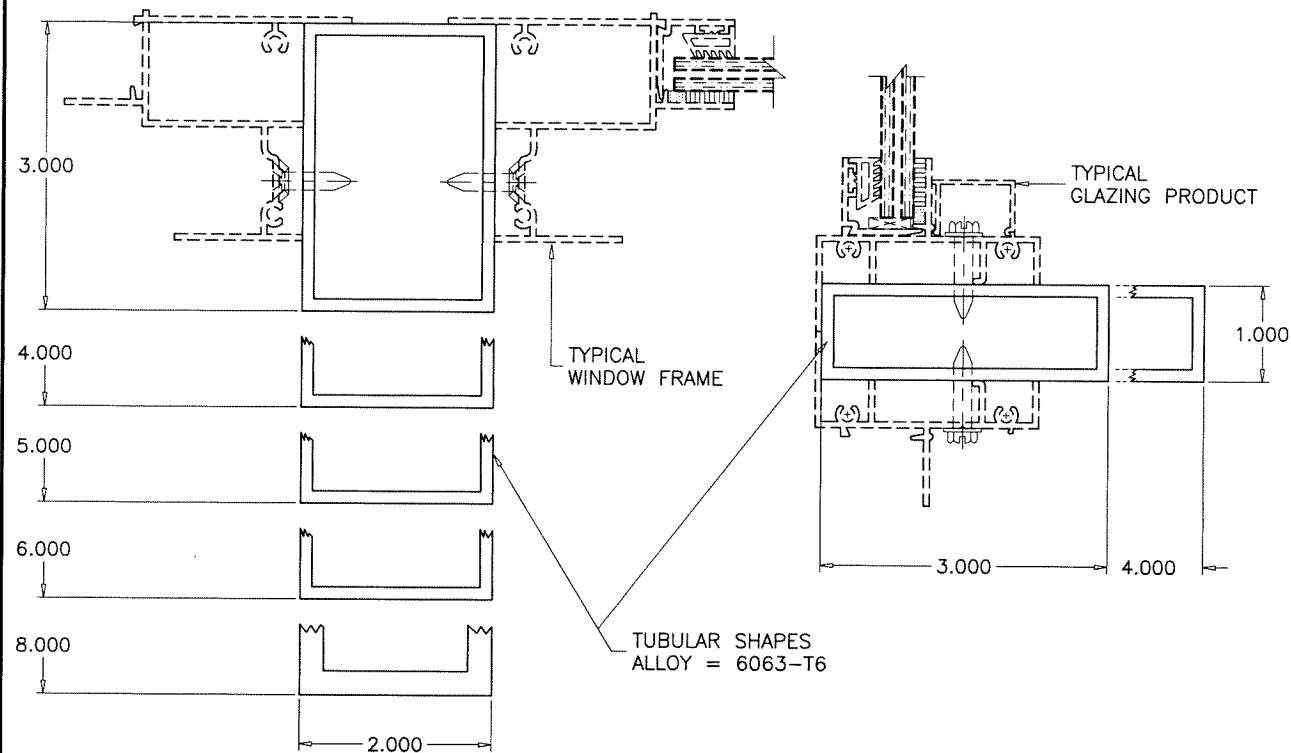
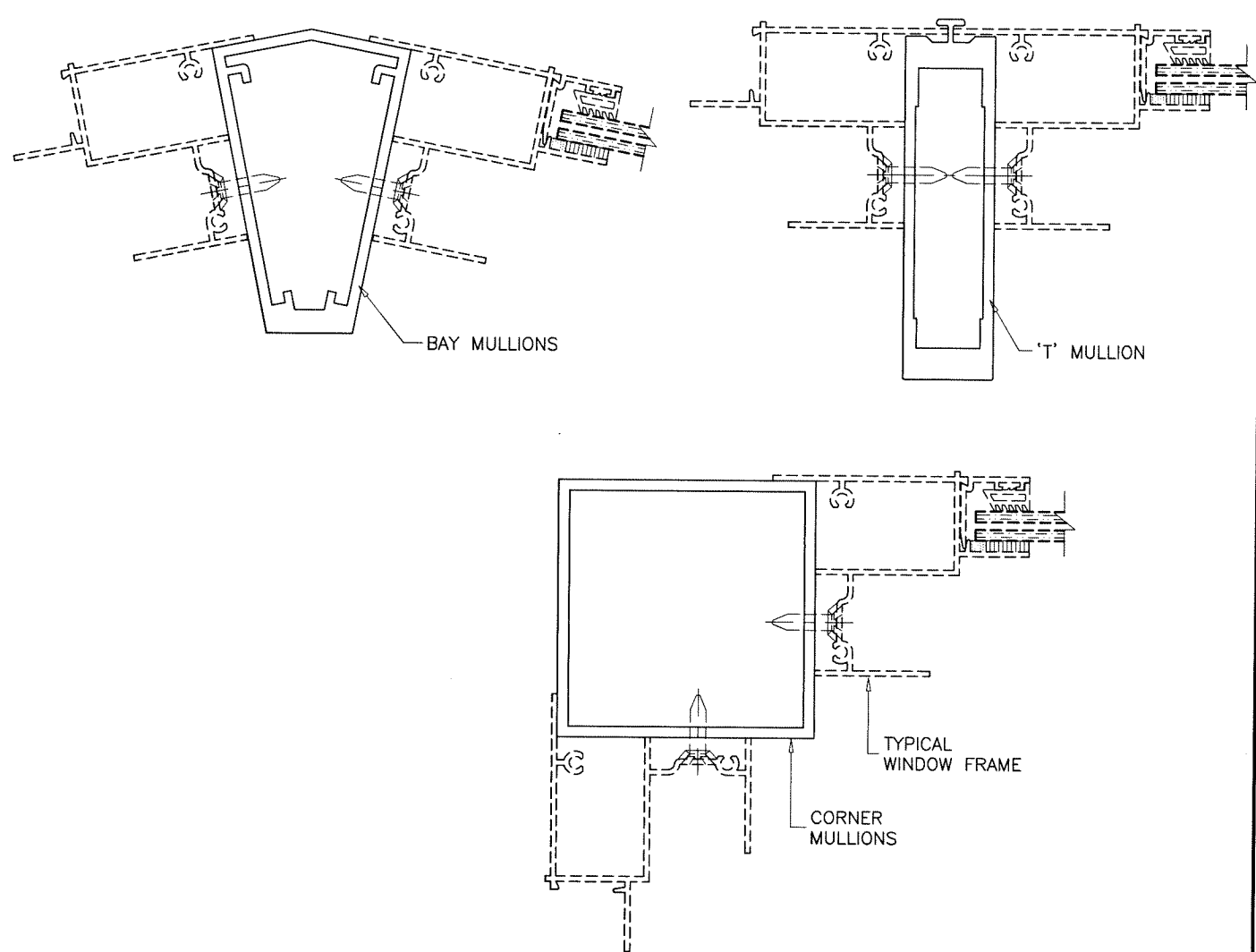




### MULLIONS CONTAINING TYPICAL GLAZING PRODUCTS

SEE WINDOW OR DOOR APPROVAL FOR FASTENERS SIZES AND SPACING



### ALUMINUM TUBE MULLIONS

#### USING MULLION PROPERTIES ONLY

#### NOTES:

THIS PRODUCT HAS BEEN DESIGNED AND TESTED TO COMPLY WITH THE REQUIREMENTS OF THE 2023 (8TH EDITION)/2026 (9TH 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 2023/2026 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.

#### INSTRUCTIONS:

USE CHARTS 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 CONNECTION TO MULLION AS PER PRODUCT APPROVAL.
- STEP 4** USING CHARTS ON SHEETS 4 & 5 SELECT MULLION SIZE WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** USING ANCHOR TYPES ON SHEETS 7 THRU 13 AND ANCHOR CHARTS ON SHEET 6, SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.

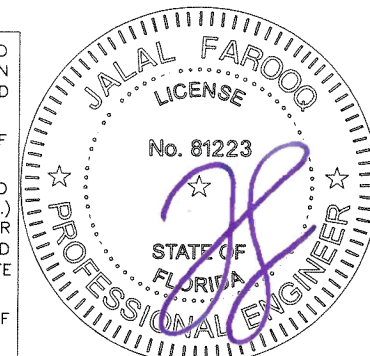
FASTENERS AND CONNECTORS (AS APPLICABLE) SHOWN IN THIS APPROVAL MAY NOT MEET CORROSION RESISTANCE REQUIREMENTS FOR COASTAL OR SALT WATER EXPOSURE ZONES. COMPLIANCE WITH THESE CONDITIONS TO BE CHECKED PER FBC 1711.

MULLION SYSTEM IS RATED FOR LARGE & SMALL MISSILE IMPACT. AND CAN BE USED WITH ALL F.B.C. APPROVED IMPACT AND NON-IMPACT RESISTANT PRODUCTS.

Sealed: 7/15/2026

FL #39086

- 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.



**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

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

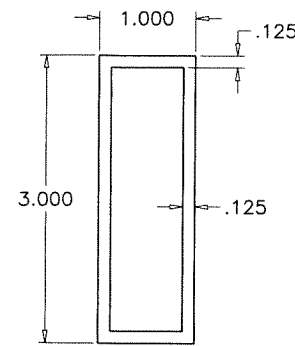
| no | date     | by | description              |
|----|----------|----|--------------------------|
| A  | 07.07.23 |    | UPDATED TO 2023 FBC      |
| B  | 03.21.25 |    | CUSTOM MULLION ADDED     |
| C  | 06.27.25 |    | MULL TO MULL DETAIL REV. |
| D  | 06.10.26 |    | 2X8 MULL ADDED           |
| E  | 07.13.26 |    | UPDATED TO 2026 FBC      |

date: 05-21-21  
scale: 1/2" = 1"  
dr. by: TARIQ  
chk. by:

drawing no.  
**21-45F**

sheet 1 of 13

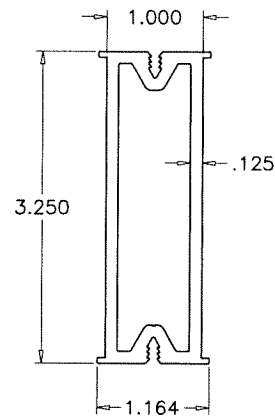
MULLION\21-45F-ESW



$$I_x = .950 \text{ IN}^4$$

$$S_x = .634 \text{ IN}^3$$

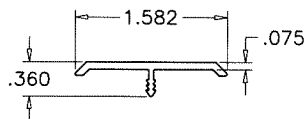
1 X 3  
STD. MULLION  
6063-T6



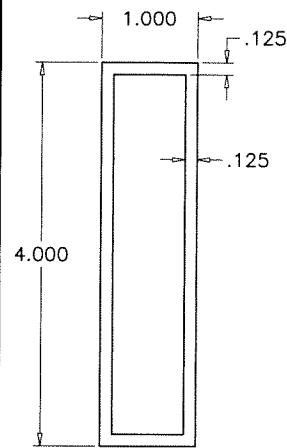
$$I_x = 1.439 \text{ IN}^4$$

$$S_x = .886 \text{ IN}^3$$

1 X 3-1/4  
CUSTOM MULLION  
6063-T6



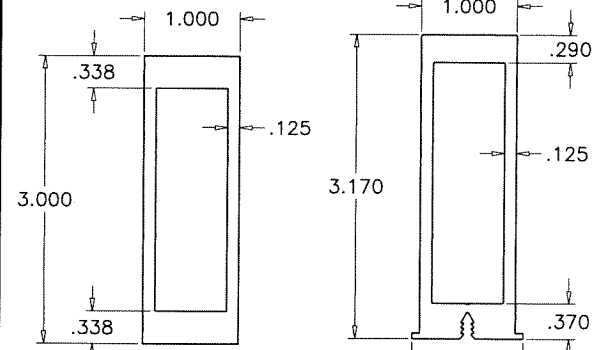
MULLION CAP  
6063-T5



$$I_x = 2.037 \text{ IN}^4$$

$$S_x = 1.018 \text{ IN}^3$$

1 X 4  
STD. MULLION  
6063-T6



$$I_x = 1.466 \text{ IN}^4$$

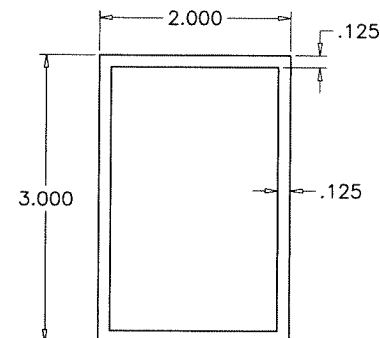
$$S_x = .977 \text{ IN}^3$$

1 X 3  
CUSTOM MULLION  
6063-T6

$$I_x = 1.627 \text{ IN}^4$$

$$S_x = 1.00 \text{ IN}^3$$

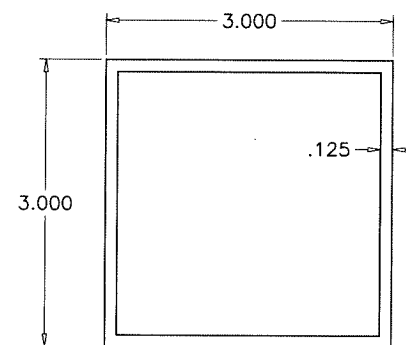
1 X 3  
CUSTOM MULLION  
6063-T6



$$I_x = 1.467 \text{ IN}^4$$

$$S_x = .978 \text{ IN}^3$$

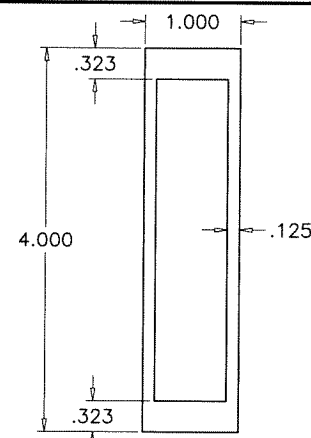
2 X 3  
STD. MULLION  
6063-T6



$$I_x = 1.467 \text{ IN}^4$$

$$S_x = .978 \text{ IN}^3$$

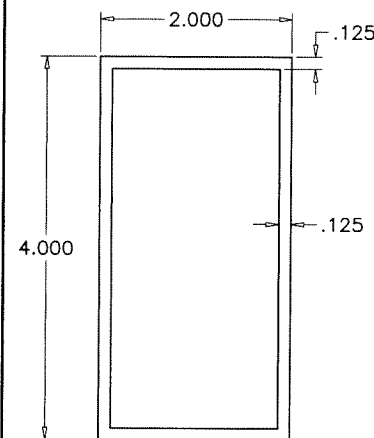
3 X 3  
STD. MULLION  
6063-T6



$$I_x = 2.975 \text{ IN}^4$$

$$S_x = 1.487 \text{ IN}^3$$

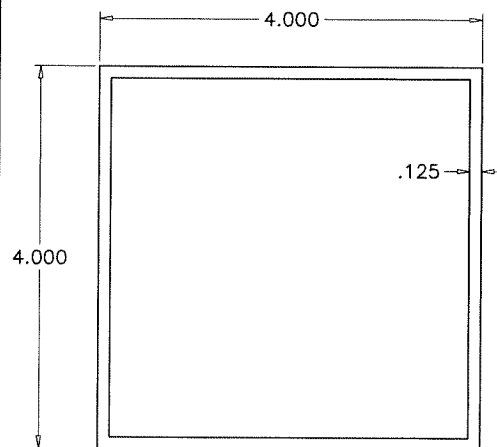
1 X 4  
CUSTOM MULLION  
6063-T6



$$I_x = 2.976 \text{ IN}^4$$

$$S_x = 1.488 \text{ IN}^3$$

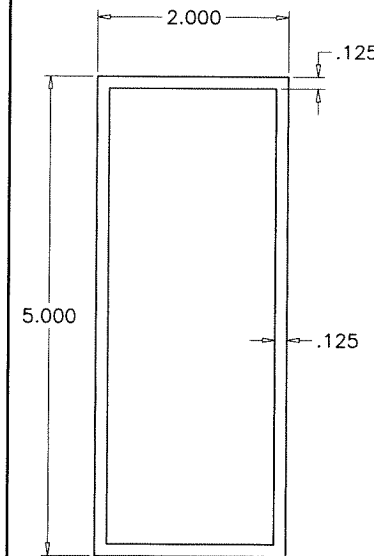
2 X 4  
STD. MULLION  
6063-T6



$$I_x = 2.976 \text{ IN}^4$$

$$S_x = 1.488 \text{ IN}^3$$

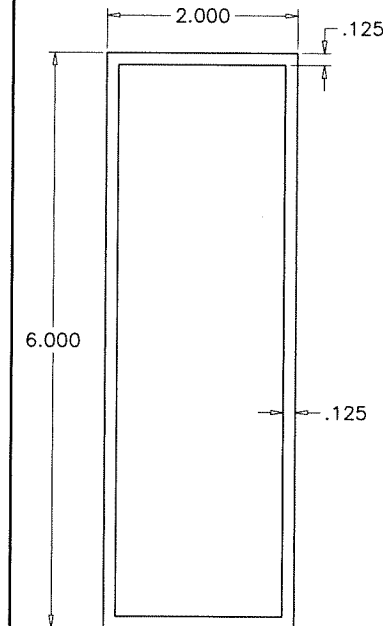
4 X 4  
STD. MULLION  
6063-T6



$$I_x = 5.204 \text{ IN}^4$$

$$S_x = 2.082 \text{ IN}^3$$

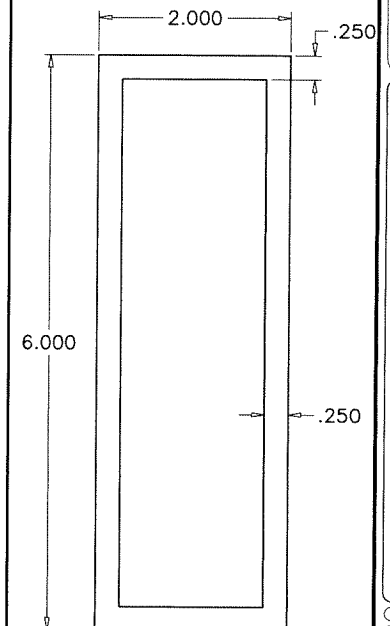
2 X 5  
STD. MULLION  
6063-T6



$$I_x = 8.276 \text{ IN}^4$$

$$S_x = 2.758 \text{ IN}^3$$

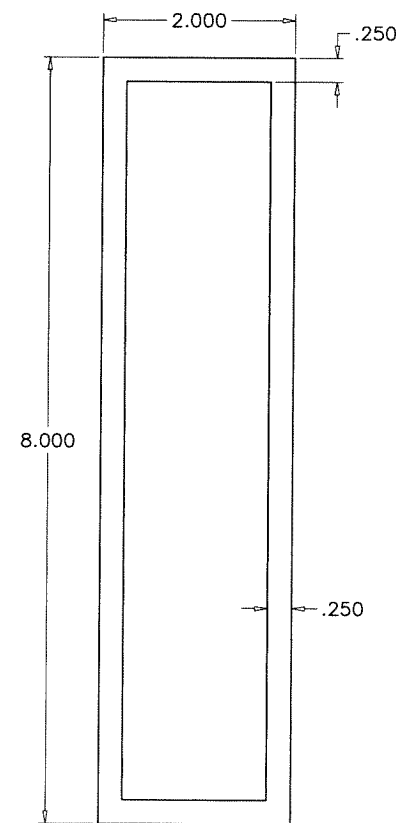
2 X 6  
STD. MULLION  
6063-T6



$$I_x = 15.203 \text{ IN}^4$$

$$S_x = 5.068 \text{ IN}^3$$

2 X 6  
HEAVY MULLION  
6063-T6



$$I_x = 32.599 \text{ IN}^4$$

$$S_x = 8.150 \text{ IN}^3$$

2 X 8  
HEAVY MULLION  
6063-T6



Sealed: 7/15/2026

FL #39086

**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

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

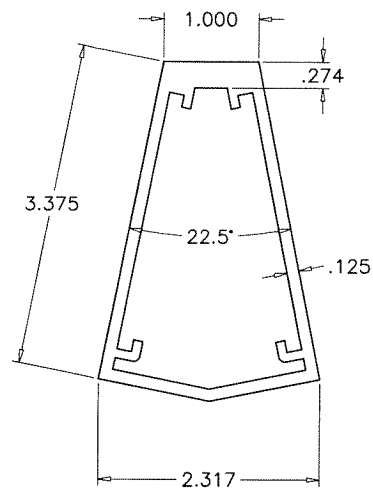
|                |                  |               |          |
|----------------|------------------|---------------|----------|
| date: 05-21-21 | scale: 1/2" = 1" | dr. by: TARIQ | chk. by: |
|----------------|------------------|---------------|----------|

drawing no.

21-45F

sheet 2 of 13

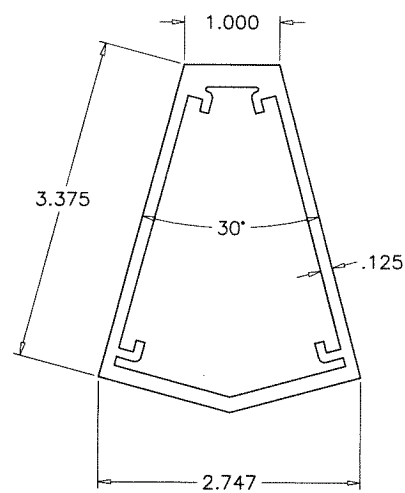
MULLION\21-45F-ESW



$$I_x = 2.2762 \text{ IN}^4$$

$$S_x = 1.2717 \text{ IN}^3$$

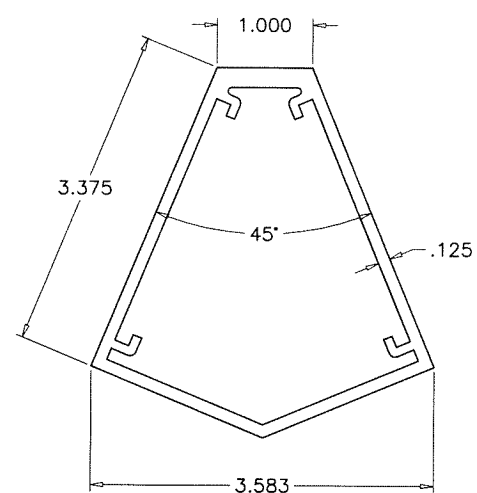
22-1/2° BAY MULLION  
6063-T6



$$I_x = 2.5623 \text{ IN}^4$$

$$S_x = 1.3526 \text{ IN}^3$$

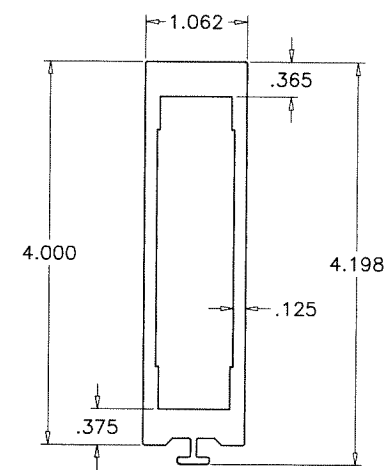
30° BAY MULLION  
6063-T6



$$I_x = 2.680 \text{ IN}^4$$

$$S_x = 1.3827 \text{ IN}^3$$

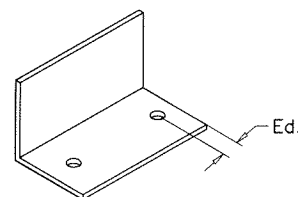
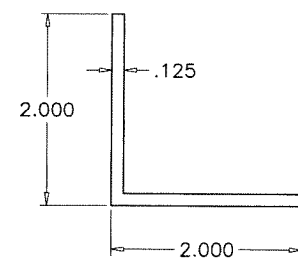
45° BAY MULLION  
6063-T6



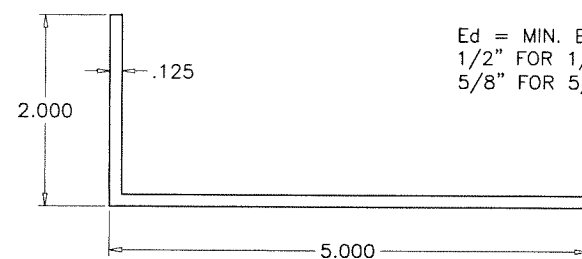
$$I_x = 3.439 \text{ IN}^4$$

$$S_x = 1.5754 \text{ IN}^3$$

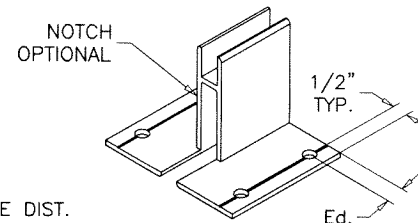
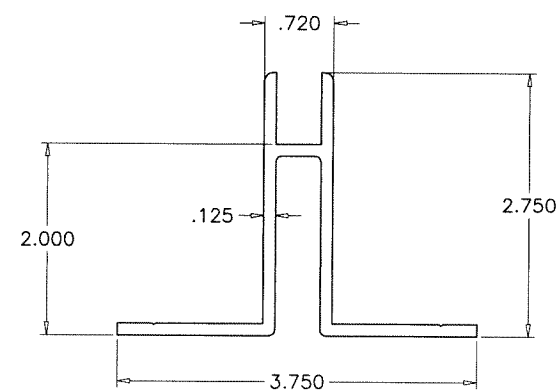
'T' MULLION  
6063-T6



Ed = MIN. EDGE DIST.  
1/2" FOR 1/4" DIA. ANCHORS  
5/8" FOR 5/16" DIA. ANCHORS

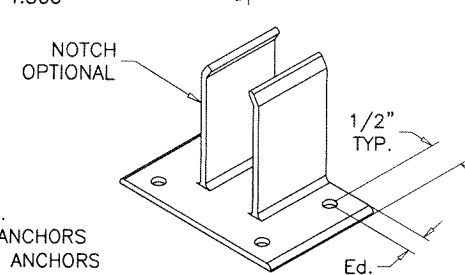
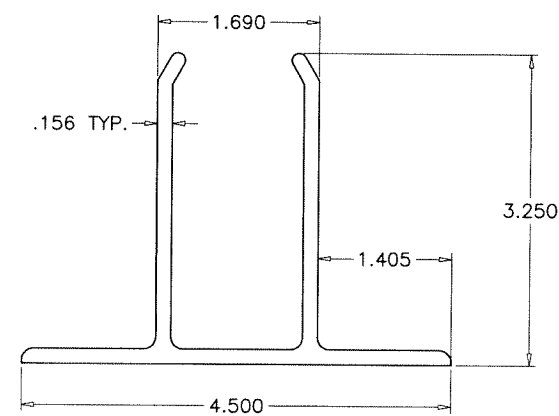


ANGLE CLIP  
6063-T5



Ed = MIN. EDGE DIST.  
1/2" FOR 1/4" DIA. ANCHORS  
5/8" FOR 5/16" DIA. ANCHORS

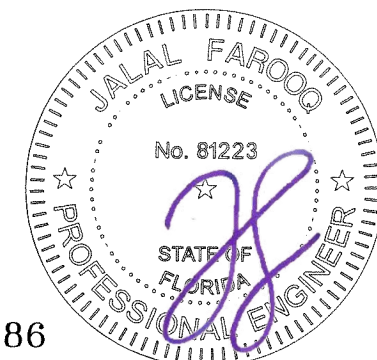
MULLION CLIP  
6063-T6



Ed = MIN. EDGE DIST.  
1/2" FOR 1/4" DIA. ANCHORS  
5/8" FOR 5/16" DIA. ANCHORS

MULLION CLIP  
6063-T6

Sealed: 7/15/2026



FL #39086

**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

ALUMINUM TUBE MULLIONS

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

|                |                  |               |          |
|----------------|------------------|---------------|----------|
| date: 05-21-21 | scale: 1/2" = 1" | dr. by: TARIQ | chk. by: |
|----------------|------------------|---------------|----------|

drawing no.  
**21-45F**  
sheet 3 of 13

| DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS) |           |                        |               |                 |                 |               |               |                |
|--------------------------------------------|-----------|------------------------|---------------|-----------------|-----------------|---------------|---------------|----------------|
| WINDOW DIMS.                               |           | 1 X 3<br>STD.          | 1 X 4<br>STD. | 1 X 3<br>CUSTOM | 1 X 4<br>CUSTOM | 2 X 5<br>STD. | 2 X 6<br>STD. | 2 X 6<br>HEAVY |
|                                            |           | 1 X<br>3-1/4<br>CUSTOM |               | 2 X 3<br>STD.   | 2 X 4<br>STD.   |               |               |                |
| WIDTH (W)                                  | MULL SPAN |                        |               |                 |                 |               |               |                |
| 19-1/8"                                    | 38-3/8"   | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 30"                                        |           | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 37"                                        |           | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 42"                                        |           | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 48"                                        |           | 140.6                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 54"                                        |           | 124.9                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 60"                                        |           | 112.5                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 66"                                        |           | 102.2                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 72"                                        |           | 93.7                   | 149.3         | 142.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 19-1/8"                                    | 50-5/8"   | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 143.9                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 30"                                        |           | 127.1                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 37"                                        |           | 103.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 42"                                        |           | 90.8                   | 144.4         | 137.1           | 150.0           | 150.0         | 150.0         | 150.0          |
| 48"                                        |           | 79.4                   | 126.4         | 119.9           | 150.0           | 150.0         | 150.0         | 150.0          |
| 54"                                        |           | 70.6                   | 112.3         | 106.6           | 150.0           | 150.0         | 150.0         | 150.0          |
| 60"                                        |           | 63.5                   | 101.1         | 95.9            | 144.4           | 150.0         | 150.0         | 150.0          |
| 66"                                        |           | 57.8                   | 91.9          | 87.2            | 131.3           | 150.0         | 150.0         | 150.0          |
| 72"                                        |           | 53.0                   | 84.2          | 80.0            | 120.4           | 150.0         | 150.0         | 150.0          |
| 96"                                        | 54"       | -                      | -             | -               | -               | 100.0         | 100.0         | 100.0          |
| 19-1/8"                                    | 58"       | 150.0                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 108.6                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 30"                                        |           | 95.9                   | 150.0         | 144.6           | 150.0           | 150.0         | 150.0         | 150.0          |
| 37"                                        |           | 77.8                   | 123.6         | 117.2           | 150.0           | 150.0         | 150.0         | 150.0          |
| 42"                                        |           | 68.5                   | 108.9         | 103.3           | 150.0           | 150.0         | 150.0         | 150.0          |
| 48"                                        |           | 60.0                   | 95.3          | 90.4            | 135.9           | 150.0         | 150.0         | 150.0          |
| 54"                                        |           | 53.3                   | 84.7          | 80.3            | 120.8           | 150.0         | 150.0         | 150.0          |
| 60"                                        |           | 48.0                   | 76.2          | 72.3            | 108.7           | 150.0         | 150.0         | 150.0          |
| 66"                                        |           | 43.6                   | 69.3          | 65.7            | 98.9            | 150.0         | 150.0         | 150.0          |
| 72"                                        |           | 40.0                   | 63.5          | 60.2            | 90.6            | 137.8         | 150.0         | 150.0          |
| 19-1/8"                                    | 63"       | 123.3                  | 150.0         | 150.0           | 150.0           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 89.0                   | 145.3         | 137.3           | 150.0           | 150.0         | 150.0         | 150.0          |
| 30"                                        |           | 78.6                   | 128.4         | 121.3           | 150.0           | 150.0         | 150.0         | 150.0          |
| 37"                                        |           | 63.7                   | 104.1         | 98.3            | 148.3           | 150.0         | 150.0         | 150.0          |
| 42"                                        |           | 56.1                   | 91.7          | 86.6            | 130.7           | 150.0         | 150.0         | 150.0          |
| 48"                                        |           | 49.1                   | 80.2          | 75.8            | 114.3           | 150.0         | 150.0         | 150.0          |
| 54"                                        |           | 43.7                   | 71.3          | 67.4            | 101.6           | 150.0         | 150.0         | 150.0          |
| 60"                                        |           | 39.3                   | 64.2          | 60.6            | 91.5            | 139.7         | 150.0         | 150.0          |
| 66"                                        |           | 35.7                   | 58.4          | 55.1            | 83.1            | 127.0         | 150.0         | 150.0          |
| 72"                                        |           | 32.7                   | 53.5          | 50.5            | 76.2            | 116.4         | 150.0         | 150.0          |

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

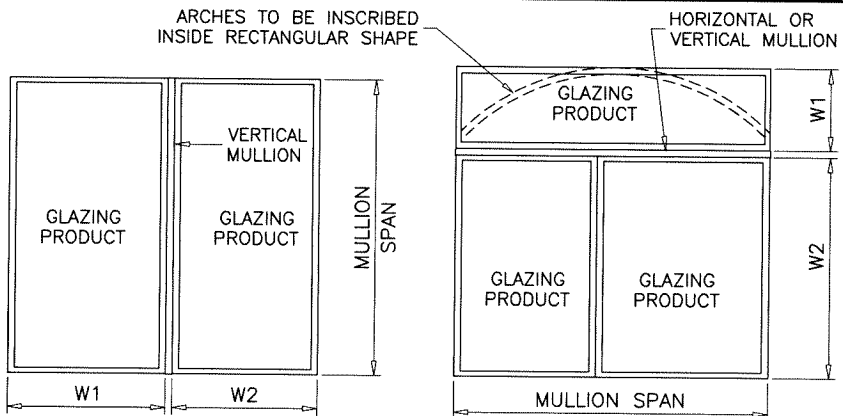
ANCHORS TYPE 'D' AND 'E' APPLICABLE TO  
4", 5" AND 6" TUBE MULLIONS.  
ANCHORS TYPE 'A', 'B', 'C', 'F' AND 'G' APPLICABLE  
TO ALL TUBE MULLIONS.

SEE SHEET 6.1 FOR 8" TUBE MULLION ANCHORS.

| DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS) |           |                        |               |                 |                 |               |               |                |
|--------------------------------------------|-----------|------------------------|---------------|-----------------|-----------------|---------------|---------------|----------------|
| WINDOW DIMS.                               |           | 1 X 3<br>STD.          | 1 X 4<br>STD. | 1 X 3<br>CUSTOM | 1 X 4<br>CUSTOM | 2 X 5<br>STD. | 2 X 6<br>STD. | 2 X 6<br>HEAVY |
|                                            |           | 1 X<br>3-1/4<br>CUSTOM |               | 2 X 3<br>STD.   | 2 X 4<br>STD.   |               |               |                |
| WIDTH (W)                                  | MULL SPAN |                        |               |                 |                 |               |               |                |
| 19-1/8"                                    | 74-1/4"   | 75.3                   | 143.0         | 116.2           | 150.0           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 54.3                   | 103.2         | 83.9            | 146.6           | 150.0         | 150.0         | 150.0          |
| 30"                                        |           | 48.0                   | 91.1          | 74.1            | 129.5           | 150.0         | 150.0         | 150.0          |
| 37"                                        |           | 38.9                   | 73.9          | 60.1            | 105.0           | 150.0         | 150.0         | 150.0          |
| 42"                                        |           | 34.3                   | 65.1          | 52.9            | 92.5            | 142.5         | 150.0         | 150.0          |
| 48"                                        |           | 30.0                   | 57.0          | 46.3            | 81.0            | 124.7         | 150.0         | 150.0          |
| 54"                                        |           | 26.7                   | 50.6          | 41.2            | 72.0            | 110.8         | 146.2         | 150.0          |
| 60"                                        |           | 24.0                   | 45.6          | 37.0            | 64.8            | 99.7          | 131.6         | 150.0          |
| 66"                                        |           | 21.8                   | 41.4          | 33.7            | 58.9            | 90.7          | 119.6         | 150.0          |
| 72"                                        |           | 20.0                   | 38.0          | 30.9            | 54.0            | 83.1          | 109.7         | 150.0          |
| 19-1/8"                                    | 84"       | 52.0                   | 110.4         | 80.3            | 150.0           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 37.5                   | 79.7          | 57.9            | 113.0           | 150.0         | 150.0         | 150.0          |
| 30"                                        |           | 33.2                   | 70.4          | 51.2            | 99.8            | 150.0         | 150.0         | 150.0          |
| 37"                                        |           | 26.9                   | 57.1          | 41.5            | 81.0            | 125.6         | 150.0         | 150.0          |
| 42"                                        |           | 23.7                   | 50.3          | 36.5            | 71.3            | 110.6         | 145.9         | 150.0          |
| 48"                                        |           | 20.7                   | 44.0          | 32.0            | 62.4            | 96.8          | 127.6         | 150.0          |
| 54"                                        |           | -                      | 39.1          | 28.4            | 55.5            | 86.0          | 113.5         | 150.0          |
| 60"                                        |           | -                      | 35.2          | 25.6            | 49.9            | 77.4          | 102.1         | 150.0          |
| 66"                                        |           | -                      | 32.0          | 23.3            | 45.4            | 70.4          | 92.8          | 150.0          |
| 72"                                        |           | -                      | 29.3          | 21.3            | 41.6            | 64.5          | 85.1          | 150.0          |
| 19-1/8"                                    | 96"       | 34.8                   | 74.7          | 53.8            | 109.1           | 150.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | 25.1                   | 53.9          | 38.8            | 78.7            | 133.2         | 150.0         | 150.0          |
| 30"                                        |           | 22.2                   | 47.6          | 34.3            | 69.6            | 117.7         | 150.0         | 150.0          |
| 37"                                        |           | -                      | 38.6          | 27.8            | 56.4            | 95.4          | 125.8         | 150.0          |
| 42"                                        |           | -                      | 34.0          | 24.5            | 49.7            | 84.1          | 110.8         | 150.0          |
| 48"                                        |           | -                      | 29.8          | 21.4            | 43.5            | 73.5          | 97.0          | 150.0          |
| 54"                                        |           | -                      | 26.5          | -               | 38.6            | 65.4          | 86.2          | 150.0          |
| 60"                                        |           | -                      | 23.8          | -               | 34.8            | 58.8          | 77.6          | 142.0          |
| 66"                                        |           | -                      | 21.6          | -               | 31.6            | 53.5          | 70.5          | 129.0          |
| 72"                                        |           | -                      | -             | -               | 29.0            | 49.0          | 64.6          | 118.3          |
| 19-1/8"                                    | 108"      | -                      | 52.5          | 37.8            | 76.6            | 134.0         | 150.0         | 150.0          |
| 26-1/2"                                    |           | -                      | 37.9          | 27.3            | 55.3            | 96.7          | 137.7         | 150.0          |
| 30"                                        |           | -                      | 33.4          | 24.1            | 48.9            | 85.5          | 121.7         | 150.0          |
| 37"                                        |           | -                      | 27.1          | -               | 39.6            | 69.3          | 98.7          | 150.0          |
| 42"                                        |           | -                      | 23.9          | -               | 34.9            | 61.0          | 86.9          | 150.0          |
| 48"                                        |           | -                      | 20.9          | -               | 30.5            | 53.4          | 76.0          | 139.1          |
| 54"                                        |           | -                      | -             | -               | 27.1            | 47.5          | 67.6          | 123.7          |
| 60"                                        |           | -                      | -             | -               | 24.4            | 42.7          | 60.8          | 111.3          |
| 66"                                        |           | -                      | -             | -               | 22.2            | 38.8          | 55.3          | 101.2          |
| 72"                                        |           | -                      | -             | -               | 20.4            | 35.6          | 50.7          | 92.7           |

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

| DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS) |           |                        |               |                 |                 |               |               |                |
|--------------------------------------------|-----------|------------------------|---------------|-----------------|-----------------|---------------|---------------|----------------|
| WINDOW DIMS.                               |           | 1 X 3<br>STD.          | 1 X 4<br>STD. | 1 X 3<br>CUSTOM | 1 X 4<br>CUSTOM | 2 X 5<br>STD. | 2 X 6<br>STD. | 2 X 6<br>HEAVY |
|                                            |           | 1 X<br>3-1/4<br>CUSTOM |               | 2 X 3<br>STD.   | 2 X 4<br>STD.   |               |               |                |
| WIDTH (W)                                  | MULL SPAN |                        |               |                 |                 |               |               |                |
| 19-1/8"                                    | 120"      | -                      | 38.2          | 27.5            | 55.9            | 97.7          | 150.0         | 150.0          |
| 26-1/2"                                    |           | -                      | 27.6          | -               | 40.3            | 70.5          | 110.8         | 150.0          |
| 30"                                        |           | -                      | 24.4          | -               | 35.6            | 62.3          | 97.9          | 150.0          |
| 37"                                        |           | -                      | -             | -               | 28.9            | 50.5          | 79.3          | 145.1          |
| 42"                                        |           | -                      | -             | -               | 25.4            | 44.5          | 69.9          | 127.8          |
| 48"                                        |           | -                      | -             | -               | 22.3            | 38.9          | 61.2          | 111.9          |
| 54"                                        |           | -                      | -             | -               | -               | 34.6          | 54.4          | 99.4           |
| 60"                                        |           | -                      | -             | -               | -               | 31.1          | 48.9          | 89.5           |
| 66"                                        |           | -                      | -             | -               | -               | 28.3          | 44.5          | 81.4           |
| 72"                                        |           | -                      | -             | -               | -               | 26.0          | 40.8          | 74.6           |
| 19-1/8"                                    | 132"      | -                      | 28.7          | 20.7            | 42.0            | 73.4          | 116.8         | 150.0          |
| 26-1/2"                                    |           | -                      | 20.7          | -               | 30.3            | 53.0          | 84.3          | 150.0          |
| 30"                                        |           | -                      | -             | -               | 26.8            | 46.8          | 74.4          | 136.7          |
| 37"                                        |           | -                      | -             | -               | 21.7            | 37.9          | 60.3          | 110.9          |
| 42"                                        |           | -                      | -             | -               | -               | 33.4          | 53.2          | 97.7           |
| 48"                                        |           | -                      | -             | -               | -               | 29.3          | 46.5          | 85.5           |
| 54"                                        |           | -                      | -             | -               | -               | 26.0          | 41.4          | 76.0           |
| 60"                                        |           | -                      | -             | -               | -               | 23.4          | 37.2          | 68.4           |
| 66"                                        |           | -                      | -             | -               | -               | 21.3          | 33.8          | 62.1           |
| 72"                                        |           | -                      | -             | -               | -               | -             | 31.0          | 57.0           |
| 19-1/8"                                    | 144"      | -                      | -             | -               | 32.3            | 56.5          | 89.9          | 150.0          |
| 26-1/2"                                    |           | -                      | -             | -               | 23.3            | 40.8          | 64.9          | 119.2          |
| 30"                                        |           | -                      | -             | -               | 20.6            | 36.0          | 57.3          | 105.3          |
| 37"                                        |           | -                      | -             | -               | -               | 29.2          | 46.5          | 85.4           |
| 42"                                        |           | -                      | -             | -               | -               | 25.7          | 41.0          | 75.2           |
| 48"                                        |           | -                      | -             | -               | -               | 22.5          | 35.8          | 65.8           |
| 54"                                        |           | -                      | -             | -               | -               | 20.0          | 31.9          | 58.5           |
| 60"                                        |           | -                      | -             | -               | -               | -             | 28.7          | 52.7           |
| 66"                                        |           | -                      | -             | -               | -               | -             | 26.1          | 47.9           |
| 72"                                        |           | -                      | -             | -               | -               | -             | 23.9          | 43.9           |

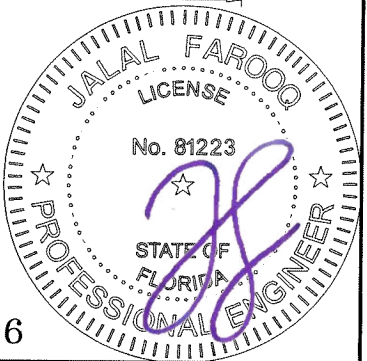


TYPICAL MULLION ARRANGEMENTS

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

Sealed: 7/15/2026

FL #39086



**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**

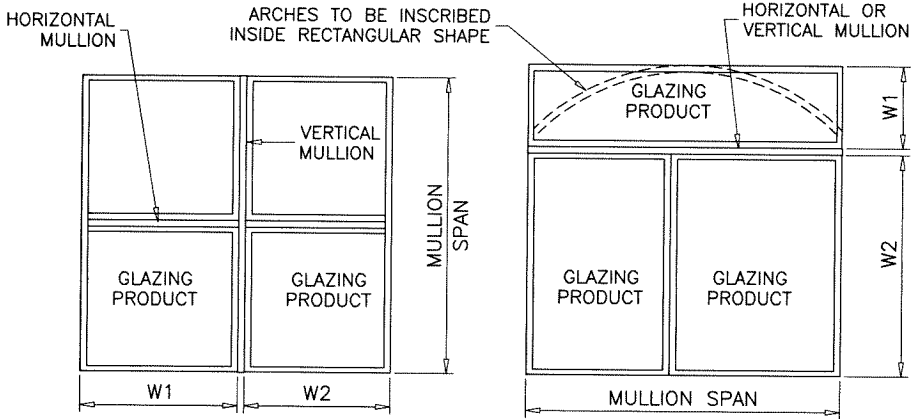
**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

|             |          |        |               |             |
|-------------|----------|--------|---------------|-------------|
| revisions:  | no       | date   | by            | description |
|             |          |        |               |             |
|             |          |        |               |             |
|             |          |        |               |             |
|             |          |        |               |             |
| date:       | 05-21-21 | scale: | dr. by: TARIQ | chk. by:    |
| drawing no. | 21-45F   | sheet  | 4 of 13       |             |

| DESIGN LOAD CAPACITY - PSF |           |             |
|----------------------------|-----------|-------------|
| WINDOW DIMS.               |           | 2 X 8 HEAVY |
| WIDTH (W)                  | MULL SPAN |             |
| 30"                        | 108"      | 150.0       |
| 36"                        |           | 150.0       |
| 42"                        |           | 150.0       |
| 48"                        |           | 150.0       |
| 54"                        |           | 150.0       |
| 60"                        |           | 150.0       |
| 66"                        |           | 150.0       |
| 72"                        |           | 147.7       |
| 78"                        |           | 136.3       |
| 84"                        |           | 126.6       |
| 90"                        |           | 118.1       |
| 96"                        |           | 110.8       |
| 30"                        | 120"      | 150.0       |
| 36"                        |           | 150.0       |
| 42"                        |           | 150.0       |
| 48"                        |           | 150.0       |
| 54"                        |           | 150.0       |
| 60"                        |           | 142.4       |
| 66"                        |           | 129.4       |
| 72"                        |           | 118.7       |
| 78"                        |           | 109.5       |
| 84"                        |           | 101.7       |
| 30"                        | 132"      | 150.0       |
| 36"                        |           | 150.0       |
| 42"                        |           | 150.0       |
| 48"                        |           | 146.0       |
| 54"                        |           | 129.8       |
| 60"                        |           | 116.8       |
| 66"                        |           | 106.2       |
| 72"                        |           | 97.3        |
| 78"                        |           | 89.8        |
| 30"                        | 144"      | 150.0       |
| 36"                        |           | 150.0       |
| 42"                        |           | 139.2       |
| 48"                        |           | 121.8       |
| 54"                        |           | 108.2       |
| 60"                        |           | 97.4        |
| 66"                        |           | 88.6        |
| 72"                        |           | 81.2        |
| 30"                        | 156"      | 150.0       |
| 36"                        |           | 137.4       |
| 42"                        |           | 117.7       |
| 48"                        |           | 103.0       |
| 54"                        |           | 91.6        |
| 60"                        |           | 82.4        |
| 66"                        |           | 74.9        |
| 30"                        | 168"      | 140.8       |
| 36"                        |           | 117.4       |
| 42"                        |           | 100.6       |
| 48"                        |           | 88.0        |
| 54"                        |           | 78.2        |
| 60"                        |           | 70.4        |

| DESIGN LOAD CAPACITY - PSF |           |             |
|----------------------------|-----------|-------------|
| WINDOW DIMS.               |           | 2 X 8 HEAVY |
| WIDTH (W)                  | MULL SPAN |             |
| 30"                        | 180"      | 112.5       |
| 36"                        |           | 93.7        |
| 42"                        |           | 80.4        |
| 48"                        |           | 70.3        |
| 54"                        |           | 62.5        |
| 30"                        | 192"      | 91.2        |
| 36"                        |           | 76.0        |
| 42"                        |           | 65.2        |
| 48"                        |           | 57.0        |
| 54"                        |           | 50.7        |

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



TYPICAL MULLION ARRANGEMENTS

WIDTH (W) =

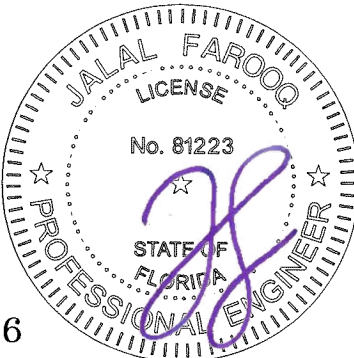
W1 + W2

2

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

MULLIONS

Sealed: 7/15/2026



FL #39086

**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

ALUMINUM TUBE MULLIONS

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: |                |
|------------|----------------|
| no         | by description |
|            |                |
|            |                |
|            |                |
|            |                |
|            |                |

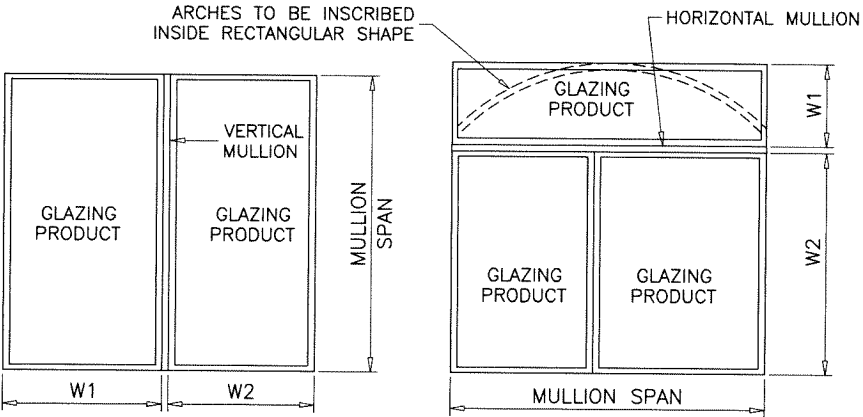
|                |        |               |          |
|----------------|--------|---------------|----------|
| date: 05-21-21 | scale: | dr. by: TARIQ | chk. by: |
|----------------|--------|---------------|----------|

|                 |
|-----------------|
| drawing no.     |
| 21-45F          |
| sheet 4.1 of 13 |

| DESIGN LOAD CAPACITY - PSF (BAY MULLIONS) |           |          |          |          |       |
|-------------------------------------------|-----------|----------|----------|----------|-------|
| WINDOW DIMS.                              |           | 22-1/2"  | 30"      | 45"      | 'T'   |
| WIDTH (W)                                 | MULL SPAN | BAY MULL | BAY MULL | BAY MULL | MULL  |
| 19-1/8"                                   | 38-3/8"   | 150.0    | 150.0    | 150.0    | 150.0 |
| 26-1/2"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 30"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 36"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 42"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 48"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 54"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 60"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 66"                                       | 50-5/8"   | 150.0    | 150.0    | 150.0    | 150.0 |
| 72"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 19-1/8"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 26-1/2"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 30"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 36"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 42"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 48"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 54"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 60"                                       |           | 143.0    | 140.4    | 145.1    | 150.0 |
| 66"                                       |           | 130.0    | 127.7    | 131.9    | 137.9 |
| 72"                                       |           | 119.2    | 117.0    | 120.9    | 126.4 |
| 19-1/8"                                   | 58"       | 150.0    | 150.0    | 150.0    | 150.0 |
| 26-1/2"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 30"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 36"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 42"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 48"                                       |           | 136.1    | 132.9    | 137.4    | 142.7 |
| 54"                                       |           | 121.0    | 118.1    | 122.1    | 126.8 |
| 60"                                       |           | 108.9    | 106.3    | 109.9    | 114.1 |
| 66"                                       | 63"       | 99.0     | 96.6     | 99.9     | 103.8 |
| 72"                                       |           | 90.8     | 88.6     | 91.6     | 95.1  |
| 19-1/8"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 26-1/2"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 30"                                       |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 36"                                       |           | 150.0    | 149.5    | 150.0    | 150.0 |
| 42"                                       |           | 131.8    | 128.1    | 132.6    | 137.1 |
| 48"                                       |           | 115.3    | 112.1    | 116.0    | 119.9 |
| 54"                                       | 74-1/4"   | 102.5    | 99.7     | 103.1    | 106.6 |
| 60"                                       |           | 92.3     | 89.7     | 92.8     | 96.0  |
| 66"                                       |           | 83.9     | 81.5     | 84.4     | 87.2  |
| 72"                                       |           | 76.9     | 74.8     | 77.3     | 80.0  |
| 19-1/8"                                   |           | 150.0    | 150.0    | 150.0    | 150.0 |
| 26-1/2"                                   |           | 130.2    | 144.9    | 150.0    | 150.0 |
| 30"                                       |           | 115.0    | 128.0    | 132.6    | 135.8 |
| 36"                                       |           | 95.8     | 106.7    | 110.5    | 113.1 |
| 42"                                       | 84"       | 82.2     | 91.4     | 94.7     | 97.0  |
| 48"                                       |           | 71.9     | 80.0     | 82.8     | 84.8  |
| 54"                                       |           | 63.9     | 71.1     | 73.6     | 75.4  |
| 60"                                       |           | 57.5     | 64.0     | 66.3     | 67.9  |
| 66"                                       |           | 52.3     | 58.2     | 60.3     | 61.7  |
| 72"                                       |           | 47.9     | 53.3     | 55.2     | 56.6  |

| DESIGN LOAD CAPACITY - PSF (BAY MULLIONS) |           |          |          |          |       |
|-------------------------------------------|-----------|----------|----------|----------|-------|
| WINDOW DIMS.                              |           | 22-1/2"  | 30"      | 45"      | 'T'   |
| WIDTH (W)                                 | MULL SPAN | BAY MULL | BAY MULL | BAY MULL | MULL  |
| 19-1/8"                                   | 84"       | 124.6    | 140.3    | 146.7    | 150.0 |
| 26-1/2"                                   |           | 89.9     | 101.2    | 105.9    | 118.4 |
| 30"                                       |           | 79.4     | 89.4     | 93.5     | 104.6 |
| 36"                                       |           | 66.2     | 74.5     | 77.9     | 87.1  |
| 42"                                       |           | 56.7     | 63.9     | 66.8     | 74.7  |
| 48"                                       |           | 49.6     | 55.9     | 58.5     | 65.3  |
| 54"                                       |           | 44.1     | 49.7     | 52.0     | 58.1  |
| 60"                                       |           | 39.7     | 44.7     | 46.8     | 52.3  |
| 66"                                       | 96"       | 36.1     | 40.6     | 42.5     | 47.5  |
| 72"                                       |           | 33.1     | 37.3     | 39.0     | 43.6  |
| 19-1/8"                                   |           | 83.5     | 94.0     | 98.3     | 123.5 |
| 26-1/2"                                   |           | 60.2     | 67.8     | 70.9     | 89.1  |
| 30"                                       |           | 53.2     | 59.9     | 62.7     | 78.7  |
| 36"                                       |           | 44.3     | 49.9     | 52.2     | 65.6  |
| 42"                                       |           | 38.0     | 42.8     | 44.8     | 56.2  |
| 48"                                       |           | 33.3     | 37.4     | 39.2     | 49.2  |
| 54"                                       | 108"      | 29.6     | 33.3     | 34.8     | 43.7  |
| 60"                                       |           | 26.6     | 30.0     | 31.3     | 39.4  |
| 66"                                       |           | 24.2     | 27.2     | 28.5     | 35.8  |
| 72"                                       |           | 22.2     | 25.0     | 26.1     | 32.8  |
| 19-1/8"                                   |           | 58.6     | 66.0     | 69.0     | 88.6  |
| 26-1/2"                                   |           | 42.3     | 47.6     | 49.8     | 63.9  |
| 30"                                       |           | 37.4     | 42.1     | 44.0     | 56.5  |
| 36"                                       |           | 31.1     | 35.1     | 36.7     | 47.1  |
| 42"                                       | 120"      | 26.7     | 30.1     | 31.4     | 40.3  |
| 48"                                       |           | 23.4     | 26.3     | 27.5     | 35.3  |
| 54"                                       |           | 20.8     | 23.4     | 24.4     | 31.4  |
| 60"                                       |           | -        | 21.0     | 22.0     | 28.2  |
| 66"                                       |           | -        | -        | 20.0     | 25.7  |
| 72"                                       |           | -        | -        | -        | 23.5  |
| 19-1/8"                                   |           | 42.7     | 48.1     | 50.3     | 64.6  |
| 26-1/2"                                   |           | 30.8     | 34.7     | 36.3     | 46.6  |
| 30"                                       | 132"      | 27.2     | 30.7     | 32.1     | 41.2  |
| 36"                                       |           | 22.7     | 25.6     | 26.7     | 34.3  |
| 42"                                       |           | -        | 21.9     | 22.9     | 29.4  |
| 48"                                       |           | -        | -        | 20.1     | 25.7  |
| 54"                                       |           | -        | -        | -        | 22.9  |
| 60"                                       |           | -        | -        | -        | 20.6  |
| 19-1/8"                                   |           | 32.1     | 36.1     | 37.8     | 48.5  |
| 26-1/2"                                   |           | 23.2     | 26.1     | 27.3     | 35.0  |
| 30"                                       | 144"      | 20.5     | 23.0     | 24.1     | 30.9  |
| 36"                                       |           | -        | -        | 20.1     | 25.8  |
| 42"                                       |           | -        | -        | -        | 22.1  |
| 19-1/8"                                   |           | 24.7     | 27.8     | 29.1     | 37.4  |
| 26-1/2"                                   |           | -        | 20.1     | 21.0     | 27.0  |
| 30"                                       |           | -        | -        | -        | 23.8  |

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



TYPICAL MULLION ARRANGEMENTS

WIDTH (W) = (W1 + W2) / 2

NOTE:  
'T' MULLION RATED IN THESE CHARTS MAY BE ORIENTED VERTICALLY OR HORIZONTALLY.  
(INTERPOLATION BETWEEN WIDTHS ALLOWED)

Sealed: 7/15/2026



MULLIONS

FL #39086

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  
E.S. WINDOWS, LLC  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

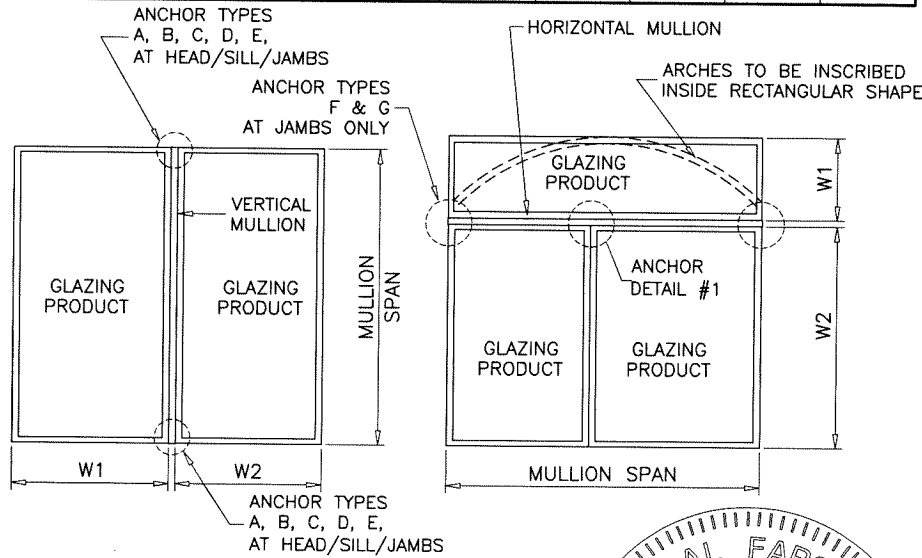
| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

|          |          |
|----------|----------|
| date:    | 05-21-21 |
| scale:   |          |
| dr. by:  | TARIQ    |
| chk. by: |          |

| DESIGN LOAD CAPACITY - PSF |           |              |       |       |       |       |       |       |
|----------------------------|-----------|--------------|-------|-------|-------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS TYPE |       |       |       |       |       |       |
| WIDTH (W)                  | MULL SPAN | A            | B     | C     | D     | E     | F     | G     |
| 19-1/8"                    | 38-3/8"   | 150.0        | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 143.9        | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 |
| 30"                        |           | 127.1        | 150.0 | 150.0 | 150.0 | 150.0 | 145.1 | 150.0 |
| 37"                        |           | 103.0        | 150.0 | 140.8 | 150.0 | 150.0 | 117.6 | 150.0 |
| 42"                        |           | 90.8         | 150.0 | 124.0 | 150.0 | 150.0 | 103.6 | 150.0 |
| 48"                        |           | 79.4         | 150.0 | 108.5 | 150.0 | 150.0 | 90.7  | 150.0 |
| 54"                        |           | 70.6         | 141.2 | 96.5  | 150.0 | 150.0 | 80.6  | 147.3 |
| 60"                        |           | 63.5         | 127.1 | 86.8  | 150.0 | 150.0 | 72.5  | 132.6 |
| 66"                        |           | 57.8         | 115.5 | 78.9  | 150.0 | 150.0 | 66.0  | 120.5 |
| 72"                        |           | 53.0         | 105.9 | 72.3  | 144.7 | 150.0 | 60.5  | 110.5 |
| 19-1/8"                    | 50-5/8"   | 150.0        | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 109.1        | 150.0 | 149.0 | 150.0 | 150.0 | 124.5 | 150.0 |
| 30"                        |           | 96.3         | 150.0 | 131.6 | 150.0 | 150.0 | 110.0 | 150.0 |
| 37"                        |           | 78.1         | 150.0 | 106.7 | 150.0 | 150.0 | 89.2  | 150.0 |
| 42"                        |           | 68.8         | 137.6 | 94.0  | 150.0 | 150.0 | 78.6  | 143.6 |
| 48"                        |           | 60.2         | 120.4 | 82.3  | 150.0 | 150.0 | 68.7  | 125.6 |
| 54"                        |           | 53.5         | 107.0 | 73.1  | 146.2 | 150.0 | 61.1  | 111.7 |
| 60"                        |           | 48.2         | 96.3  | 65.8  | 131.6 | 150.0 | 55.0  | 100.5 |
| 66"                        |           | 43.8         | 87.6  | 59.8  | 119.6 | 139.3 | 50.0  | 91.4  |
| 72"                        |           | 40.1         | 80.3  | 54.8  | 109.7 | 127.7 | 45.8  | 83.8  |
| 96"                        | 54"       | -            | 56.7  | -     | 77.1  | 89.8  | -     | 58.9  |
| 19-1/8"                    | 58"       | 131.9        | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 95.2         | 150.0 | 130.0 | 150.0 | 150.0 | 108.7 | 150.0 |
| 30"                        |           | 84.1         | 150.0 | 114.9 | 150.0 | 150.0 | 96.0  | 150.0 |
| 37"                        |           | 68.2         | 136.4 | 93.1  | 150.0 | 150.0 | 77.8  | 142.3 |
| 42"                        |           | 60.1         | 120.1 | 82.0  | 150.0 | 150.0 | 68.6  | 125.3 |
| 48"                        |           | 52.6         | 105.1 | 71.8  | 143.6 | 150.0 | 60.0  | 109.7 |
| 54"                        |           | 46.7         | 93.4  | 63.8  | 127.6 | 148.6 | 53.3  | 97.5  |
| 60"                        |           | 42.0         | 84.1  | 57.4  | 114.9 | 133.7 | 48.0  | 87.7  |
| 66"                        |           | 38.2         | 76.4  | 52.2  | 104.4 | 121.6 | 43.6  | 79.7  |
| 72"                        |           | 35.0         | 70.1  | 47.9  | 95.7  | 111.4 | 40.0  | 73.1  |
| 19-1/8"                    | 63"       | 121.4        | 150.0 | 150.0 | 150.0 | 150.0 | 138.6 | 150.0 |
| 26-1/2"                    |           | 87.6         | 150.0 | 119.7 | 150.0 | 150.0 | 100.1 | 150.0 |
| 30"                        |           | 77.4         | 150.0 | 105.8 | 150.0 | 150.0 | 88.4  | 150.0 |
| 37"                        |           | 62.8         | 125.5 | 85.7  | 150.0 | 150.0 | 71.7  | 131.0 |
| 42"                        |           | 55.3         | 110.6 | 75.5  | 150.0 | 150.0 | 63.1  | 115.4 |
| 48"                        |           | 48.4         | 96.8  | 66.1  | 132.2 | 150.0 | 55.2  | 101.0 |
| 54"                        |           | 43.0         | 86.0  | 58.8  | 117.5 | 136.8 | 49.1  | 89.7  |
| 60"                        |           | 38.7         | 77.4  | 52.9  | 105.8 | 123.1 | 44.2  | 80.8  |
| 66"                        |           | 35.2         | 70.4  | 48.1  | 96.1  | 111.9 | 40.2  | 73.4  |
| 72"                        |           | 32.3         | 64.5  | 44.1  | 88.1  | 102.6 | 36.8  | 67.3  |

| DESIGN LOAD CAPACITY - PSF |           |              |       |       |       |       |       |       |  |  |  |  |
|----------------------------|-----------|--------------|-------|-------|-------|-------|-------|-------|--|--|--|--|
|                            |           | ANCHORS TYPE |       |       |       |       |       |       |  |  |  |  |
| WIDTH (W)                  | MULL SPAN | A            | B     | C     | D     | E     | F     | G     |  |  |  |  |
| 19-1/8"                    | 74-1/4"   | 103.0        | 150.0 | 140.8 | 150.0 | 150.0 | 117.6 | 150.0 |  |  |  |  |
| 26-1/2"                    |           | 74.4         | 148.7 | 101.6 | 150.0 | 150.0 | 84.9  | 150.0 |  |  |  |  |
| 30"                        |           | 65.7         | 131.4 | 89.7  | 150.0 | 150.0 | 75.0  | 137.1 |  |  |  |  |
| 37"                        |           | 53.3         | 106.5 | 72.8  | 145.5 | 150.0 | 60.8  | 111.1 |  |  |  |  |
| 42"                        |           | 46.9         | 93.8  | 64.1  | 128.2 | 149.2 | 53.6  | 97.9  |  |  |  |  |
| 48"                        |           | 41.1         | 82.1  | 56.1  | 112.2 | 130.6 | 46.9  | 85.7  |  |  |  |  |
| 54"                        |           | 36.5         | 73.0  | 49.8  | 99.7  | 116.1 | 41.7  | 76.1  |  |  |  |  |
| 60"                        |           | 32.8         | 65.7  | 44.9  | 89.7  | 104.5 | 37.5  | 68.5  |  |  |  |  |
| 66"                        |           | 29.9         | 59.7  | 40.8  | 81.6  | 95.0  | 34.1  | 62.3  |  |  |  |  |
| 72"                        |           | 27.4         | 54.7  | 37.4  | 74.8  | 87.1  | 31.2  | 57.1  |  |  |  |  |
| 19-1/8"                    | 84"       | 91.1         | 150.0 | 124.4 | 150.0 | 150.0 | 104.0 | 150.0 |  |  |  |  |
| 26-1/2"                    |           | 65.7         | 131.5 | 89.8  | 150.0 | 150.0 | 75.0  | 137.1 |  |  |  |  |
| 30"                        |           | 58.1         | 116.1 | 79.3  | 150.0 | 150.0 | 66.3  | 121.1 |  |  |  |  |
| 37"                        |           | 47.1         | 94.1  | 64.3  | 128.6 | 149.7 | 53.7  | 98.2  |  |  |  |  |
| 42"                        |           | 41.5         | 82.9  | 56.7  | 113.3 | 131.9 | 47.3  | 86.5  |  |  |  |  |
| 48"                        |           | 36.3         | 72.6  | 49.6  | 99.1  | 115.4 | 41.4  | 75.7  |  |  |  |  |
| 54"                        |           | 32.3         | 64.5  | 44.1  | 88.1  | 102.6 | 36.8  | 67.3  |  |  |  |  |
| 60"                        |           | 29.0         | 58.1  | 39.7  | 79.3  | 92.3  | 33.1  | 60.6  |  |  |  |  |
| 66"                        |           | 26.4         | 52.8  | 36.1  | 72.1  | 83.9  | 30.1  | 55.1  |  |  |  |  |
| 72"                        |           | 24.2         | 48.4  | 33.0  | 66.1  | 77.0  | 27.6  | 50.5  |  |  |  |  |
| 19-1/8"                    | 96"       | 79.7         | 150.0 | 108.9 | 150.0 | 150.0 | 91.0  | 150.0 |  |  |  |  |
| 26-1/2"                    |           | 57.5         | 115.0 | 78.6  | 150.0 | 150.0 | 65.7  | 120.0 |  |  |  |  |
| 30"                        |           | 50.8         | 101.6 | 69.4  | 138.8 | 150.0 | 58.0  | 106.0 |  |  |  |  |
| 37"                        |           | 41.2         | 82.4  | 56.3  | 112.5 | 131.0 | 47.0  | 85.9  |  |  |  |  |
| 42"                        |           | 36.3         | 72.6  | 49.6  | 99.1  | 115.4 | 41.4  | 75.7  |  |  |  |  |
| 48"                        |           | 31.8         | 63.5  | 43.4  | 86.8  | 101.0 | 36.3  | 66.3  |  |  |  |  |
| 54"                        |           | 28.2         | 56.4  | 38.6  | 77.1  | 89.8  | 32.2  | 58.9  |  |  |  |  |
| 60"                        |           | 25.4         | 50.8  | 34.7  | 69.4  | 80.8  | 29.0  | 53.0  |  |  |  |  |
| 66"                        |           | 23.1         | 46.2  | 31.5  | 63.1  | 73.5  | 26.4  | 48.2  |  |  |  |  |
| 72"                        |           | 21.2         | 42.3  | 28.9  | 57.8  | 67.3  | 24.2  | 44.2  |  |  |  |  |
| 19-1/8"                    | 108"      | 70.8         | 141.7 | 96.8  | 150.0 | 150.0 | 80.9  | 147.8 |  |  |  |  |
| 26-1/2"                    |           | 51.1         | 102.2 | 69.8  | 139.7 | 150.0 | 58.4  | 106.7 |  |  |  |  |
| 30"                        |           | 45.2         | 90.3  | 61.7  | 123.4 | 143.6 | 51.6  | 94.2  |  |  |  |  |
| 37"                        |           | 36.6         | 73.2  | 50.0  | 100.0 | 116.5 | 41.8  | 76.4  |  |  |  |  |
| 42"                        |           | 32.3         | 64.5  | 44.1  | 88.1  | 102.6 | 36.8  | 67.3  |  |  |  |  |
| 48"                        |           | 28.2         | 56.4  | 38.6  | 77.1  | 89.8  | 32.2  | 58.9  |  |  |  |  |
| 54"                        |           | 25.1         | 50.2  | 34.3  | 68.5  | 79.8  | 28.6  | 52.3  |  |  |  |  |
| 60"                        |           | 22.6         | 45.2  | 30.8  | 61.7  | 71.8  | 25.8  | 47.1  |  |  |  |  |
| 66"                        |           | 20.5         | 41.1  | 28.0  | 56.1  | 65.3  | 23.4  | 42.8  |  |  |  |  |
| 72"                        |           | -            | 37.6  | 25.7  | 51.4  | 59.9  | 21.5  | 39.3  |  |  |  |  |

| DESIGN LOAD CAPACITY - PSF |           |              |       |      |       |       |      |       |  |
|----------------------------|-----------|--------------|-------|------|-------|-------|------|-------|--|
|                            |           | ANCHORS TYPE |       |      |       |       |      |       |  |
| WIDTH (W)                  | MULL SPAN | A            | B     | C    | D     | E     | F    | G     |  |
| 19-1/8"                    | 120"      | 63.7         | 127.5 | 87.1 | 150.0 | 150.0 | 72.8 | 133.0 |  |
| 26-1/2"                    |           | 46.0         | 92.0  | 62.9 | 125.7 | 146.4 | 52.5 | 96.0  |  |
| 30"                        |           | 40.6         | 81.3  | 55.5 | 111.0 | 129.3 | 46.4 | 84.8  |  |
| 37"                        |           | 33.0         | 65.9  | 45.0 | 90.0  | 104.8 | 37.6 | 68.8  |  |
| 42"                        |           | 29.0         | 58.1  | 39.7 | 79.3  | 92.3  | 33.1 | 60.6  |  |
| 48"                        |           | 25.4         | 50.8  | 34.7 | 69.4  | 80.8  | 29.0 | 53.0  |  |
| 54"                        |           | 22.6         | 45.2  | 30.8 | 61.7  | 71.8  | 25.8 | 47.1  |  |
| 60"                        |           | 20.3         | 40.6  | 27.8 | 55.5  | 64.6  | 23.2 | 42.4  |  |
| 66"                        |           | -            | 36.9  | 25.2 | 50.5  | 58.8  | 21.1 | 38.5  |  |
| 72"                        |           | -            | 33.9  | 23.1 | 46.3  | 53.9  | -    | 35.3  |  |
| 19-1/8"                    | 132"      | 58.0         | 115.9 | 79.2 | 150.0 | 150.0 | 66.2 | 120.9 |  |
| 26-1/2"                    |           | 41.8         | 83.7  | 57.1 | 114.3 | 133.0 | 47.8 | 87.3  |  |
| 30"                        |           | 36.9         | 73.9  | 50.5 | 100.9 | 117.5 | 42.2 | 77.1  |  |
| 37"                        |           | 30.0         | 59.9  | 40.9 | 81.8  | 95.3  | 34.2 | 62.5  |  |
| 42"                        |           | 26.4         | 52.8  | 36.1 | 72.1  | 83.9  | 30.1 | 55.1  |  |
| 48"                        |           | 23.1         | 46.2  | 31.5 | 63.1  | 73.5  | 26.4 | 48.2  |  |
| 54"                        |           | 20.5         | 41.1  | 28.0 | 56.1  | 65.3  | 23.4 | 42.8  |  |
| 60"                        |           | -            | 36.9  | 25.2 | 50.5  | 58.8  | 21.1 | 38.5  |  |
| 66"                        |           | -            | 33.6  | 22.9 | 45.9  | 53.4  | -    | 35.0  |  |
| 72"                        |           | -            | 30.8  | 21.0 | 42.1  | 49.0  | -    | 32.1  |  |
| 19-1/8"                    | 144"      | 53.1         | 106.2 | 72.6 | 145.2 | 150.0 | 60.7 | 110.8 |  |
| 26-1/2"                    |           | 38.3         | 76.7  | 52.4 | 104.8 | 122.0 | 43.8 | 80.0  |  |
| 30"                        |           | 33.9         | 67.7  | 46.3 | 92.5  | 107.7 | 38.7 | 70.7  |  |
| 37"                        |           | 27.5         | 54.9  | 37.5 | 75.0  | 87.4  | 31.4 | 57.3  |  |
| 42"                        |           | 24.2         | 48.4  | 33.0 | 66.1  | 77.0  | 27.6 | 50.5  |  |
| 48"                        |           | -            | 42.3  | 28.9 | 57.8  | 67.3  | 24.2 | 44.2  |  |
| 54"                        |           | -            | 37.6  | 25.7 | 51.4  | 59.9  | 21.5 | 39.3  |  |
| 60"                        |           | -            | 33.9  | 23.1 | 46.3  | 53.9  | -    | 35.3  |  |
| 66"                        |           | -            | 30.8  | 21.0 | 42.1  | 49.0  | -    | 32.1  |  |
| 72"                        |           | -            | 28.2  | -    | 38.6  | 44.9  | -    | 29.4  |  |

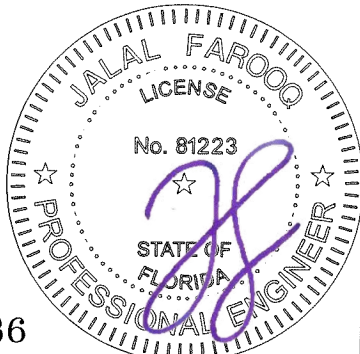


TYPICAL MULLION ARRANGEMENTS

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

Sealed: 7/15/2026

FL #39086



**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)

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

|          |          |
|----------|----------|
| date:    | 05-21-21 |
| scale:   |          |
| dr. by:  | TARIQ    |
| chk. by: |          |

drawing no.  
**21-45F**  
sheet 6 of 13

**NOTE:**  
ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS AT HEAD, SILL OR JAMB ENDS.  
FOR ANCHORS DESCRIPTION SEE SHEETS 7 THRU 13.  
(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

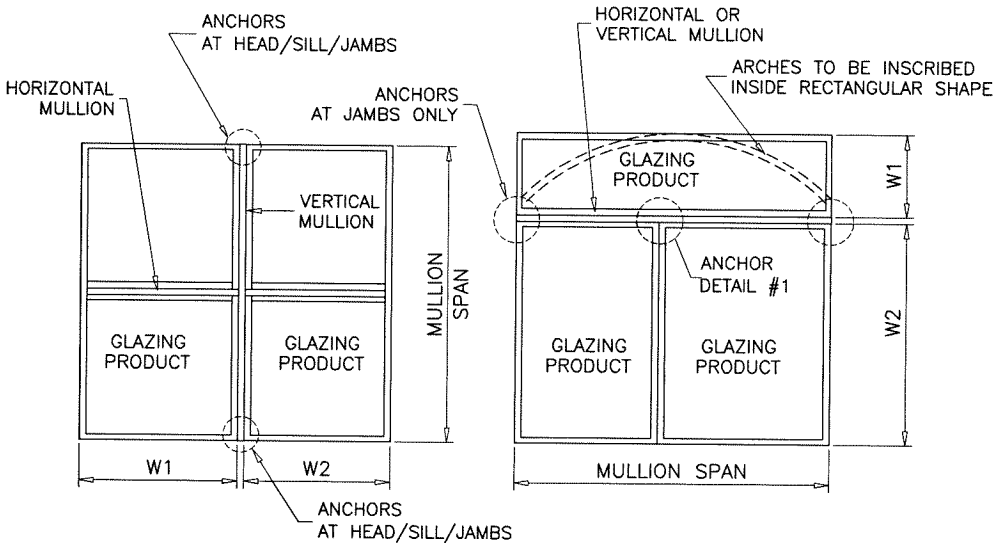
ANCHORS TYPE 'D' AND 'E' APPLICABLE TO 4", 5" AND 6" TUBE MULLIONS.  
ANCHORS TYPE 'A', 'B', 'C', 'F' AND 'G' APPLICABLE TO ALL TUBE MULLIONS.

ANCHORS

| DESIGN LOAD CAPACITY - PSF |           |               |       |       |       |       |       |       |       |
|----------------------------|-----------|---------------|-------|-------|-------|-------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS TYPES |       |       |       |       |       |       |       |
| WIDTH (W)                  | MULL SPAN | HW            | iW    | HC    | iC    | HB    | iB    | J     | K     |
| 30"                        | 108"      | 150.0         | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 | 150.0 |
| 36"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 128.9 | 150.0 | 150.0 | 150.0 |
| 42"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 110.5 | 133.6 | 150.0 | 150.0 |
| 48"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 96.7  | 116.9 | 150.0 | 150.0 |
| 54"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 85.9  | 103.9 | 150.0 | 150.0 |
| 60"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 77.3  | 93.5  | 150.0 | 150.0 |
| 66"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 70.3  | 85.0  | 150.0 | 150.0 |
| 72"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 64.4  | 77.9  | 150.0 | 150.0 |
| 78"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 59.5  | 71.9  | 150.0 | 150.0 |
| 84"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 55.2  | 66.8  | 150.0 | 150.0 |
| 90"                        | 120"      | 150.0         | 150.0 | 150.0 | 150.0 | 51.6  | 62.3  | 150.0 | 150.0 |
| 96"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 48.3  | 58.4  | 150.0 | 150.0 |
| 30"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 116.0 | 140.3 | 150.0 | 150.0 |
| 36"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 112.0 | 136.5 | 150.0 | 150.0 |
| 42"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 99.4  | 120.2 | 150.0 | 150.0 |
| 48"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 87.0  | 105.2 | 150.0 | 150.0 |
| 54"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 77.3  | 93.5  | 150.0 | 150.0 |
| 60"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 69.6  | 84.2  | 150.0 | 150.0 |
| 66"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 63.3  | 76.5  | 150.0 | 150.0 |
| 72"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 58.0  | 70.1  | 150.0 | 150.0 |
| 78"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 53.5  | 64.7  | 150.0 | 150.0 |
| 84"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 49.7  | 60.1  | 150.0 | 150.0 |
| 30"                        | 132"      | 150.0         | 150.0 | 150.0 | 150.0 | 105.5 | 127.5 | 150.0 | 150.0 |
| 36"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 102.6 | 124.1 | 139.3 | 150.0 |
| 42"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 90.4  | 109.3 | 119.4 | 150.0 |
| 48"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 79.1  | 95.6  | 104.5 | 139.3 |
| 54"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 70.3  | 85.0  | 92.8  | 123.8 |
| 60"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 63.3  | 76.5  | 83.6  | 111.4 |
| 66"                        |           | 150.0         | 150.0 | 150.0 | 150.0 | 57.5  | 69.6  | 76.0  | 101.3 |
| 72"                        |           | 115.5         | 150.0 | 150.0 | 150.0 | 52.7  | 63.8  | 69.6  | 92.8  |
| 78"                        |           | 102.0         | 150.0 | 150.0 | 150.0 | 48.7  | 58.9  | 64.3  | 85.7  |
| 30"                        | 144"      | 85.0          | 113.3 | 115.7 | 150.0 | 116.0 | 140.3 | 127.7 | 150.0 |
| 36"                        |           | 82.7          | 110.3 | 112.5 | 150.0 | 94.1  | 113.7 | 124.2 | 150.0 |
| 42"                        |           | 72.9          | 97.1  | 99.1  | 132.2 | 82.9  | 100.2 | 109.4 | 145.9 |
| 48"                        |           | 63.8          | 85.0  | 86.8  | 115.7 | 72.5  | 87.7  | 95.8  | 127.7 |
| 54"                        |           | 56.7          | 75.6  | 77.1  | 102.8 | 64.4  | 77.9  | 85.1  | 113.5 |
| 60"                        |           | 51.0          | 68.0  | 69.4  | 92.5  | 58.0  | 70.1  | 76.6  | 102.1 |
| 66"                        |           | 46.4          | 61.8  | 63.1  | 84.1  | 52.7  | 63.8  | 69.6  | 92.8  |
| 72"                        |           | 42.5          | 56.7  | 57.8  | 77.1  | 48.3  | 58.4  | 63.8  | 85.1  |
| 30"                        | 156"      | 94.2          | 125.5 | 128.1 | 150.0 | 107.1 | 129.5 | 141.4 | 150.0 |
| 36"                        |           | 78.5          | 104.6 | 106.8 | 142.4 | 89.2  | 107.9 | 117.8 | 150.0 |
| 42"                        |           | 67.3          | 89.7  | 91.5  | 122.0 | 76.5  | 92.5  | 101.0 | 134.7 |
| 48"                        |           | 58.8          | 78.5  | 80.1  | 106.8 | 66.9  | 80.9  | 88.4  | 117.8 |
| 54"                        |           | 52.3          | 69.7  | 71.2  | 94.9  | 59.5  | 71.9  | 78.6  | 104.8 |
| 60"                        |           | 47.1          | 62.8  | 64.1  | 85.4  | 53.5  | 64.7  | 70.7  | 94.3  |
| 66"                        | 168"      | 42.8          | 57.1  | 58.2  | 77.7  | 48.7  | 58.9  | 64.3  | 85.7  |
| 30"                        |           | 87.4          | 116.6 | 119.0 | 150.0 | 99.4  | 120.2 | 131.3 | 150.0 |
| 36"                        |           | 72.9          | 97.1  | 99.1  | 132.2 | 82.9  | 100.2 | 109.4 | 145.9 |
| 42"                        |           | 62.4          | 83.3  | 85.0  | 113.3 | 71.0  | 85.9  | 93.8  | 125.1 |
| 48"                        |           | 54.6          | 72.9  | 74.4  | 99.1  | 62.1  | 75.1  | 82.1  | 109.4 |
| 54"                        |           | 48.6          | 64.8  | 66.1  | 88.1  | 55.2  | 66.8  | 73.0  | 97.3  |
| 60"                        |           | 43.7          | 58.3  | 59.5  | 79.3  | 49.7  | 60.1  | 65.7  | 87.5  |

| DESIGN LOAD CAPACITY - PSF |           |               |       |       |       |      |       |       |       |
|----------------------------|-----------|---------------|-------|-------|-------|------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS TYPES |       |       |       |      |       |       |       |
| WIDTH (W)                  | MULL SPAN | HW            | iW    | HC    | iC    | HB   | iB    | J     | K     |
| 30"                        | 180"      | 81.6          | 108.8 | 111.0 | 148.1 | 92.8 | 112.2 | 122.6 | 150.0 |
| 36"                        |           | 68.0          | 90.7  | 92.5  | 123.4 | 77.3 | 93.5  | 102.1 | 136.2 |
| 42"                        |           | 58.3          | 77.7  | 79.3  | 105.8 | 66.3 | 80.2  | 87.5  | 116.7 |
| 48"                        |           | 51.0          | 68.0  | 69.4  | 92.5  | 58.0 | 70.1  | 76.6  | 102.1 |
| 54"                        |           | 45.3          | 60.4  | 61.7  | 82.3  | 51.6 | 62.3  | 68.1  | 90.8  |
| 30"                        | 192"      | 76.5          | 102.0 | 104.1 | 138.8 | 87.0 | 105.2 | 114.9 | 150.0 |
| 36"                        |           | 63.8          | 85.0  | 86.8  | 115.7 | 72.5 | 87.7  | 95.8  | 127.7 |
| 42"                        |           | 54.6          | 72.9  | 74.4  | 99.1  | 62.1 | 75.1  | 82.1  | 109.4 |
| 48"                        |           | 47.8          | 63.8  | 65.1  | 86.8  | 54.4 | 65.8  | 71.8  | 95.8  |
| 54"                        |           | 42.5          | 56.7  | 57.8  | 77.1  | 48.3 | 58.4  | 63.8  | 85.1  |

ALL LOADS ARE EXT.(+)/INT.(−).



TYPICAL MULLION ARRANGEMENTS

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

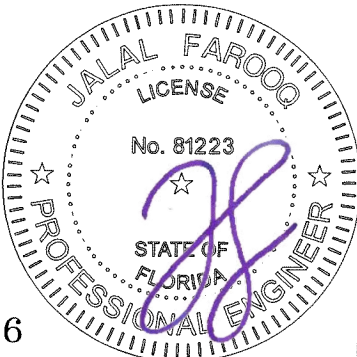
NOTE:

ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS AT HEAD, SILL OR JAMB ENDS.

FOR ANCHORS DESCRIPTION SEE SHEET 12.1 & 12.2 (INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

ANCHORS

FL #39086



**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\21-45F-ESW

ALUMINUM TUBE MULLIONS

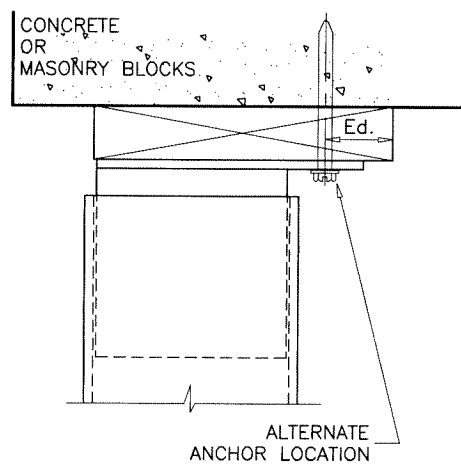
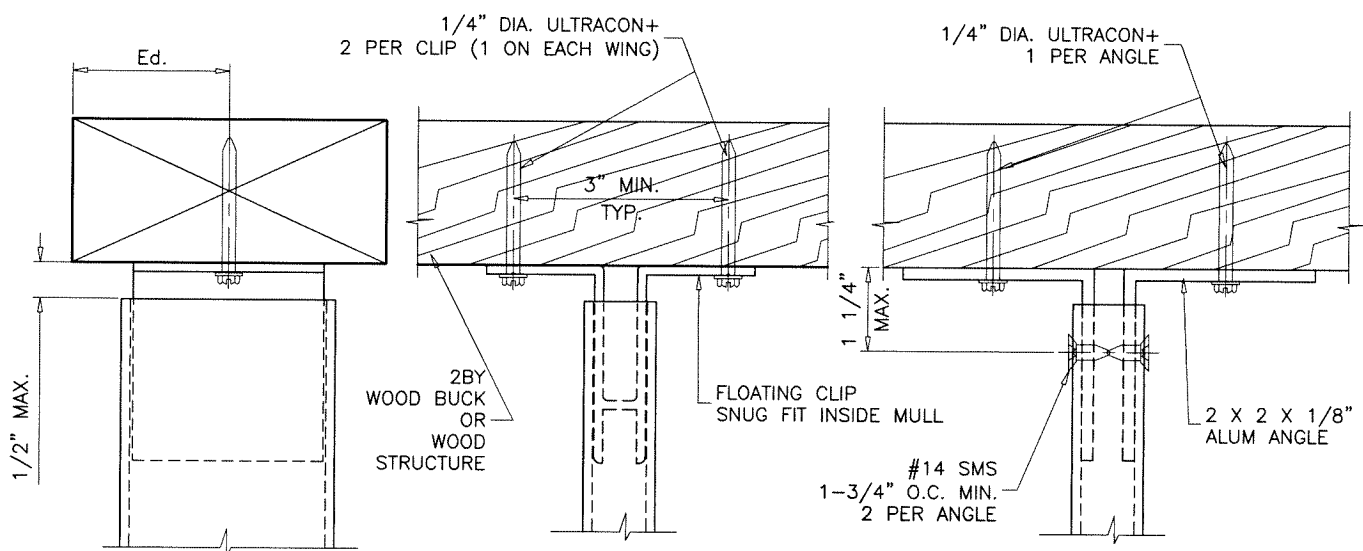
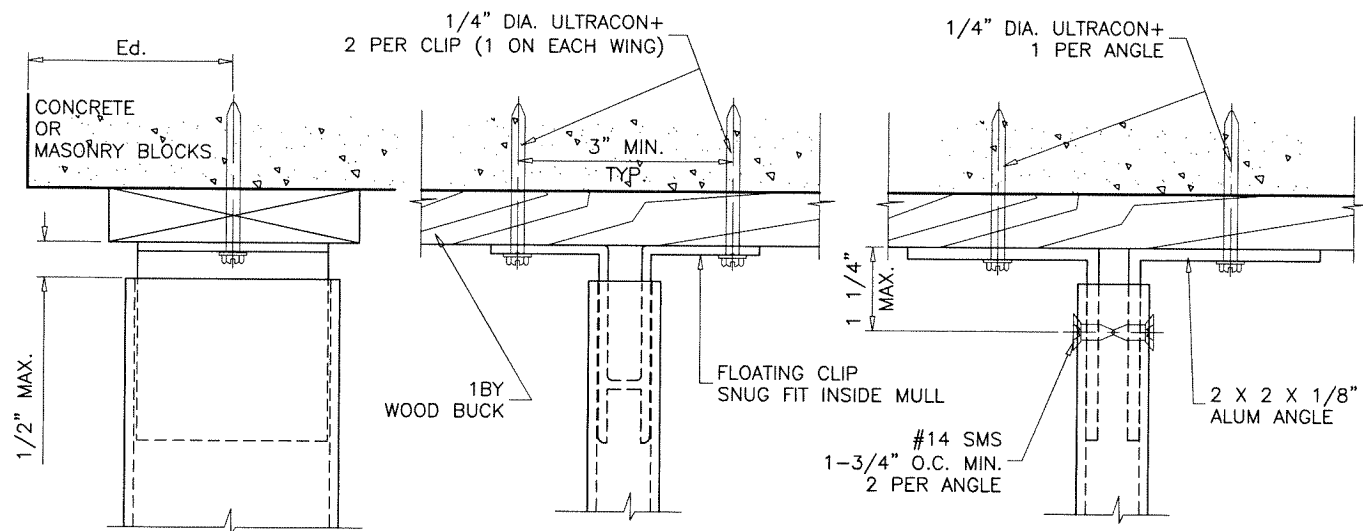
**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: |  | no | date | by | description |
|------------|--|----|------|----|-------------|
|            |  |    |      |    |             |
|            |  |    |      |    |             |
|            |  |    |      |    |             |
|            |  |    |      |    |             |

|                |        |               |          |
|----------------|--------|---------------|----------|
| date: 05-21-21 | scale: | dr. by: TARIQ | chk. by: |
|----------------|--------|---------------|----------|

drawing no. 21-45F

sheet 6.1 of 13

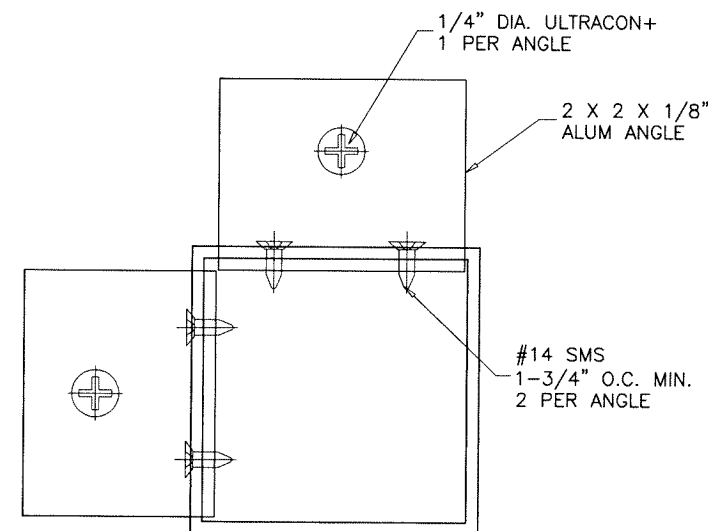
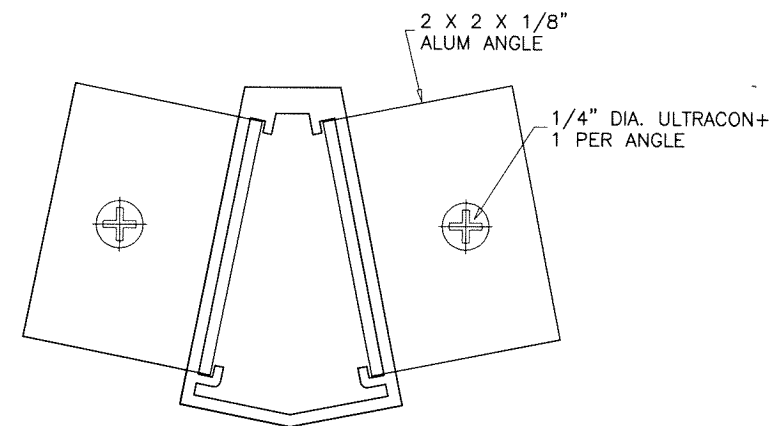


ANCHORS TYPE 'A'

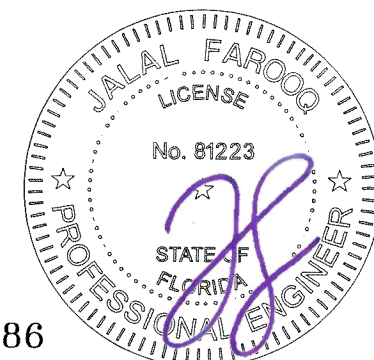
| 1/4" DIA. ULTRACON+ BY 'DEWALT'<br>(Fu=164 KSI, Fy=148 KSI)<br>ULTRACON+ MAY BE HEX OR FLAT HEAD |                       |                |
|--------------------------------------------------------------------------------------------------|-----------------------|----------------|
| SUBSTRATE                                                                                        | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| WOOD                                                                                             | 1"                    | 1-1/2"         |
| CONCRETE                                                                                         | 2-1/2"                | 1-3/4"         |
| BLOCK                                                                                            | 2-1/2"                | 1-1/4"         |

WOOD = 2BY WOOD BUCKS OR WOOD STRUCTURE S.G. = 0.55 MIN.  
CONCRETE = f'c = 3000 PSI MIN.  
C-90 HOLLOW/FILLED BLOCKS f'm = 2000 PSI MIN.

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



Sealed: 7/15/2026



FL #39086

**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 21-45F-ESW

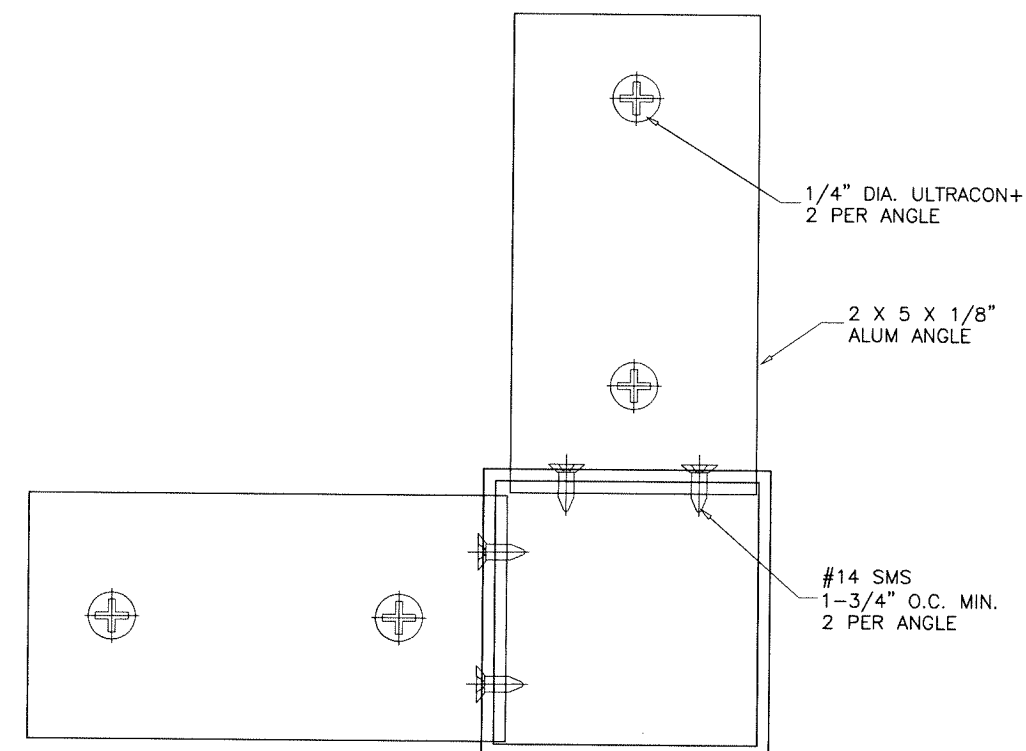
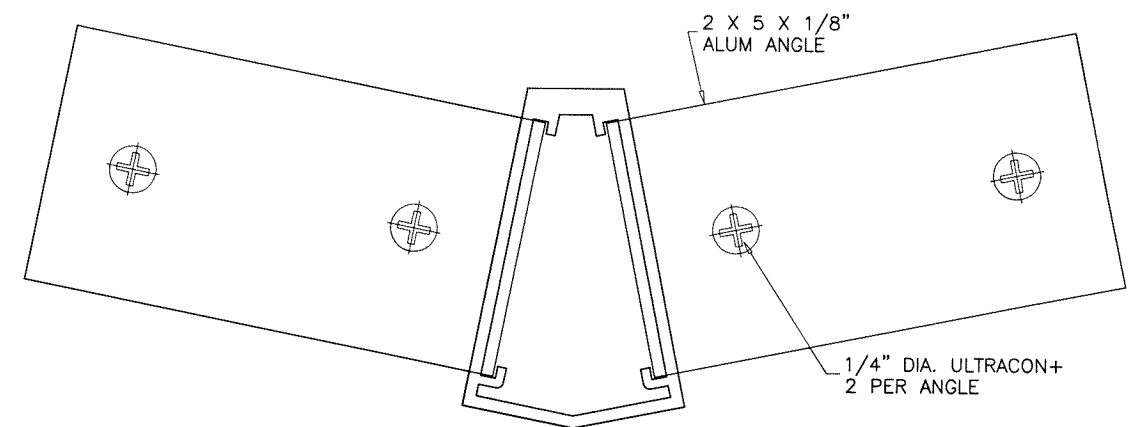
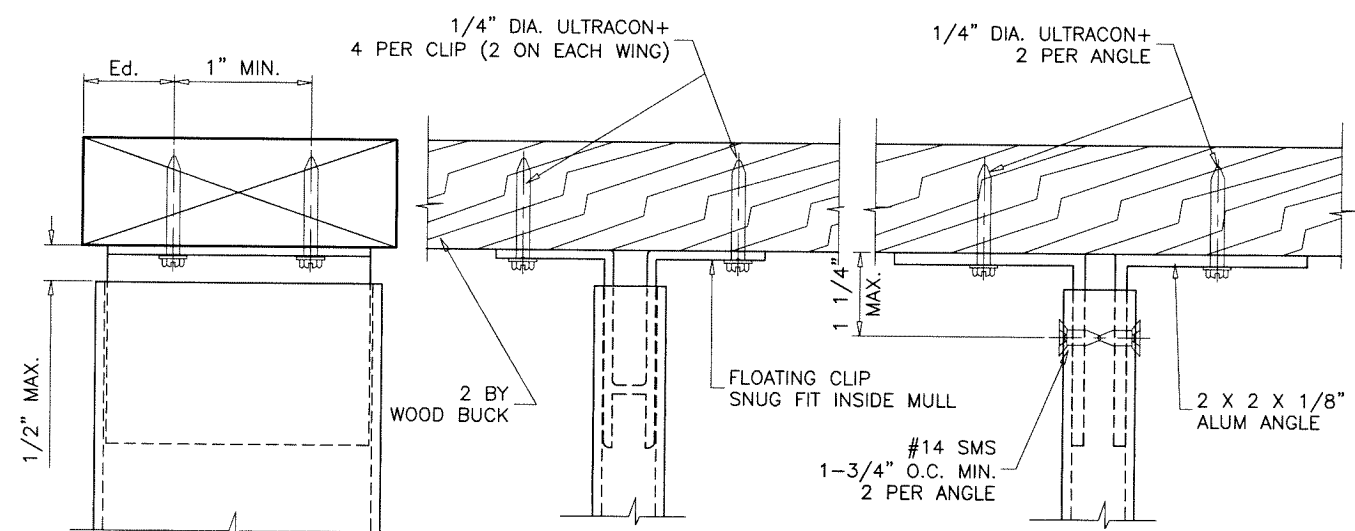
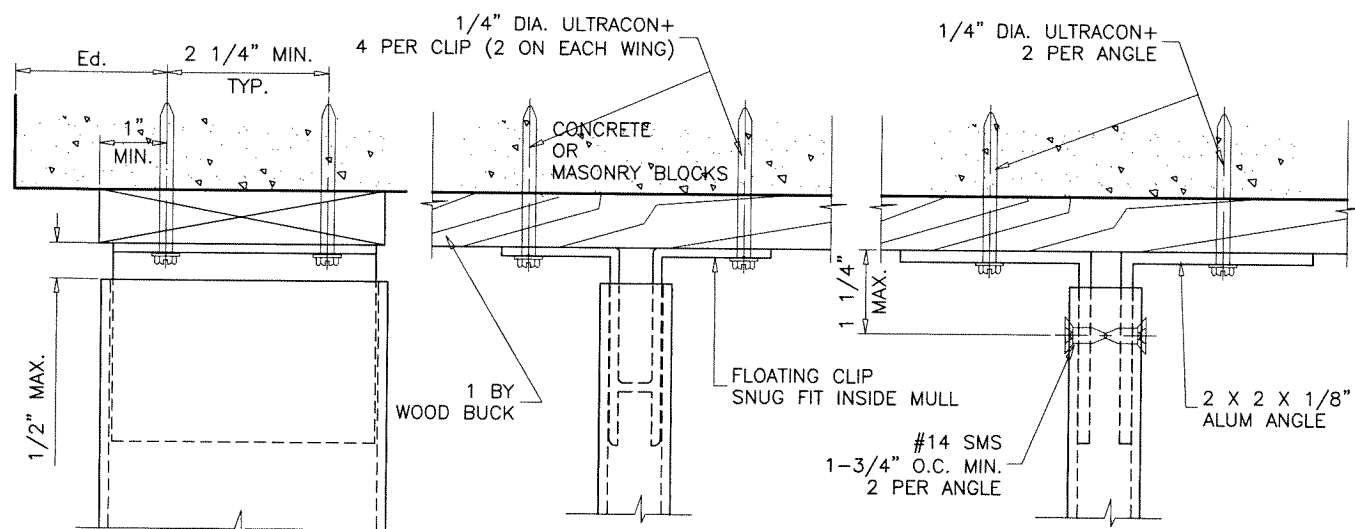
ALUMINUM TUBE MULLIONS

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

|                |                  |               |          |
|----------------|------------------|---------------|----------|
| date: 05-21-21 | scale: 3/8" = 1" | dr. by: TARIQ | chk. by: |
|----------------|------------------|---------------|----------|

drawing no.  
**21-45F**  
sheet 7 of 13



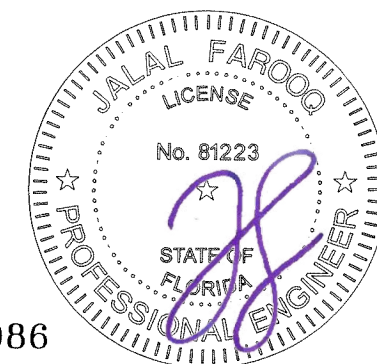
ANCHORS TYPE 'B'

| <b>1/4" DIA. ULTRACON+ BY 'DEWALT'</b><br>(Fu=164 KSI, Fy=148 KSI)<br>ULTRACON+ MAY BE HEX OR FLAT HEAD |                       |               |
|---------------------------------------------------------------------------------------------------------|-----------------------|---------------|
| SUBSTRATE                                                                                               | Ed. = MIN. EDGE DIST. | MIN. EMBEDMEN |
| WOOD                                                                                                    | 1"                    | 1-1/2"        |
| CONCRETE                                                                                                | 2-1/2"                | 1-3/4"        |
| BLOCK                                                                                                   | 2-1/2"                | 1-1/4"        |

WOOD = 2BY WOOD BUCKS OR WOOD STRUCTURE S.G. = 0.55 MIN.  
CONCRETE =  $f'_c$  = 3000 PSI MIN.  
C-90 HOLLOW/FILLED BLOCKS  $f'_m$  = 2000 PSI MIN.

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

Sealed: 7/15/2026



**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

ALUMINUM TUBE MULLIONS

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

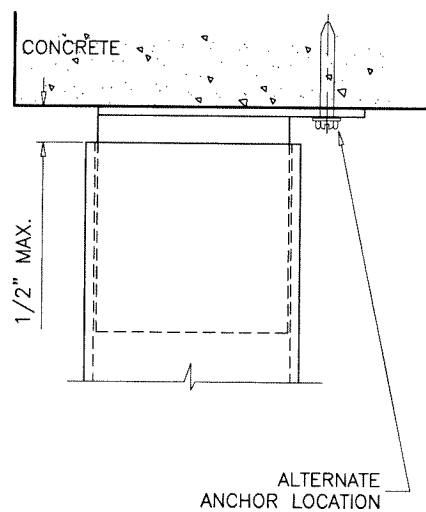
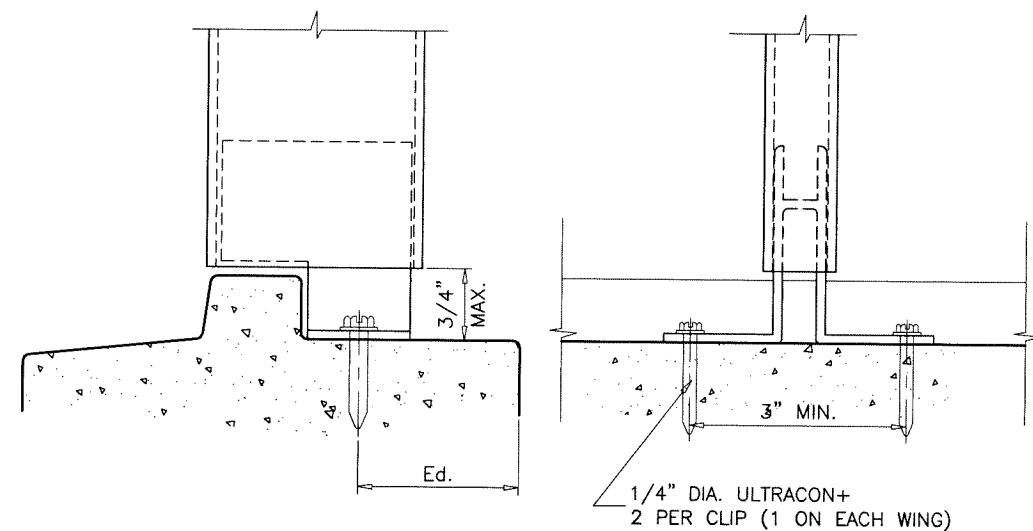
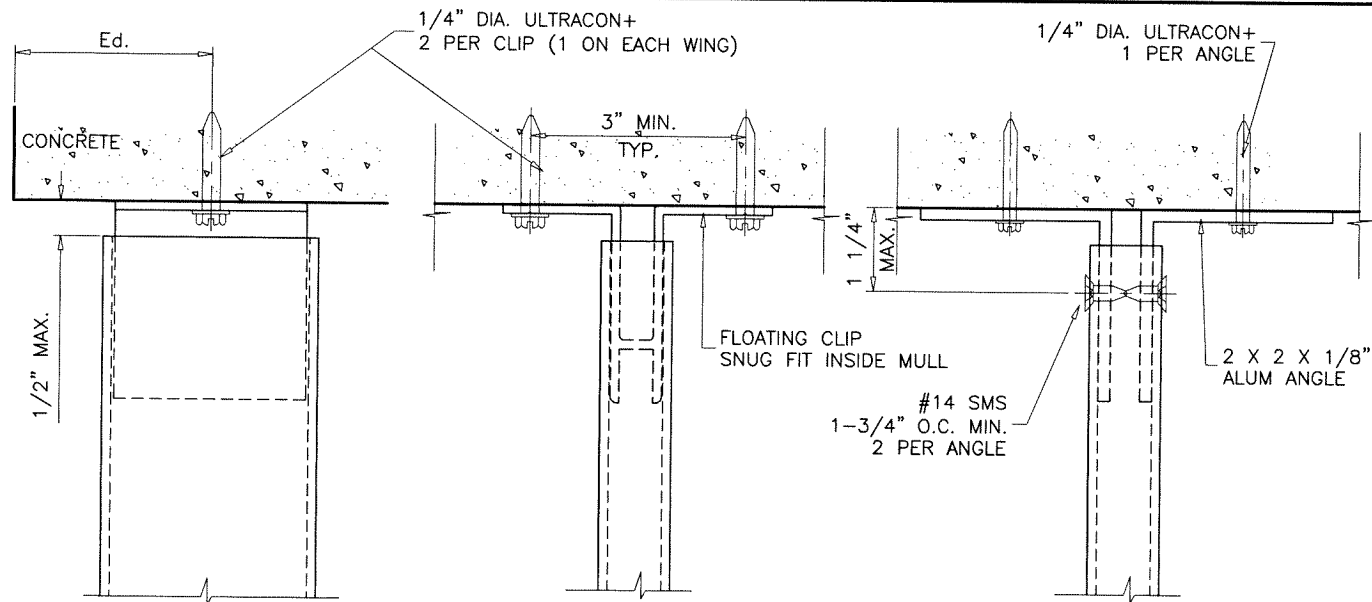
[illegible]

|                    |
|--------------------|
| date: 05-21-21     |
| scale: $3/8" = 1"$ |
| dr. by: TARIQ      |
| chk. by:           |

drawing no.  
21-45F

sheet 8 of 13

FL #39086

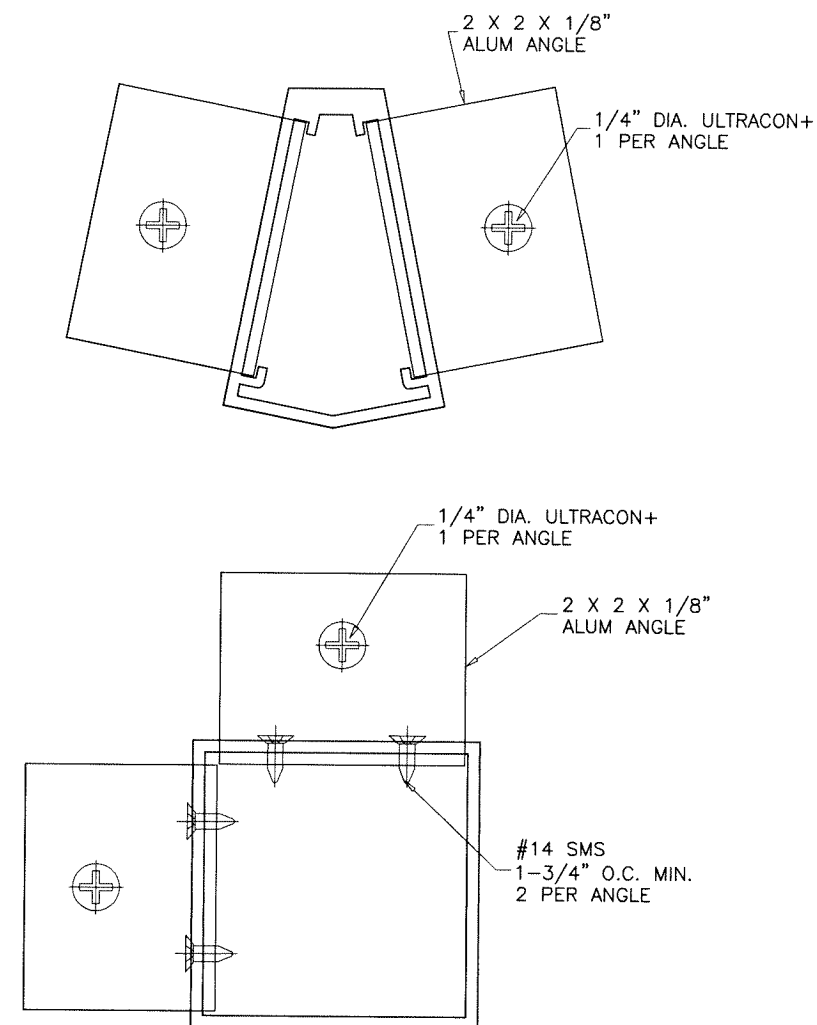


ANCHORS TYPE 'C'

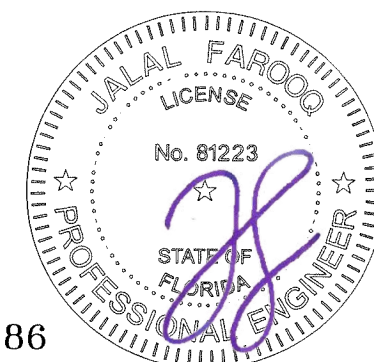
| 1/4" DIA. ULTRAACON+ BY 'DEWALT'   |                       |                |
|------------------------------------|-----------------------|----------------|
| (Fu=164 KSI, Fy=148 KSI)           |                       |                |
| ULTRAACON+ MAY BE HEX OR FLAT HEAD |                       |                |
| SUBSTRATE                          | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| CONCRETE                           | 2-1/2"                | 1-3/4"         |

CONCRETE = f'c = 3000 PSI MIN.

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



Sealed: 7/15/2026



FL #39086

**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)

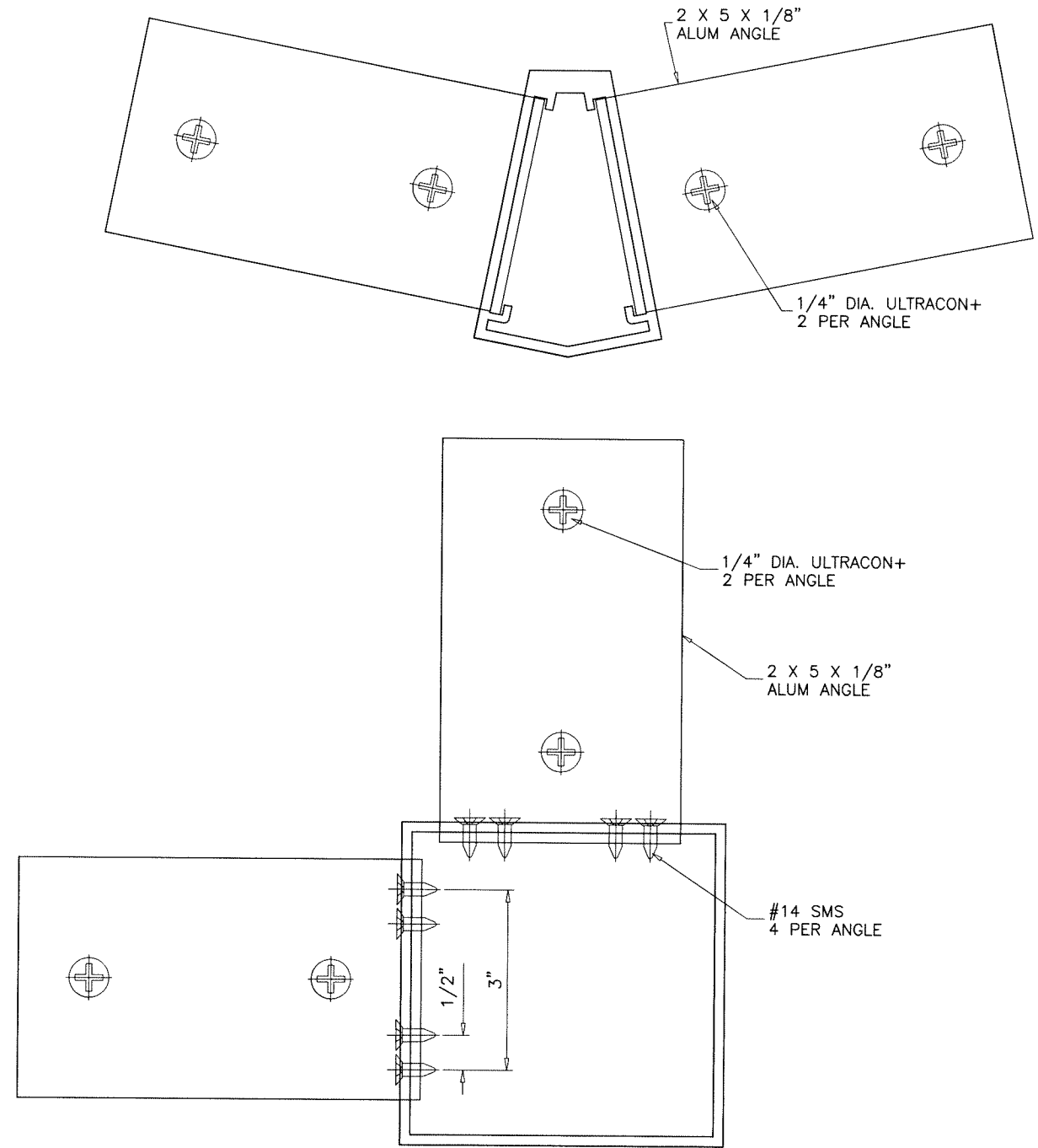
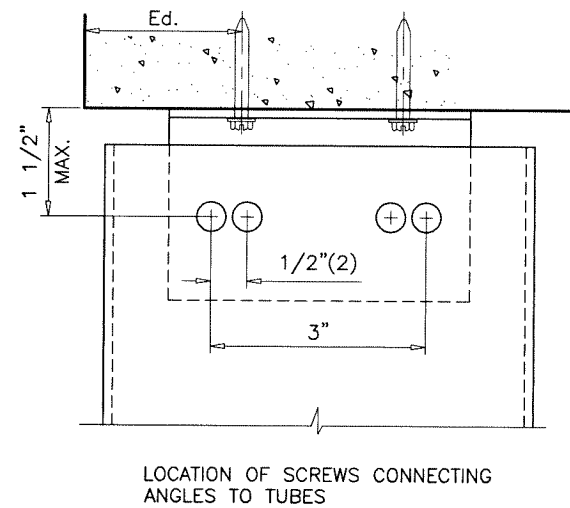
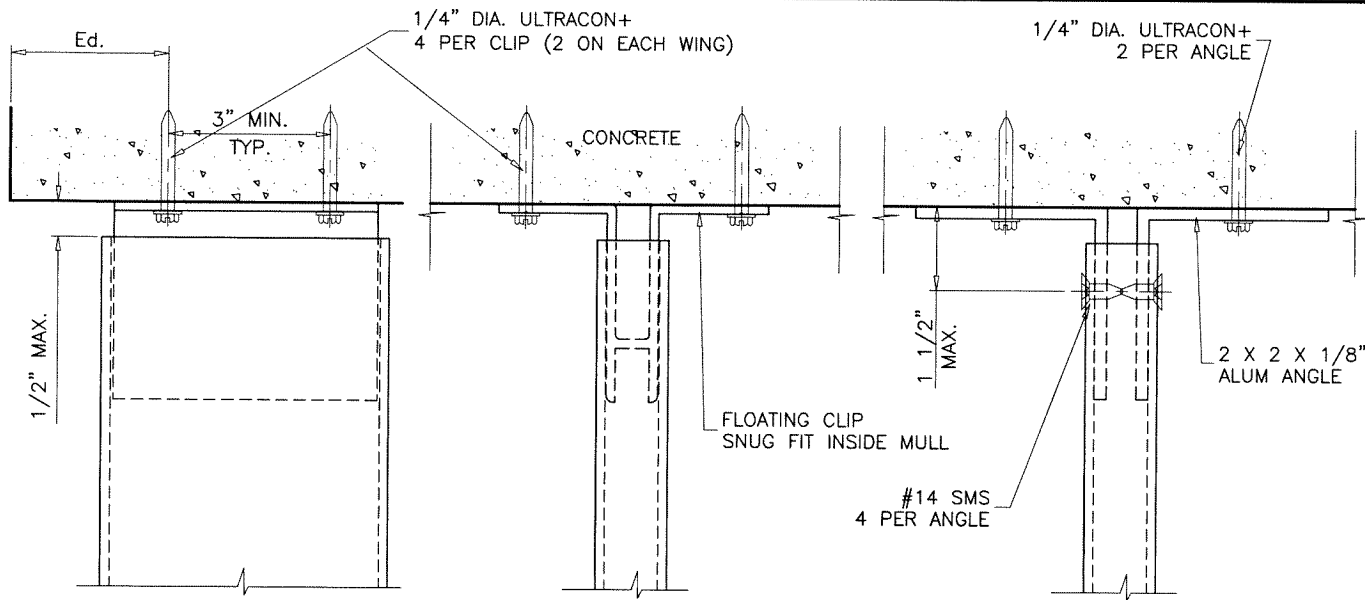
ALUMINUM TUBE MULLIONS

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

|                |                  |               |          |
|----------------|------------------|---------------|----------|
| date: 05-21-21 | scale: 3/8" = 1" | dr. by: TARIQ | chk. by: |
|----------------|------------------|---------------|----------|

drawing no.  
**21-45F**  
sheet 9 of 13



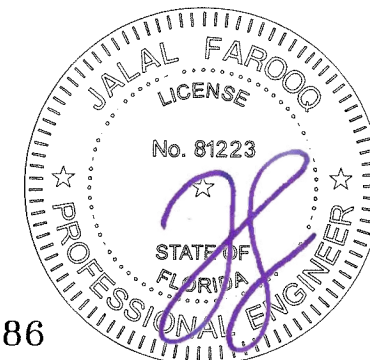
**ANCHORS TYPE 'D'**  
APPLICABLE FOR 4", 5" AND 6" TUBE MULLIONS

|                                    |                       |                |
|------------------------------------|-----------------------|----------------|
| 1/4" DIA. ULTRAACON+ BY 'DEWALT'   |                       |                |
| (Fu=164 KSI, Fy=148 KSI)           |                       |                |
| ULTRAACON+ MAY BE HEX OR FLAT HEAD |                       |                |
| SUBSTRATE                          | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| CONCRETE                           | 2-1/2"                | 1-3/4"         |

CONCRETE = f'c = 3000 PSI MIN.

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

Sealed: 7/15/2026



FL #39086

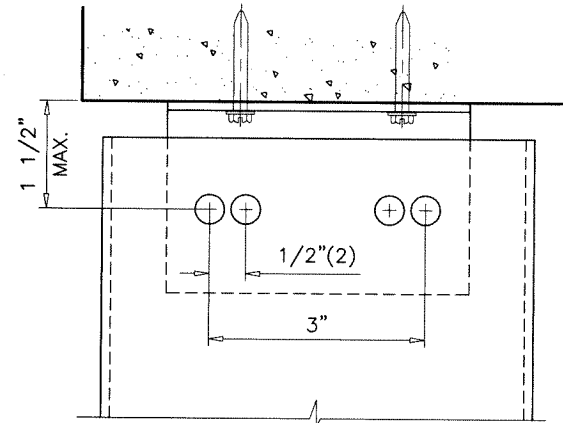
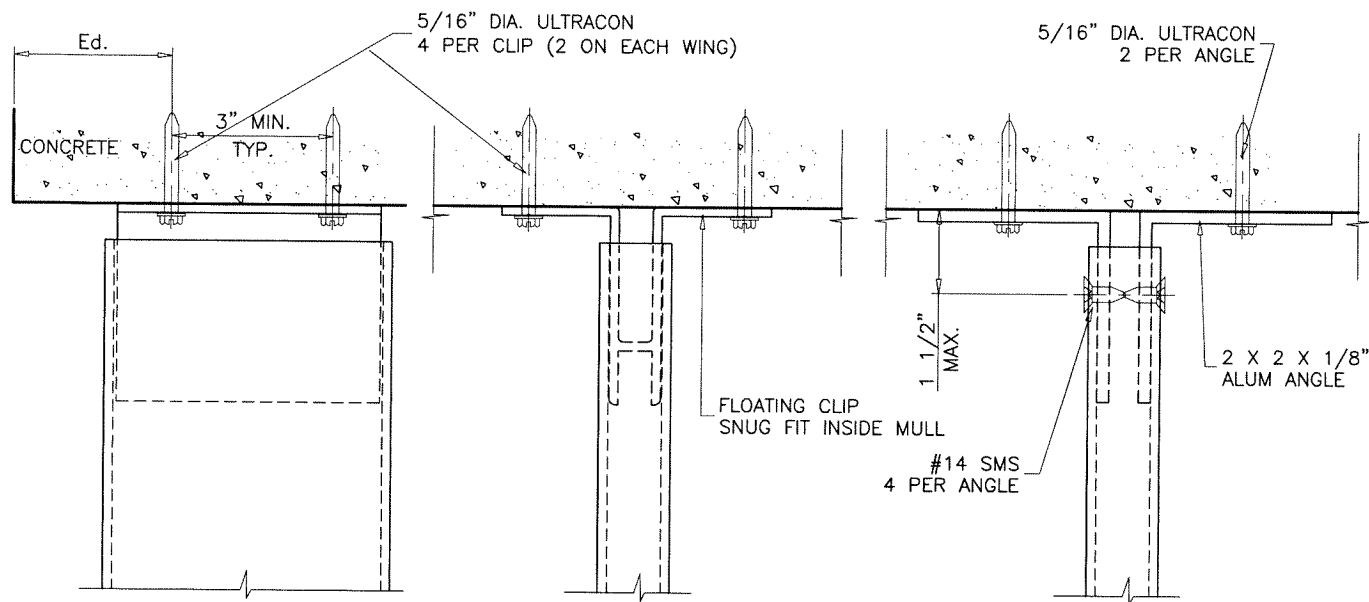
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
9360 SUNSET DRIVE, SUITE 220  
MIAMI, FLORIDA 33173  
TEL. (305) 264-8100 FAX. (305) 262-6978  
(C.A.N. 3538)

**ALUMINUM TUBE MULLIONS**  
**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

date: 05-21-21  
scale: 3/8" = 1"  
dr. by: TARIQ  
chk. by:

drawing no.  
**21-45F**  
sheet 10 of 13



LOCATION OF SCREWS CONNECTING  
ANGLES TO TUBES

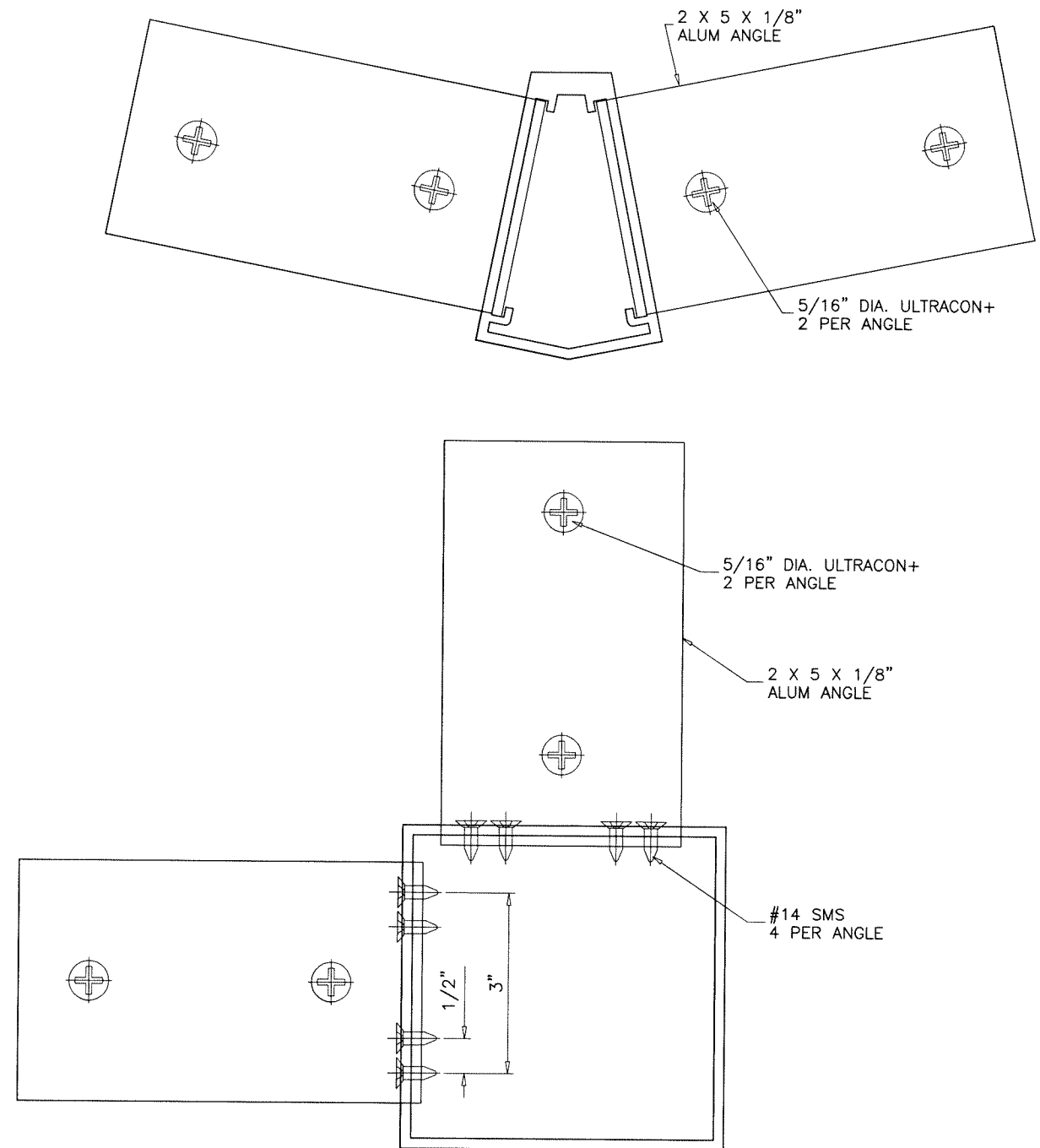
### ANCHORS TYPE 'E'

APPLICABLE FOR 4", 5" AND 6" TUBE MULLIONS

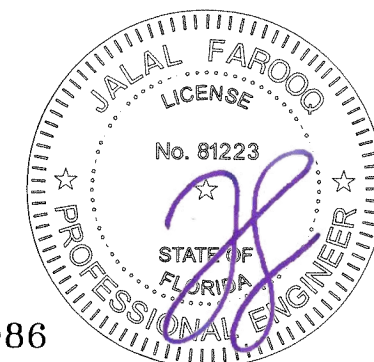
|                                  |                       |                |
|----------------------------------|-----------------------|----------------|
| 5/16" DIA. ULTRACON BY 'DEWALT'  |                       |                |
| (Fu=177 KSI, Fy=155 KSI)         |                       |                |
| ULTRACON MAY BE HEX OR FLAT HEAD |                       |                |
| SUBSTRATE                        | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| CONCRETE                         | 3-1/8"                | 2"             |

CONCRETE = f'c = 3000 PSI MIN.

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



Sealed: 7/15/2026



FL #39086

**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

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

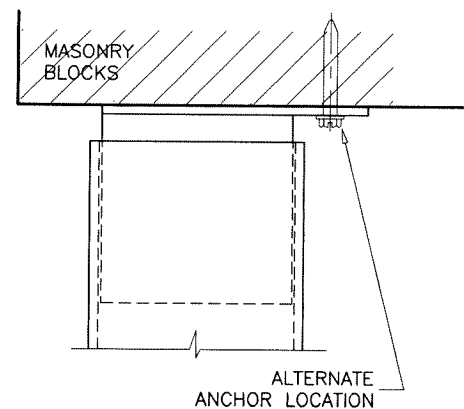
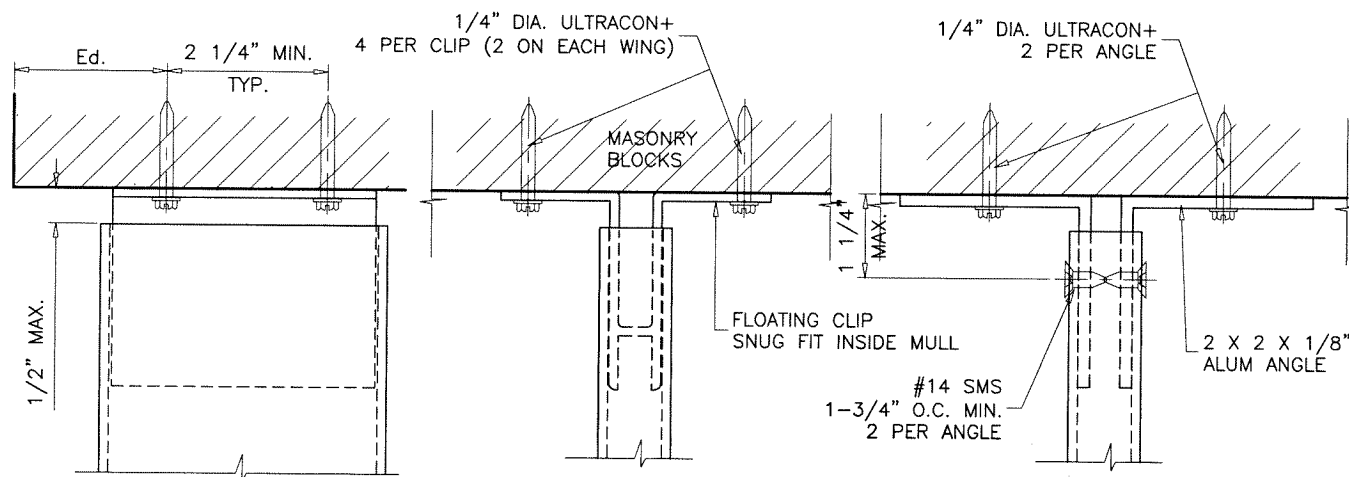
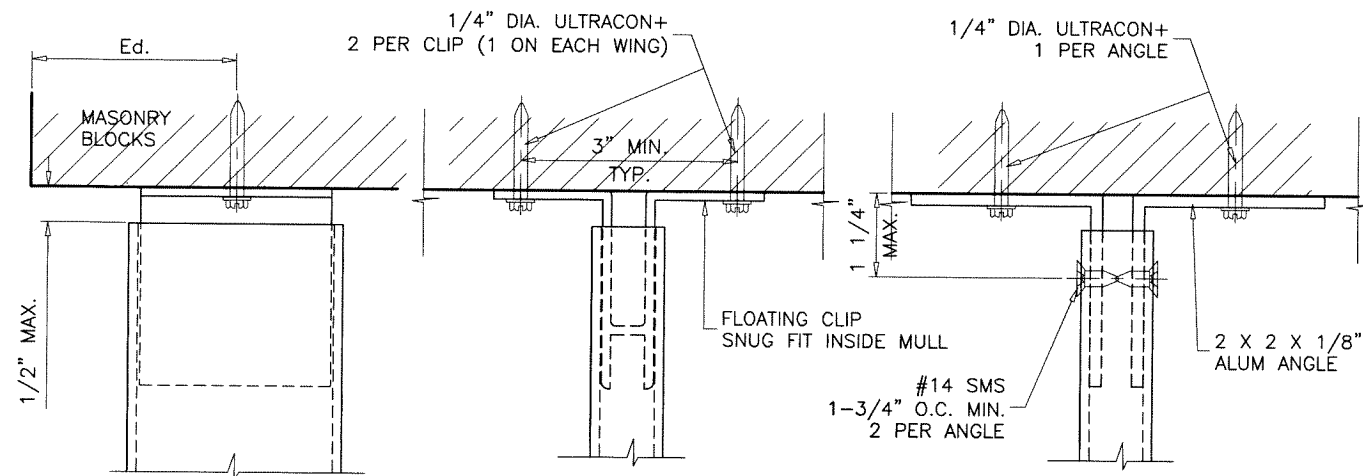
|          |           |
|----------|-----------|
| date:    | 05-21-21  |
| scale:   | 3/8" = 1" |
| dr. by:  | TARIQ     |
| chk. by: |           |

drawing no.

21-45F

sheet 11 of 13

MULLION 21-45F-ESW



ANCHORS TYPE 'F'

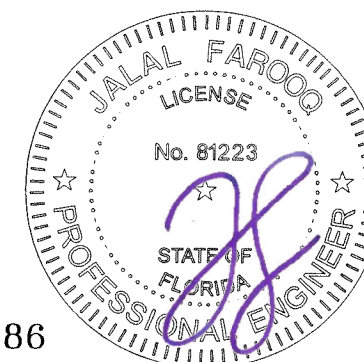
ANCHORS TYPE 'G'

| 1/4" DIA. ULTRACON+ BY 'DEWALT'   |                       |                |
|-----------------------------------|-----------------------|----------------|
| (Fu=164 KSI, Fy=148 KSI)          |                       |                |
| ULTRACON+ MAY BE HEX OR FLAT HEAD |                       |                |
| SUBSTRATE                         | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| BLOCKS                            | 2-1/2"                | 1-1/4"         |

C-90 HOLLOW/FILLED BLOCK f'm = 2000 PSI MIN.

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

Sealed: 7/15/2026



FL #39086

**af c**  
**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  
**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: | no | date | by | description |
|------------|----|------|----|-------------|
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |
|            |    |      |    |             |

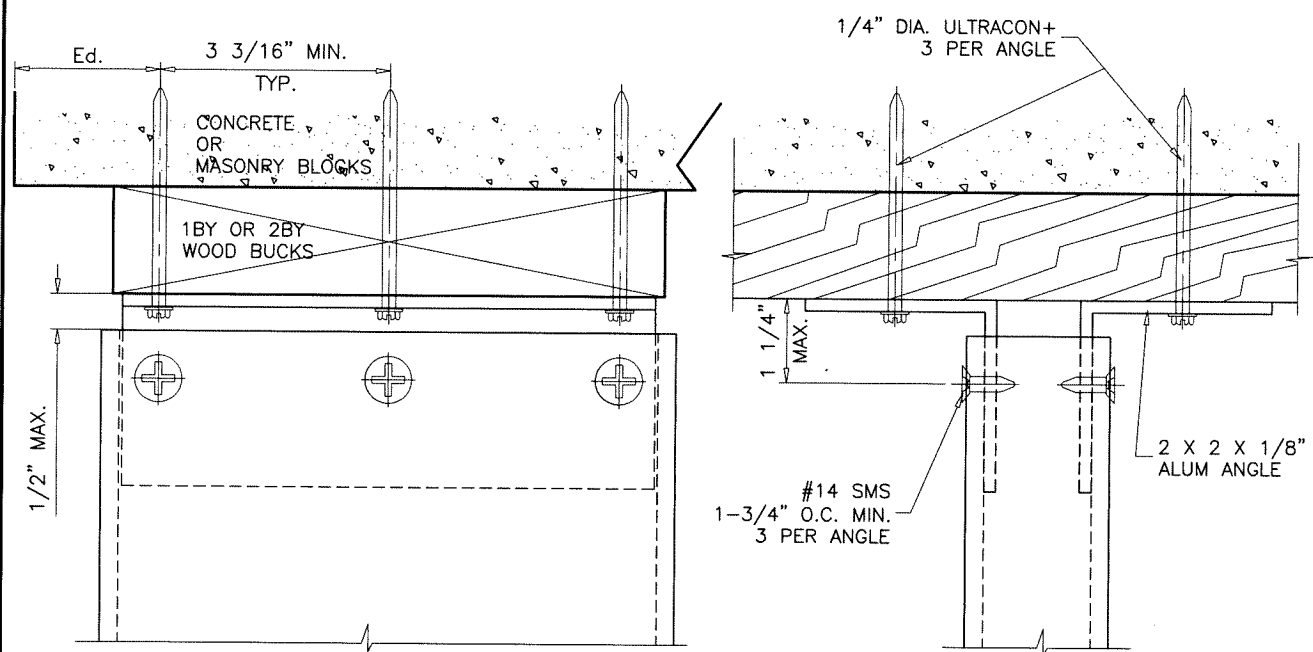
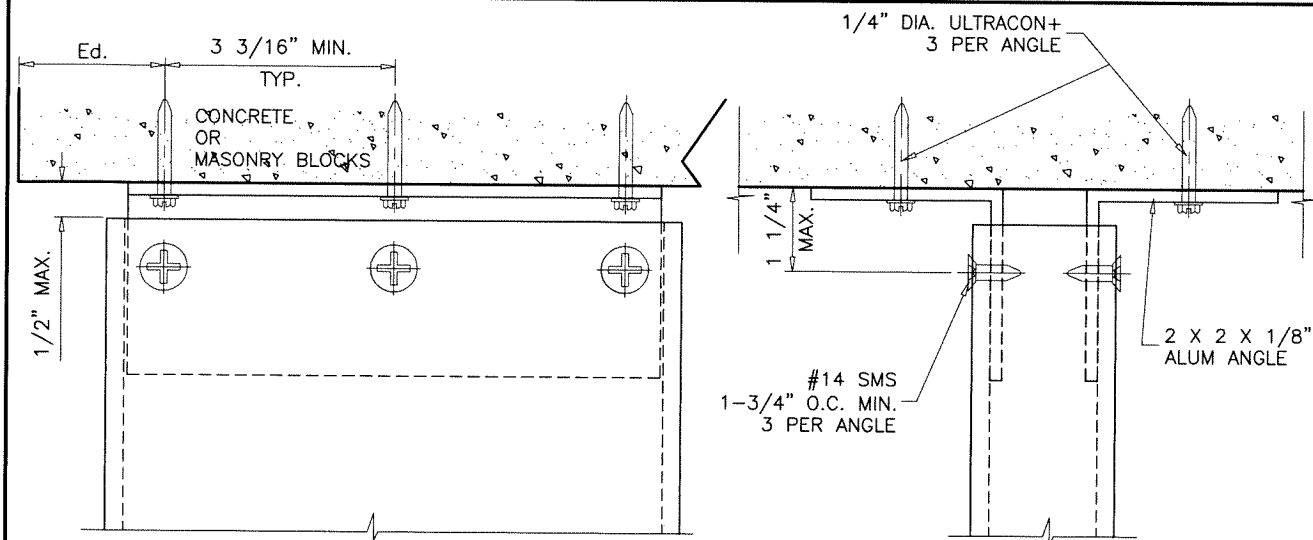
date: 05-21-21  
scale: 3/8" = 1"  
dr. by: TARIQ  
chk. by:

drawing no.

21-45F

sheet 12 of 13

MULLION 21-45F-ESW

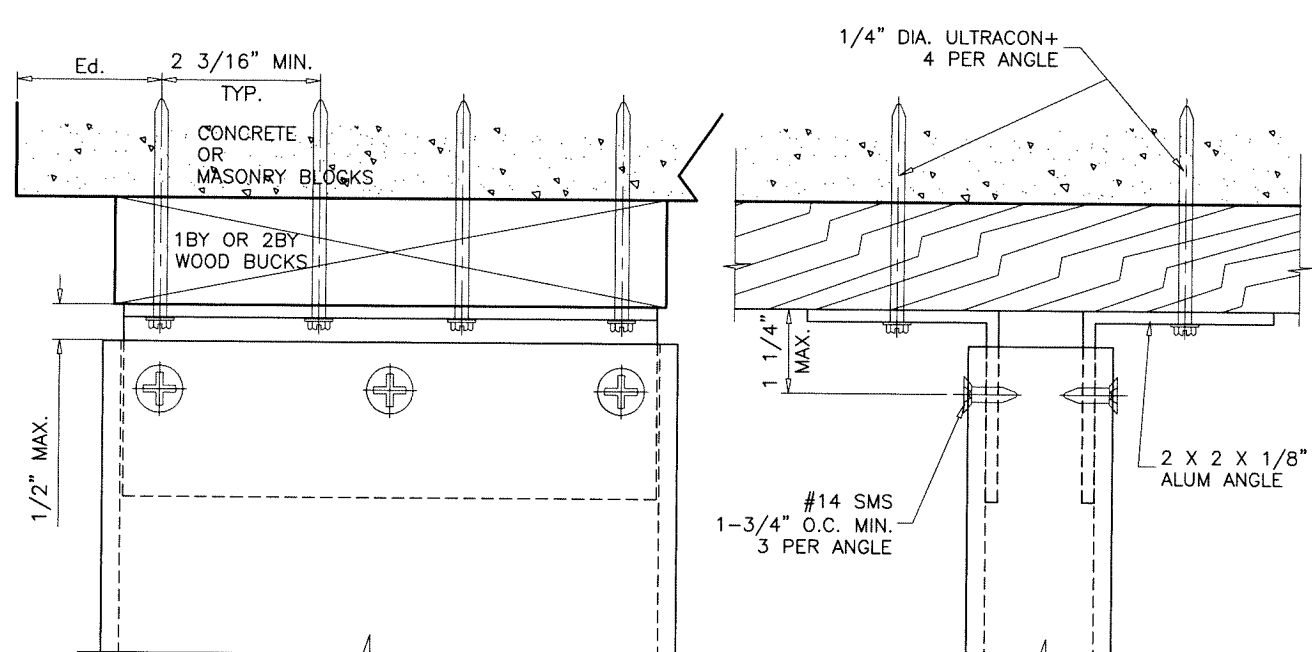
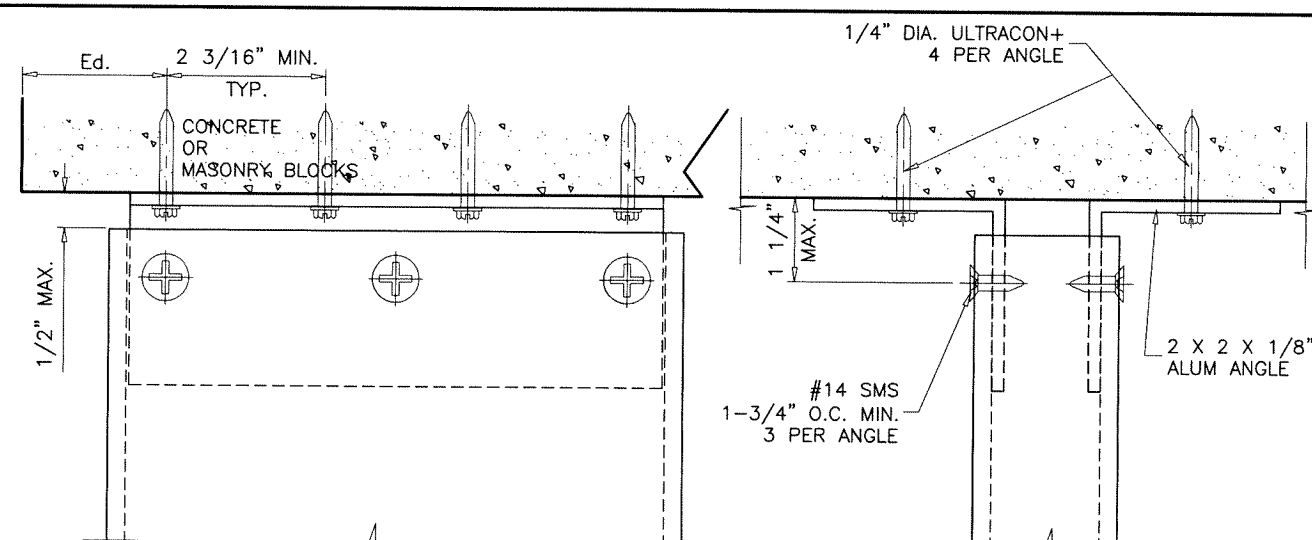


ANCHORS TYPE 'H'

| 1/4" DIA. ULTRACON+ BY 'DEWALT'   |           |                       |                |
|-----------------------------------|-----------|-----------------------|----------------|
| (Fu=164 KSI, Fy=148 KSI)          |           |                       |                |
| ULTRACON+ MAY BE HEX OR FLAT HEAD |           |                       |                |
| TYPES                             | SUBSTRATE | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| HW                                | THRU WOOD | 1"                    | 1-1/2"         |
| HC                                | CONCRETE  | 2-1/2"                | 1-3/4"         |
| HB                                | BLOCK     | 2-1/2"                | 1-1/4"         |

WOOD = 1BY OR 2BY WOOD BUCKS S.G. = 0.55 MIN.  
 CONCRETE = f'c = 3000 PSI MIN.  
 C-90 HOLLOW/FILLED BLOCKS f'm = 2000 PSI MIN.

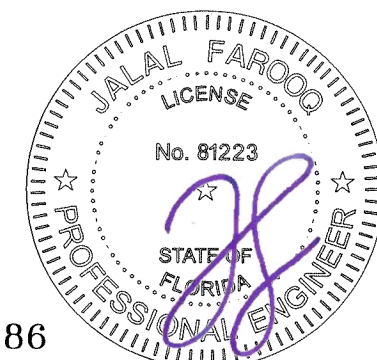
ALL ANGLES TO FIT SNUG INTO TUBE MULLIONS.  
 ANGLES CONNECTED DIRECTLY TO CONCRETE/BLOCKS TO BE PROTECTED  
 WITH ALKALI-RESISTANT COATINGS, SUCH AS BITUMINOUS PAINT OR  
 WATER-WHITE METHACRYLATE LACQUER.



ANCHORS TYPE 'i'

| 1/4" DIA. ULTRACON+ BY 'DEWALT'   |           |                       |                |
|-----------------------------------|-----------|-----------------------|----------------|
| (Fu=164 KSI, Fy=148 KSI)          |           |                       |                |
| ULTRACON+ MAY BE HEX OR FLAT HEAD |           |                       |                |
| TYPES                             | SUBSTRATE | Ed. = MIN. EDGE DIST. | MIN. EMBEDMENT |
| iW                                | THRU WOOD | 1"                    | 1-1/2"         |
| iC                                | CONCRETE  | 2-1/2"                | 1-3/4"         |
| iB                                | BLOCK     | 2-1/2"                | 1-1/4"         |

WOOD = 1BY OR 2BY WOOD BUCKS S.G. = 0.55 MIN.  
 CONCRETE = f'c = 3000 PSI MIN.  
 C-90 HOLLOW/FILLED BLOCKS f'm = 2000 PSI MIN.



Sealed: 7/15/2026  
 FL #39086

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

**a f c**  
 (C.A.N. 3538)  
 MULLION\21-45F-ESW

---

**ALUMINUM TUBE MULLIONS**  
**E.S. WINDOWS, LLC**  
 3550 N.W. 49 STREET  
 MIAMI, FL. 33142  
 TEL. (305) 638-5151 FAX. (305) 638-5158

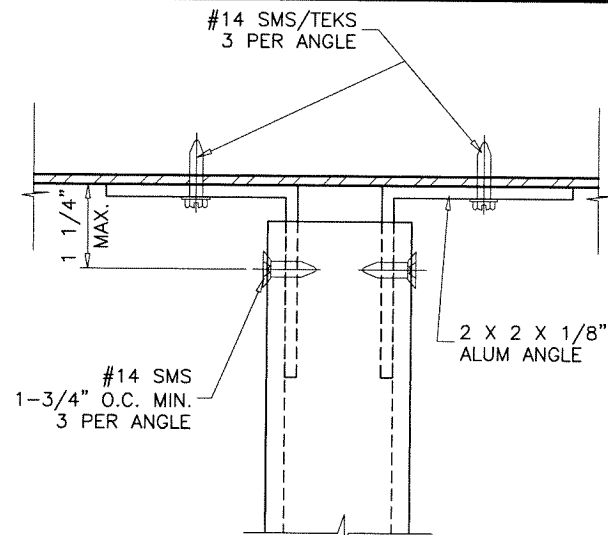
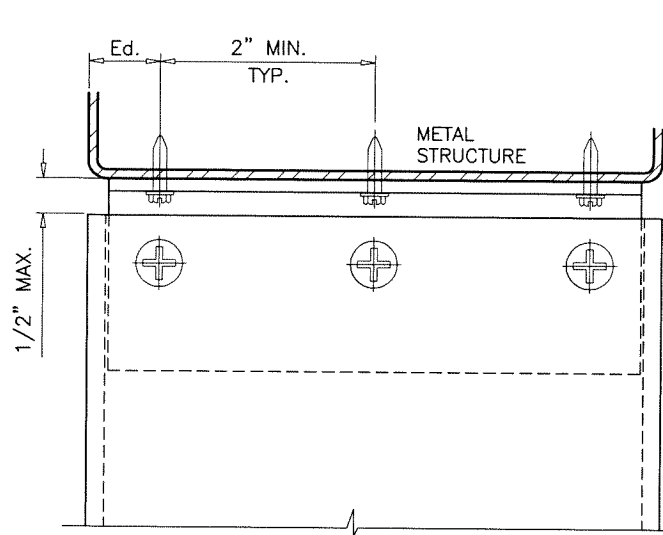
**revisions:**

| no | date | by | description |
|----|------|----|-------------|
|    |      |    |             |
|    |      |    |             |
|    |      |    |             |
|    |      |    |             |

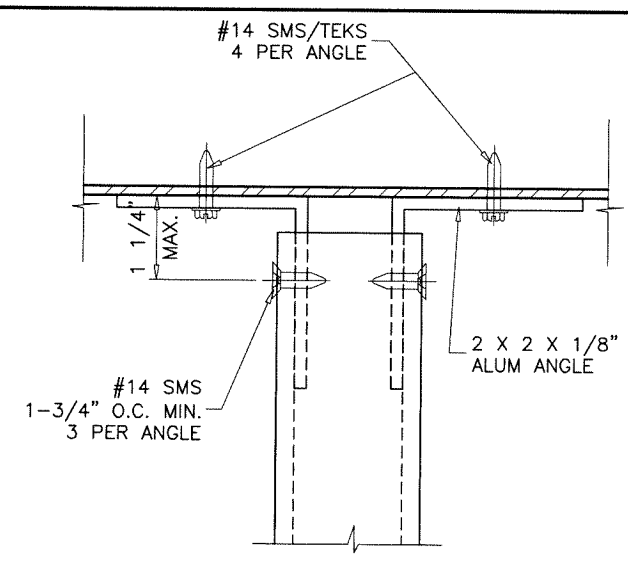
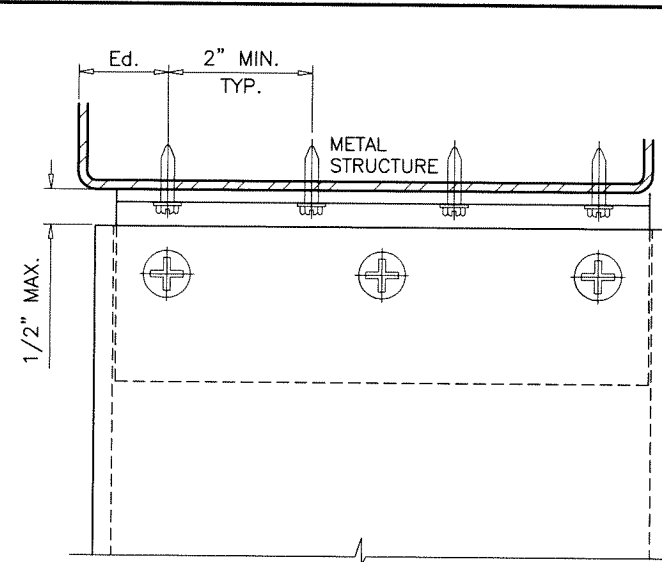
---

date: 05-21-21  
 scale: 3/8" = 1"  
 dr. by: TARIQ  
 chk. by:

drawing no.  
**21-45F**  
 sheet 12.1 of 13



ANCHORS TYPE 'J'



ANCHORS TYPE 'K'

| #14 SMS/TEKS |                       |                       |
|--------------|-----------------------|-----------------------|
| SUBSTRATE    | Ed. = MIN. EDGE DIST. | MIN. CL TO CL SPACING |
| METAL        | 5/8"                  | 2"                    |

METAL = 1/8" MIN. THK. STEEL  $F_y = 36$  KSI MIN.  
1/8" MIN. THK. ALUMINUM (6063-T6 MIN.)

Sealed: 7/15/2026



FL #39086

**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

ALUMINUM TUBE MULLIONS  
**E.S. WINDOWS, LLC**  
 3550 N.W. 49 STREET  
 MIAMI, FL. 33142  
 TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: |                     |
|------------|---------------------|
| no         | date by description |
|            |                     |
|            |                     |
|            |                     |
|            |                     |

date: 05-21-21  
 scale: 3/8" = 1"  
 dr. by: TARIQ  
 chk. by:

drawing no.  
**21-45F**

sheet 12.2 of 13

MULLION\21-45F-ESW

| DESIGN LOAD CAPACITY - PSF |           |                  |       |       |       |
|----------------------------|-----------|------------------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS QUANTITY |       |       |       |
| WIDTH (W)                  | MULL SPAN | 2                | 3     | 4     | 6     |
| 19-1/8"                    | 38-3/8"   | 150.0            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 150.0            | 150.0 | 150.0 | 150.0 |
| 30"                        |           | 150.0            | 150.0 | 150.0 | 150.0 |
| 37"                        |           | 150.0            | 150.0 | 150.0 | 150.0 |
| 42"                        |           | 136.9            | 150.0 | 150.0 | 150.0 |
| 48"                        |           | 119.8            | 150.0 | 150.0 | 150.0 |
| 54"                        |           | 106.5            | 150.0 | 150.0 | 150.0 |
| 60"                        |           | 95.8             | 143.7 | 150.0 | 150.0 |
| 66"                        |           | 87.1             | 130.7 | 150.0 | 150.0 |
| 72"                        |           | 79.8             | 119.8 | 150.0 | 150.0 |
| 19-1/8"                    | 50-5/8"   | 150.0            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 150.0            | 150.0 | 150.0 | 150.0 |
| 30"                        |           | 145.3            | 150.0 | 150.0 | 150.0 |
| 37"                        |           | 117.8            | 150.0 | 150.0 | 150.0 |
| 42"                        |           | 103.8            | 150.0 | 150.0 | 150.0 |
| 48"                        |           | 90.8             | 136.2 | 150.0 | 150.0 |
| 54"                        |           | 80.7             | 121.0 | 150.0 | 150.0 |
| 60"                        |           | 72.6             | 108.9 | 145.3 | 150.0 |
| 66"                        |           | 66.0             | 99.0  | 132.1 | 150.0 |
| 72"                        |           | 60.5             | 90.8  | 121.0 | 150.0 |
| 96"                        | 54"       | -                | -     | 85.1  | 127.7 |
| 19-1/8"                    | 58"       | 150.0            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 143.5            | 150.0 | 150.0 | 150.0 |
| 30"                        |           | 126.8            | 150.0 | 150.0 | 150.0 |
| 37"                        |           | 102.8            | 150.0 | 150.0 | 150.0 |
| 42"                        |           | 90.6             | 135.8 | 150.0 | 150.0 |
| 48"                        |           | 79.2             | 118.9 | 150.0 | 150.0 |
| 54"                        |           | 70.4             | 105.7 | 140.9 | 150.0 |
| 60"                        |           | 63.4             | 95.1  | 126.8 | 150.0 |
| 66"                        |           | 57.6             | 86.4  | 115.3 | 150.0 |
| 72"                        |           | 52.8             | 79.2  | 105.7 | 150.0 |
| 19-1/8"                    | 63"       | 150.0            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 132.1            | 150.0 | 150.0 | 150.0 |
| 30"                        |           | 116.7            | 150.0 | 150.0 | 150.0 |
| 37"                        |           | 94.6             | 142.0 | 150.0 | 150.0 |
| 42"                        |           | 83.4             | 125.1 | 150.0 | 150.0 |
| 48"                        |           | 73.0             | 109.4 | 145.9 | 150.0 |
| 54"                        |           | 64.8             | 97.3  | 129.7 | 150.0 |
| 60"                        |           | 58.4             | 87.5  | 116.7 | 150.0 |
| 66"                        |           | 53.1             | 79.6  | 106.1 | 150.0 |
| 72"                        |           | 48.6             | 73.0  | 97.3  | 145.9 |
| 19-1/8"                    | 74-1/4"   | 150.0            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 112.1            | 150.0 | 150.0 | 150.0 |
| 30"                        |           | 99.0             | 148.6 | 150.0 | 150.0 |
| 37"                        |           | 80.3             | 120.5 | 150.0 | 150.0 |
| 42"                        |           | 70.7             | 106.1 | 141.5 | 150.0 |
| 48"                        |           | 61.9             | 92.8  | 123.8 | 150.0 |
| 54"                        |           | 55.0             | 82.5  | 110.0 | 150.0 |
| 60"                        |           | 49.5             | 74.3  | 99.0  | 148.6 |
| 66"                        |           | 45.0             | 67.5  | 90.0  | 135.1 |
| 72"                        |           | 41.3             | 61.9  | 82.5  | 123.8 |

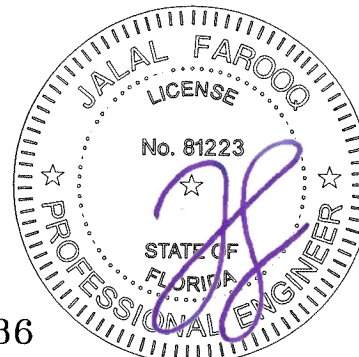
| DESIGN LOAD CAPACITY - PSF |           |                  |       |       |       |
|----------------------------|-----------|------------------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS QUANTITY |       |       |       |
| WIDTH (W)                  | MULL SPAN | 2                | 3     | 4     | 6     |
| 19-1/8"                    | 84"       | 137.3            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 99.1             | 148.7 | 150.0 | 150.0 |
| 30"                        |           | 87.5             | 131.3 | 150.0 | 150.0 |
| 37"                        |           | 71.0             | 106.5 | 142.0 | 150.0 |
| 42"                        |           | 62.5             | 93.8  | 125.1 | 150.0 |
| 48"                        |           | 54.7             | 82.1  | 109.4 | 150.0 |
| 54"                        |           | 48.6             | 73.0  | 97.3  | 145.9 |
| 60"                        |           | 43.8             | 65.7  | 87.5  | 131.3 |
| 66"                        |           | 39.8             | 59.7  | 79.6  | 119.4 |
| 72"                        |           | 36.5             | 54.7  | 73.0  | 109.4 |
| 19-1/8"                    | 96"       | 120.2            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 86.7             | 130.1 | 150.0 | 150.0 |
| 30"                        |           | 76.6             | 114.9 | 150.0 | 150.0 |
| 37"                        |           | 62.1             | 93.2  | 124.2 | 150.0 |
| 42"                        |           | 54.7             | 82.1  | 109.4 | 150.0 |
| 48"                        |           | 47.9             | 71.8  | 95.8  | 143.6 |
| 54"                        |           | 42.6             | 63.8  | 85.1  | 127.7 |
| 60"                        |           | 38.3             | 57.5  | 76.6  | 114.9 |
| 66"                        |           | 34.8             | 52.2  | 69.6  | 104.5 |
| 72"                        |           | 31.9             | 47.9  | 63.8  | 95.8  |
| 19-1/8"                    | 108"      | 106.8            | 150.0 | 150.0 | 150.0 |
| 26-1/2"                    |           | 77.1             | 115.6 | 150.0 | 150.0 |
| 30"                        |           | 68.1             | 102.1 | 136.2 | 150.0 |
| 37"                        |           | 55.2             | 82.8  | 110.4 | 150.0 |
| 42"                        |           | 48.6             | 73.0  | 97.3  | 145.9 |
| 48"                        |           | 42.6             | 63.8  | 85.1  | 127.7 |
| 54"                        |           | 37.8             | 56.7  | 75.7  | 113.5 |
| 60"                        |           | 34.0             | 51.1  | 68.1  | 102.1 |
| 66"                        |           | 30.9             | 46.4  | 61.9  | 92.8  |
| 72"                        |           | 28.4             | 42.6  | 56.7  | 85.1  |
| 19-1/8"                    | 120"      | 96.1             | 144.2 | 150.0 | 150.0 |
| 26-1/2"                    |           | 69.4             | 104.1 | 138.7 | 150.0 |
| 30"                        |           | 61.3             | 91.9  | 122.6 | 150.0 |
| 37"                        |           | 49.7             | 74.5  | 99.4  | 149.1 |
| 42"                        |           | 43.8             | 65.7  | 87.5  | 131.3 |
| 48"                        |           | 38.3             | 57.5  | 76.6  | 114.9 |
| 54"                        |           | 34.0             | 51.1  | 68.1  | 102.1 |
| 60"                        |           | 30.6             | 46.0  | 61.3  | 91.9  |
| 66"                        |           | 27.9             | 41.8  | 55.7  | 83.6  |
| 72"                        |           | 25.5             | 38.3  | 51.1  | 76.6  |
| 19-1/8"                    | 132"      | 87.4             | 131.1 | 150.0 | 150.0 |
| 26-1/2"                    |           | 63.1             | 94.6  | 126.1 | 150.0 |
| 30"                        |           | 55.7             | 83.6  | 111.4 | 150.0 |
| 37"                        |           | 45.2             | 67.8  | 90.3  | 135.5 |
| 42"                        |           | 39.8             | 59.7  | 79.6  | 119.4 |
| 48"                        |           | 34.8             | 52.2  | 69.6  | 104.5 |
| 54"                        |           | 30.9             | 46.4  | 61.9  | 92.8  |
| 60"                        |           | 27.9             | 41.8  | 55.7  | 83.6  |
| 66"                        |           | 25.3             | 38.0  | 50.6  | 76.0  |
| 72"                        |           | 23.2             | 34.8  | 46.4  | 69.6  |

| DESIGN LOAD CAPACITY - PSF |           |                  |       |       |       |
|----------------------------|-----------|------------------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS QUANTITY |       |       |       |
| WIDTH (W)                  | MULL SPAN | 2                | 3     | 4     | 6     |
| 19-1/8"                    | 144"      | 80.1             | 120.2 | 150.0 | 150.0 |
| 26-1/2"                    |           | 57.8             | 86.7  | 115.6 | 150.0 |
| 30"                        |           | 51.1             | 76.6  | 102.1 | 150.0 |
| 37"                        |           | 41.4             | 62.1  | 82.8  | 124.2 |
| 42"                        |           | 36.5             | 54.7  | 73.0  | 109.4 |
| 48"                        |           | 31.9             | 47.9  | 63.8  | 95.8  |
| 54"                        |           | 28.4             | 42.6  | 56.7  | 85.1  |
| 60"                        |           | 25.5             | 38.3  | 51.1  | 76.6  |
| 66"                        |           | 23.2             | 34.8  | 46.4  | 69.6  |
| 72"                        |           | 21.3             | 31.9  | 42.6  | 63.8  |

ALL LOADS ARE EXT.(+)/INT.(-).  
SEE SHEET 13.1 FOR CONNECTION DETAILS

ANCHORS

Sealed: 7/15/2026



FL #39086

**a f c**

**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)

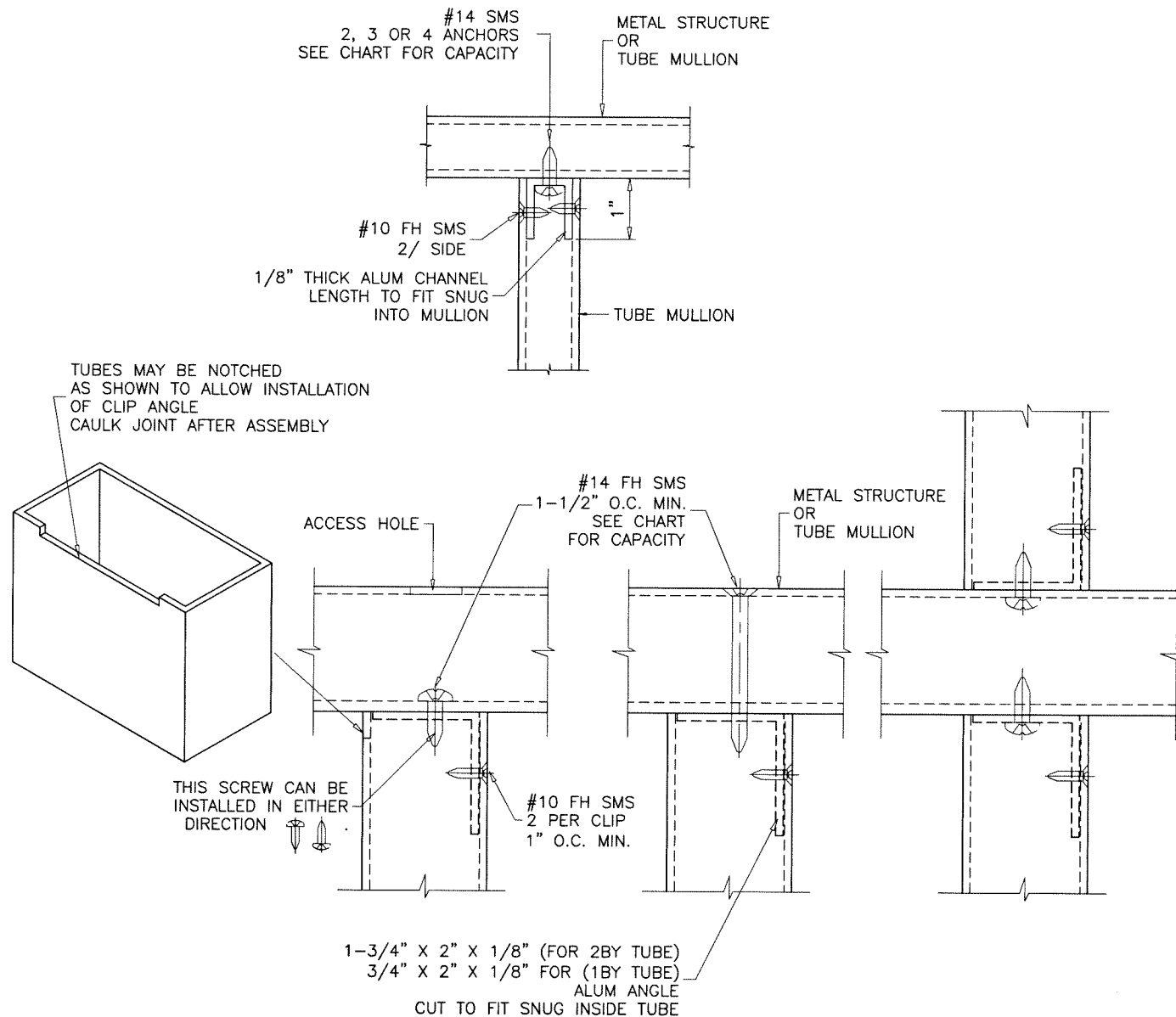
ALUMINUM TUBE MULLIONS

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

| revisions: |                |
|------------|----------------|
| no         | by description |
|            |                |
|            |                |
|            |                |
|            |                |

|                |                  |
|----------------|------------------|
| date: 05-21-21 | scale: 3/8" = 1" |
| dr. by: TARIQ  | chk. by:         |

MULLION\21-45F-ESW

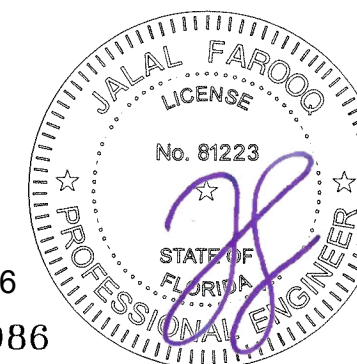
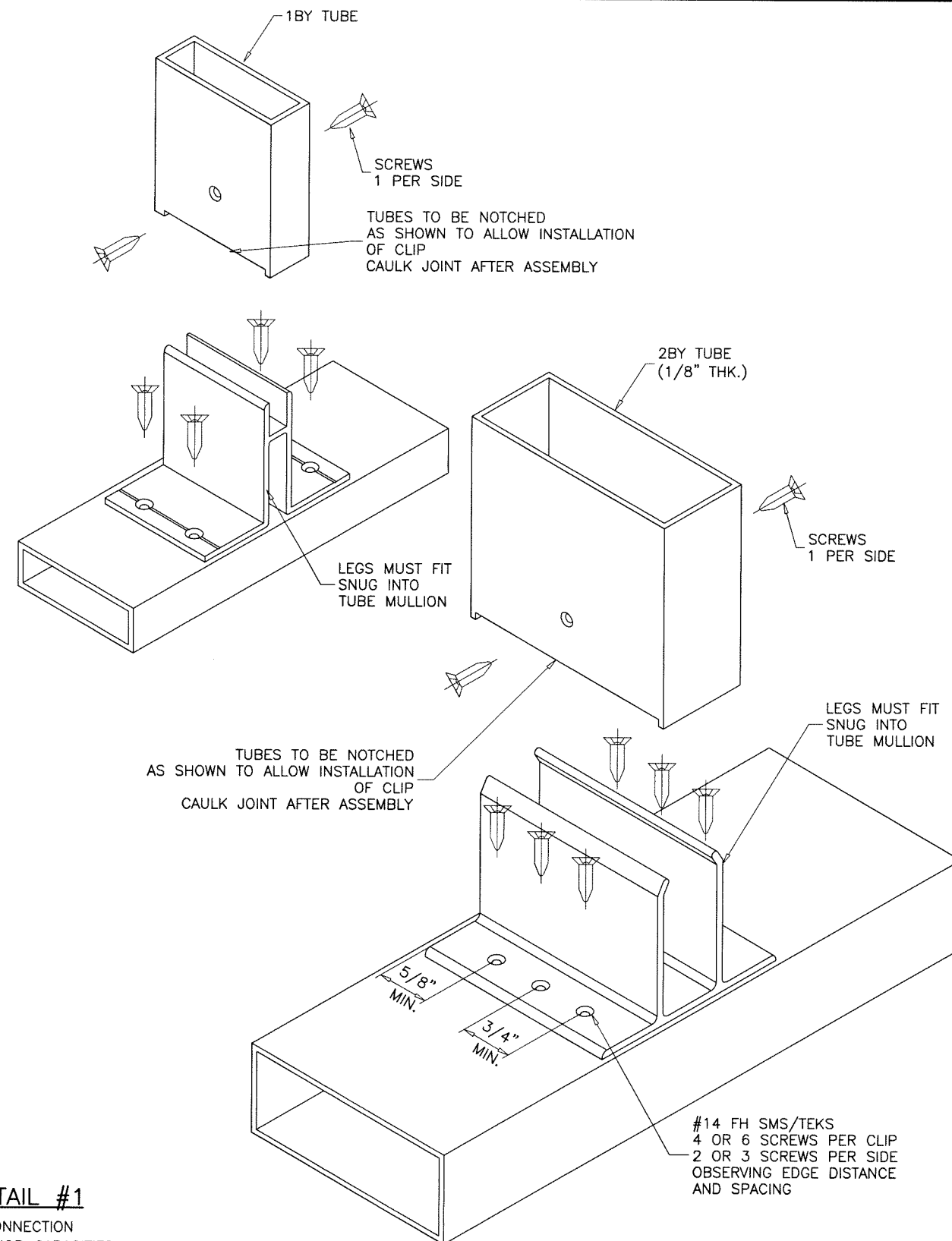


### ANCHORS DETAIL #1

METAL TO METAL CONNECTION  
SEE SHEET 13 FOR ANCHOR CAPACITIES

| #14 SMS/TEKS |                       |                       |
|--------------|-----------------------|-----------------------|
| SUBSTRATE    | Ed. = MIN. EDGE DIST. | MIN. CL TO CL SPACING |
| METAL        | 5/8"                  | 1/2"                  |

METAL = 1/8" MIN. THK. STEEL  $F_y = 36$  KSI MIN.  
1/8" MIN. THK. ALUMINUM (6063-T6 MIN.)



Sealed: 7/15/2026

FL #39086

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

**a f c**

(C.A.N. 3538)

MULLION\21-45F-ESW

---

**ALUMINUM TUBE MULLIONS**

**E.S. WINDOWS, LLC**  
3550 N.W. 49 STREET  
MIAMI, FL. 33142  
TEL. (305) 638-5151 FAX. (305) 638-5158

revisions:

| no | date | by | description |
|----|------|----|-------------|
|    |      |    |             |
|    |      |    |             |
|    |      |    |             |
|    |      |    |             |

---

date: 05-21-21  
scale: 3/8" = 1"  
dr. by: TARIQ  
chk. by:

drawing no.  
**21-45F**  
sheet 13.1 of 13