



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, FL 33175  
T (786) 315-2590 F (786) 315-2599

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

### Gopi Glass Sales & Services Corp.

7450 NW 41<sup>st</sup> Street

Miami, FL 33166

#### SCOPE:

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

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

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

#### DESCRIPTION: Clipped, Extruded Aluminum Tube Mullion – L.M.I.

**APPROVAL DOCUMENT:** Drawing No. **M95-16**, titled "Aluminum Tube Mullions", sheets 1 through 8 of 8, dated 12/05/95, with revision with revision **K** dated 12/28/20, 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, city, state, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

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

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

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

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

This NOA **revises and renews NOA# 18-0319.06** and consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

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



*S.Z.*  
05/13/2021

NOA No. 21-0122.08  
Expiration Date: March 28, 2027  
Approval Date: May 13, 2021  
Page 1

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**1. EVIDENCE SUBMITTED UNDER PREVIOUS NOA's**

**A. DRAWINGS**

1. Manufacturer's die drawings and sections.
2. Drawing No **M95-16**, titled "Aluminum Tube Mullions", sheets 1 through 8 of 8, dated 12/05/95, with revision **J** dated 02/28/18, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P. E.

**B. TESTS**

1. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94  
2) Large Missile Impact Test per FBC, TAS 201-94  
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of aluminum fixed windows mulled together, prepared by Fenestration Testing Laboratory, Inc., verification Test Report No. **FTL-5378**, dated 10/04/07, signed and sealed by Michael R. Wenzel, P.E. *(Submitted under NOA No. 06-0210.07)*
2. Test reports on: 1) Air Infiltration Test, per TAS 202-94  
2) Uniform Static Air Pressure Test, Loading per TAS 202-94  
3) Water Resistance Test, per TAS 202-94  
4.) Large Missile Impact Test, FBC TAS 201-94  
5.) Cyclic Loading Test, per FBC TAS 203-94  
along with marked-up drawings and installation diagram of two mulled side-by-side series 510 aluminum fixed window, prepared by Hurricane Engineering & Testing Lab, Inc., Test Report No. **HETI-02-1145B** dated 04/30/02, signed and sealed by Hector M. Medina, P.E. *(For reference only) (Submitted under NOA No. 02-0826.03)*
3. Test reports on: 1) Uniform Static Air Pressure Test, Loading per PA 202-94  
along with installation diagram of window prepared by Hurricane Engineering & Testing Inc., Test Report No. **HETI-96-512**, dated 02/02/96 signed and sealed by Hector M. Medina, P.E. *(Submitted under NOA No. 99-0331.02)*

**C. CALCULATIONS**

1. Anchor verification calculations and structural analysis, complying with **FBC 6<sup>th</sup> Edition (2017)**, dated 02/28/2018, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. None.



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Sifang Zhao, P.E.  
Product Control Examiner  
NOA No. 21-0122.08  
Expiration Date: March 28, 2027  
Approval Date: May 13, 2021

**Gopi Glass Sales & Services Corp.**

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**F. STATEMENTS**

1. Statement letter of conformance, complying with **FBC 6<sup>th</sup> Edition (2017)**, and of no financial interest, dated February 27, 2018, issued by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P.E.

**G. OTHERS**

1. NOA No. **16-1116.02**, issued to Gopi Glass Sales & Services Corp. for their Clipped, Extruded Aluminum Tube Mullion - L.M.I.", approved on 03/16/17 and expiring on 03/28/22.

**2. NEW EVIDENCE SUBMITTED**

**A. DRAWINGS**

1. Drawing No **M95-16**, titled "Aluminum Tube Mullions", sheets 1 through 8 of 8, dated 12/05/95, with revision **K** dated 12/28/20, 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. None.

**F. STATEMENTS**

1. Statement letter of conformance, complying with **FBC 7<sup>th</sup> Edition (2020)**, and of no financial interest, dated 01/04/2021, issued by Al-Farooq Corporation, signed and sealed by Jalal Farooq, P.E.

**G. OTHERS**

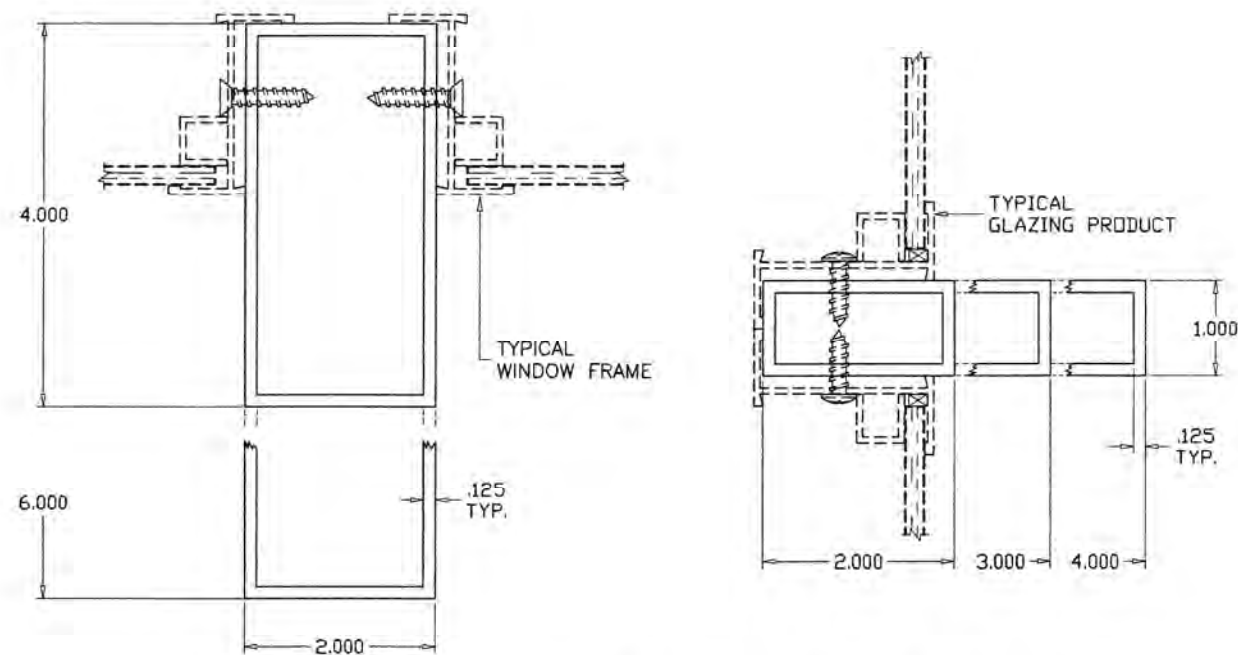
1. NOA No. **18-0319.06**, issued to Gopi Glass Sales & Services Corp. for their Clipped, Extruded Aluminum Tube Mullion - L.M.I.", approved on 05/10/2018 and expiring on 03/28/22.



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Sifang Zhao, P.E.  
Product Control Examiner  
NOA No. 21-0122.08  
Expiration Date: March 28, 2027  
Approval Date: May 13, 2021





### MULLIONS CONTAINING TYPICAL GLAZING PRODUCTS HORIZONTAL OR VERTICAL

SEE WINDOW OR DOOR APPROVAL FOR FASTENERS SIZES AND SPACING

ALL MULLIONS 6063-T6 MIN.

### RECTANGULAR ALUMINUM TUBE MULLIONS USING MULLION PROPERTIES ONLY

#### NOTES:

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2020 (7TH 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 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.

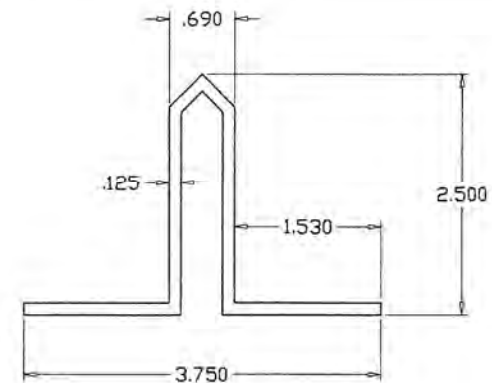
DESIGN LOADS SHOWN ARE BASED ON 'ALLOWABLE STRESS DESIGN (ASD)'

MULLION SYSTEM IS RATED FOR LARGE & SMALL MISSILE IMPACT, AND CAN BE USED WITH ALL MIAMI-DADE COUNTY APPROVED IMPACT AND NON-IMPACT RESISTANT PRODUCTS.

#### INSTRUCTIONS:

USE CHARTS AND GRAPHS AS FOLLOWS.

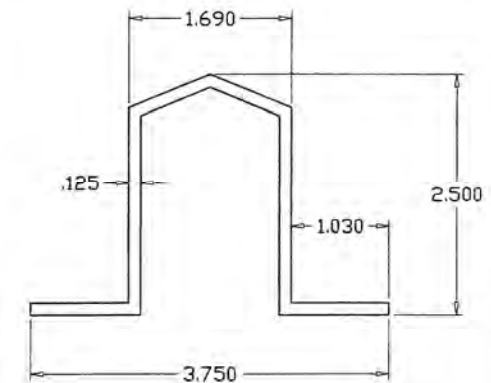
- STEP 1** DETERMINE DESIGN LOAD REQUIRED PER ASCE 7 FOR PARTICULAR OPENING.
  - STEP 2** USE MIAMI-DADE COUNTY APPROVED GLAZING PRODUCTS MEETING ABOVE LOAD REQUIREMENTS.
  - STEP 3** USE CONNECTION TO MULLION AS PER PRODUCT APPROVAL.
  - STEP 4** USING CHARTS ON SHEET 2 SELECT MULLION SIZE WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
  - STEP 5** USING ANCHOR TYPES ON SHEETS 6 THRU 8 AND ANCHOR CHARTS ON SHEET 3 THRU 5 SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.
- LOWER VALUES FROM GLAZING PRODUCTS, MULLION CHARTS OR ANCHOR CHARTS WILL APPLY TO ENTIRE SYSTEM.



#### MULLION CLIP (6063-T6)

(ALT. TO ANGLES)

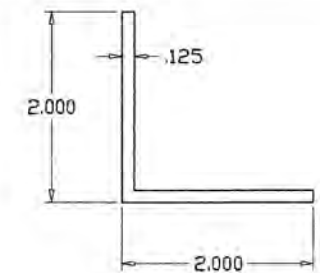
CLIP LENGTHS MUST BE CUT TO FIT SNUG INTO TUBE MULLIONS.



#### MULLION CLIP (6063-T6)

(ALT. TO ANGLES)

CLIP LENGTHS MUST BE CUT TO FIT SNUG INTO TUBE MULLIONS.



#### ANGLE CLIP (6063-T6)

**PRODUCT REVISED**  
as complying with the Florida Building Code

NOA-No. **21-0122.08**

Expiration Date **03/28/2027**

By   
Miami-Dade Product Control



JAN 12 2021

**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
9360 SUNSET DRIVE, SUITE 220  
MIAMI, FLORIDA 33173 (C.A.N. 353B)  
TEL. (305) 264-8100 FAX. (305) 262-6978  
MULLION M95-16GG

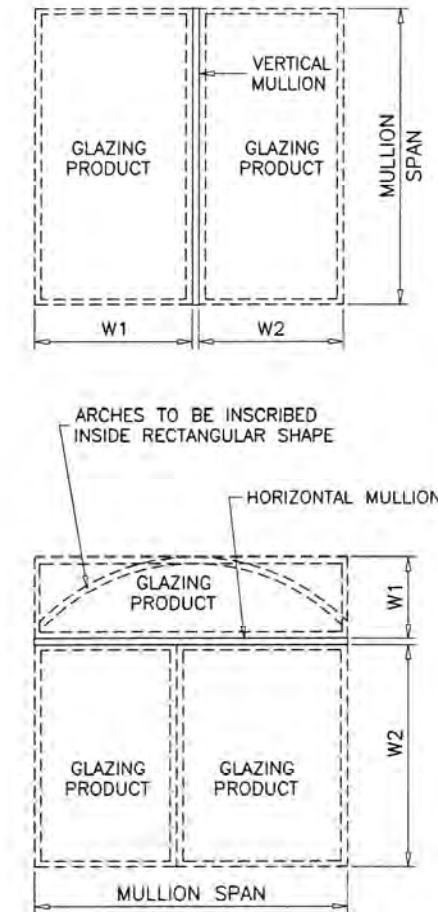
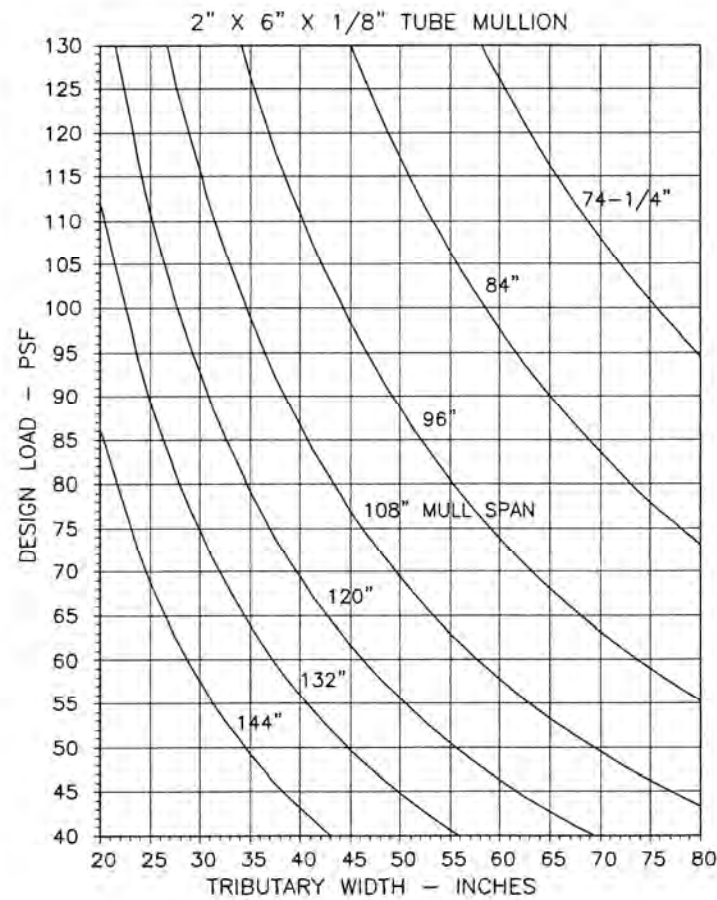
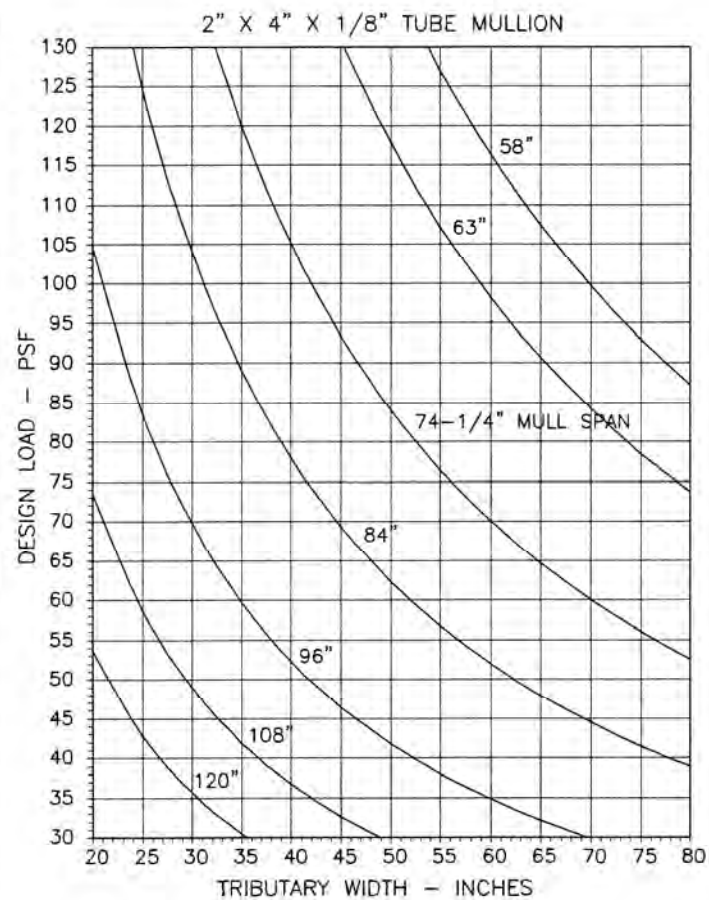
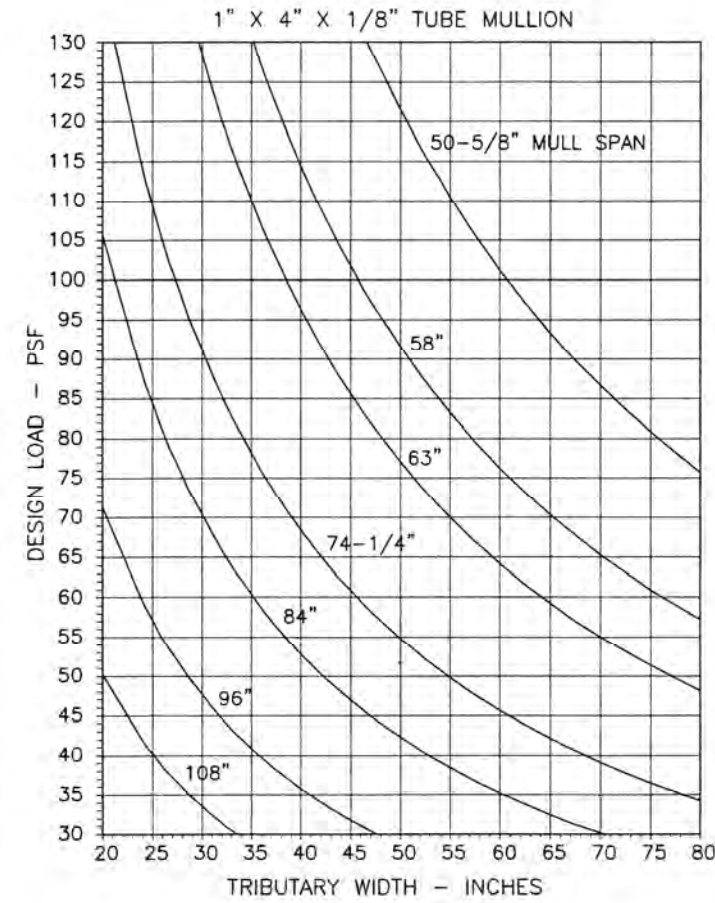
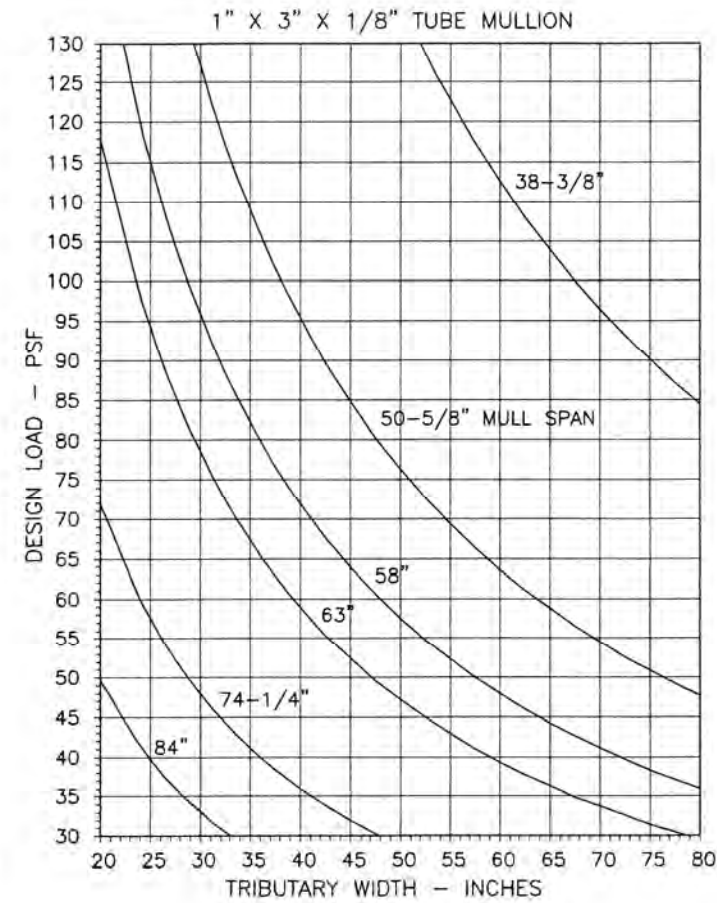
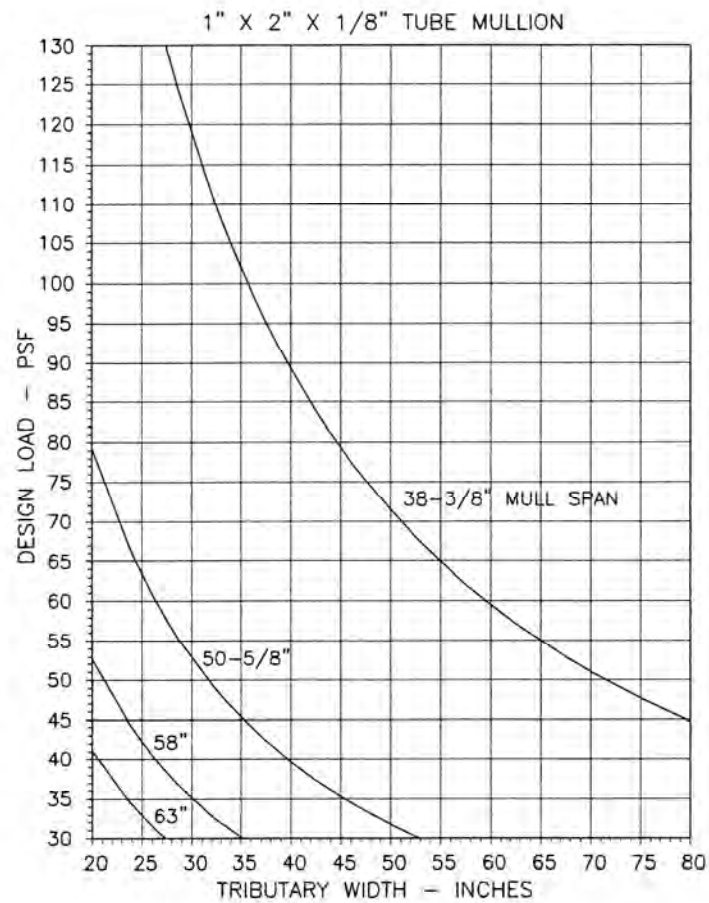
ALUMINUM TUBE MULLIONS  
**Gopi Glass Sales & Services Corp.**  
7450 N.W. 41 STREET  
MIAMI, FL. 33166  
TEL. (305) 592-2089 FAX. (305) 477-0992

revisions:	no	date	by	description
	G	06.12.14		UPDATED TO 2014 FBC
	H	11.07.16		EDITORIAL CHANGES
	I	02.25.17		REV. PER RER COMMENTS
	J	02.28.18		UPDATED TO 2017 FBC
	K	12.28.20		UPDATED TO 2020 FBC

date: 12-05-95	scale: 1/2" = 1"	dr. by: TARIO	chk. by:
drawing no. <b>M95-16</b>			
sheet 1 of 8			





#### TYPICAL MULLION ARRANGEMENTS

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

**PRODUCT REVISED**  
as complying with the Florida  
Building Code

NOA-No. **21-0122.08**

Expiration Date **03/28/2027**

By   
**Miami-Dade Product Control**

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



JAN 1 2 2021

MULLIONS

**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\M95-16GG

ALUMINUM TUBE MULLIONS

**Gopi Glass Sales & Services Corp.**  
7450 N.W. 41 STREET  
MIAMI, FL. 33166  
TEL. (305) 592-2089 FAX. (305) 477-0992

revisions:	no	date	by	description
	G	06.12.14		NO CHANGE THIS SHEET
	H	11.07.16		EDITORIAL CHANGES
	I	02.25.17		REV. PER RER COMMENTS
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	K	12.28.20		UPDATED TO 2020 FBC

date: 12-05-95	scale: 1/2" = 1"	dr. by: TARIQ	chk. by:
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drawing no.

**M95-16**

sheet 2 of 8

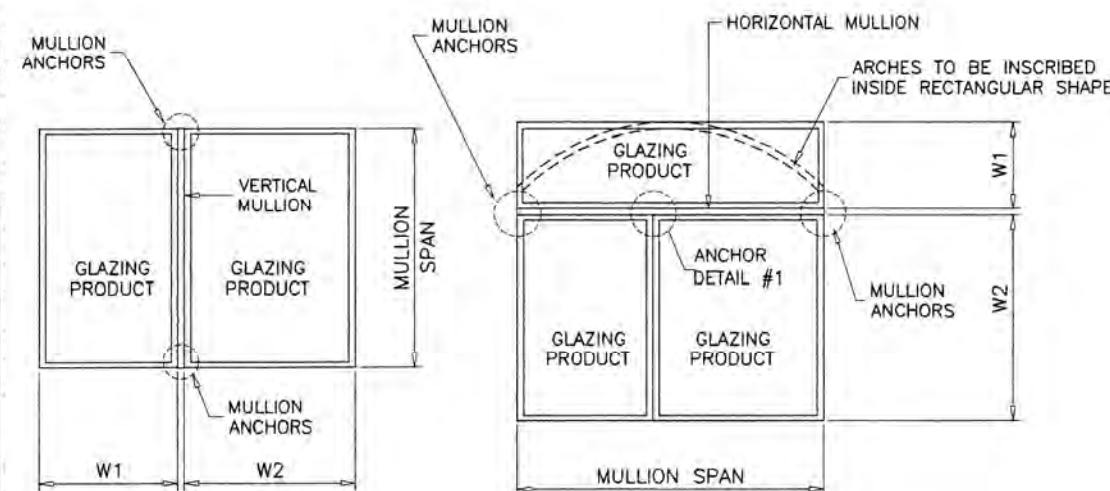


DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W2	B2	C2/M2
20"	50-5/8"	130.0	107.0	130.0
25"		120.1	85.6	130.0
30"		100.1	71.3	130.0
35"		85.8	61.1	126.8
40"		75.1	53.5	110.9
45"		66.7	47.5	98.6
50"		60.1	42.8	88.7
55"		54.6	38.9	80.7
60"		50.1	35.7	74.0
65"		46.2	32.9	68.3
70"		42.9	30.6	63.4
75"		40.0	28.5	59.2
80"		37.5	26.7	55.5
85"		35.3	25.2	52.2
20"	58"	130.0	93.4	130.0
25"		104.9	74.7	130.0
30"		87.4	62.2	129.1
35"		74.9	53.3	110.7
40"		65.5	46.7	96.8
45"		58.3	41.5	86.1
50"		52.4	37.3	77.5
55"		47.7	33.9	70.4
60"		43.7	31.1	64.6
65"		40.3	28.7	59.6
70"		37.5	26.7	55.3
75"		35.0	24.9	51.6
80"		32.8	23.3	48.4
85"		30.8	22.0	45.6
20"	63"	120.7	85.9	130.0
25"		96.5	68.8	130.0
30"		80.5	57.3	118.9
35"		69.0	49.1	101.9
40"		60.3	43.0	89.1
45"		53.6	38.2	79.2
50"		48.3	34.4	71.3
55"		43.9	31.3	64.8
60"		40.2	28.6	59.4
65"		37.1	26.4	54.9
70"		34.5	24.6	50.9
75"		32.2	22.9	47.5
80"		30.2	21.5	44.6
85"		28.4	20.2	41.9
20"	74-1/4"	102.4	72.9	130.0
25"		81.9	58.3	121.0
30"		68.3	48.6	100.8
35"		58.5	41.7	86.4
40"		51.2	36.5	75.6
45"		45.5	32.4	67.2
50"		41.0	29.2	60.5
55"		37.2	26.5	55.0
60"		34.1	24.3	50.4
65"		31.5	22.4	46.5
70"		29.3	20.8	43.2
75"		27.3	-	40.3
80"		25.6	-	37.8
85"		24.1	-	35.6

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W2	B2	C2/M2
20"	84"	90.5	64.5	130.0
25"		72.4	51.6	107.0
30"		60.3	43.0	89.1
35"		51.7	36.8	76.4
40"		45.3	32.2	66.9
45"		40.2	28.6	59.4
50"		36.2	25.8	53.5
55"		32.9	23.4	48.6
60"		30.2	21.5	44.6
65"		27.9	-	41.1
70"		25.9	-	38.2
75"		24.1	-	35.7
80"		22.6	-	33.4
85"		21.3	-	31.5
20"	96"	79.2	56.4	117.0
25"		63.4	45.1	93.6
30"		52.8	37.6	78.0
35"		45.3	32.2	66.9
40"		39.6	28.2	58.5
45"		35.2	25.1	52.0
50"		31.7	22.6	46.8
55"		28.8	20.5	42.5
60"		26.4	-	39.0
65"		24.4	-	36.0
70"		22.6	-	33.4
75"		21.1	-	31.2
80"		-	-	29.3
85"		-	-	27.5
20"	108"	70.4	50.1	104.0
25"		56.3	40.1	83.2
30"		46.9	33.4	69.3
35"		40.2	28.6	59.4
40"		35.2	25.1	52.0
45"		31.3	22.3	46.2
50"		28.2	20.1	41.6
55"		25.6	-	37.8
60"		23.5	-	34.7
65"		21.7	-	32.0
70"		20.1	-	29.7
75"		-	-	27.7
80"		-	-	26.0
85"		-	-	24.5
20"	120"	63.4	45.1	93.6
25"		50.7	36.1	74.9
30"		42.2	30.1	62.4
35"		36.2	25.8	53.5
40"		31.7	22.6	46.8
45"		28.2	20.1	41.6
50"		25.3	-	37.4
55"		23.0	-	34.0
60"		21.1	-	31.2
65"		-	-	28.8
70"		-	-	26.7
75"		-	-	25.0
80"		-	-	23.4
85"		-	-	22.0

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W2	B2	C2/M2
20"	132"	57.6	41.0	85.1
25"		46.1	32.8	68.1
30"		38.4	27.3	56.7
35"		32.9	23.4	48.6
40"		28.8	20.5	42.5
45"		25.6	-	37.8
50"		23.0	-	34.0
55"		20.9	-	30.9
60"		-	-	28.4
65"		-	-	26.2
70"		-	-	24.3
75"		-	-	22.7
80"		-	-	21.3
85"		-	-	20.0
20"	144"	52.8	37.6	78.0
25"		42.2	30.1	62.4
30"		35.2	25.1	52.0
35"		30.2	21.5	44.6
40"		26.4	-	39.0
45"		23.5	-	34.7
50"		21.1	-	31.2
55"		-	-	28.4
60"		-	-	26.0
65"		-	-	24.0
70"		-	-	22.3
75"		-	-	20.8

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



TYPICAL MULLION ARRANGEMENTS

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

ANCHORS

## 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

B2: THRU 1BY BUCKS INTO CONC. OR BLOCKS  
1-1/4" MIN. EMBED INTO CONCRETE  
1-3/4" MIN. EMBED INTO GROUT FILLED BLOCK

B2: DIRECTLY INTO GROUT FILLED BLOCK  
1-3/4" MIN. EMBED INTO BLOCK

C2: DIRECTLY INTO CONCRETE  
1-3/4" MIN. EMBED INTO CONCRETE

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

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 GROUT FILLED NORMAL WEIGHT BLOCK AT JAMBS f'm = 2000 PSI MIN.

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

(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)


**PRODUCT REVISED**  
as complying with the Florida  
Building Code

NOA-No. **21-0122.08**

Expiration Date **03/28/2027**

By   
Miami-Dade Product Control





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

ALUMINUM TUBE MULLIONS

**Gopi Glass Sales & Services Corp.**  
7450 N.W. 41 STREET  
MIAMI, FL. 33166  
TEL. (305) 592-2089 FAX. (305) 477-0992

revisions:

no	date	description
G	06.12.14	UPDATED TO 2014 FBC
H	11.07.16	EDITORIAL CHANGES
I	02.25.17	REV. PER PER COMMENTS
J	02.28.18	UPDATED TO 2017 FBC
K	12.28.20	UPDATED TO 2020 FBC

date: 12-05-95

scale: 1/2" = 1"

dr. by: TARIQ

chk. by:

drawing no.

**M95-16**

sheet 3 of 8



DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4.2	B4.2	C4.2
20"	50-5/8"	130.0	130.0	130.0
25"		130.0	113.8	130.0
30"		130.0	94.8	130.0
35"		130.0	81.3	130.0
40"		130.0	71.1	130.0
45"		130.0	63.2	130.0
50"		120.1	56.9	118.3
55"		109.2	51.7	107.6
60"		100.1	47.4	98.6
65"		92.4	43.8	91.0
70"		85.8	40.6	84.5
75"		80.1	37.9	78.9
80"		75.1	35.6	74.0
85"		70.7	33.5	69.6
20"	58"	130.0	124.1	130.0
25"		130.0	99.3	130.0
30"		130.0	82.8	130.0
35"		130.0	70.9	130.0
40"		130.0	62.1	129.1
45"		116.5	55.2	114.8
50"		104.9	49.7	103.3
55"		95.3	45.1	93.9
60"		87.4	41.4	86.1
65"		80.7	38.2	79.4
70"		74.9	35.5	73.8
75"		69.9	33.1	68.9
80"		65.5	31.0	64.6
85"		61.7	29.2	60.8
20"	63"	130.0	114.3	130.0
25"		130.0	91.4	130.0
30"		130.0	76.2	130.0
35"		130.0	65.3	130.0
40"		120.7	57.1	118.9
45"		107.3	50.8	105.7
50"		96.5	45.7	95.1
55"		87.8	41.6	86.4
60"		80.5	38.1	79.2
65"		74.3	35.2	73.1
70"		69.0	32.7	67.9
75"		64.4	30.5	63.4
80"		60.3	28.6	59.4
85"		56.8	26.9	55.9
20"	74-1/4"	130.0	97.0	130.0
25"		130.0	77.6	130.0
30"		130.0	64.6	130.0
35"		117.0	55.4	115.3
40"		102.4	48.5	100.8
45"		91.0	43.1	89.6
50"		81.9	38.8	80.7
55"		74.5	35.3	73.3
60"		68.3	32.3	67.2
65"		63.0	29.8	62.1
70"		58.5	27.7	57.6
75"		54.6	25.9	53.8
80"		51.2	24.2	50.4
85"		48.2	22.8	47.5

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4.2	B4.2	C4.2
20"	84"	130.0	85.7	130.0
25"		130.0	68.6	130.0
30"		120.7	57.1	118.9
35"		103.4	49.0	101.9
40"		90.5	42.9	89.1
45"		80.5	38.1	79.2
50"		72.4	34.3	71.3
55"		65.8	31.2	64.8
60"		60.3	28.6	59.4
65"		55.7	26.4	54.9
70"		51.7	24.5	50.9
75"		48.3	22.9	47.5
80"		45.3	21.4	44.6
85"		42.6	20.2	41.9
20"	96"	130.0	75.0	130.0
25"		126.7	60.0	124.8
30"		105.6	50.0	104.0
35"		90.5	42.9	89.1
40"		79.2	37.5	78.0
45"		70.4	33.3	69.3
50"		63.4	30.0	62.4
55"		57.6	27.3	56.7
60"		52.8	25.0	52.0
65"		48.7	23.1	48.0
70"		45.3	21.4	44.6
75"		42.2	20.0	41.6
80"		39.6	-	39.0
85"		37.3	-	36.7
20"	108"	130.0	66.7	130.0
25"		112.6	53.3	110.9
30"		93.9	44.4	92.4
35"		80.5	38.1	79.2
40"		70.4	33.3	69.3
45"		62.6	29.6	61.6
50"		56.3	26.7	55.5
55"		51.2	24.2	50.4
60"		46.9	22.2	46.2
65"		43.3	20.5	42.7
70"		40.2	-	39.6
75"		37.5	-	37.0
80"		35.2	-	34.7
85"		33.1	-	32.6
20"	120"	126.7	60.0	124.8
25"		101.4	48.0	99.8
30"		84.5	40.0	83.2
35"		72.4	34.3	71.3
40"		63.4	30.0	62.4
45"		56.3	26.7	55.5
50"		50.7	24.0	49.9
55"		46.1	21.8	45.4
60"		42.2	20.0	41.6
65"		39.0	-	38.4
70"		36.2	-	35.7
75"		33.8	-	33.3
80"		31.7	-	31.2
85"		29.8	-	29.4

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4.2	B4.2	C4.2
20"	132"	115.2	54.5	113.5
25"		92.2	43.6	90.8
30"		76.8	36.4	75.6
35"		65.8	31.2	64.8
40"		57.6	27.3	56.7
45"		51.2	24.2	50.4
50"		46.1	21.8	45.4
55"		41.9	-	41.3
60"		38.4	-	37.8
65"		35.4	-	34.9
70"		32.9	-	32.4
75"		30.7	-	30.3
80"		28.8	-	28.4
85"		27.1	-	26.7
20"	144"	105.6	50.0	104.0
25"		84.5	40.0	83.2
30"		70.4	33.3	69.3
35"		60.3	28.6	59.4
40"		52.8	25.0	52.0
45"		46.9	22.2	46.2
50"		42.2	20.0	41.6
55"		38.4	-	37.8
60"		35.2	-	34.7
65"		32.5	-	32.0
70"		30.2	-	29.7
75"		28.2	-	27.7
80"		26.4	-	26.0
85"		24.8	-	24.5

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

## 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

B4.2: THRU 1BY BUCKS INTO CONC. OR BLOCKS  
1-1/4" MIN. EMBED INTO CONCRETE  
1-3/4" MIN. EMBED INTO GROUT FILLED BLOCK

B4.2: DIRECTLY INTO GROUT FILLED BLOCK  
1-3/4" MIN. EMBED INTO BLOCK

C4.2: DIRECTLY INTO CONCRETE  
1-3/4" MIN. EMBED INTO CONCRETE

## TYPICAL EDGE DISTANCE

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

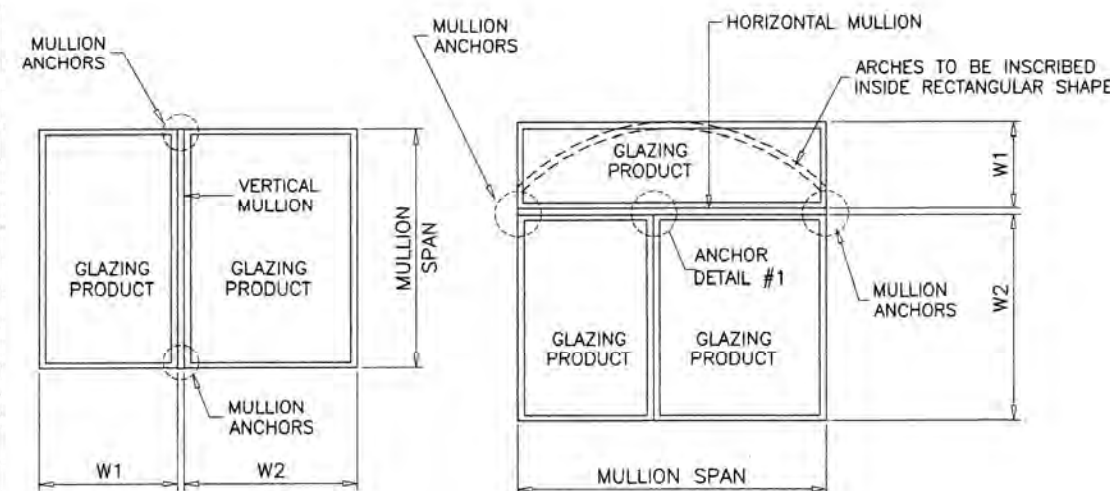
WOOD AT HEAD, SILL OR JAMBS SG = 0.55 MIN.

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

C-90 GROUT FILLED NORMAL WEIGHT BLOCK AT JAMBS f'm = 2000 PSI MIN.

NOTE:  
ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS  
AT HEAD, SILL OR JAMB ENDS.  
SEE SHEET 7 FOR ANCHOR DETAILS.

(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)



## TYPICAL MULLION ARRANGEMENTS

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

## ANCHORS

**PRODUCT REVISED**  
as complying with the Florida  
Building Code


NOA-No. **21-0122.08**

Expiration Date **03/28/2027**

By   
Miami-Dade Product Control



JAN 12 2021



**AL-FAROOQ CORPORATION**  
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no	date	by	description
1	02.25.17	J	REV. PER PER COMMENTS
2	02.28.18	J	UPDATED TO 2017 FBC
3	12.28.20	K	UPDATED TO 2020 FBC

date: 12-05-95

scale: 1/2" = 1"

dr. by: TARIQ

chk. by:

drawing no.

**M95-16**

sheet 4 of 8

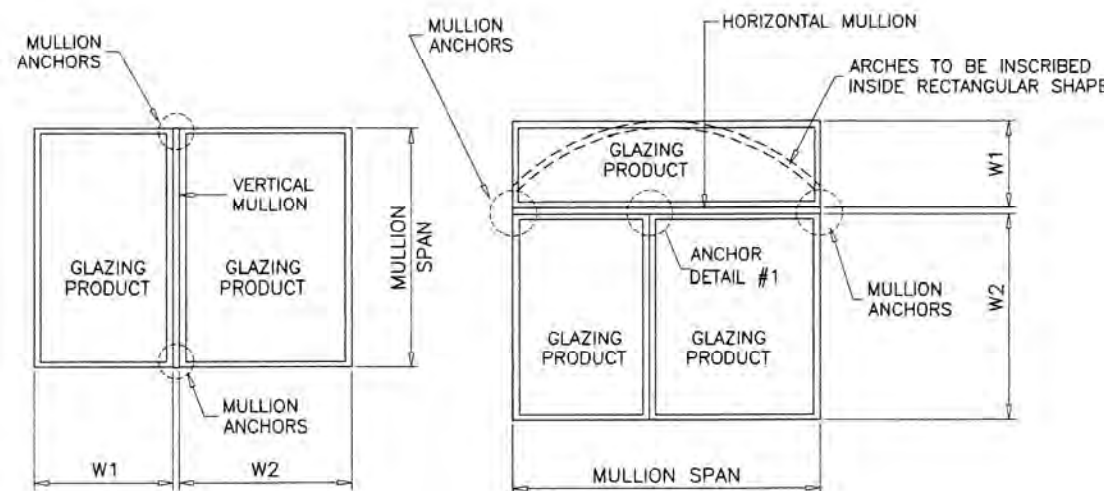


DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4.3	B4.3	C4.3/M4.3
20"	50-5/8"	130.0	130.0	130.0
25"		130.0	130.0	130.0
30"		130.0	130.0	130.0
35"		130.0	122.2	130.0
40"		130.0	107.0	130.0
45"		130.0	95.1	130.0
50"		120.1	85.6	130.0
55"		109.2	77.8	130.0
60"		100.1	71.3	130.0
65"		92.4	65.8	130.0
70"		85.8	61.1	126.8
75"		80.1	57.0	118.3
80"		75.1	53.5	110.9
85"		70.7	50.3	104.4
20"	58"	130.0	130.0	130.0
25"		130.0	130.0	130.0
30"		130.0	124.5	130.0
35"		130.0	106.7	130.0
40"		130.0	93.4	130.0
45"		116.5	83.0	130.0
50"		104.9	74.7	130.0
55"		95.3	67.9	130.0
60"		87.4	62.2	129.1
65"		80.7	57.4	119.2
70"		74.9	53.3	110.7
75"		69.9	49.8	103.3
80"		65.5	46.7	96.8
85"		61.7	43.9	91.1
20"	63"	130.0	130.0	130.0
25"		130.0	130.0	130.0
30"		130.0	114.6	130.0
35"		130.0	98.2	130.0
40"		120.7	85.9	130.0
45"		107.3	76.4	130.0
50"		96.5	68.8	130.0
55"		87.8	62.5	129.7
60"		80.5	57.3	118.9
65"		74.3	52.9	109.7
70"		69.0	49.1	101.9
75"		64.4	45.8	95.1
80"		60.3	43.0	89.1
85"		56.8	40.4	83.9
20"	74-1/4"	130.0	130.0	130.0
25"		130.0	116.7	130.0
30"		130.0	97.2	130.0
35"		117.0	83.3	130.0
40"		102.4	72.9	130.0
45"		91.0	64.8	130.0
50"		81.9	58.3	121.0
55"		74.5	53.0	110.0
60"		68.3	48.6	100.8
65"		63.0	44.9	93.1
70"		58.5	41.7	86.4
75"		54.6	38.9	80.7
80"		51.2	36.5	75.6
85"		48.2	34.3	71.2

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4.3	B4.3	C4.3/M4.3
20"	84"	130.0	128.9	130.0
25"		130.0	103.1	130.0
30"		120.7	85.9	130.0
35"		103.4	73.7	130.0
40"		90.5	64.5	130.0
45"		80.5	57.3	118.9
50"		72.4	51.6	107.0
55"		65.8	46.9	97.2
60"		60.3	43.0	89.1
65"		55.7	39.7	82.3
70"		51.7	36.8	76.4
75"		48.3	34.4	71.3
80"		45.3	32.2	66.9
85"		42.6	30.3	62.9
20"	96"	130.0	112.8	130.0
25"		126.7	90.2	130.0
30"		105.6	75.2	130.0
35"		90.5	64.5	130.0
40"		79.2	56.4	117.0
45"		70.4	50.1	104.0
50"		63.4	45.1	93.6
55"		57.6	41.0	85.1
60"		52.8	37.6	78.0
65"		48.7	34.7	72.0
70"		45.3	32.2	66.9
75"		42.2	30.1	62.4
80"		39.6	28.2	58.5
85"		37.3	26.5	55.1
20"	108"	130.0	100.3	130.0
25"		112.6	80.2	130.0
30"		93.9	66.8	130.0
35"		80.5	57.3	118.9
40"		70.4	50.1	104.0
45"		62.6	44.6	92.4
50"		56.3	40.1	83.2
55"		51.2	36.5	75.6
60"		46.9	33.4	69.3
65"		43.3	30.9	64.0
70"		40.2	28.6	59.4
75"		37.5	26.7	55.5
80"		35.2	25.1	52.0
85"		33.1	23.6	48.9
20"	120"	126.7	90.2	130.0
25"		101.4	72.2	130.0
30"		84.5	60.2	124.8
35"		72.4	51.6	107.0
40"		63.4	45.1	93.6
45"		56.3	40.1	83.2
50"		50.7	36.1	74.9
55"		46.1	32.8	68.1
60"		42.2	30.1	62.4
65"		39.0	27.8	57.6
70"		36.2	25.8	53.5
75"		33.8	24.1	49.9
80"		31.7	22.6	46.8
85"		29.8	21.2	44.0

DESIGN LOAD CAPACITY - PSF				
WINDOW DIMS.		ANCHORS TYPE		
WIDTH (W)	MULL SPAN	W4.3	B4.3	C4.3/M4.3
20"	132"	115.2	82.0	130.0
25"		92.2	65.6	130.0
30"		76.8	54.7	113.5
35"		65.8	46.9	97.2
40"		57.6	41.0	85.1
45"		51.2	36.5	75.6
50"		46.1	32.8	68.1
55"		41.9	29.8	61.9
60"		38.4	27.3	56.7
65"		35.4	25.2	52.4
70"		32.9	23.4	48.6
75"		30.7	21.9	45.4
80"		28.8	20.5	42.5
85"		27.1	-	40.0
20"	144"	105.6	75.2	130.0
25"		84.5	60.2	124.8
30"		70.4	50.1	104.0
35"		60.3	43.0	89.1
40"		52.8	37.6	78.0
45"		46.9	33.4	69.3
50"		42.2	30.1	62.4
55"		38.4	27.3	56.7
60"		35.2	25.1	52.0
65"		32.5	23.1	48.0
70"		30.2	21.5	44.6
75"		28.2	20.1	41.6
80"		26.4	-	39.0
85"		24.8	-	36.7

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



TYPICAL MULLION ARRANGEMENTS

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

ANCHORS

## 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

B4.3: THRU 1BY BUCKS INTO CONC. OR BLOCKS  
1-1/4" MIN. EMBED INTO CONCRETE  
1-3/4" MIN. EMBED INTO GROUT FILLED BLOCK

B4.3: DIRECTLY INTO GROUT FILLED BLOCK  
1-3/4" MIN. EMBED INTO BLOCK

C4.3: DIRECTLY INTO CONCRETE  
1-3/4" MIN. EMBED INTO CONCRETE

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

M4.3: 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 GROUT FILLED NORMAL WEIGHT BLOCK AT JAMBS f'm = 2000 PSI MIN.

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

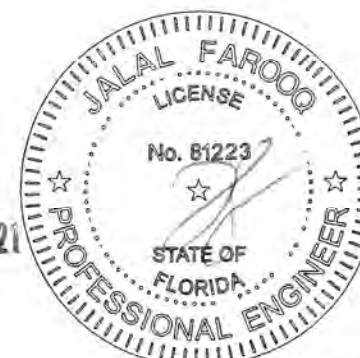
(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

**PRODUCT REVISED**  
as complying with the Florida  
Building Code


NOA-No. **21-0122.08**

Expiration Date **03/28/2027**

By   
Miami-Dade Product Control



JAN 1 2 2021



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ENGINEERS & PRODUCT DEVELOPMENT  
9360 SUNSET DRIVE, SUITE 220  
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ALUMINUM TUBE MULLIONS

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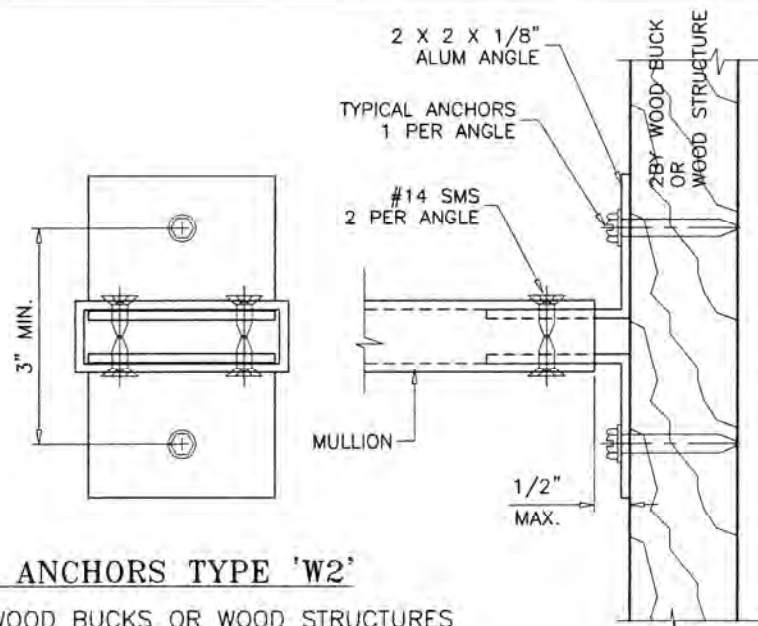
revisions:

no	date	by	description
1	02.25.17	J	REV. PER RER COMMENTS
2	02.28.18	J	UPDATED TO 2017 FBC
3	12.28.20	K	UPDATED TO 2020 FBC

date: 12-05-95  
scale: 1/2" = 1"  
dr. by: TARIO  
chk. by:

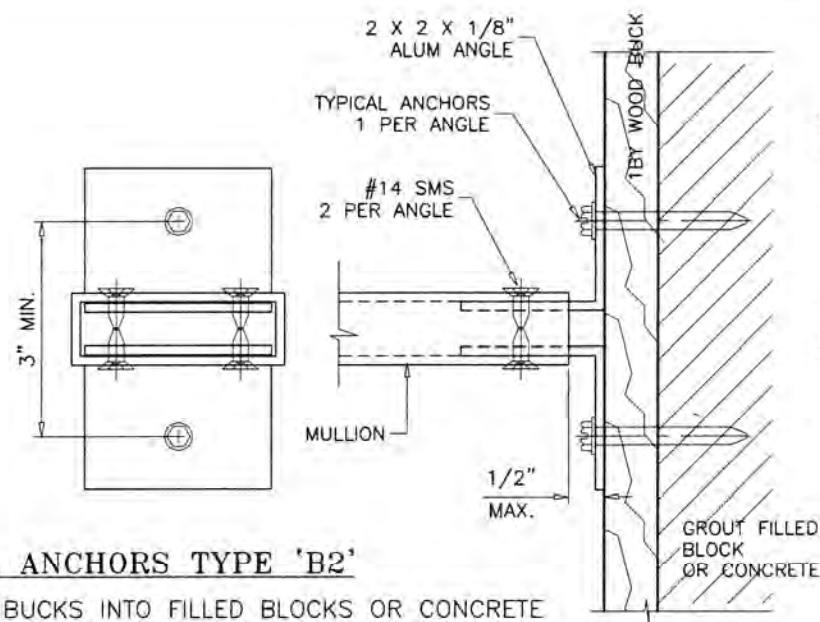
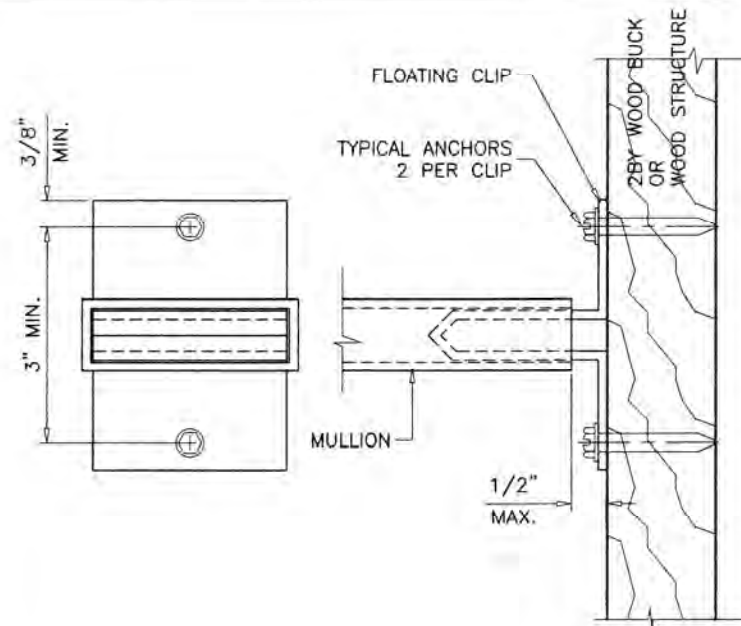
drawing no.  
**M95-16**  
sheet 5 of 8





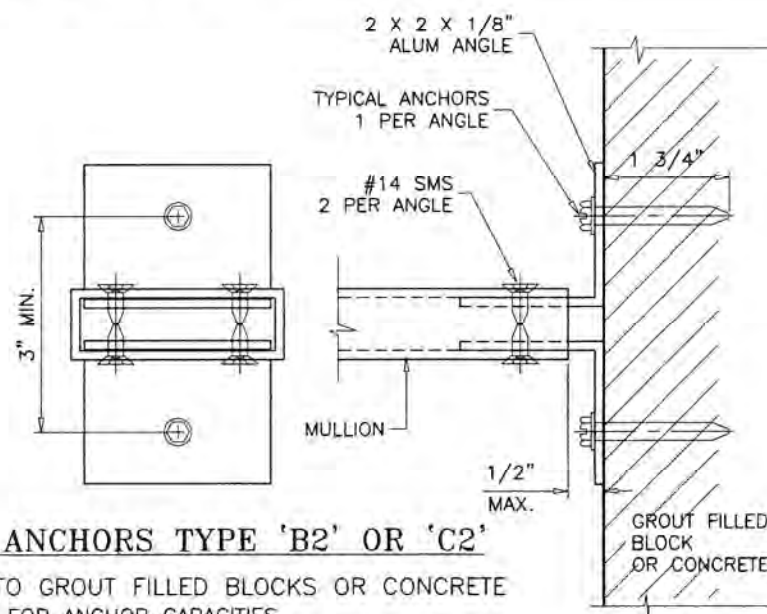
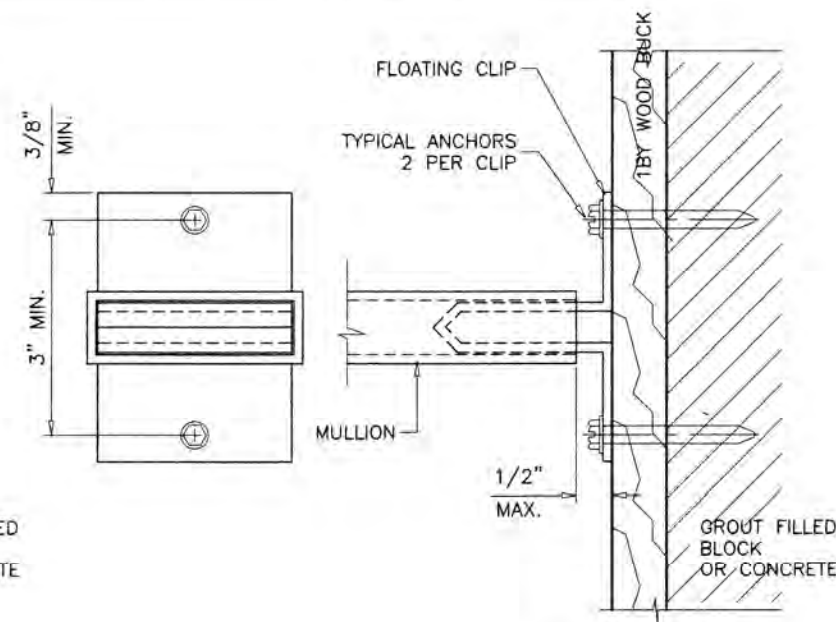
### TYPICAL ANCHORS TYPE 'W2'

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES  
SEE SHEET 6 FOR ANCHOR CAPACITIES



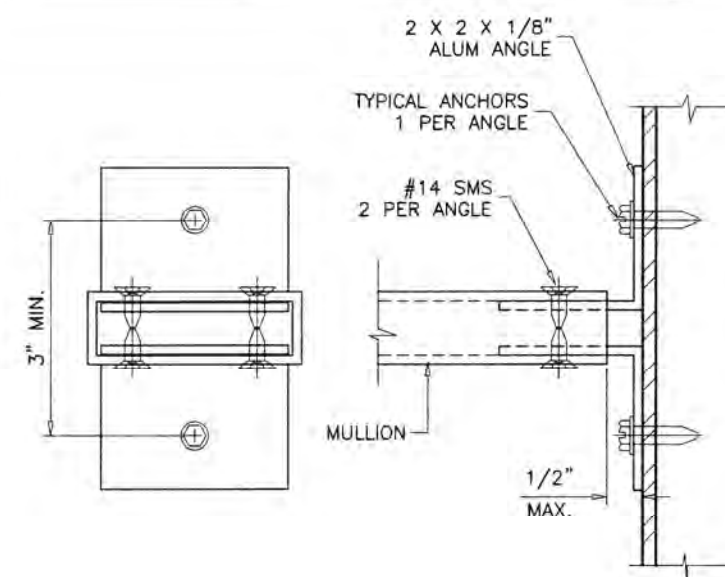
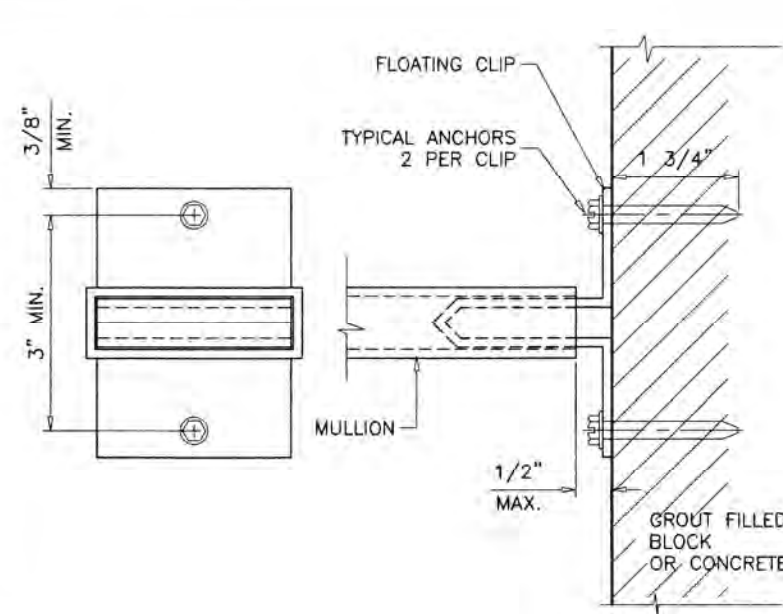
### TYPICAL ANCHORS TYPE 'B2'

THRU 1BY BUCKS INTO FILLED BLOCKS OR CONCRETE  
SEE SHEET 6 FOR ANCHOR CAPACITIES



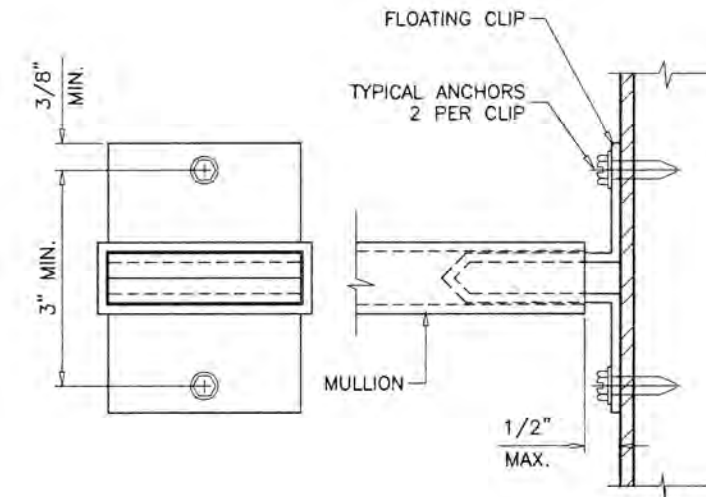
### TYPICAL ANCHORS TYPE 'B2' OR 'C2'

DIRECTLY INTO GROUT FILLED BLOCKS OR CONCRETE  
SEE SHEET 3 FOR ANCHOR CAPACITIES



### TYPICAL ANCHORS TYPE 'M2'

INTO METAL STRUCTURES  
SEE SHEET 3 FOR ANCHOR CAPACITIES



ALL CLIPS AND ANGLES TO FIT SNUG INTO TUBE MULLIONS.  
CLIPS OR ANGLES CONNECTED DIRECTLY TO MASONRY TO BE PROTECTED  
WITH ALKALI-RESISTANT COATINGS, SUCH AS BITUMINOUS PAINT OR  
WATER-WHITE METHACRYLATE LACQUER.

**PRODUCT REVISED**  
as complying with the Florida  
Building Code  
NOA-No. **21-0122.08**  
Expiration Date **03/28/2027**  
By **JALAL FAROOQ**  
Miami-Dade Product Control

JAN 12 2021



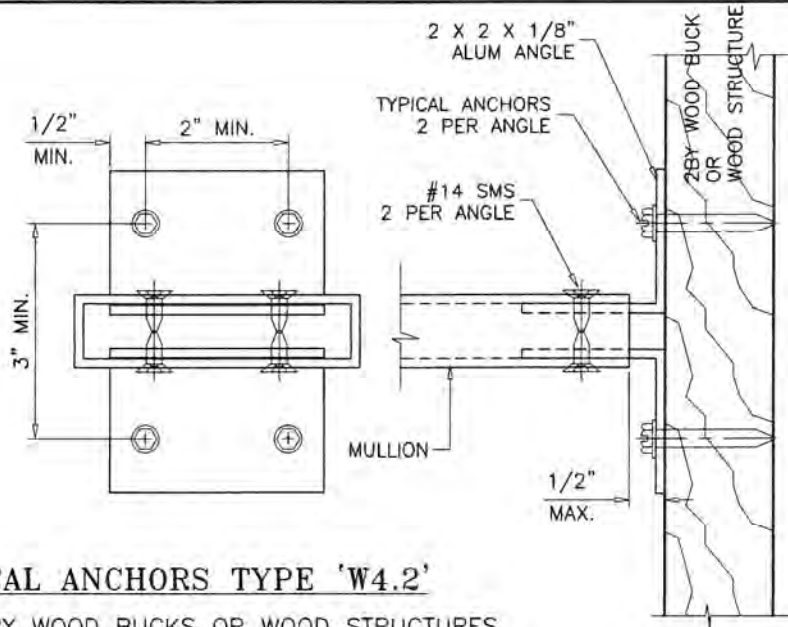
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
9360 SUNSET DRIVE, SUITE 220  
MIAMI, FLORIDA 33173  
TEL. (305) 264-8100 FAX. (305) 262-6978  
(C.A.N. 3538)

**ALUMINUM TUBE MULLIONS**  
**Gopi Glass Sales & Services Corp.**  
7450 N.W. 41 STREET  
MIAMI, FL. 33166  
TEL. (305) 592-2089 FAX. (305) 477-0992

revisions:	no.	date	by	description
	G	06.12.14		NO CHANGE THIS SHEET
	H	11.07.16		EDITORIAL CHANGES
	I	02.25.17		REV. PER PER COMMENTS
	J	02.28.18		UPDATED TO 2017 FBC
	K	12.28.20		UPDATED TO 2020 FBC

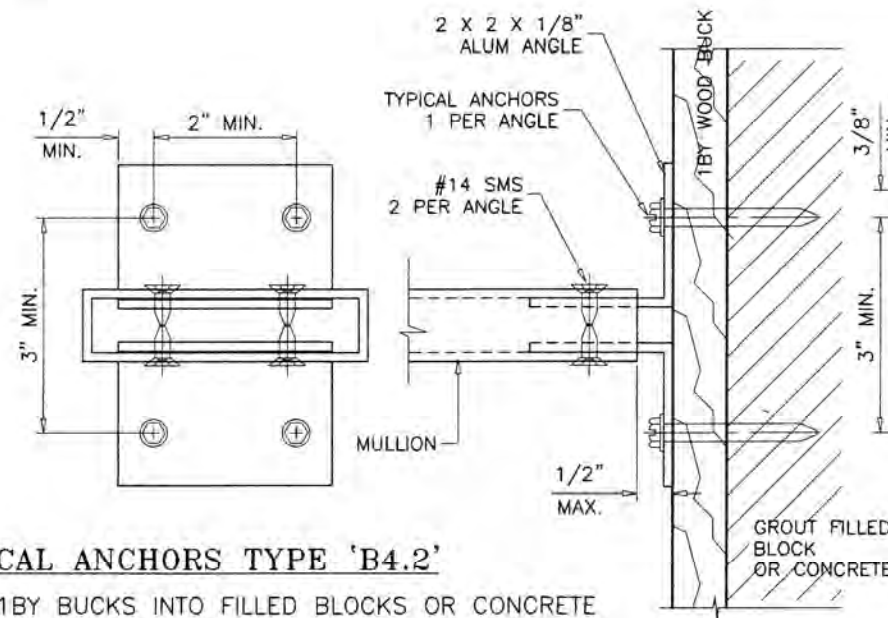
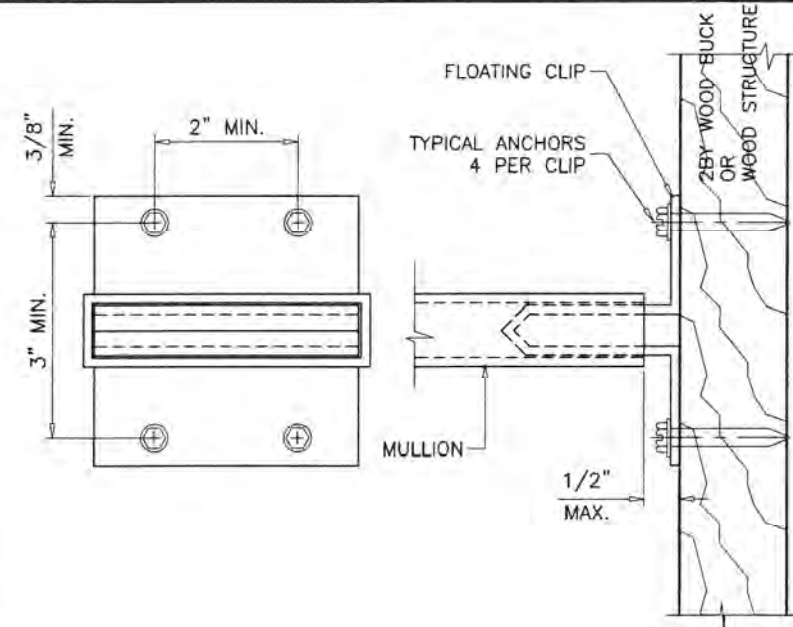
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chk. by:  
drawing no.  
**M95-16**  
sheet 6 of 8





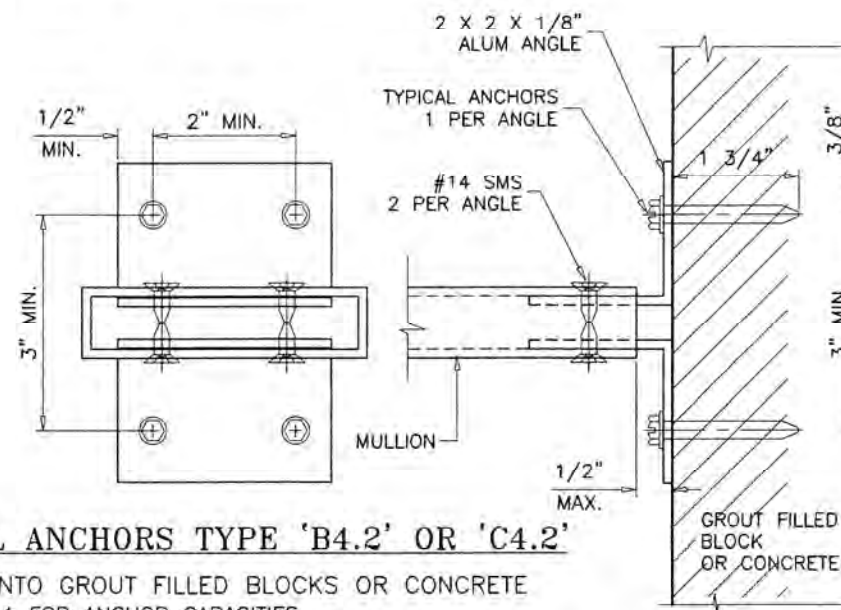
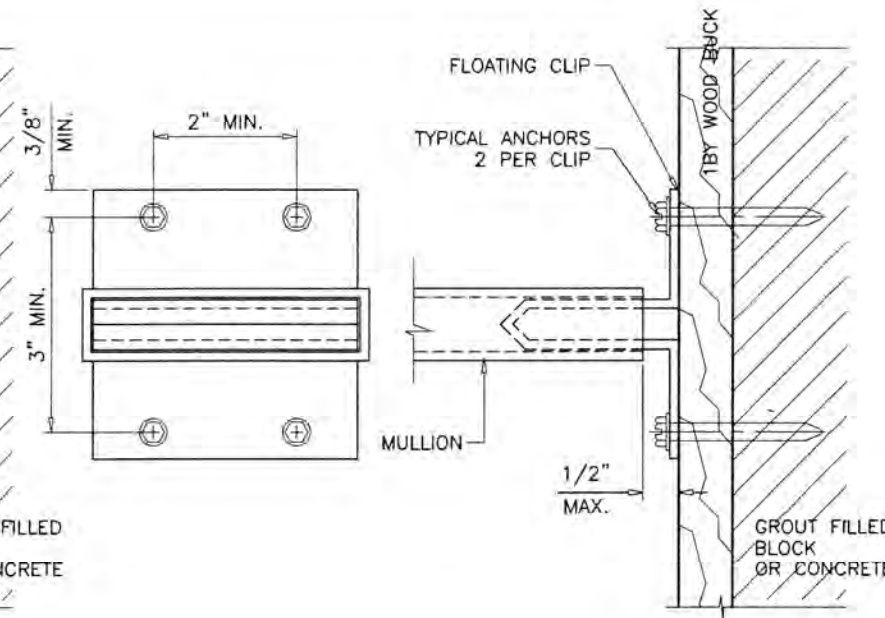
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INTO 2BY WOOD BUCKS OR WOOD STRUCTURES  
SEE SHEET 6 FOR ANCHOR CAPACITIES



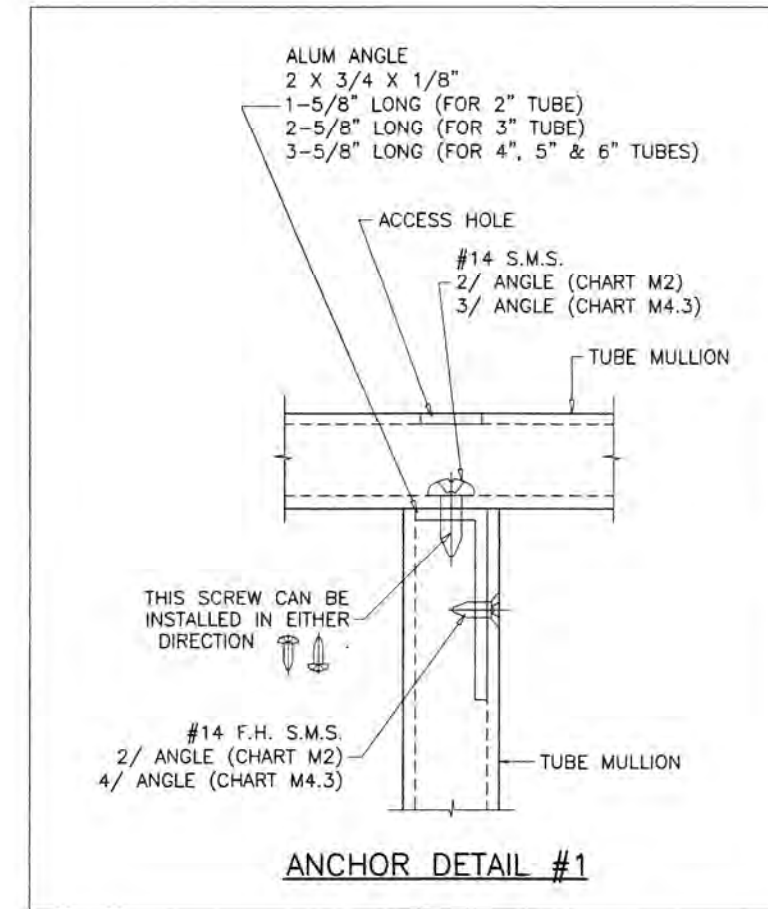
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THRU 1BY BUCKS INTO FILLED BLOCKS OR CONCRETE  
SEE SHEET 6 FOR ANCHOR CAPACITIES



### TYPICAL ANCHORS TYPE 'B4.2' OR 'C4.2'

DIRECTLY INTO GROUT FILLED BLOCKS OR CONCRETE  
SEE SHEET 4 FOR ANCHOR CAPACITIES



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WITH ALKALI-RESISTANT COATINGS, SUCH AS BITUMINOUS PAINT OR  
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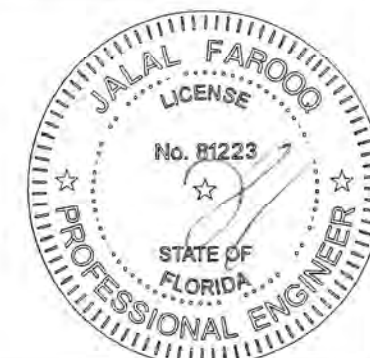
**PRODUCT REVISED**  
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Expiration Date **03/28/2027**

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(C.A.N. 353B)  
MULLION M95-16GG

ALUMINUM TUBE MULLIONS  
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	J	02.28.18	UPDATED TO 2017 FBC	
	K	12.28.20	UPDATED TO 2020 FBC	

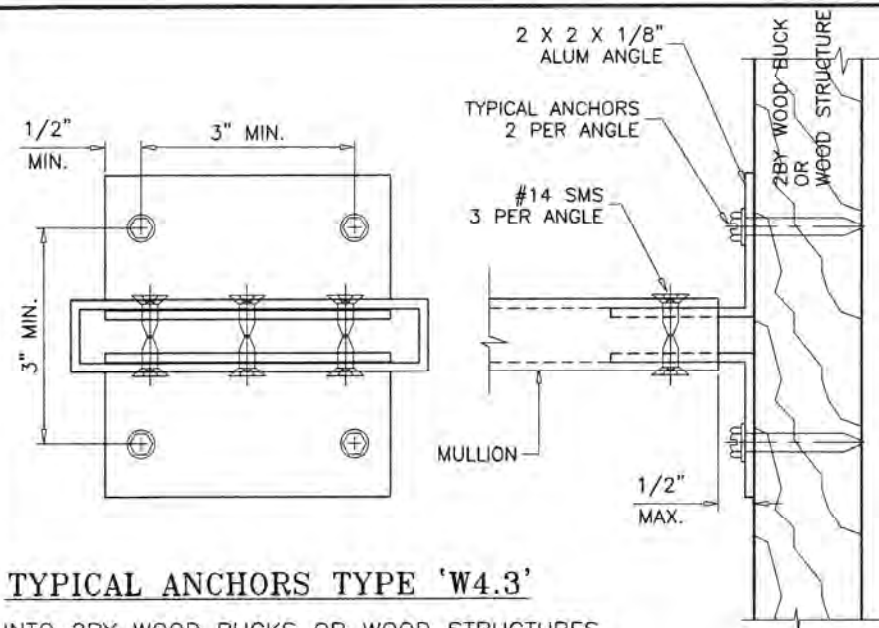
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chk. by:

drawing no.

M95-16

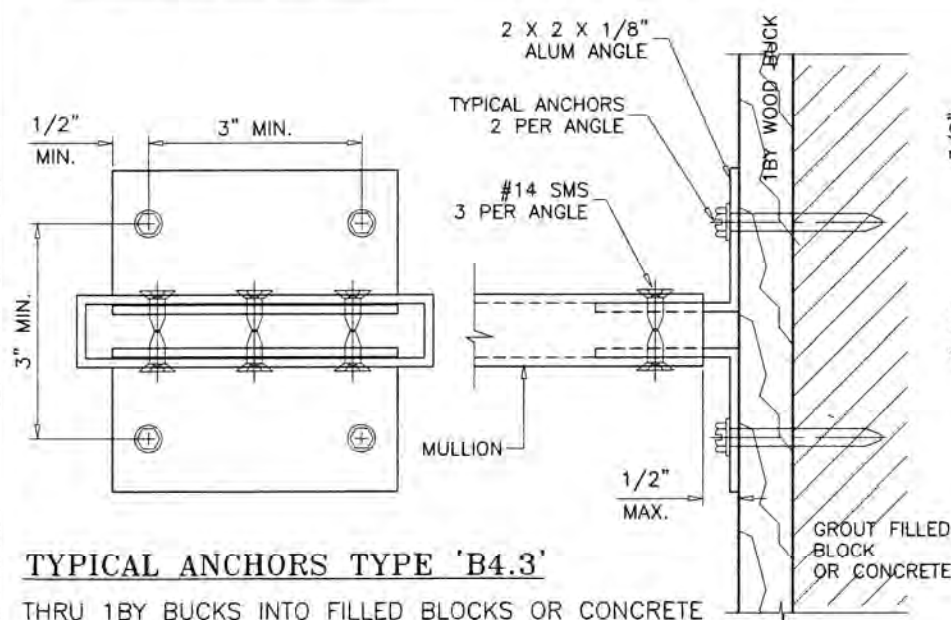
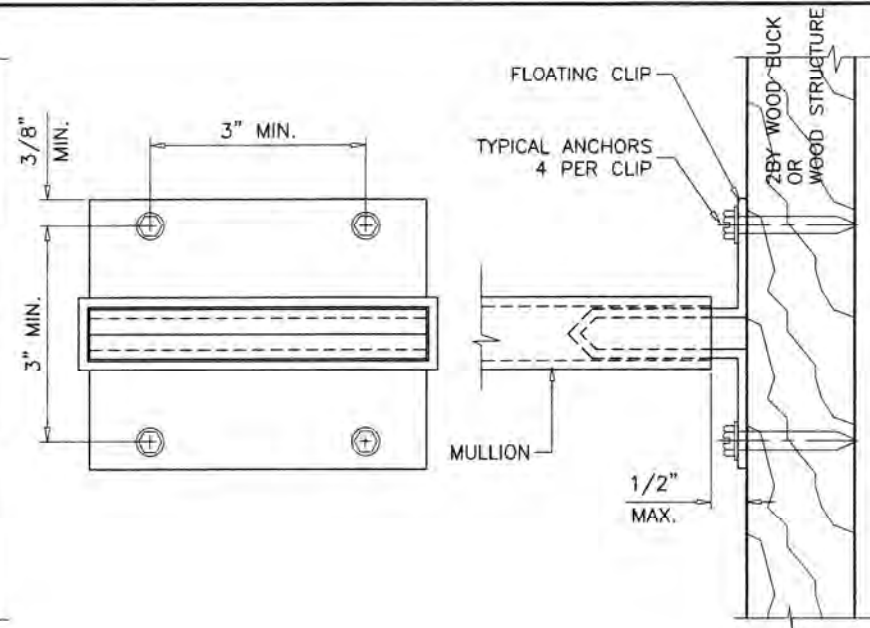
sheet 7 of 8





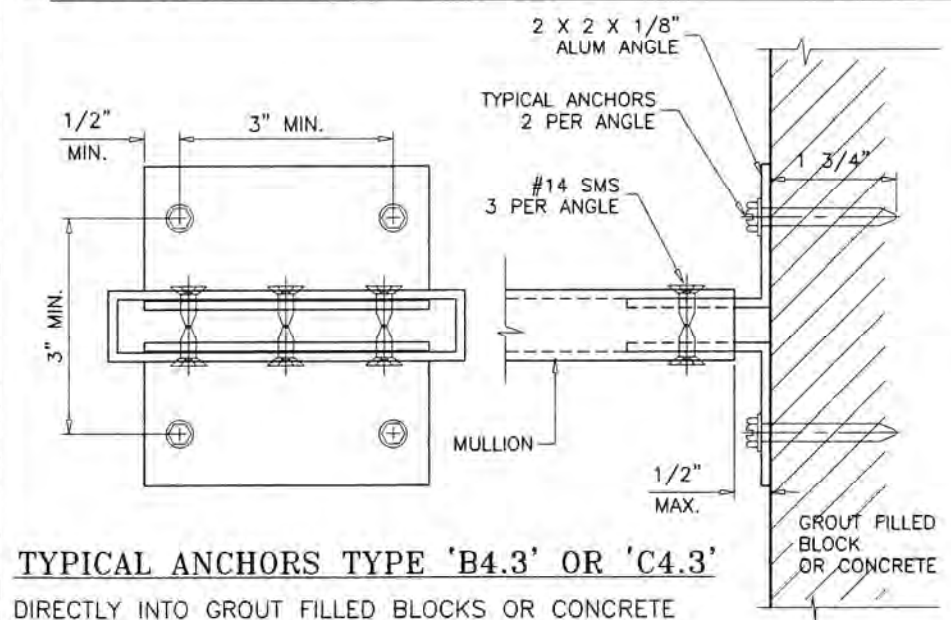
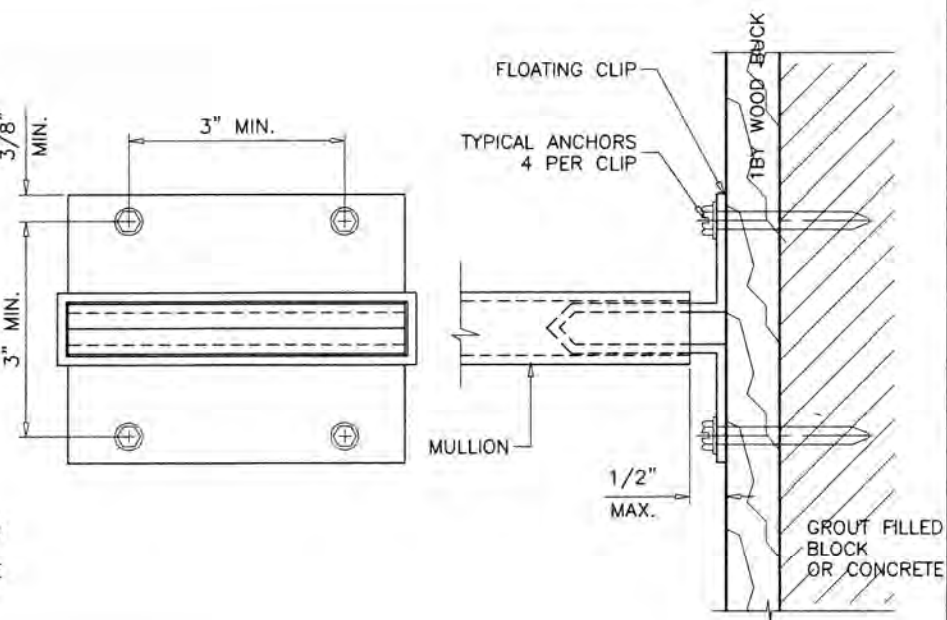
### TYPICAL ANCHORS TYPE 'W4.3'

INTO 2BY WOOD BUCKS OR WOOD STRUCTURES  
SEE SHEET 6 FOR ANCHOR CAPACITIES



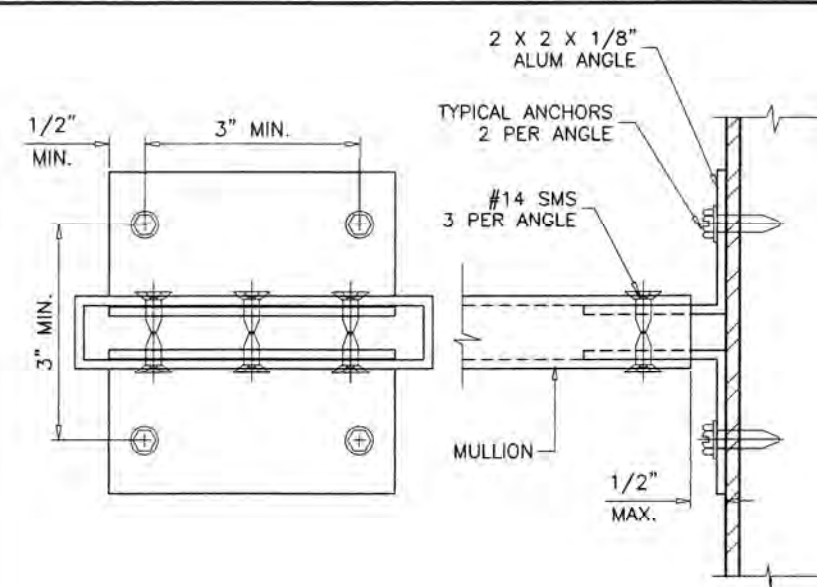
### TYPICAL ANCHORS TYPE 'B4.3'

THRU 1BY BUCKS INTO FILLED BLOCKS OR CONCRETE  
SEE SHEET 6 FOR ANCHOR CAPACITIES



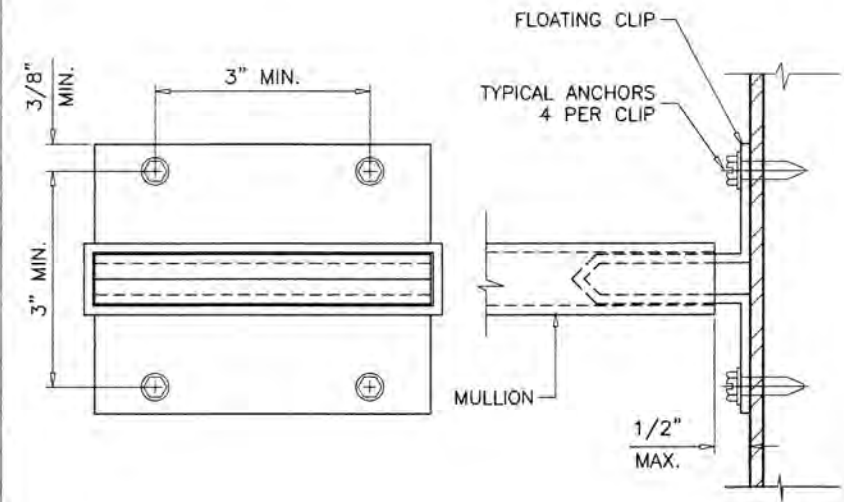
### TYPICAL ANCHORS TYPE 'B4.3' OR 'C4.3'

DIRECTLY INTO GROUT FILLED BLOCKS OR CONCRETE  
SEE SHEET 5 FOR ANCHOR CAPACITIES



### TYPICAL ANCHORS TYPE 'M4.3'

INTO METAL STRUCTURES  
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**PRODUCT REVISED**  
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Expiration Date **03/28/2027**

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Miami-Dade Product Control

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**af c**  
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MULLION\M95-16GG

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chk. by:

drawing no.  
**M95-16**  
sheet 8 of 8