

UNCLIPPED ALUMINUM MULLION
WINDOW FRAME MEMBER INCLUDED IN PROPERTIES

ZERO MULLION (ARSO-168) TO BE USED WITH SERIES 3000/3062
FIXED, CASEMENT AND PROJECTED WINDOWS
MULLION (ARSO-6) TO BE USED WITH SERIES 540
FIXED, SINGLE HUNG AND PROJECTED WINDOWS.
FOR WINDOWS IMPACT AND LOAD RATINGS SEE
CORRESPONDING APPROVAL'S.
LOWER DESIGN PRESSURE FROM WINDOW APPROVALS
OR MULLION CHARTS WILL APPLY TO ENTIRE SYSTEM.

NOTES:

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE
REQUIREMENTS OF THE 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 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.

THESE MULLIONS ARE RATED FOR LARGE & SMALL MISSILE IMPACT

MULLIONS MAY BE USED TO ATTACH TWO OR MORE WINDOWS TOGETHER

SHEET NO.	INDEX OF DRAWING
	DESCRIPTION
1	GENERAL NOTES, INSTRUCTIONS AND INDEX OF DRAWINGS
2	PARTS DRAWING
3	DESIGN LOAD CAPACITY TABLE ARSO-168 ZERO MULLION WITH SERIES 3000/3062 FRAMES
4	DESIGN LOAD CAPACITY TABLE 1 X 4 X 1/8" ALUM TUBE MULLION WITH SERIES 3000/3062 FRAMES
5	DESIGN LOAD CAPACITY TABLE 1 X 4 X 1/8" ALUM TUBE MULLION WITH SERIES 535 FRAMES
6	DESIGN LOAD CAPACITY TABLE ARSO-6 CUSTOM MULLION WITH SERIES 535 FRAMES
7	DESIGN LOAD CAPACITY TABLE ARSO-6 CUSTOM MULLION WITH SERIES 540 FRAMES
8	ANCHORING DETAILS FOR ARSO-168 MULLION AND SERIES 3000/3062 FRAMES
9	ANCHORING DETAILS FOR 1 X 4 X 1/8" TUBE MULLION AND SERIES 535 FRAMES
10	ANCHORING DETAILS FOR ARSO-6 CUSTOM MULLION AND SERIES 540 FRAMES

INSTRUCTIONS:

USE CHARTS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN LOAD REQUIRED PER ASCE 7
FOR PARTICULAR OPENING.
- STEP 2** USE CONNECTION OF WINDOWS TO MULLION AS PER
PRODUCT APPROVAL.
- STEP 3** USING CHARTS ON SHEETS 3 THRU 7 SELECT MULLION TYPE
AND ANCHOR QUANTITIES WITH DESIGN RATING MORE THAN
THE DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 4** CAPACITY OF SELECTED SOLATROL'S WINDOWS AND MULLION
MUST EQUAL OR EXCEED REQUIRED LOADS.

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.



Sealed: 12/13/2023

FL #17761

afc

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

MULLION M15-05SAT

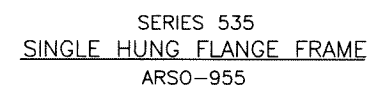
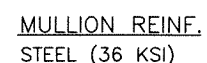
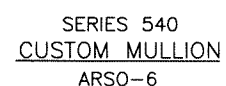
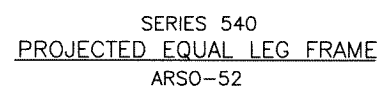
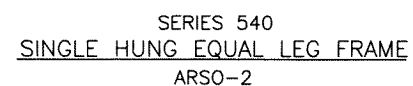
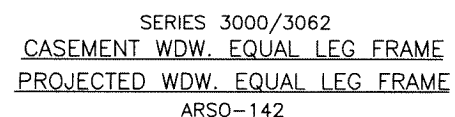
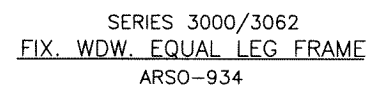
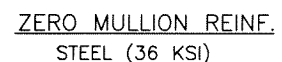
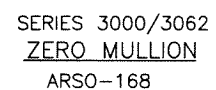
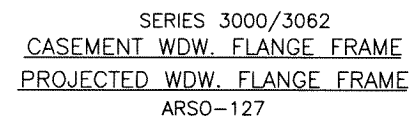
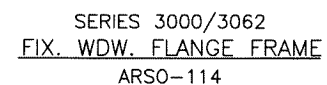
UNCLIPPED ALUM ZERO & TUBE MULLION

SOL-A-TROL ALUMINUM PRODUCTS
4101 N.W. 132ND STREET
MIAMI, FL. 33054
TEL. (305) 681-2020 FAX. (305) 681-2035

revisions:		no	date	by	description
A	11.21.18	A	11.21.18	A	UPDATED TO 2017 FBC
					UPDATED TO 2023 FBC
B	10.27.23	B	10.27.23	B	

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chk. by:

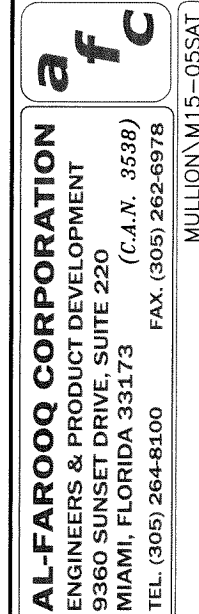
drawing no.
M15-05
sheet 1 of 10



ALL FRAMES AND MULLIONS TO BE ALLOY 6063-T6

Sealed: 12/13/2023

FL #17761



UNCLIPPED ALUM ZERO & TUBE MULLION

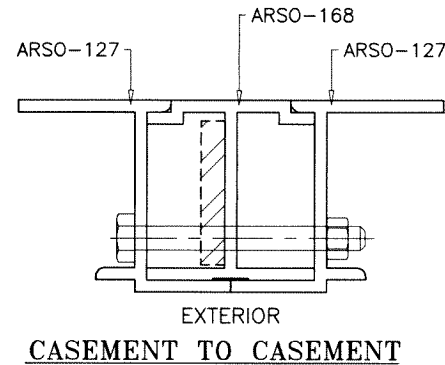
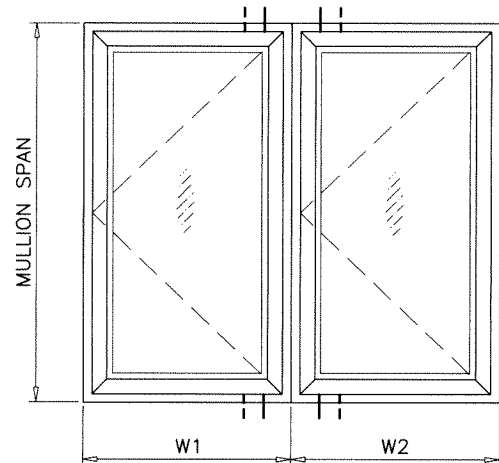
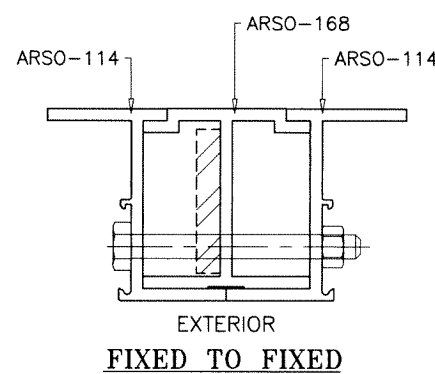
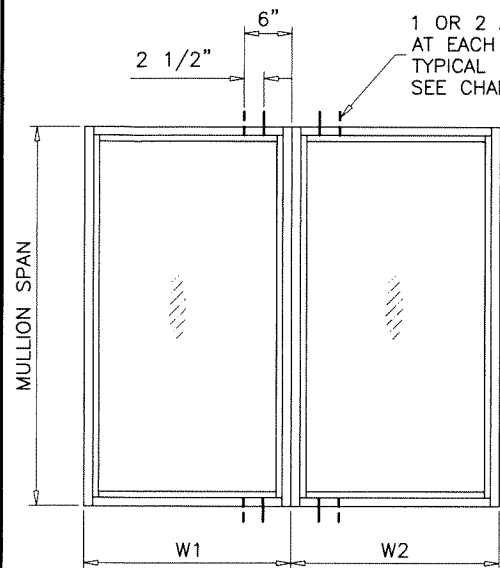
SSOL-A-TROL ALUMINUM PRODUCTS
4101 N.W. 132ND STREET
MIAMI, FL. 33054
TEL. (305) 681-2020 FAX. (305) 681-2035

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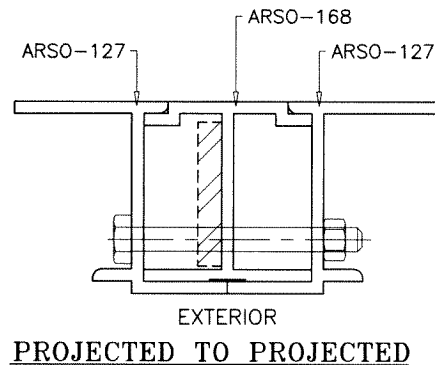
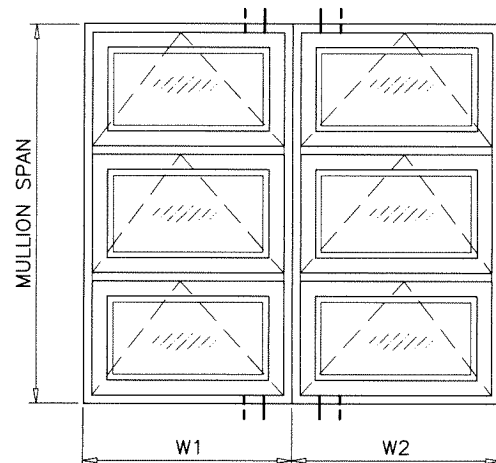
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chk. by:

drawing no.
M15-05

sheet 2 of 10

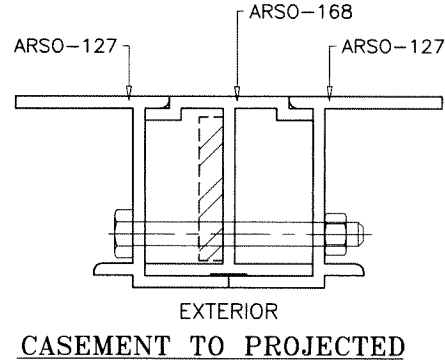
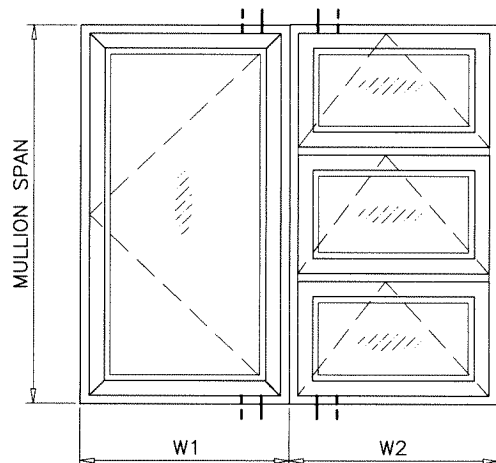
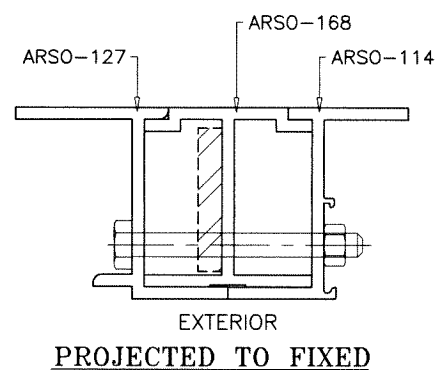
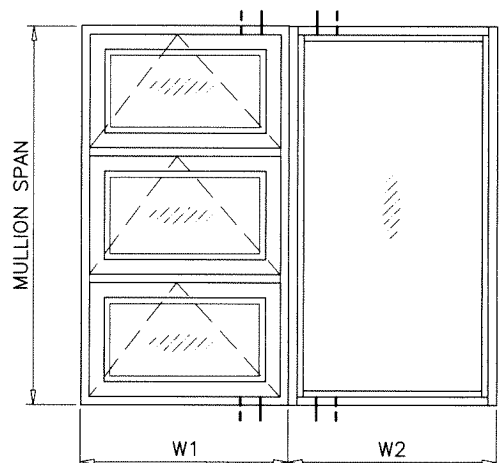
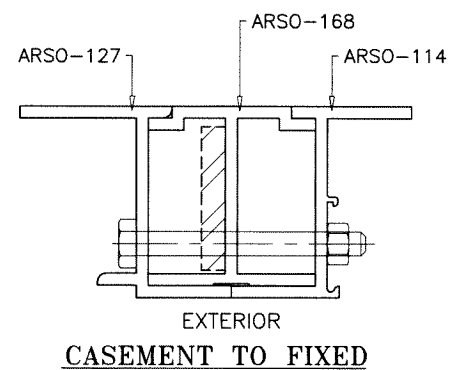
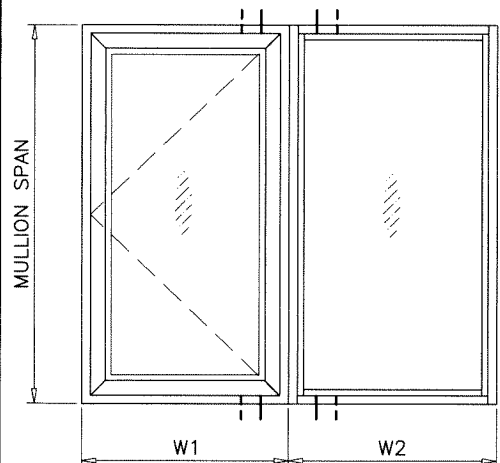


NOTE:
MULLIONS RATED IN THESE CHARTS MAY BE ORIENTED VERTICALLY
OR HORIZONTALLY.
(INTERPOLATION BETWEEN WIDTHS ALLOWED)

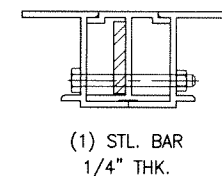


SEE SHEET 8 OF 10 FOR ANCHORING DETAILS

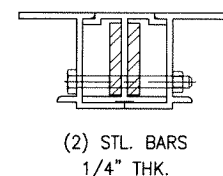
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$



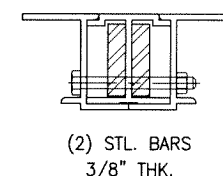
DESIGN LOAD CAPACITY - PSF					
ZERO MULLION WITH ANY COMBINATION OF SERIES 3000/3062 FIXED, CASEMENT OR PROJECTED WINDOWS					
WINDOW DIMS.		1 ANCHOR AT EACH SIDE OF MULL	2 ANCHORS AT EACH SIDE OF MULLION		
WIDTH (W)	MULL SPAN	(1) STL. BAR 1/4" THK.	(1) STL. BAR 1/4" THK.	(2) STL. BARS 1/4" THK.	(2) STL. BARS 3/8" THK.
19-1/8"	38-3/8"	100.0	100.0	100.0	100.0
26-1/2"		100.0	100.0	100.0	100.0
37"		93.7	100.0	100.0	100.0
53-1/8"		65.3	100.0	100.0	100.0
19-1/8"	50-5/8"	100.0	100.0	100.0	100.0
26-1/2"		99.2	100.0	100.0	100.0
37"		71.0	100.0	100.0	100.0
53-1/8"		49.5	98.9	98.9	98.9
19-1/8"	63"	100.0	100.0	100.0	100.0
26-1/2"		79.7	100.0	100.0	100.0
37"		57.1	80.8	94.4	100.0
24"	48"	100.0	100.0	100.0	100.0
30"		92.4	100.0	100.0	100.0
36"		77.0	100.0	100.0	100.0
42"		66.0	100.0	100.0	100.0
48"		57.8	100.0	100.0	100.0
24"	54"	100.0	100.0	100.0	100.0
30"		82.1	100.0	100.0	100.0
36"		68.4	100.0	100.0	100.0
42"		58.7	100.0	100.0	100.0
48"		51.3	98.9	100.0	100.0
24"	60"	92.4	100.0	100.0	100.0
30"		73.9	100.0	100.0	100.0
36"		61.6	96.2	100.0	100.0
42"		52.8	82.4	96.2	100.0
48"		46.2	72.1	84.2	92.4
24"	63"	88.0	100.0	100.0	100.0
30"		70.4	99.7	100.0	100.0
36"		58.7	83.1	97.0	100.0
42"		50.3	71.2	83.1	95.1
48"		44.0	62.3	72.7	83.2



	Ix IN ⁴	Sx IN ³
ALUMINUM	1.0033	0.9679
STEEL	0.0703	0.0937
TOTAL Ix ALUM + Ix STL X 2.9	1.2072	



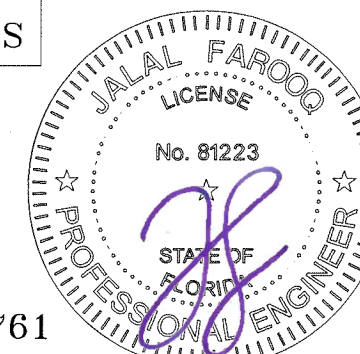
	Ix IN ⁴	Sx IN ³
ALUMINUM	1.0033	0.9679
STEEL	0.1406	0.1874
TOTAL Ix ALUM + Ix STL X 2.9	1.4110	



	Ix IN ⁴	Sx IN ³
ALUMINUM	1.0033	0.9679
STEEL	0.2110	0.2814
TOTAL Ix ALUM + Ix STL X 2.9	1.6152	

ZERO MULLION
SERIES 3000/3062 FRAMES

Sealed: 12/13/2023



FL #17761

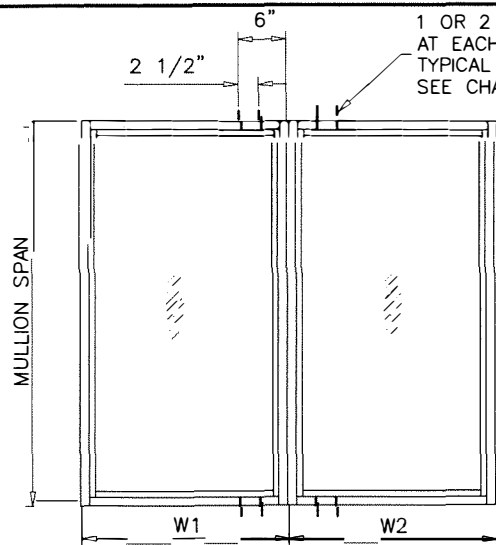
AL-FAROOQ CORPORATION
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9360 SUNSET DRIVE, SUITE 220
MIAMI, FLORIDA 33173 (C.A.N. 3538)
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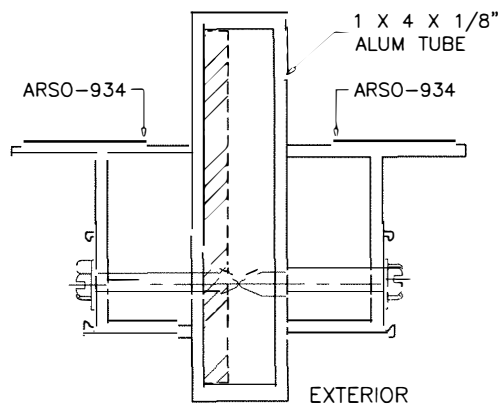
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chk. by:

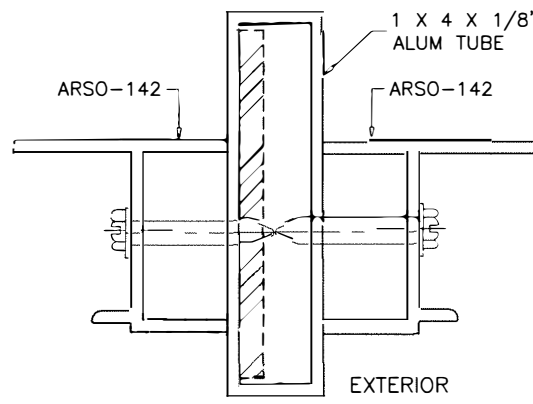
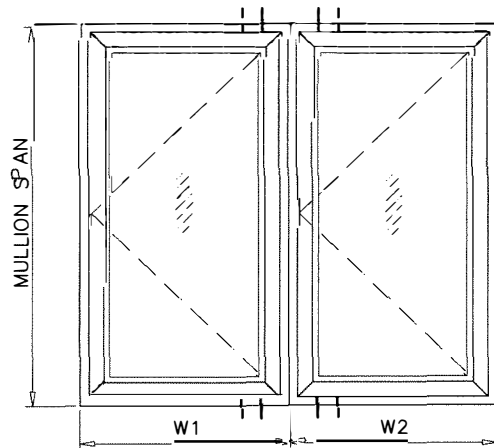
drawing no.
M15-05
sheet 3 of 10



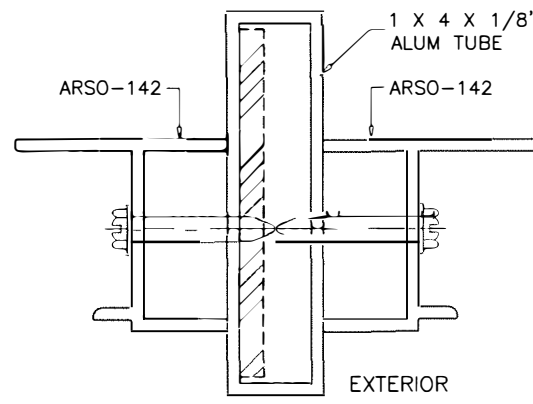
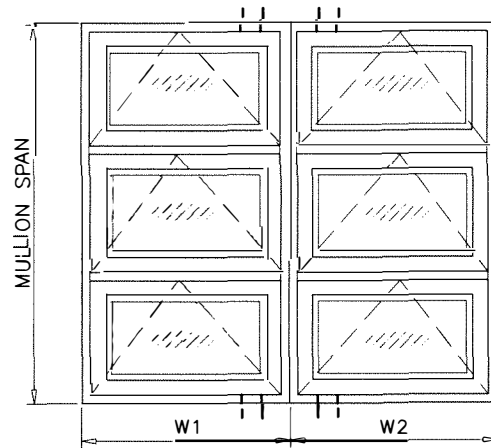
1 OR 2 ANCHORS
AT EACH SIDE OF MULLION
TYPICAL
SEE CHART FOR CAPACITY



FIXED TO FIXED

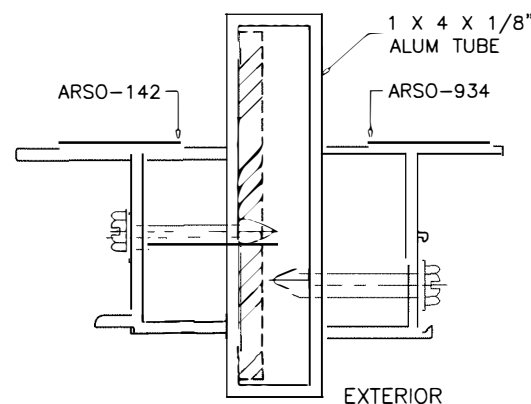
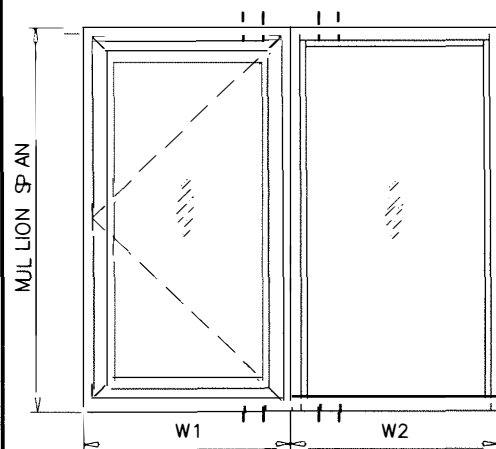


CASEMENT TO CASEMENT

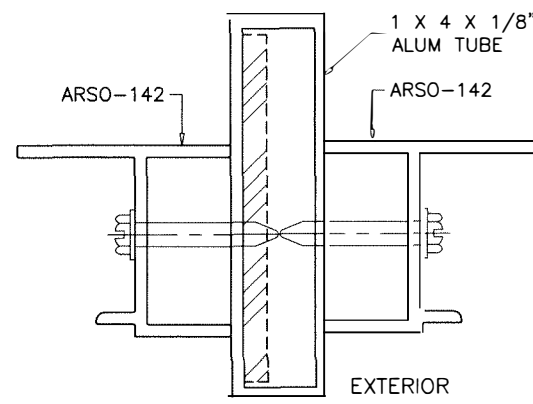
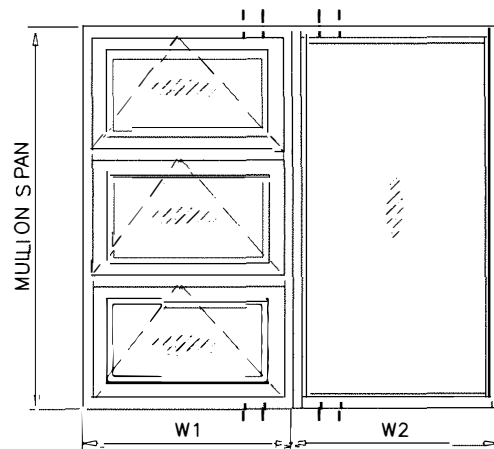


PROJECTED TO PROJECTED

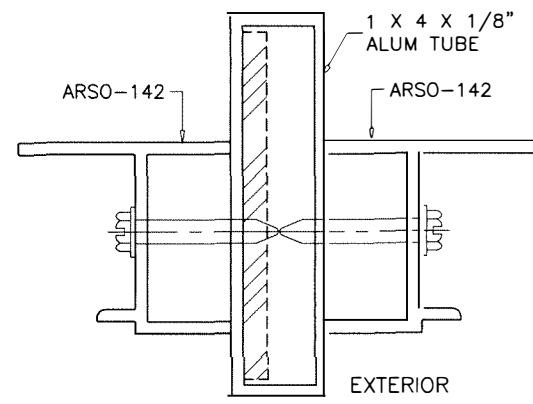
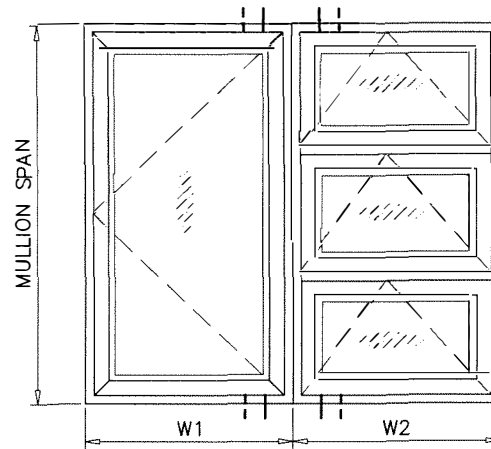
SEE SHEET 9 OF 10 FOR ANCHORING DETAILS



CASEMENT TO FIXED



PROJECTED TO FIXED



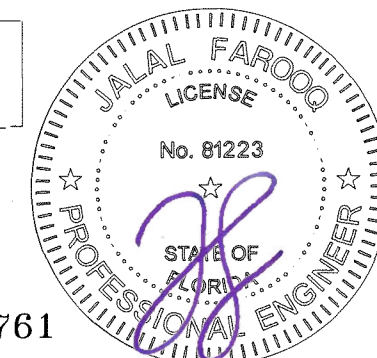
CASEMENT TO PROJECTED

DESIGN LOAD CAPACITY - PSF				
TUBE MULLION WITH ANY COMBINATION OF S-3000/3062 FIXED, CASEMENT OR PROJECTED WDW.				
WINDOW DIMS.		1 ANCHOR AT EACH SIDE OF MULL	2 ANCHORS AT EACH SIDE OF MULLION	
WIDTH (W)	MULL SPAN	MULLION W/O REINF.	MULLION W/O REINF.	MULLION W/ REINF.
19-1/8"	38-3/8"	95.0	95.0	95.0
26-1/2"		95.0	95.0	95.0
37"		95.0	95.0	95.0
53-1/8"		73.7	95.0	95.0
19-1/8"	50-5/8"	95.0	95.0	95.0
26-1/2"		95.0	95.0	95.0
37"		80.2	95.0	95.0
53-1/8"		55.8	95.0	95.0
19-1/8"	63"	95.0	95.0	95.0
26-1/2"		89.9	95.0	95.0
37"		64.4	95.0	95.0
19-1/8"	74-1/4"	95.0	95.0	95.0
26-1/2"		76.3	95.0	95.0
37"		54.7	95.0	95.0
24"	54"	95.0	95.0	95.0
30"		92.7	95.0	95.0
36"		77.2	95.0	95.0
42"		66.2	95.0	95.0
48"		57.9	95.0	95.0
54"		51.5	95.0	95.0
24"	60"	95.0	95.0	95.0
30"		83.4	95.0	95.0
36"		69.5	95.0	95.0
42"		59.6	95.0	95.0
48"		52.1	95.0	95.0
24"	66"	94.8	95.0	95.0
30"		75.8	95.0	95.0
36"		63.2	95.0	95.0
42"		54.2	95.0	95.0
24"	72"	86.9	95.0	95.0
30"		69.5	95.0	95.0
36"		57.9	95.0	95.0
42"		49.7	95.0	95.0
24"	78"	80.2	95.0	95.0
30"		64.2	95.0	95.0
36"		53.5	93.9	95.0
24"	84"	74.5	95.0	95.0
30"		59.6	95.0	95.0
36"		49.7	80.4	95.0

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

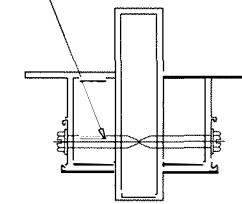
**TUBE MULLION
SERIES 3000/3062 FRAMES**

Sealed: 12/13/2023



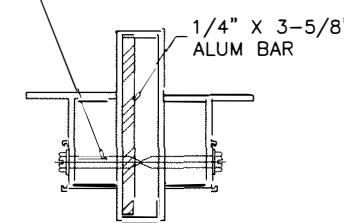
FL #17761

ALTERNATE
THRU BOLT WITH
NUT AND WASHER



1x IN⁴ Sx IN³
2.7772 1.3886

ALTERNATE
THRU BOLT WITH
NUT AND WASHER



1x IN⁴ Sx IN³
3.3995 1.6998

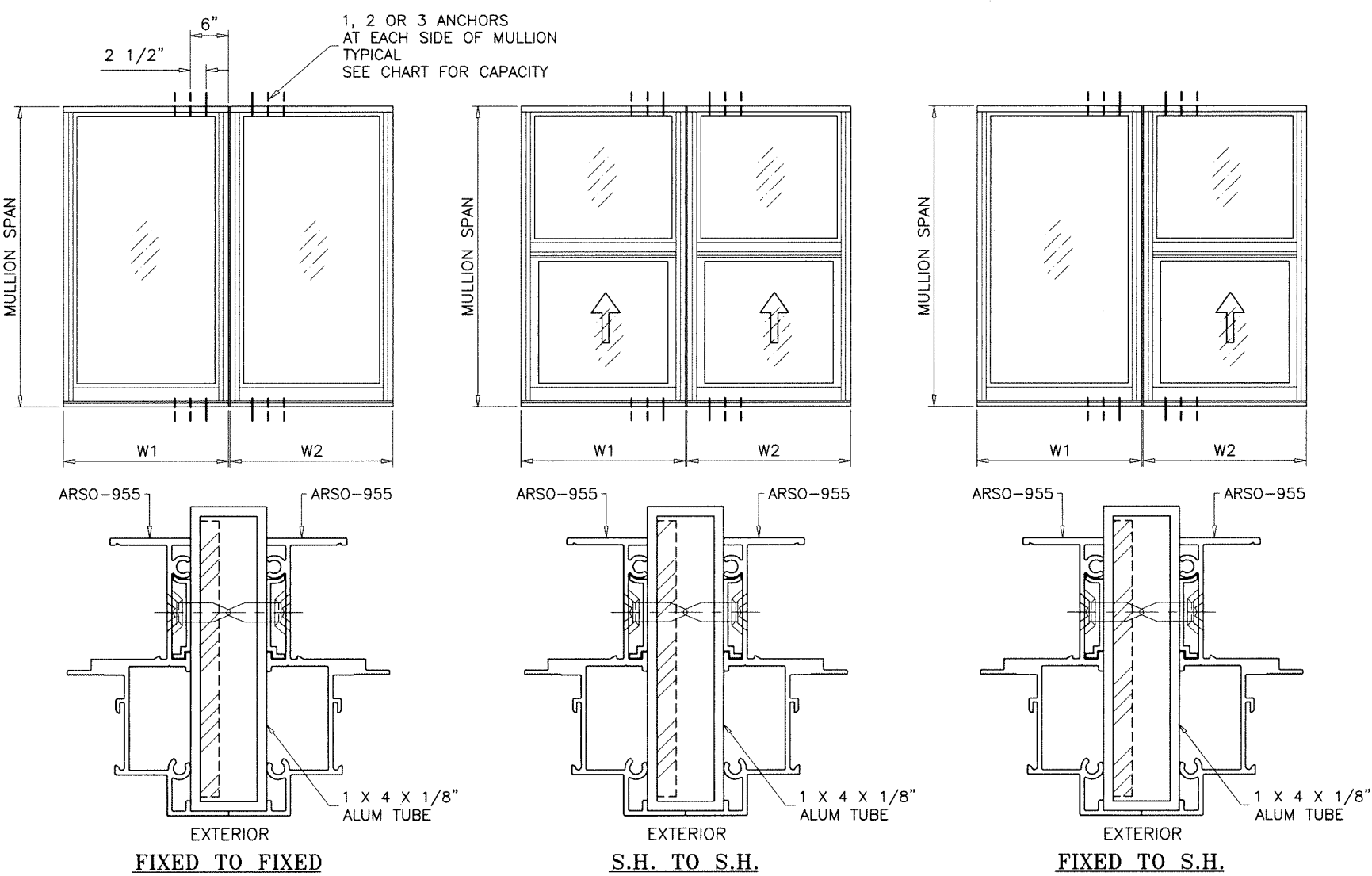
$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

af c
AL-FAROOQ CORPORATION
ENGINEERS & PRODUCT DEVELOPMENT
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MIAMI, FLORIDA 33173 (C.A.N. 3538)
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UNCLIPPED ALUM ZERO & TUBE MULLION
SOL-A-TROL ALUMINUM PRODUCTS
4101 N.W. 132ND STREET
MIAMI, FL. 33054
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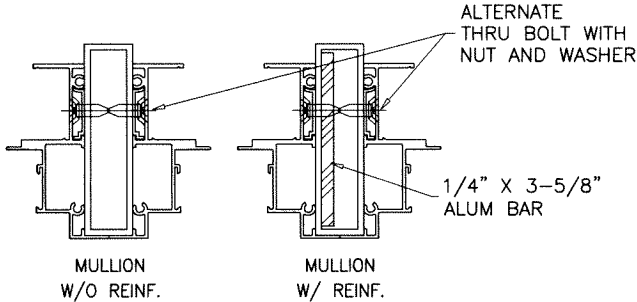
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date:	04-29-15	scale:	1/2" = 1"	dr. by: HAMID
chk. by:				
drawing no.	M15-05			
sheet	4 of 10			

DESIGN LOAD CAPACITY - PSF						
TUBE MULLION WITH ANY COMBINATION OF SERIES 535 FIXED AND SINGLE HUNG WINDOWS						
WINDOW DIMS.		1 ANCHOR AT EACH SIDE OF MULL	2 ANCHORS AT EACH SIDE OF MULLION		3 ANCHORS AT EACH SIDE OF MULLION	
WIDTH (W)	MULL SPAN	MULLION W/O REINF.	MULLION W/O REINF.	MULLION W/ REINF.	MULLION W/O REINF.	MULLION W/ REINF.
19-1/8"	50-5/8"	100.0	100.0	100.0	100.0	100.0
26-1/2"		99.2	100.0	100.0	100.0	100.0
37"		71.0	100.0	100.0	100.0	100.0
53-1/8"		49.5	98.9	98.9	100.0	100.0
19-1/8"	63"	100.0	100.0	100.0	100.0	100.0
26-1/2"		79.7	100.0	100.0	100.0	100.0
37"		57.1	100.0	100.0	100.0	100.0
53-1/8"		39.8	79.5	79.5	100.0	100.0
19-1/8"	74-1/4"	93.7	100.0	100.0	100.0	100.0
26-1/2"		67.6	100.0	100.0	100.0	100.0
37"		48.4	96.9	96.9	100.0	100.0
53-1/8"		33.7	67.5	67.5	95.6	100.0
24"	66"	84.0	100.0	100.0	100.0	100.0
30"		67.2	100.0	100.0	100.0	100.0
36"		56.0	100.0	100.0	100.0	100.0
42"		48.0	96.0	96.0	100.0	100.0
48"		42.0	84.0	84.0	100.0	100.0
53-1/8"		37.9	75.9	75.9	100.0	100.0
54"		37.3	74.7	74.7	100.0	100.0
60"	72"	33.6	67.2	67.2	100.0	100.0
24"		77.0	100.0	100.0	100.0	100.0
30"		61.6	100.0	100.0	100.0	100.0
36"		51.3	100.0	100.0	100.0	100.0
42"		44.0	88.0	88.0	100.0	100.0
48"		38.5	77.0	77.0	100.0	100.0
53-1/8"		34.8	69.6	69.6	100.0	100.0
54"	78"	34.2	68.4	68.4	100.0	100.0
24"		71.1	100.0	100.0	100.0	100.0
30"		56.9	100.0	100.0	100.0	100.0
36"		47.4	94.8	94.8	100.0	100.0
42"		40.6	81.2	81.2	100.0	100.0
48"		35.5	71.1	71.1	95.4	100.0
53-1/8"		32.1	64.2	64.2	86.2	96.3
54"	80"	31.6	63.2	63.2	84.8	94.8
24"		69.3	100.0	100.0	100.0	100.0
30"		55.4	100.0	100.0	100.0	100.0
36"		46.2	92.4	92.4	100.0	100.0
42"		39.6	79.2	79.2	100.0	100.0
48"	80"	34.7	69.3	69.3	90.4	100.0
53-1/8"		31.3	62.6	62.6	81.7	93.9



SEE SHEET 9 OF 10 FOR ANCHORING DETAILS

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

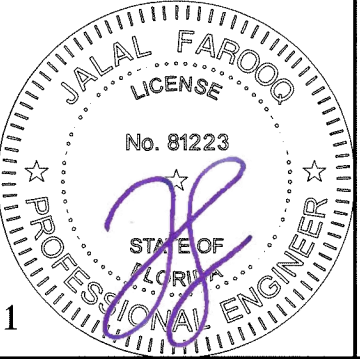


Ix IN^4	Sx IN^3	Ix IN^4	Sx IN^3
3.8676	1.9338	4.8600	2.4300

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

TUBE MULLION
SERIES 535 FRAMES

Sealed: 12/13/2023



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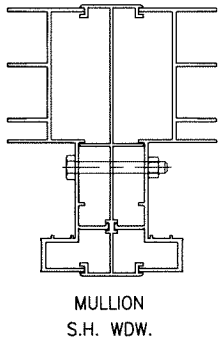
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SOL-A-TROL ALUMINUM PRODUCTS
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revisions:
no date by description

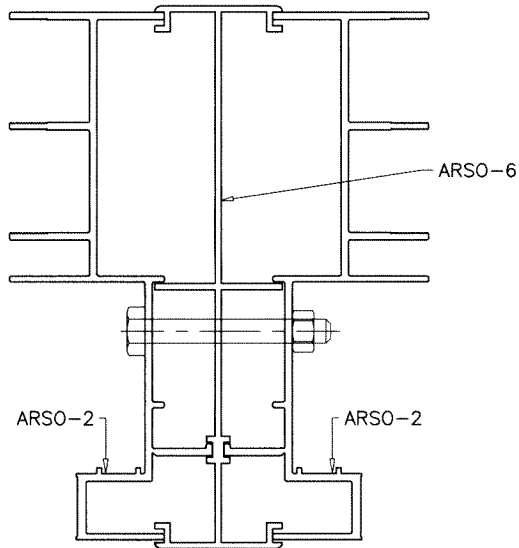
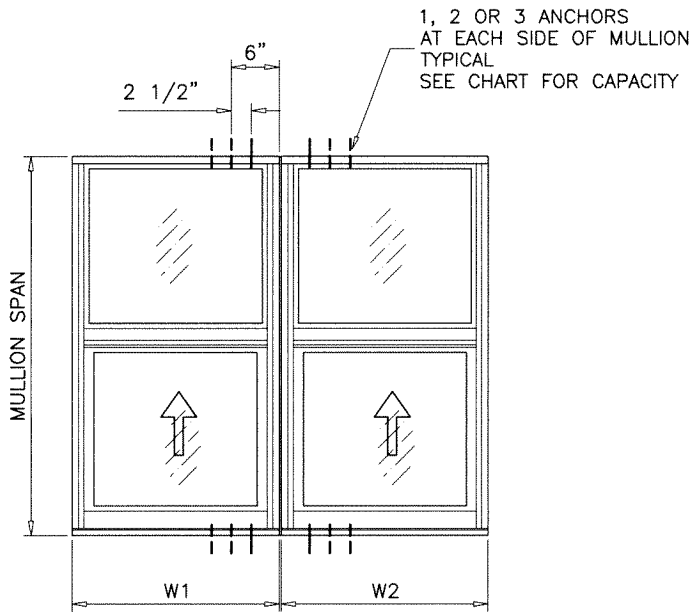
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scale: 1/2" = 1"
dr. by: HAMID
chk. by:

drawing no.
M15-05
sheet 5 of 10

DESIGN LOAD CAPACITY - PSF CUSTOM MULLION W/O REINF. SERIES 540 S.H. WINDOWS				
WINDOW DIMS.		1 ANCHOR AT EACH SIDE OF MULLION	2 ANCHORS AT EACH SIDE OF MULLION	3 ANCHORS AT EACH SIDE OF MULLION
WIDTH (W)	MULL SPAN			
19-1/8"	50-5/8"	75.0	75.0	75.0
26-1/2"		75.0	75.0	75.0
37"		75.0	75.0	75.0
53-1/8"		55.5	75.0	75.0
19-1/8"	63"	75.0	75.0	75.0
26-1/2"		75.0	75.0	75.0
37"		64.0	75.0	75.0
53-1/8"		44.6	75.0	75.0
19-1/8"	74-1/4"	75.0	75.0	75.0
26-1/2"		75.0	75.0	75.0
37"		54.3	75.0	75.0
53-1/8"		37.8	75.0	75.0
24"	76"	75.0	75.0	75.0
30"		65.4	75.0	75.0
36"		54.5	75.0	75.0
42"		46.7	75.0	75.0
48"		40.9	75.0	75.0
54"		36.4	72.7	75.0
60"		32.7	65.4	75.0
24"	84"	74.0	75.0	75.0
30"		59.2	75.0	75.0
36"		49.3	75.0	75.0
42"		42.3	75.0	75.0
48"		37.0	74.0	75.0
54"		32.9	65.8	75.0
24"	90"	69.1	75.0	75.0
30"		55.3	75.0	75.0
36"		46.0	75.0	75.0
42"		39.5	75.0	75.0
48"		34.5	69.1	75.0
24"	96"	64.8	75.0	75.0
30"		51.8	75.0	75.0
36"		43.2	75.0	75.0
42"		37.0	74.0	75.0
48"		32.4	64.8	75.0



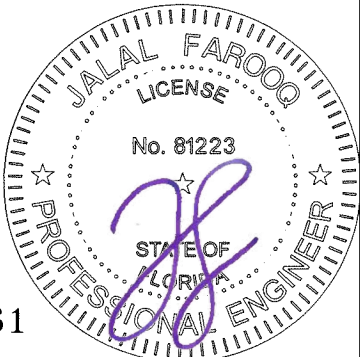
Ix	IN ⁴	Sx	IN ³
8.8317		3.0129	



EXTERIOR
S.H. TO S.H.

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

CUSTOM MULLION
SERIES 540 FRAMES



Sealed: 12/13/2023

SEE SHEET 10 OF 10 FOR ANCHORING DETAILS

FL #17761

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UNCLIPPED ALUM ZERO & TUBE MULLION

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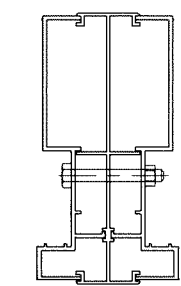
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dr. by:	HAMID
chk. by:	

drawing no.	M15-05
sheet	6 of 10

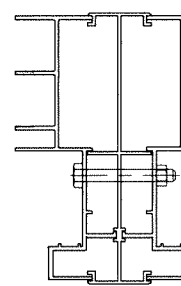
MULLION\M15-05SAT

DESIGN LOAD CAPACITY - PSF CUSTOM MULLION W/O REINF. SERIES 540 PROJECTED AND S.H. TO PROJECTED WDW.			
WINDOW DIMS.		1 ANCHOR AT EACH SIDE OF MULLION	2 ANCHORS AT EACH SIDE OF MULLION
WIDTH (W)	MULL SPAN		
19-1/8"	38-3/8"	75.0	75.0
26-1/2"		75.0	75.0
37"		75.0	75.0
53-1/8"		73.2	75.0
19-1/8"	50-5/8"	75.0	75.0
26-1/2"		75.0	75.0
37"		75.0	75.0
53-1/8"		55.5	75.0
19-1/8"	63"	75.0	75.0
26-1/2"		75.0	75.0
37"		64.0	75.0
24"		75.0	75.0
30"	48"	75.0	75.0
36"		75.0	75.0
42"		74.0	75.0
48"		64.8	75.0
54"	54"	57.6	75.0
60"		51.8	75.0
24"	60"	75.0	75.0
30"		75.0	75.0
36"		69.1	75.0
42"		59.2	75.0
48"	63"	51.8	75.0
24"		75.0	75.0
30"		75.0	75.0
36"		65.8	75.0
42"		56.4	75.0
48"		49.3	75.0



MULLION W/O REINF.
PROJECTED

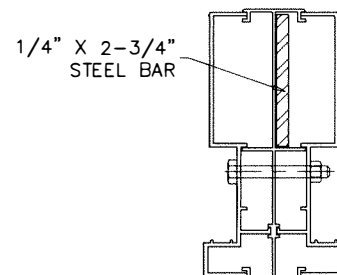
Ix IN ⁴	Sx IN ³
7.4397	2.4092



MULLION W/O REINF.
S.H. - PROJECTED

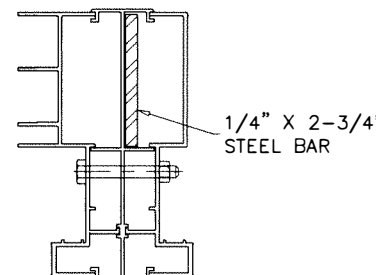
Ix IN ⁴	Sx IN ³
8.1357	2.7845

DESIGN LOAD CAPACITY - PSF CUSTOM MULLION W/ REINF. SERIES 540 PROJECTED AND S.H. TO PROJECTED WDW.			
WINDOW DIMS.		1 ANCHOR AT EACH SIDE OF MULLION	2 ANCHORS AT EACH SIDE OF MULLION
WIDTH (W)	MULL SPAN		
19-1/8"	63"	75.0	75.0
26-1/2"		75.0	75.0
37"		64.0	75.0
53-1/8"		44.6	75.0
19-1/8"	74-1/4"	75.0	75.0
26-1/2"		75.0	75.0
37"		54.3	75.0
53-1/8"		37.8	75.0
24"	63"	75.0	75.0
30"		75.0	75.0
36"		65.8	75.0
42"		56.4	75.0
48"	72"	49.3	75.0
54"		43.9	75.0
60"		39.5	75.0
24"	80"	75.0	75.0
30"		69.1	75.0
36"		57.6	75.0
42"		49.3	75.0
48"	84"	43.2	75.0
54"		38.4	75.0
24"		75.0	75.0
30"		62.2	75.0
36"	80"	51.8	75.0
42"		44.4	75.0
48"		38.9	75.0
24"	84"	74.0	75.0
30"		59.2	75.0
36"		49.3	75.0
42"		42.3	75.0



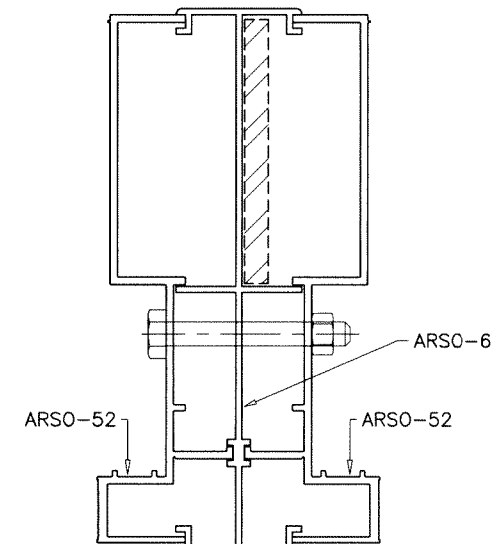
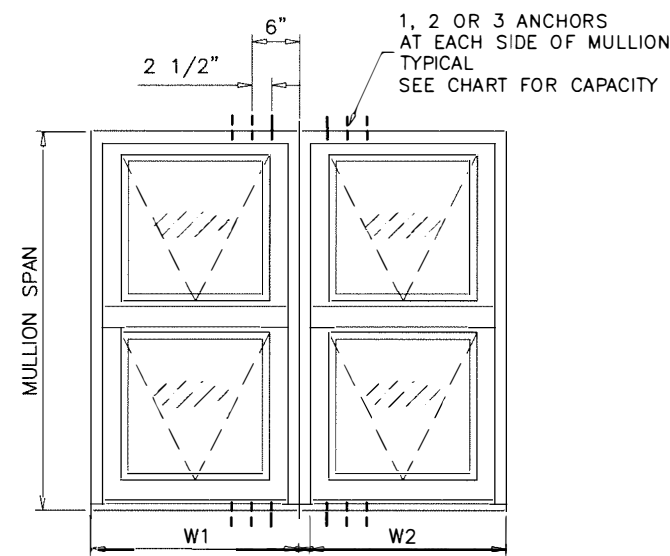
MULLION W/ REINF.
PROJECTED

	Ix IN ⁴	Sx IN ³
ALUMINUM	7.4397	2.4092
STEEL	0.4333	0.3151
TOTAL		
Ix ALUM + Ix STL X 2.9	8.6963	



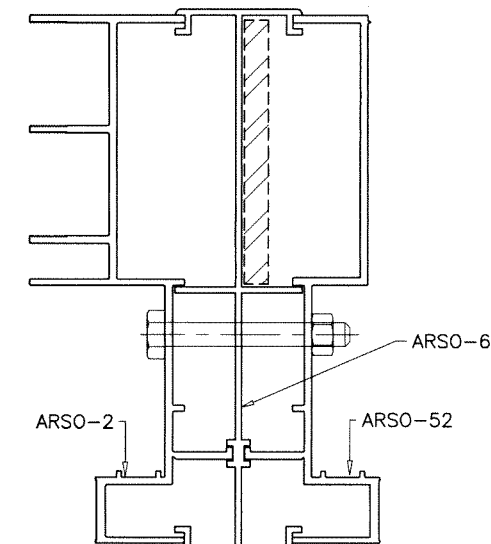
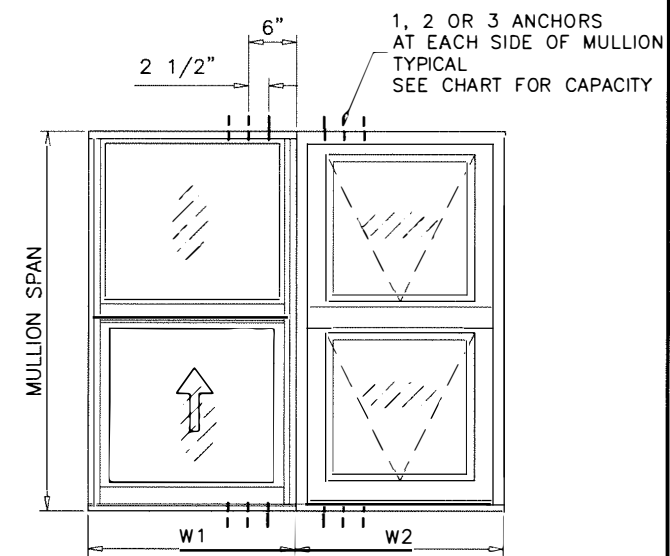
MULLION W/ REINF.
S.H. - PROJECTED

	Ix IN ⁴	Sx IN ³
ALUMINUM	8.1357	2.7845
STEEL	0.4333	0.3151
TOTAL		
Ix ALUM + Ix STL X 2.9	9.3923	



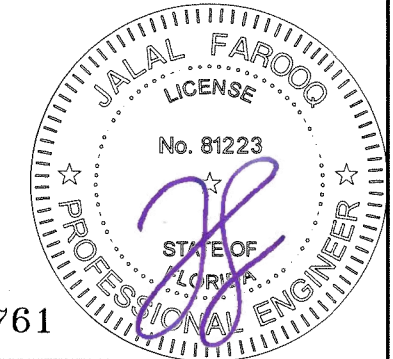
EXTERIOR
PROJECTED TO PROJECTED

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



EXTERIOR
S.H. TO PROJECTED

CUSTOM MULLION
SERIES 540 FRAMES



Sealed: 12/13/2023

FL #17761

SEE SHEET 10 OF 10 FOR ANCHORING DETAILS

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MULLION M15-05SAT

UNCLIPPED ALUM ZERO & TUBE MULLION

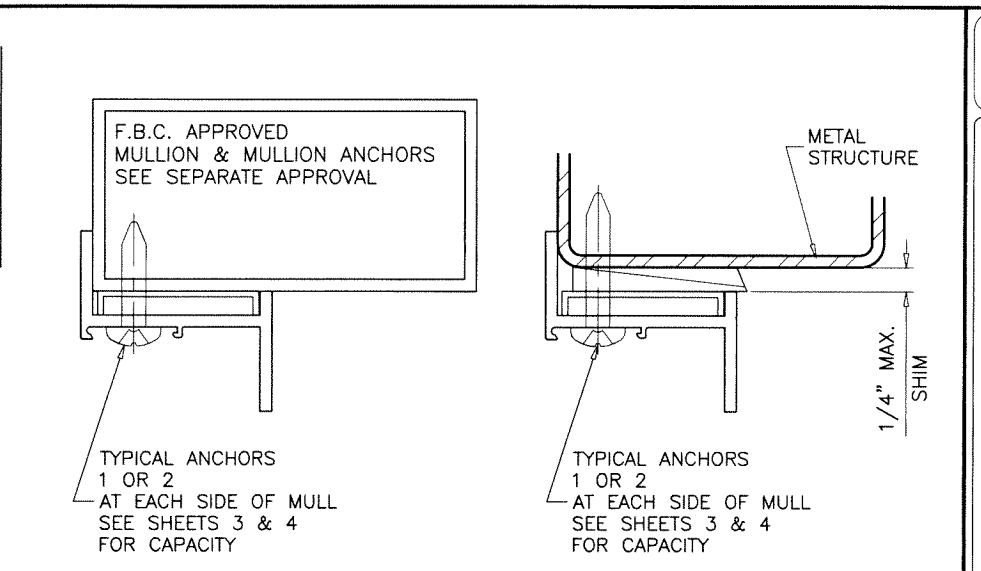
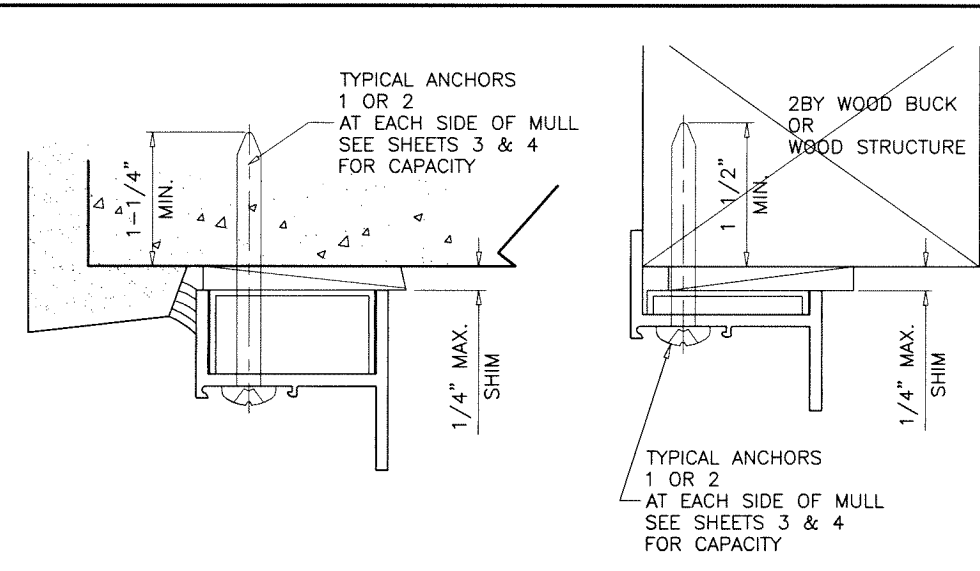
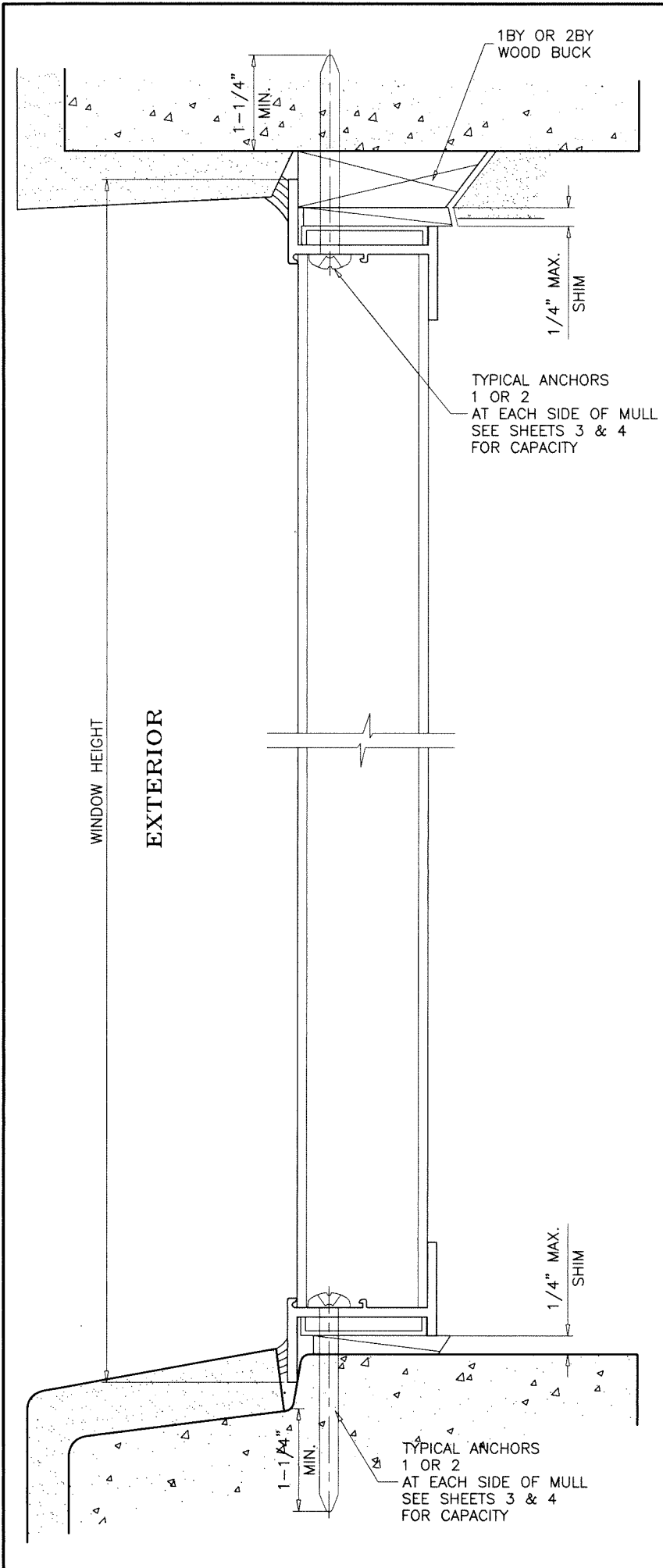
SOL-A-TROL ALUMINUM PRODUCTS
4101 N.W. 132ND STREET
MIAMI, FL. 33054
TEL. (305) 681-2020 FAX. (305) 681-2035

revisions:

no	date	by	description

date: 04-29-15
scale: 1/2" = 1"
dr. by: HAMID
chk. by:

drawing no.
M15-05
sheet 7 of 10



FLANGE AND EQUAL LEG FRAMES CAN BE USED AT ALL ANCHORAGE CONDITIONS.

WOOD BUCKS AND METAL STRUCTURE NOT BY 'SOL-A-TROL' MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING
1/4" DIA. ULTRACON+ BY 'DEWALT' ($F_u=164$ KSI, $F_y=148$ KSI)
 INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
 1-1/2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY WOOD BUCKS INTO CONC. OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
 DIRECTLY INTO CONCRETE OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)

1/4" DIA. TEKS OR SELF-DRILLING SCREWS (GRADE 5 CRS)
 INTO METAL STRUCTURES (HEAD/SILL/JAMBS)
 (3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
 ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
 STEEL: 1/8" THK. MIN. ($F_y = 36$ KSI MIN.)
 (STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

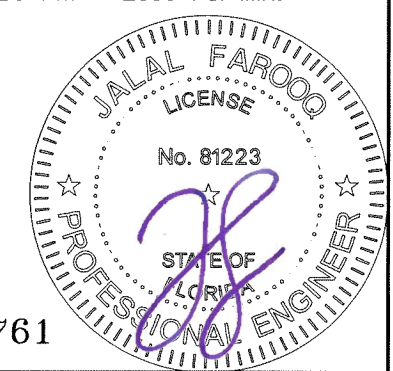
CRITICAL EDGE DISTANCE
 INTO CONCRETE AND BLOCKS = 2-1/2" MIN.
 INTO WOOD STRUCTURE = 1" MIN.
 INTO METAL STRUCTURE = 3/4" MIN.

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 BLOCK AT JAMBS $f'_m = 2000$ PSI MIN.

ZERO MULLION
 TUBE MULLION
 SERIES 3000/3062 FRAMES

Sealed: 12/13/2023

FL #17761





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UNCLIPPED ALUM ZERO & TUBE MULLION

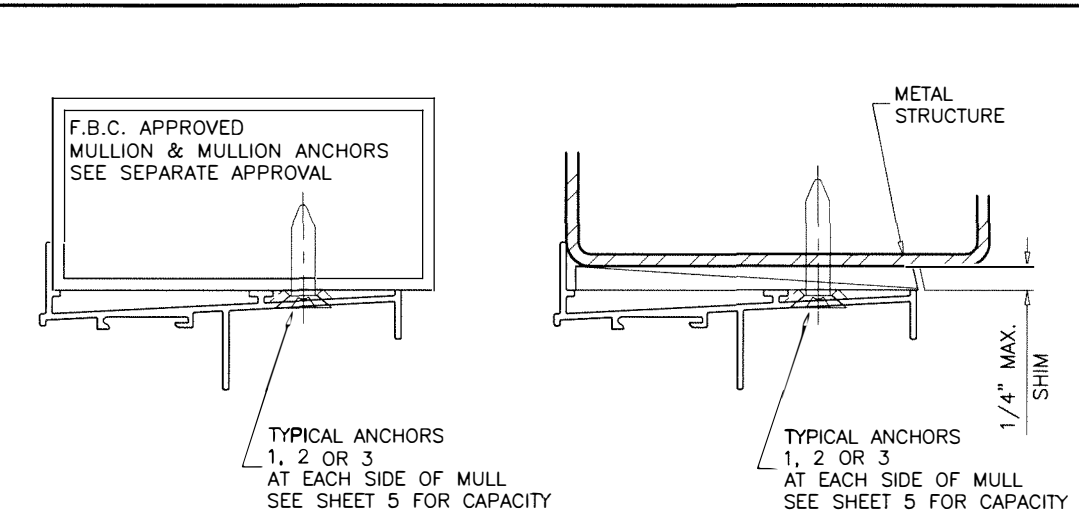
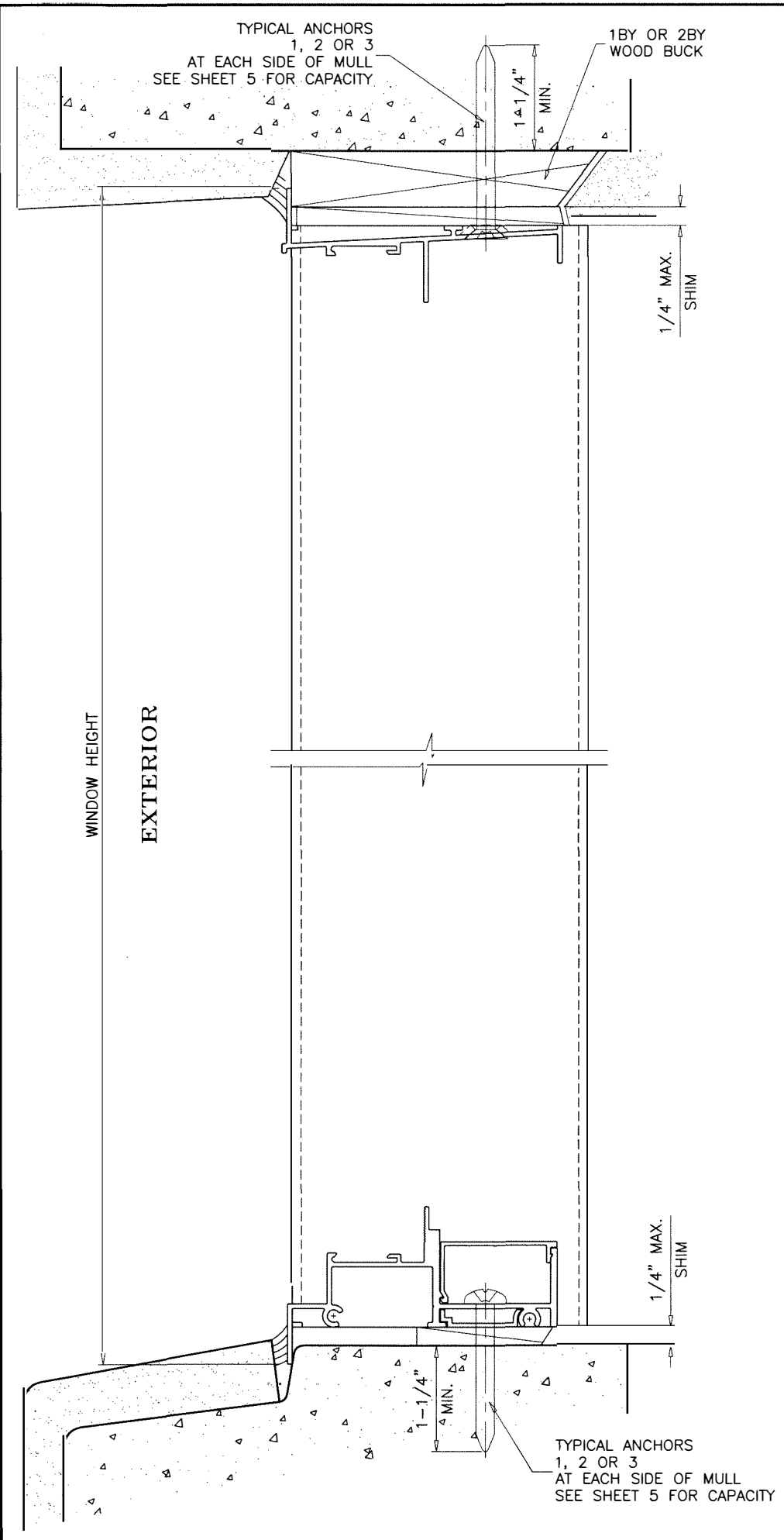
SOL-A-TROL ALUMINUM PRODUCTS
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 MIAMI, FL. 33054
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MULLION M15-05SAT

revisions:	
no	date by description

date: 04-29-15	scale: 1/2" = 1"	dr. by: TARIQ	chk. by:	
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drawing no.	sheet
M15-05	8 of 10



WOOD BUCKS AND METAL STRUCTURE NOT BY 'SOL-A-TROL'
MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM
AND TRANSFER THEM TO THE BUILDING STRUCTURE.

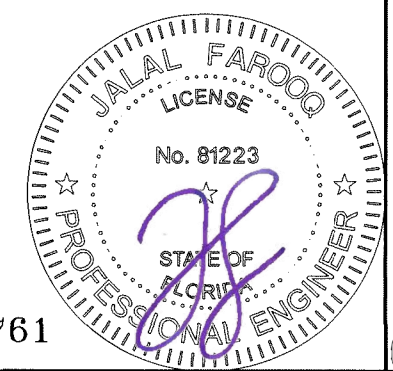
TYPICAL ANCHORS: SEE ELEV. FOR SPACING
1/4" DIA. ULTRACON+ BY 'DEWALT' ($F_u=164$ KSI, $F_y=148$ KSI)
 INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
 1-1/2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY WOOD BUCKS INTO CONC. OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
 DIRECTLY INTO CONCRETE OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
1/4" DIA. TEKS OR SELF-DRILLING SCREWS (GRADE 5 CRS)
 INTO METAL STRUCTURES (HEAD/SILL/JAMBS)
 (3) THREADS MIN. TO EXTEND BEYOND METAL THICKNESS
 ALUMINUM: 1/8" THK. MIN. (6063-T5 MIN.)
 STEEL: 1/8" THK. MIN. ($F_y = 36$ KSI MIN.)
 (STEEL IN CONTACT WITH ALUMINUM TO BE PLATED OR PAINTED)

CRITICAL 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 BLOCK AT JAMBS $f'_m = 2000$ PSI MIN.

Sealed: 12/13/2023

TUBE MULLION
SERIES 535 FRAMES

FL #17761





AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
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UNCLIPPED ALUM ZERO & TUBE MULLION

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 MIAMI, FL. 33054
 TEL. (305) 681-2020 FAX. (305) 681-2035

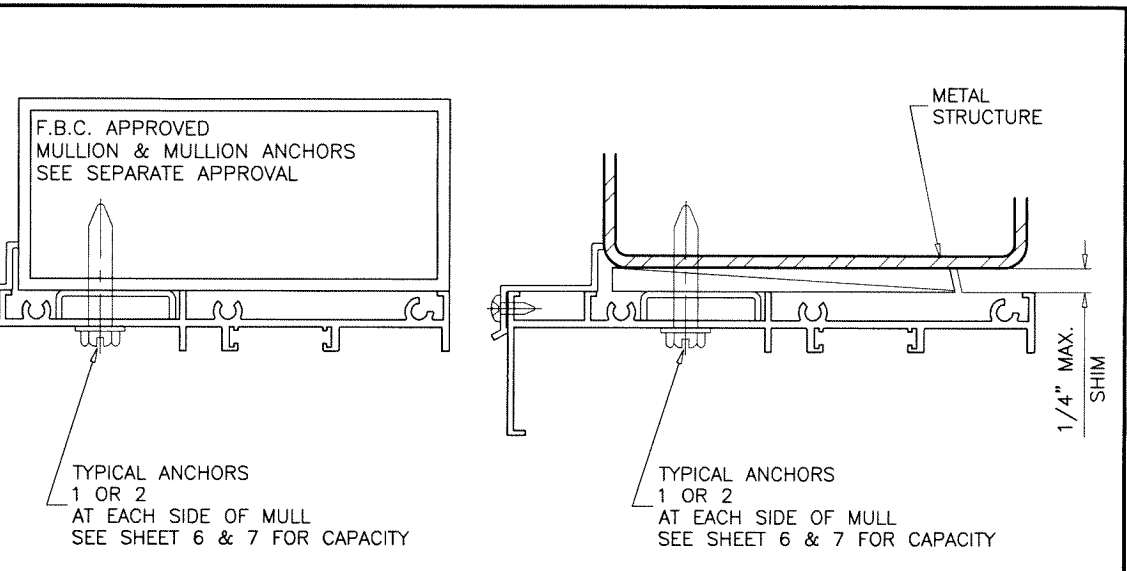
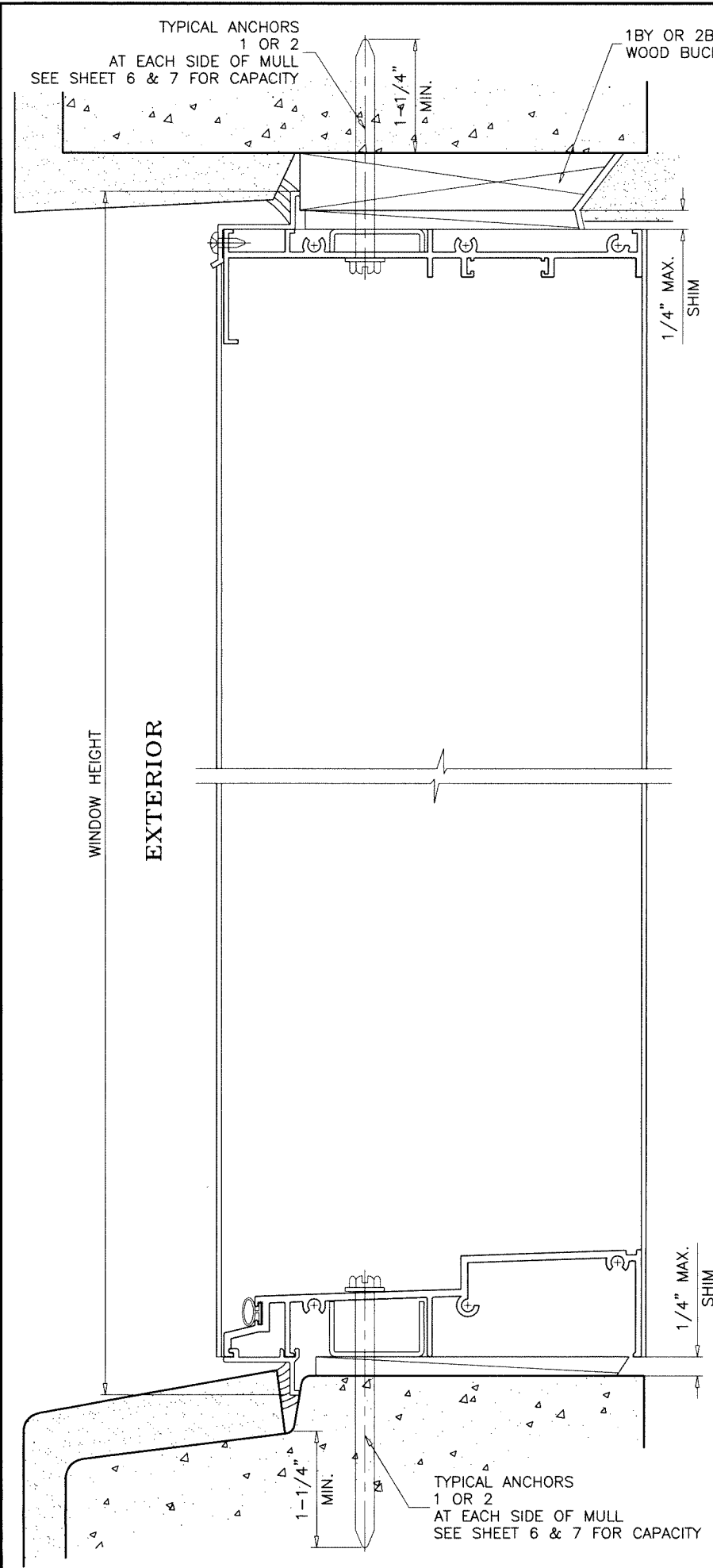
revisions:

no	date	by	description

date: 04-29-15
 scale: 1/2" = 1"
 dr. by: TARIQ
 chk. by:

drawing no.
M15-05

sheet 9 of 10



WOOD BUCKS AND METAL STRUCTURE NOT BY 'SOL-A-TROL' MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO THE BUILDING STRUCTURE.

TYPICAL ANCHORS: SEE ELEV. FOR SPACING
1/4" DIA. ULTRACON+ BY 'DEWALT' (Fu=164 KSI, Fy=148 KSI)
 INTO 2BY WOOD BUCKS OR WOOD STRUCTURES
 1-1/2" MIN. PENETRATION INTO WOOD (HEAD/SILL/JAMBS)
 THRU 1BY OR 2BY WOOD BUCKS INTO CONC. OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)
 DIRECTLY INTO CONCRETE OR BLOCKS
 1-1/4" MIN. EMBED INTO CONCRETE (HEAD/SILL/JAMBS)
 1-1/4" MIN. EMBED INTO BLOCKS (JAMBS)

1/4" DIA. TEKS OR SELF-DRILLING SCREWS (GRADE 5 CRS)
 INTO METAL STRUCTURES (HEAD/SILL/JAMBS)
 (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)

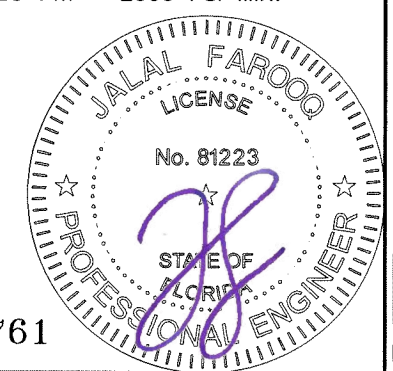
CRITICAL EDGE DISTANCE
 INTO CONCRETE AND BLOCKS = 2-1/2" MIN.
 INTO WOOD STRUCTURE = 1" MIN.
 INTO METAL STRUCTURE = 3/4" MIN.

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 BLOCK AT JAMBS f'm = 2000 PSI MIN.

Sealed: 12/13/2023

CUSTOM MULLION
 SERIES 540 FRAMES

FL #17761



AL-FAROOQ CORPORATION
 ENGINEERS & PRODUCT DEVELOPMENT
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MULLION\M15-05SAT

UNCLIPPED ALUM ZERO & TUBE MULLION

SOL-A-TROL ALUMINUM PRODUCTS
 4101 N.W. 132ND STREET
 MIAMI, FL. 33054
 TEL. (305) 681-2020 FAX. (305) 681-2035

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