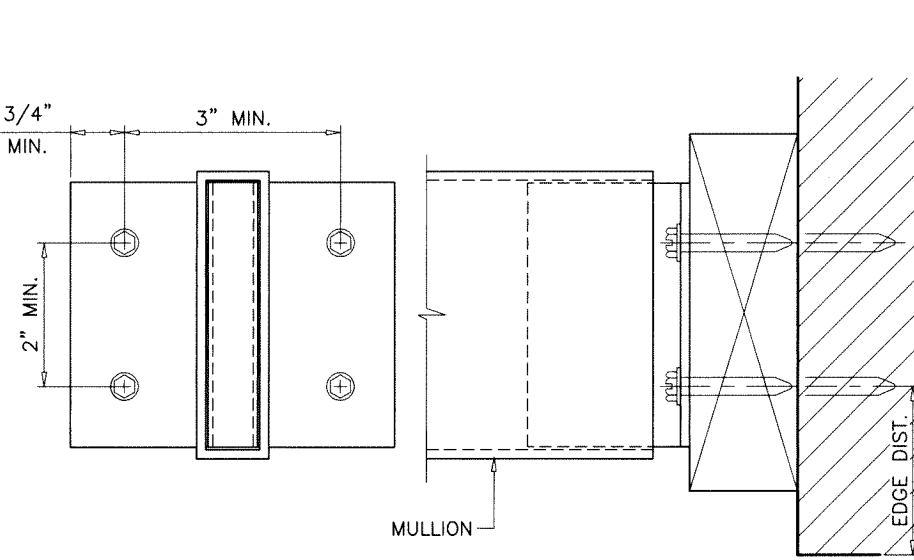
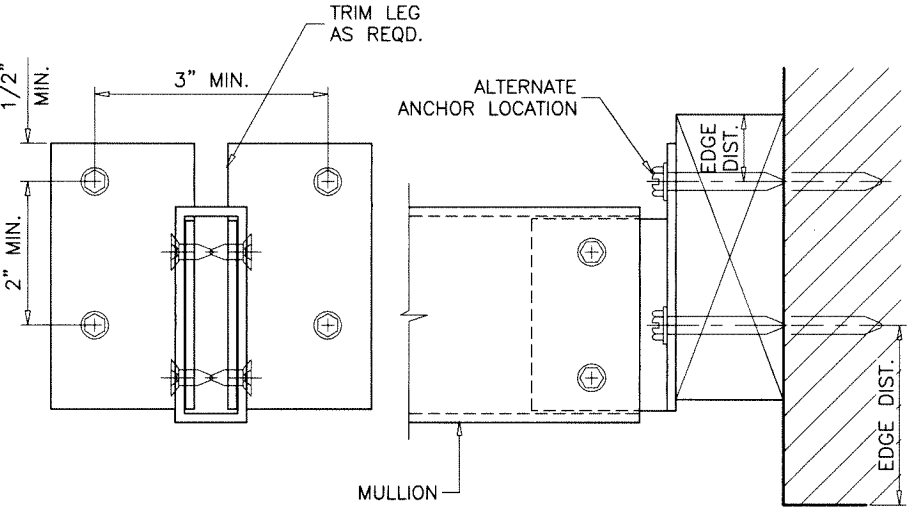
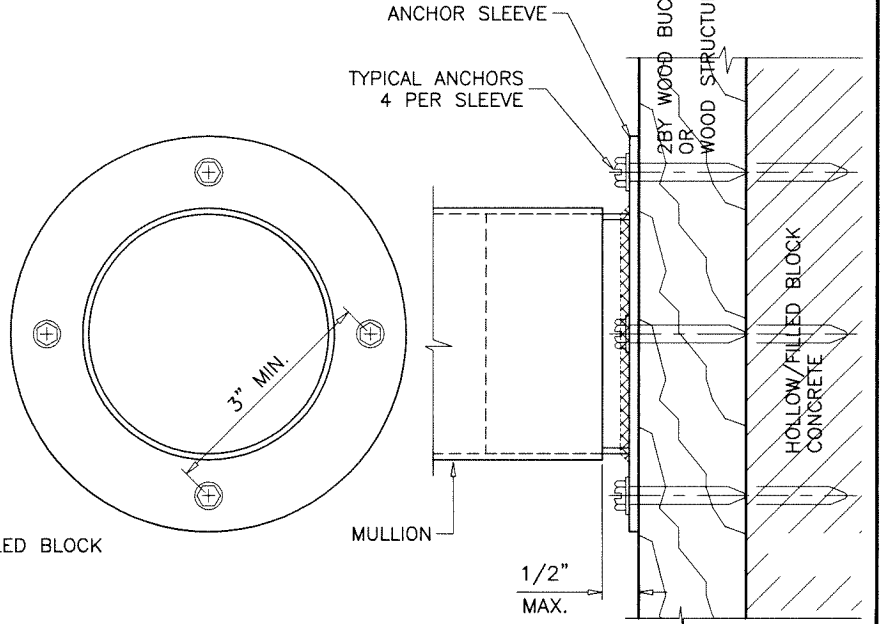
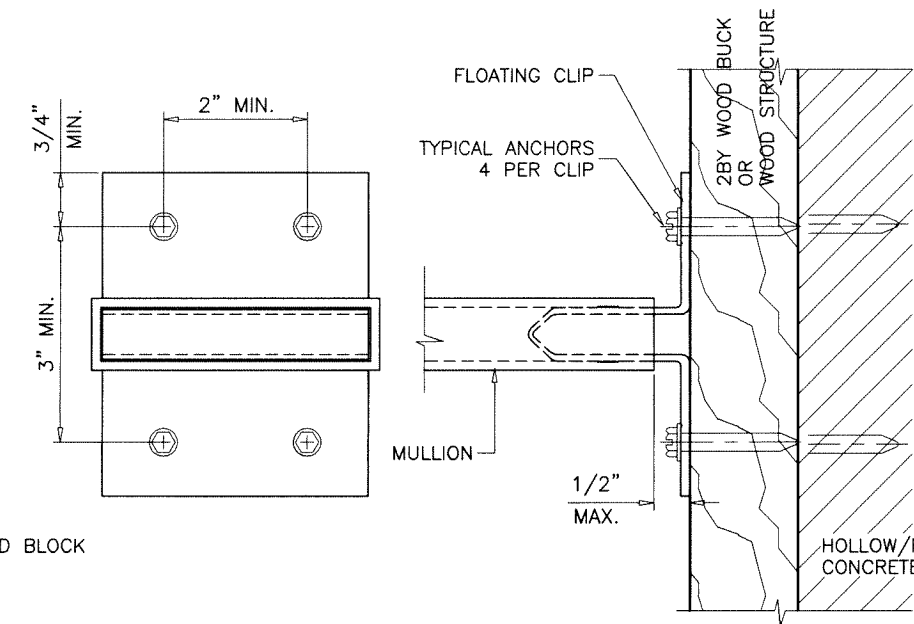
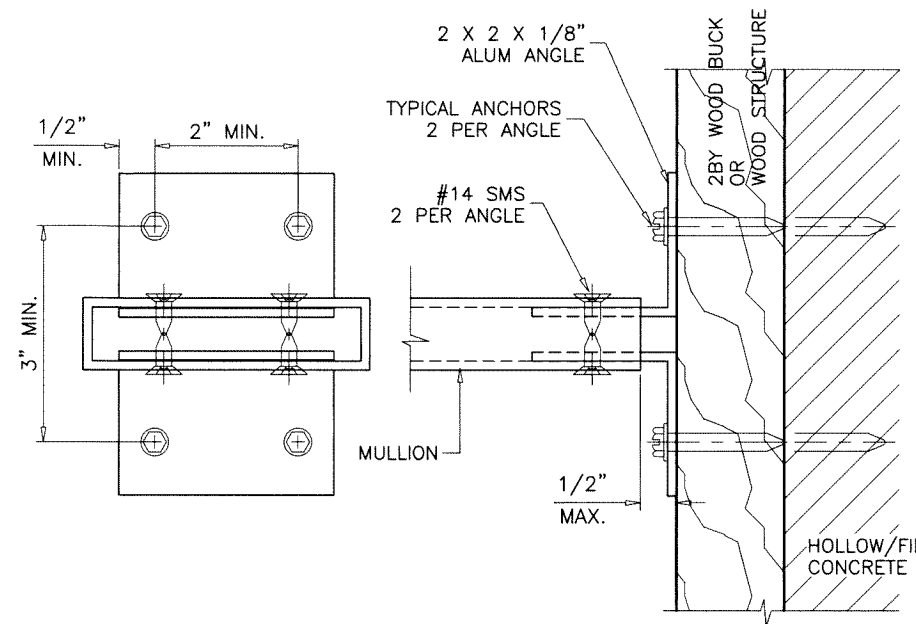
FL #31169



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date:	11-12-19	scale:	-	
dr. by:	TARIQ	chk. by:		
drawing no.	19-119F			
sheet	7 of 16			



TYPICAL ANCHORS TYPE 'W4-2'
 INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
 THRU 1BY BUCKS INTO CONC. OR MASONRY
 SEE SHEET 10 FOR ANCHOR CAPACITIES

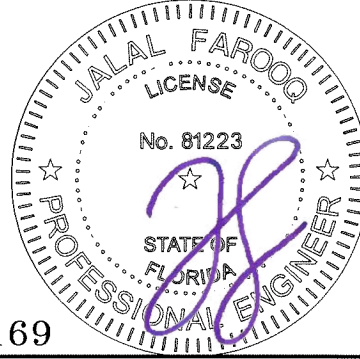
af c
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3558)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 MULLION \ 19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
 1785 West 33rd Place
 Hialeah, FL. 33012
 Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	by	description

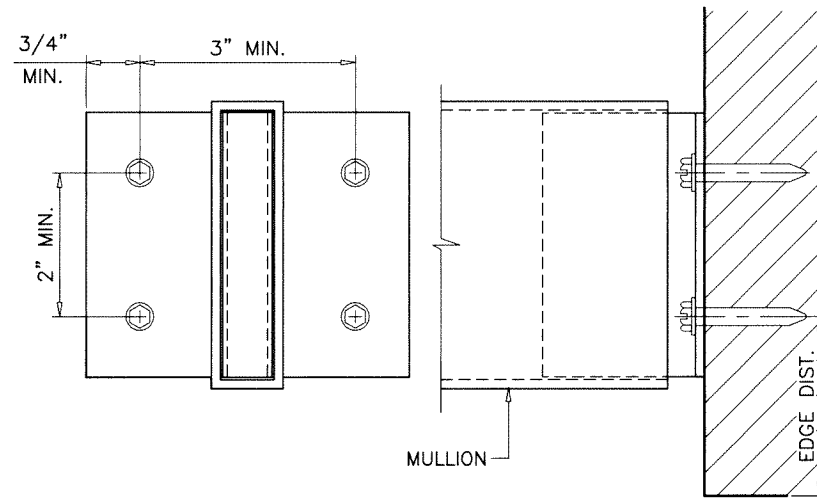
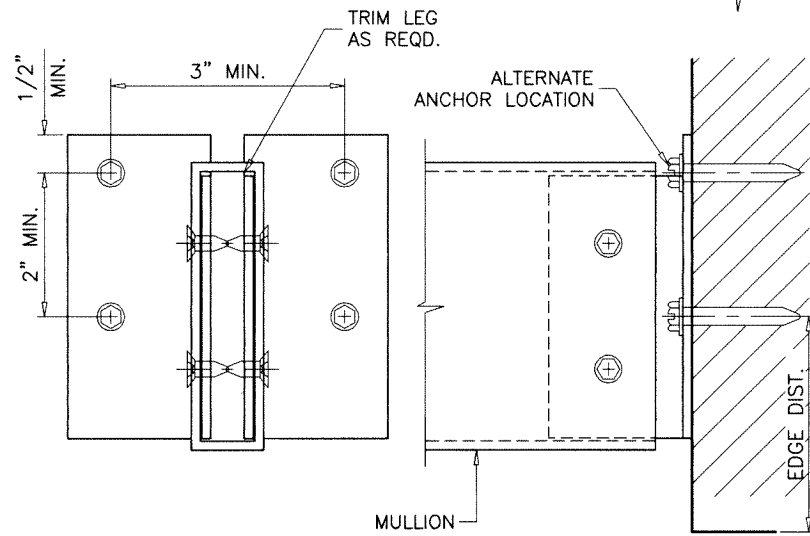
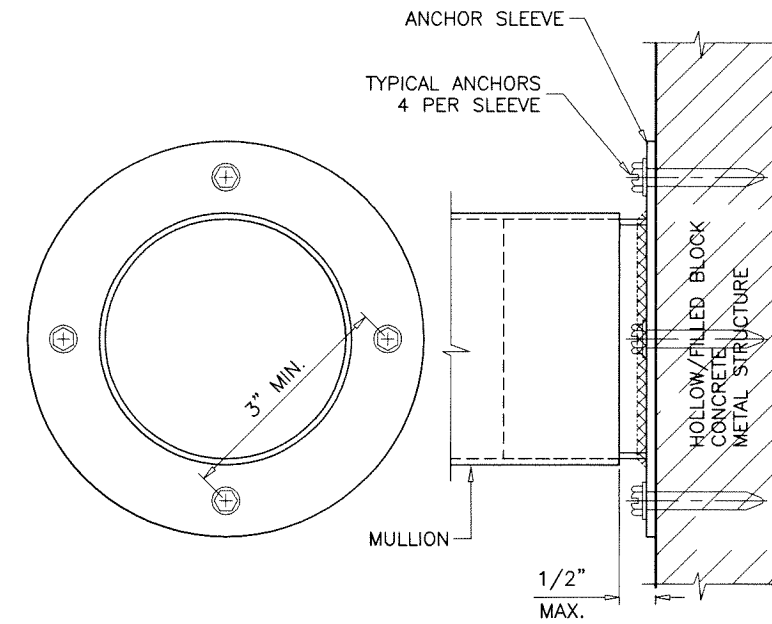
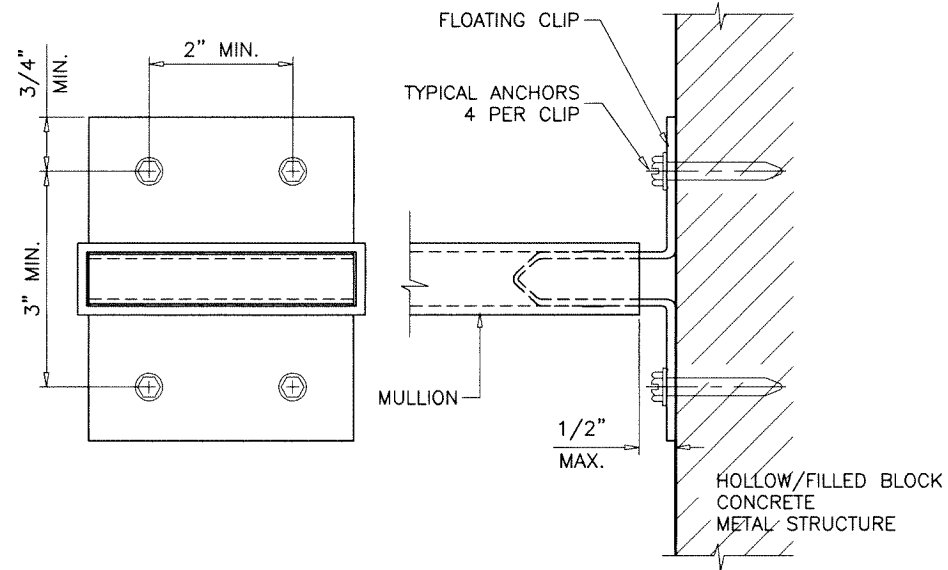
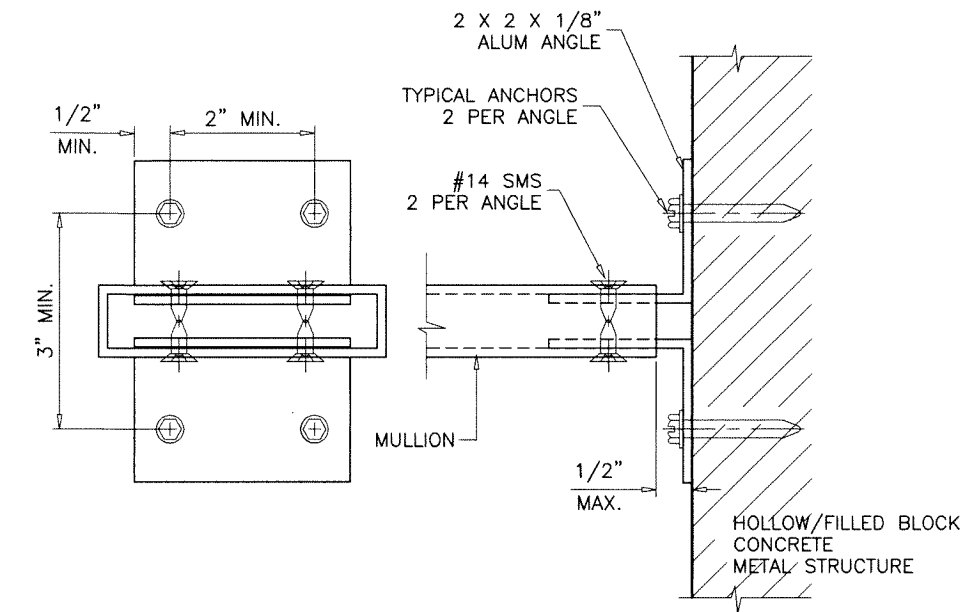
date: 11-12-19
 scale: 3/8" = 1"
 dr. by: TARIQ
 chk. by:

drawing no.
19-119F
 sheet **8** of **16**



Sealed: 7/26/2023

FL #31169



TYPICAL ANCHORS TYPE 'B4-2', 'C4-2', 'M4-2'

DIRECTLY INTO HOLLOW/FILLED BLOCK
DIRECTLY INTO CONCRETE
INTO METAL STRUCTURES

SEE SHEET 10 FOR ANCHOR CAPACITIES

af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978
MULLION \ 19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL. 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	by	description

date: 11-12-19
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

drawing no.
19-119F
sheet 9 of 16



Sealed: 7/26/2023

FL #31169

DESIGN LOAD CAPACITY - PSF					
WINDOW DIMS.		ANCHORS TYPE			
WIDTH (W)	MULL SPAN	W4-2	B4-2	C4-2	M4-2
19-1/8"	38-3/8"	140.0	140.0	140.0	140.0
26-1/2"		140.0	132.2	140.0	140.0
30"		140.0	116.7	140.0	140.0
37"		140.0	94.7	140.0	140.0
42"		140.0	83.4	140.0	140.0
48"		140.0	73.0	140.0	140.0
54"		140.0	64.9	135.0	140.0
60"		132.1	58.4	121.5	140.0
66"		120.1	53.1	110.5	140.0
72"	110.1	48.6	101.3	140.0	
19-1/8"	50-5/8"	140.0	138.8	140.0	140.0
26-1/2"		140.0	100.2	140.0	140.0
30"		140.0	88.5	140.0	140.0
37"		140.0	71.8	140.0	140.0
42"		140.0	63.2	131.6	140.0
48"		125.2	55.3	115.1	140.0
54"		111.2	49.2	102.3	140.0
60"		100.1	44.2	92.1	140.0
66"		91.0	40.2	83.7	134.8
72"	83.4	36.9	76.8	123.4	
19-1/8"	63"	140.0	111.6	140.0	140.0
26-1/2"		140.0	80.5	140.0	140.0
30"		140.0	71.1	140.0	140.0
37"		130.5	57.7	120.0	140.0
42"		114.9	50.8	105.7	140.0
48"		100.6	44.4	92.5	140.0
54"		89.4	39.5	82.2	132.4
60"		80.5	35.6	74.0	119.2
66"		73.1	32.3	67.3	108.3
72"	67.0	29.6	61.7	99.3	
19-1/8"	74-1/4"	140.0	94.6	140.0	140.0
26-1/2"		140.0	68.3	140.0	140.0
30"		136.5	60.3	125.6	140.0
37"		110.7	48.9	101.8	140.0
42"		97.5	43.1	89.7	140.0
48"		85.3	37.7	78.5	126.4
54"		75.9	33.5	69.8	112.3
60"		68.3	30.2	62.8	101.1
66"		62.1	27.4	57.1	91.9
72"	56.9	25.1	52.3	84.3	

DESIGN LOAD CAPACITY - PSF					
WINDOW DIMS.		ANCHORS TYPE			
WIDTH (W)	MULL SPAN	W4-2	B4-2	C4-2	M4-2
19-1/8"	76"	140.0	92.5	140.0	140.0
26-1/2"		140.0	66.7	138.9	140.0
30"		133.4	58.9	122.7	140.0
37"		108.2	47.8	99.5	140.0
42"		95.3	42.1	87.6	140.0
48"		83.4	36.8	76.7	123.5
54"		74.1	32.7	68.2	109.8
60"		66.7	29.5	61.4	98.8
66"		60.6	26.8	55.8	89.8
72"	55.6	24.6	51.1	82.3	
19-1/8"	84"	140.0	83.7	140.0	140.0
26-1/2"		136.6	60.4	125.7	140.0
30"		120.7	53.3	111.0	140.0
37"		97.9	43.2	90.0	140.0
42"		86.2	38.1	79.3	127.7
48"		75.4	33.3	69.4	111.7
54"		67.0	29.6	61.7	99.3
60"		60.3	26.7	55.5	89.4
66"		54.9	24.2	50.5	81.2
72"	50.3	22.2	46.3	74.5	
19-1/8"	96"	140.0	73.2	140.0	140.0
26-1/2"		119.5	52.8	110.0	140.0
30"		105.6	46.7	97.1	140.0
37"		85.6	37.8	78.8	126.8
42"		75.4	33.3	69.4	111.7
48"		66.0	29.2	60.7	97.8
54"		58.7	25.9	54.0	86.9
60"		52.8	23.3	48.6	78.2
66"		48.0	21.2	44.2	71.1
72"	44.0	-	40.5	65.2	
19-1/8"	108"	140.0	65.1	135.5	140.0
26-1/2"		106.3	47.0	97.8	140.0
30"		93.9	41.5	86.4	139.0
37"		76.1	33.6	70.0	112.7
42"		67.0	29.6	61.7	99.3
48"		58.7	25.9	54.0	86.9
54"		52.1	23.0	48.0	77.2
60"		46.9	20.7	43.2	69.5
66"		42.7	-	39.3	63.2
72"	39.1	-	36.0	57.9	

DESIGN LOAD CAPACITY - PSF					
WINDOW DIMS.		ANCHORS TYPE			
WIDTH (W)	MULL SPAN	W4-2	B4-2	C4-2	M4-2
19-1/8"	120"	132.5	58.6	121.9	140.0
26-1/2"		95.6	42.3	88.0	140.0
30"		84.5	37.3	77.7	125.1
37"		68.5	30.3	63.0	101.4
42"		60.3	26.7	55.5	89.4
48"		52.8	23.3	48.6	78.2
54"		46.9	20.7	43.2	69.5
60"		42.2	-	38.9	62.6
66"		38.4	-	35.3	56.9
72"	35.2	-	32.4	52.1	
19-1/8"	132"	120.5	53.2	110.8	140.0
26-1/2"		86.9	38.4	80.0	128.8
30"		76.8	33.9	70.7	113.7
37"		62.3	27.5	57.3	92.2
42"		54.9	24.2	50.5	81.2
48"		48.0	21.2	44.2	71.1
54"		42.7	-	39.3	63.2
60"		38.4	-	35.3	56.9
66"		34.9	-	32.1	51.7
72"	32.0	-	29.4	47.4	
19-1/8"	144"	110.4	48.8	101.6	140.0
26-1/2"		79.7	35.2	73.3	118.0
30"		70.4	31.1	64.8	104.3
37"		57.1	25.2	52.5	84.5
42"		50.3	22.2	46.3	74.5
48"		44.0	-	40.5	65.2
54"		39.1	-	36.0	57.9

TYPICAL ANCHORS:

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

- W4-2: INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/2" MIN. PENETRATION INTO WOOD
- W4-2: THRU 1BY BUCKS INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE
- B4-2: THRU 1BY BUCKS INTO BLOCKS OR DIRECTLY INTO BLOCKS
1-1/4" MIN. EMBED INTO BLOCK
- C4-2: DIRECTLY INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE

1/4" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)

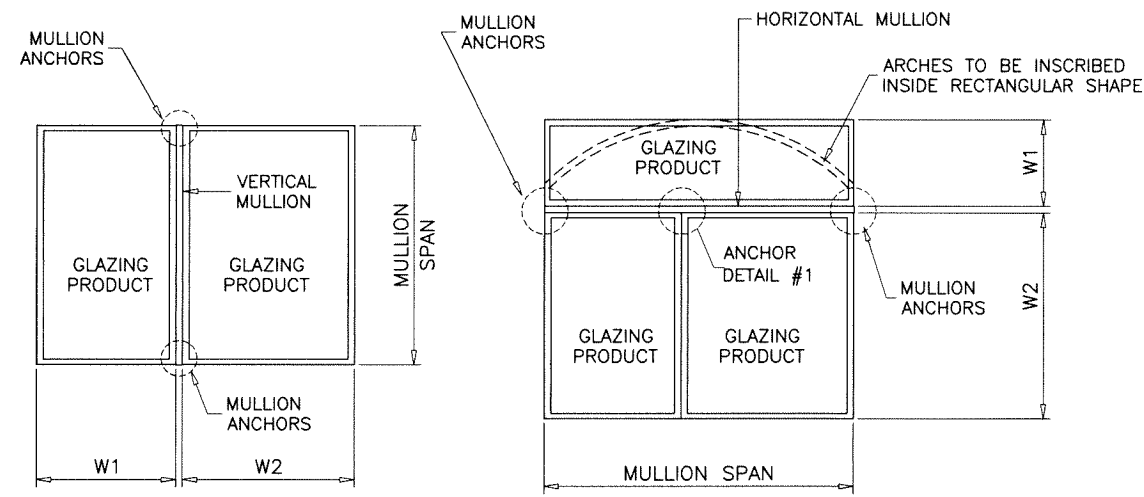
- M4-2: INTO METAL STRUCTURES
(3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

TYPICAL EDGE DISTANCE

- INTO CONCRETE AND BLOCKS = 2-1/2" MIN.
- INTO WOOD STRUCTURE = 1" MIN.
- INTO METAL STRUCTURE = 3/4" MIN.

ANCHORS CL TO CL DISTANCE = 2" MIN.

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



TYPICAL MULLION ARRANGEMENTS

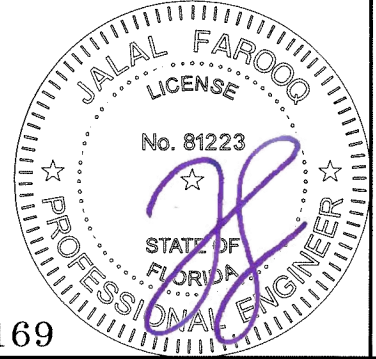
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

ALL LOADS ARE EXT.(+)/INT.(-).

NOTE:
ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS
AT HEAD, SILL OR JAMB ENDS.
SEE SHEETS 8 & 9 FOR ANCHOR DETAILS.

(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

Sealed: 7/26/2023



FL #31169

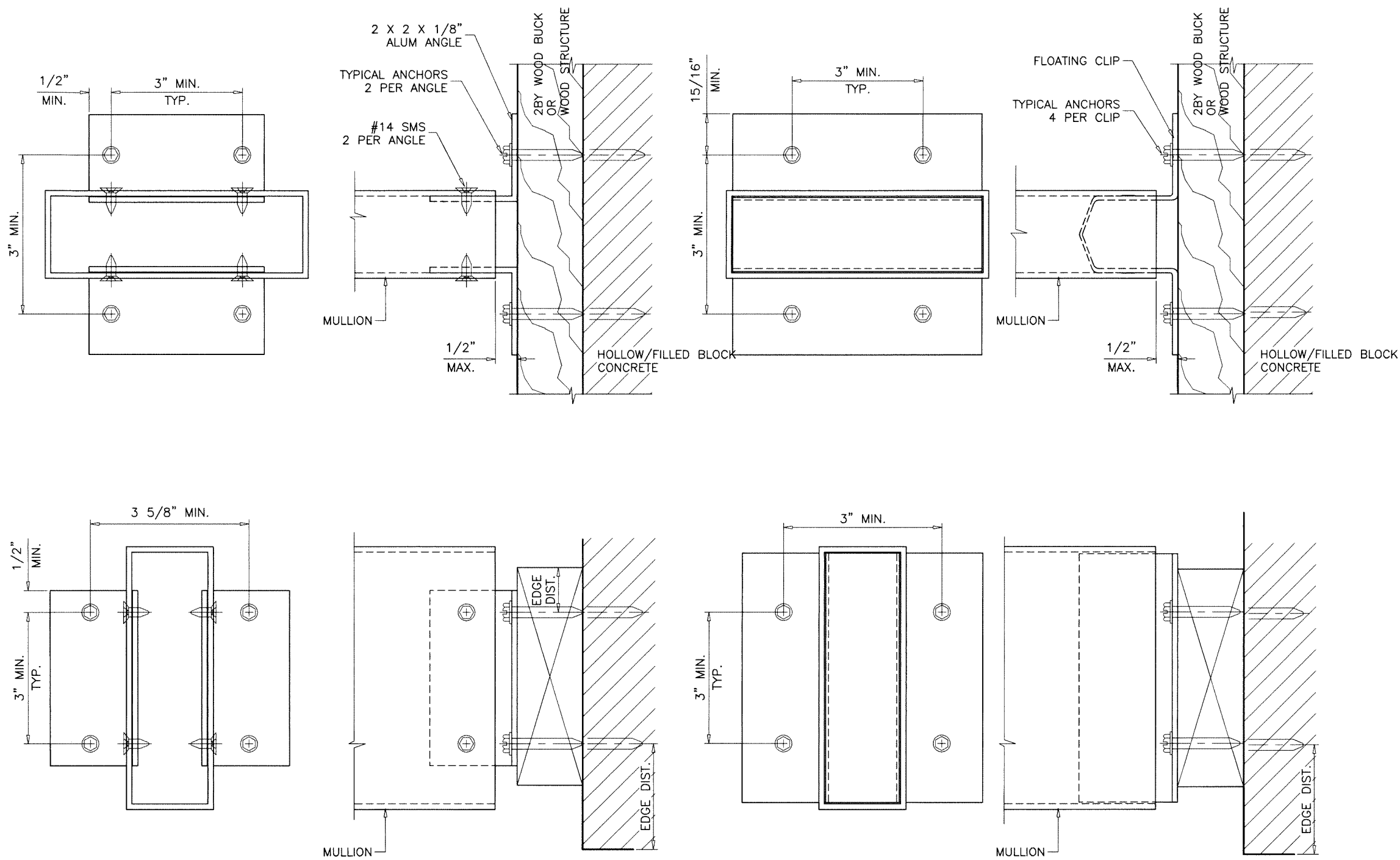
af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 262-6978 FAX. (305) 262-6978
MULLION\19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL. 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	description

date:	11-12-19
scale:	-
dr. by:	TARIQ
chk. by:	

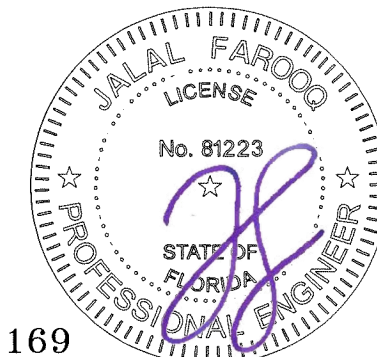
drawing no.	19-119F
sheet	10 of 16



TYPICAL ANCHORS TYPE 'W4-3'

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
THRU 1BY BUCKS INTO CONC. OR MASONRY

SEE SHEET 13 FOR ANCHOR CAPACITIES



Sealed: 7/26/2023

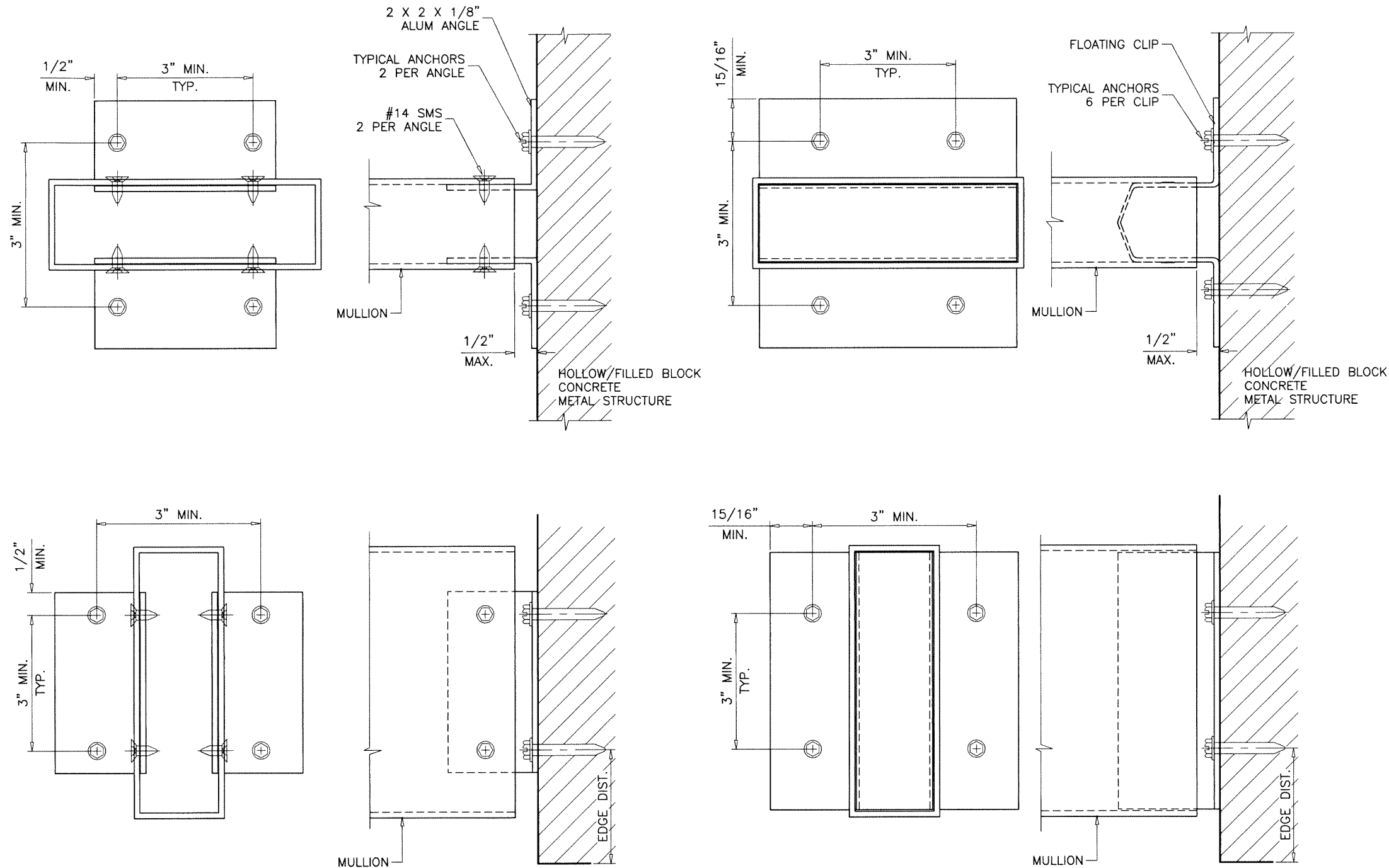
FL #31169

afc
AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
 9360 SUNSET DRIVE, SUITE 220
 MIAMI, FLORIDA 33173 (C.A.N. 3538)
 TEL. (305) 264-8100 FAX. (305) 262-6978
 MULLION \ 19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
 1785 West 33rd Place
 Hialeah, FL. 33012
 Tel. (305) 364-9952 Fax. (305) 828-5118

no	date	description

date: 11-12-19	scale: 3/8" = 1"
dr. by: TARIQ	chk. by:
drawing no. 19-119F	
sheet 11 of 16	



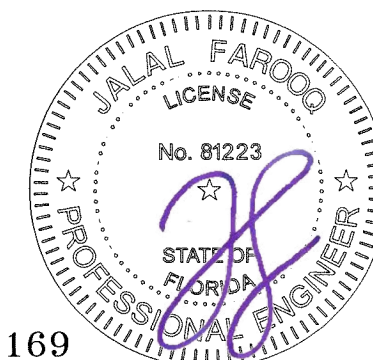
TYPICAL ANCHORS TYPE 'B4-3', 'C4-3'

DIRECTLY INTO HOLLOW/FILLED BLOCK
DIRECTLY INTO CONCRETE

SEE SHEET 13 FOR ANCHOR CAPACITIES

Sealed: 7/26/2023

FL #31169



af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
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MULLION\19-119F-SWM

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revisions:	no	date	by	description

date: 11-12-19
scale: 3/8" = 1"
dr. by: TARIQ
chk. by:

drawing no.
19-119F

sheet 12 of 16

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4-3	B4-3	C4-3
19-1/8"	38-3/8"	140.0	140.0	140.0
26-1/2"		140.0	140.0	140.0
30"		140.0	140.0	140.0
37"		140.0	121.7	140.0
42"		140.0	107.2	140.0
48"		140.0	93.8	140.0
54"		140.0	83.4	140.0
60"		132.1	75.0	139.4
66"		120.1	68.2	126.7
72"	110.1	62.5	116.1	
19-1/8"	50-5/8"	140.0	140.0	140.0
26-1/2"		140.0	128.8	140.0
30"		140.0	113.8	140.0
37"		140.0	92.3	140.0
42"		140.0	81.3	140.0
48"		125.2	71.1	132.1
54"		111.2	63.2	117.4
60"		100.1	56.9	105.7
66"		91.0	51.7	96.0
72"	83.4	47.4	88.0	
19-1/8"	63"	140.0	140.0	140.0
26-1/2"		140.0	103.5	140.0
30"		140.0	91.4	140.0
37"		130.5	74.1	137.7
42"		114.9	65.3	121.3
48"		100.6	57.1	106.1
54"		89.4	50.8	94.3
60"		80.5	45.7	84.9
66"		73.1	41.6	77.2
72"	67.0	38.1	70.7	
19-1/8"	74-1/4"	140.0	121.7	140.0
26-1/2"		140.0	87.8	140.0
30"		136.5	77.6	140.0
37"		110.7	62.9	116.8
42"		97.5	55.4	102.9
48"		85.3	48.5	90.0
54"		75.9	43.1	80.0
60"		68.3	38.8	72.0
66"		62.1	35.3	65.5
72"	56.9	32.3	60.0	

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4-3	B4-3	C4-3
19-1/8"	76"	140.0	118.9	140.0
26-1/2"		140.0	85.8	140.0
30"		133.4	75.8	140.0
37"		108.2	61.5	114.1
42"		95.3	54.1	100.5
48"		83.4	47.4	88.0
54"		74.1	42.1	78.2
60"		66.7	37.9	70.4
66"		60.6	34.4	64.0
72"	55.6	31.6	58.6	
19-1/8"	84"	140.0	107.6	140.0
26-1/2"		136.6	77.6	140.0
30"		120.7	68.6	127.3
37"		97.9	55.6	103.3
42"		86.2	49.0	91.0
48"		75.4	42.9	79.6
54"		67.0	38.1	70.7
60"		60.3	34.3	63.7
66"		54.9	31.2	57.9
72"	50.3	28.6	53.1	
19-1/8"	96"	140.0	94.1	140.0
26-1/2"		119.5	67.9	126.1
30"		105.6	60.0	111.4
37"		85.6	48.6	90.3
42"		75.4	42.9	79.6
48"		66.0	37.5	69.6
54"		58.7	33.3	61.9
60"		52.8	30.0	55.7
66"		48.0	27.3	50.6
72"	44.0	25.0	46.4	
19-1/8"	108"	140.0	83.7	140.0
26-1/2"		106.3	60.4	112.1
30"		93.9	53.3	99.0
37"		76.1	43.2	80.3
42"		67.0	38.1	70.7
48"		58.7	33.3	61.9
54"		52.1	29.6	55.0
60"		46.9	26.7	49.5
66"		42.7	24.2	45.0
72"	39.1	22.2	41.3	

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4-3	B4-3	C4-3
19-1/8"	120"	132.5	75.3	139.8
26-1/2"		95.6	54.3	100.9
30"		84.5	48.0	89.1
37"		68.5	38.9	72.3
42"		60.3	34.3	63.7
48"		52.8	30.0	55.7
54"		46.9	26.7	49.5
60"		42.2	24.0	44.6
66"		38.4	21.8	40.5
72"	35.2	20.0	37.1	
19-1/8"	132"	120.5	68.4	127.1
26-1/2"		86.9	49.4	91.7
30"		76.8	43.6	81.0
37"		62.3	35.4	65.7
42"		54.9	31.2	57.9
48"		48.0	27.3	50.6
54"		42.7	24.2	45.0
60"		38.4	21.8	40.5
66"		34.9	-	36.8
72"	32.0	-	33.8	
19-1/8"	144"	110.4	62.7	116.5
26-1/2"		79.7	45.3	84.1
30"		70.4	40.0	74.3
37"		57.1	32.4	60.2
42"		50.3	28.6	53.1
48"		44.0	25.0	46.4
54"		39.1	22.2	41.3

ALL LOADS ARE EXT.(+)/INT.(-).

NOTE:
ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS
AT HEAD, SILL OR JAMB ENDS.
SEE SHEETS 11 & 12 FOR ANCHOR DETAILS.

(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

TYPICAL ANCHORS:

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

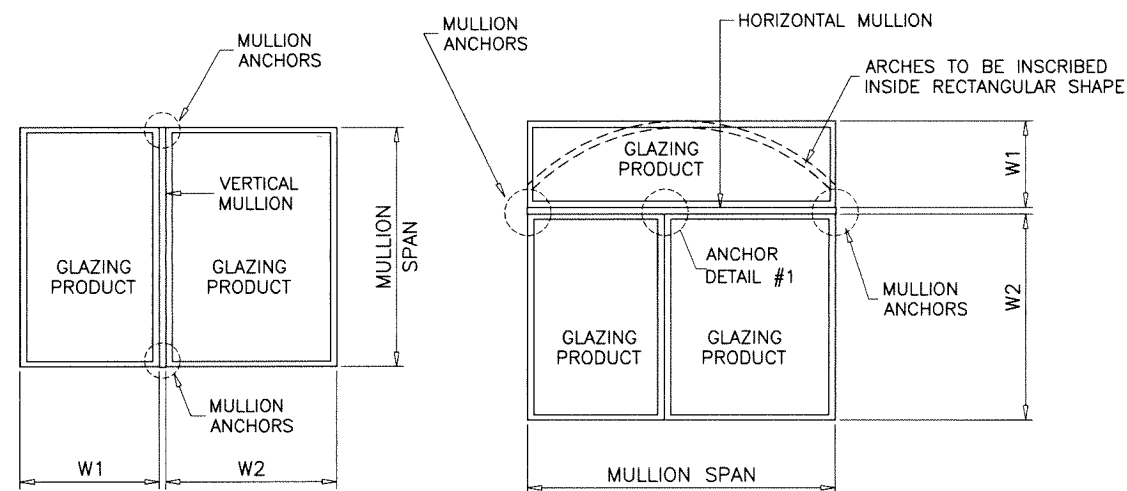
- W4-3: INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
1-1/2" MIN. PENETRATION INTO WOOD
- W4-3: THRU 1BY BUCKS INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE
- B4-3: THRU 1BY BUCKS INTO BLOCKS OR DIRECTLY INTO BLOCKS
1-1/4" MIN. EMBED INTO BLOCK
- C4-3: DIRECTLY INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE

TYPICAL EDGE DISTANCE

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

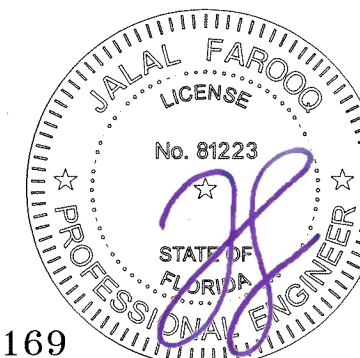
ANCHORS CL TO CL DISTANCE = 3" MIN.

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



TYPICAL MULLION ARRANGEMENTS

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



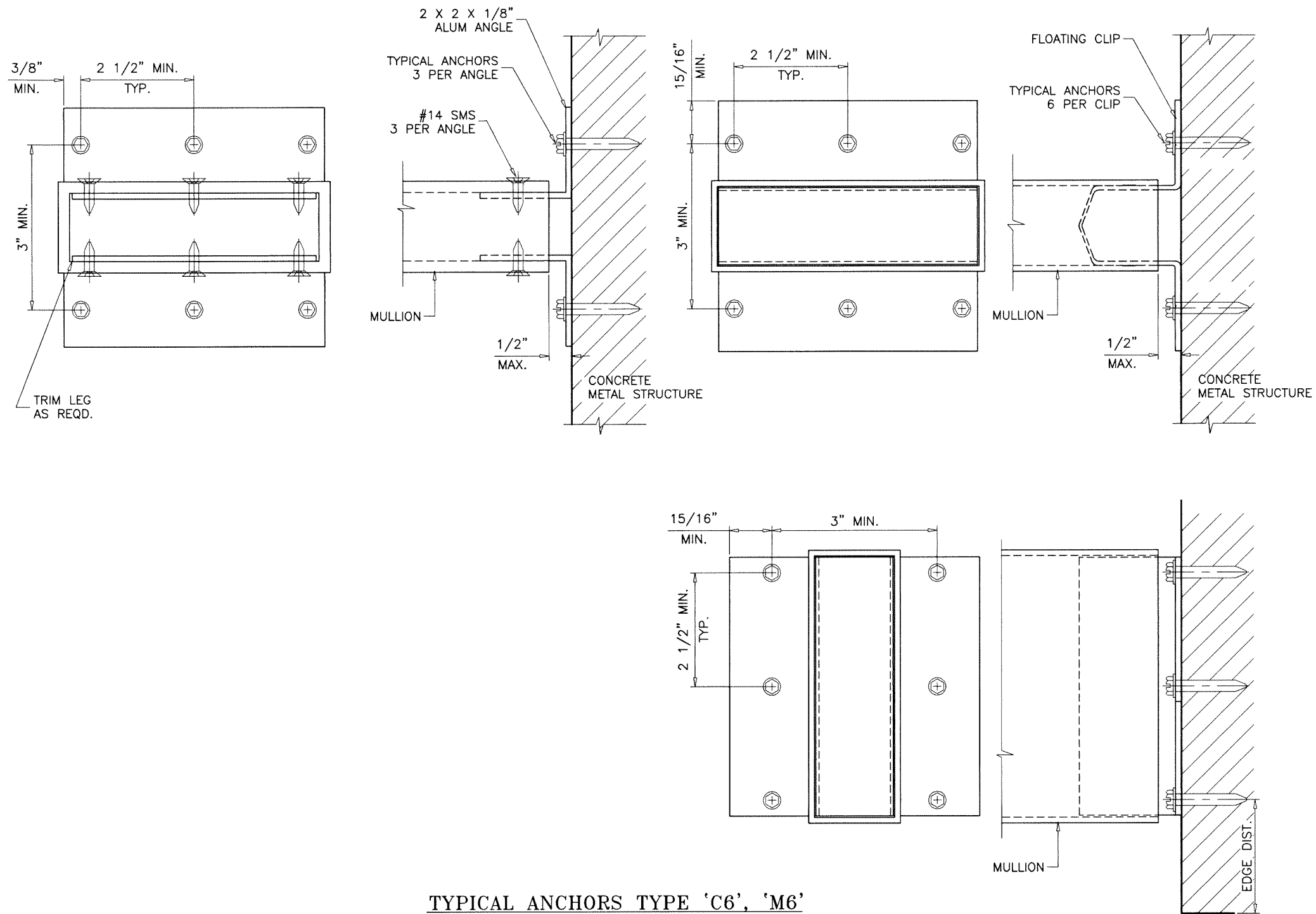
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FL #31169

af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
TEL. (305) 264-8100 FAX. (305) 262-6978
MULLION \ 19-119F-SWM

EXTRUDED ALUMINUM TUBE MULLIONS
Sunshine Windows Manufacturing, Inc.
1785 West 33rd Place
Hialeah, FL. 33012
Tel. (305) 364-9952 Fax. (305) 828-5118

revisions:	no	date	description
date:	11-12-19	scale:	-
dr. by:	TARIQ	chk. by:	
drawing no.	19-119F		
sheet	13 of 16		



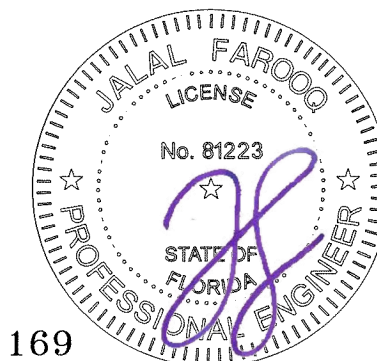
TYPICAL ANCHORS TYPE 'C6', 'M6'

DIRECTLY INTO CONCRETE
INTO METAL STRUCTURES

SEE SHEET 15 FOR ANCHOR CAPACITIES

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FL #31169



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revisions:	no	date	by	description

date: 11-12-19	scale: 3/8" = 1"	dr. by: TARIQ	chk. by:
drawing no. 19-119F			
sheet 14 of 16			

DESIGN LOAD CAPACITY - PSF				DESIGN LOAD CAPACITY - PSF				DESIGN LOAD CAPACITY - PSF			
WINDOW DIMS.		ANCHORS TYPE		WINDOW DIMS.		ANCHORS TYPE		WINDOW DIMS.		ANCHORS TYPE	
WIDTH (W)	MULL SPAN	C6	M6	WIDTH (W)	MULL SPAN	C6	M6	WIDTH (W)	MULL SPAN	C6	M6
19-1/8"	38-3/8"	140.0	140.0	19-1/8"	76"	140.0	140.0	19-1/8"	120"	140.0	140.0
26-1/2"		140.0	140.0	26-1/2"		140.0	140.0	26-1/2"		140.0	140.0
30"		140.0	140.0	30"		140.0	140.0	30"		125.1	140.0
37"		140.0	140.0	37"		140.0	140.0	37"		101.5	140.0
42"		140.0	140.0	42"		140.0	140.0	42"		89.4	134.1
48"		140.0	140.0	48"		123.5	140.0	48"		78.2	117.3
54"		140.0	140.0	54"		109.8	140.0	54"		69.5	104.3
60"		140.0	140.0	60"		98.8	140.0	60"		62.6	93.8
66"		140.0	140.0	66"		89.8	134.7	66"		56.9	85.3
72"		140.0	140.0	72"		82.3	123.5	72"		52.1	78.2
19-1/8"	50-5/8"	140.0	140.0	19-1/8"	84"	140.0	140.0	19-1/8"	132"	140.0	140.0
26-1/2"		140.0	140.0	26-1/2"		140.0	140.0	26-1/2"		128.8	140.0
30"		140.0	140.0	30"		140.0	140.0	30"		113.8	140.0
37"		140.0	140.0	37"		140.0	140.0	37"		92.2	138.3
42"		140.0	140.0	42"		127.7	140.0	42"		81.3	121.9
48"		140.0	140.0	48"		111.7	140.0	48"		71.1	106.6
54"		140.0	140.0	54"		99.3	140.0	54"		63.2	94.8
60"		140.0	140.0	60"		89.4	134.1	60"		56.9	85.3
66"		134.8	140.0	66"		81.3	121.9	66"		51.7	77.6
72"		123.6	140.0	72"		74.5	111.7	72"		47.4	71.1
19-1/8"	63"	140.0	140.0	19-1/8"	96"	140.0	140.0	19-1/8"	144"	140.0	140.0
26-1/2"		140.0	140.0	26-1/2"		140.0	140.0	26-1/2"		118.1	140.0
30"		140.0	140.0	30"		140.0	140.0	30"		104.3	140.0
37"		140.0	140.0	37"		126.8	140.0	37"		84.6	126.8
42"		140.0	140.0	42"		111.7	140.0	42"		74.5	111.7
48"		140.0	140.0	48"		97.8	140.0	48"		65.2	97.8
54"		132.4	140.0	54"		86.9	130.3	54"		57.9	86.9
60"		119.2	140.0	60"		78.2	117.3				
66"		108.3	140.0	66"		71.1	106.6				
72"		99.3	140.0	72"		65.2	97.8				
19-1/8"	74-1/4"	140.0	140.0	19-1/8"	108"	140.0	140.0				
26-1/2"		140.0	140.0	26-1/2"		140.0	140.0				
30"		140.0	140.0	30"		139.0	140.0				
37"		140.0	140.0	37"		112.7	140.0				
42"		140.0	140.0	42"		99.3	140.0				
48"		126.4	140.0	48"		86.9	130.3				
54"		112.4	140.0	54"		77.2	115.9				
60"		101.1	140.0	60"		69.5	104.3				
66"		91.9	137.9	66"		63.2	94.8				
72"		84.3	126.4	72"		57.9	86.9				

ALL LOADS ARE EXT.(+)/INT.(-).

NOTE:
ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS
AT HEAD, SILL OR JAMB ENDS.
SEE SHEET 14 FOR ANCHOR DETAILS.

(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

TYPICAL ANCHORS:

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

C6: DIRECTLY INTO CONCRETE
1-1/4" MIN. EMBED INTO CONCRETE

1/4" DIA. TEKS OR SELF DRILLING SCREWS (GRADE 5 CRS)

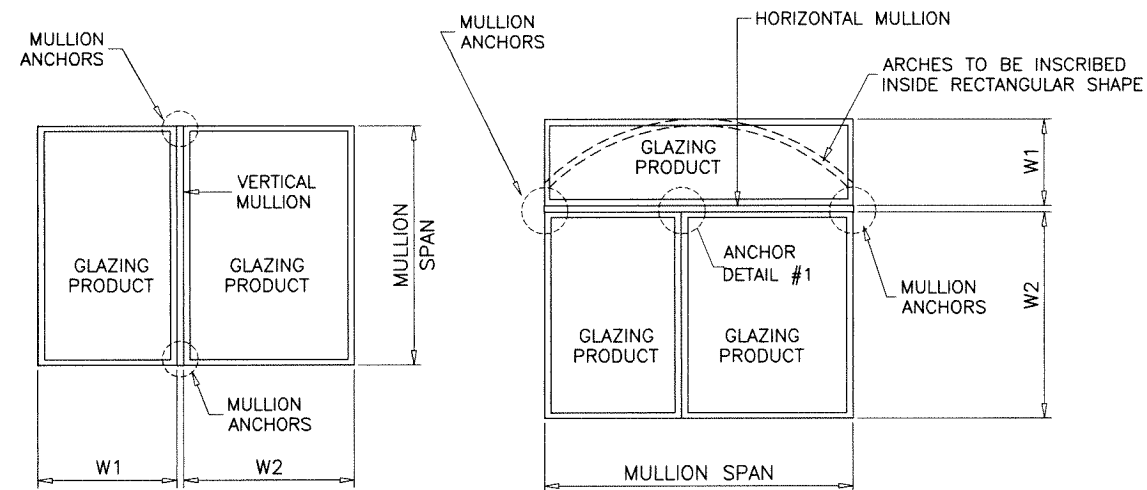
M6: INTO METAL STRUCTURES
(3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
STEEL: 1/8" THK. MIN. (Fy = 36 KSI MIN.)
(STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

TYPICAL EDGE DISTANCE

INTO CONCRETE = 2-1/2" MIN.
INTO METAL STRUCTURE = 3/4" MIN.

ANCHORS CL TO CL DISTANCE = 2-1/2" MIN.

CONCRETE AT HEAD, SILL OR JAMBS f'c = 3000 PSI MIN.



TYPICAL MULLION ARRANGEMENTS

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

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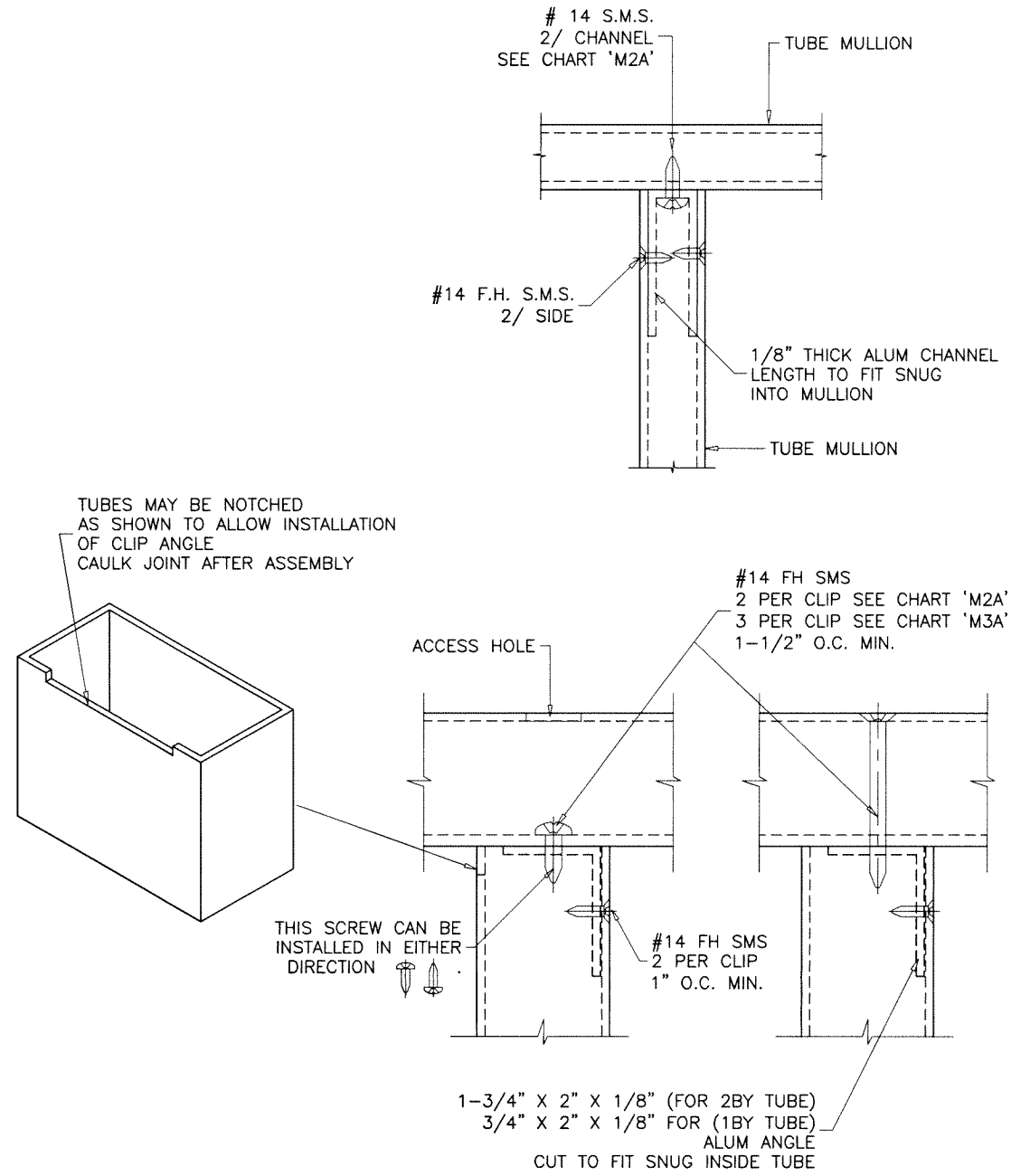
revisions:	no	date	description

date: 11-12-19
scale: -
dr. by: TARIQ
chk. by:

drawing no.
19-119F

sheet 15 of 16

DESIGN LOAD CAPACITY - PSF				DESIGN LOAD CAPACITY - PSF				DESIGN LOAD CAPACITY - PSF			
WINDOW DIMS.		ANCHORS TYPE		WINDOW DIMS.		ANCHORS TYPE		WINDOW DIMS.		ANCHORS TYPE	
WIDTH (W)	MULL SPAN	M2A	M3A	WIDTH (W)	MULL SPAN	M2A	M3A	WIDTH (W)	MULL SPAN	M2A	M3A
19-1/8"	38-3/8"	140.0	140.0	19-1/8"	76"	140.0	140.0	19-1/8"	120"	98.1	140.0
26-1/2"		140.0	140.0	26-1/2"		111.8	140.0	26-1/2"		70.8	106.2
30"		140.0	140.0	30"		98.8	140.0	30"		62.6	93.8
37"		140.0	140.0	37"		80.1	120.1	37"		50.7	76.1
42"		139.7	140.0	42"		70.6	105.8	42"		44.7	67.0
48"		122.3	140.0	48"		61.7	92.6	48"		39.1	58.7
54"		108.7	140.0	54"		54.9	82.3	54"		34.8	52.1
60"		97.8	140.0	60"		49.4	74.1	60"		31.3	46.9
66"		88.9	133.4	66"		44.9	67.3	66"		28.4	42.7
72"	81.4	122.3	72"	41.2	61.7	72"	26.1	39.1			
19-1/8"	50-5/8"	140.0	140.0	19-1/8"	84"	140.0	140.0	19-1/8"	132"	89.2	133.8
26-1/2"		140.0	140.0	26-1/2"		101.2	140.0	26-1/2"		64.4	96.6
30"		140.0	140.0	30"		89.4	134.1	30"		56.9	85.3
37"		120.2	140.0	37"		72.5	108.7	37"		46.1	69.2
42"		105.9	140.0	42"		63.8	95.8	42"		40.6	60.9
48"		92.7	139.0	48"		55.9	83.8	48"		35.5	53.3
54"		82.4	123.6	54"		49.7	74.5	54"		31.6	47.4
60"		74.1	111.2	60"		44.7	67.0	60"		28.4	42.7
66"		67.4	101.1	66"		40.6	60.9	66"		25.9	38.8
72"	61.8	92.7	72"	37.2	55.9	72"	23.7	35.5			
19-1/8"	63"	140.0	140.0	19-1/8"	96"	122.7	140.0	19-1/8"	144"	81.8	122.7
26-1/2"		134.9	140.0	26-1/2"		88.5	132.8	26-1/2"		59.0	88.5
30"		119.2	140.0	30"		78.2	117.3	30"		52.1	78.2
37"		96.6	140.0	37"		63.4	95.1	37"		42.3	63.4
42"		85.1	127.7	42"		55.9	83.8	42"		37.2	55.9
48"		74.5	111.7	48"		48.9	73.3	48"		32.5	48.9
54"		66.2	99.3	54"		43.4	65.2	54"		29.0	43.4
60"		59.6	89.4	60"		39.1	58.7	60"		26.0	39.1
66"		54.2	81.2	66"		35.5	53.3	66"		23.7	35.5
72"	49.7	74.5	72"	32.6	48.9	72"	23.7	35.5			
19-1/8"	74-1/4"	140.0	140.0	19-1/8"	108"	109.0	140.0	19-1/8"			
26-1/2"		114.5	140.0	26-1/2"		78.7	118.0	26-1/2"			
30"		101.1	140.0	30"		69.5	104.3	30"			
37"		82.0	123.0	37"		56.4	84.5	37"			
42"		72.2	108.3	42"		49.7	74.5	42"			
48"		63.2	94.8	48"		43.4	65.2	48"			
54"		56.2	84.3	54"		38.6	57.9	54"			
60"		50.6	75.8	60"		34.8	52.1	60"			
66"		46.0	68.9	66"		31.6	47.4	66"			
72"	42.1	63.2	72"	29.0	43.4	72"					



ANCHOR DETAIL #1
METAL TO METAL CONNECTION



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sheet	16 of 16			