



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

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

**NOTICE OF ACCEPTANCE (NOA)**

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

Eco Window Systems, LLC  
9114 NW 106 Street  
Miami, Fl. 33178

**SCOPE:**

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

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

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

**DESCRIPTION:** Series "ECO-Guard Clipped" Aluminum Tube Mullion - L.M.I.

**APPROVAL DOCUMENT:** Drawing No. M14-01, Series titled "Aluminum Tube Mullion", sheets 01 through 09 of 09, dated 05/19/14 with the latest revision dated 05/23/14, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P. E., bearing the Miami-Dade County Product Control Section Approval stamp with the Notice of Acceptance number and Approval date by the Miami-Dade County Product Control Section.

**MISSILE IMPACT RATING:** Large and Small Missile Impact Resistant

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

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

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

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

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

This NOA consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Jaime D. Gascon, P. E.**



*J. Gascon*  
10/16/14

NOA No. 14-0529.16  
Expiration Date: October 23, 2019  
Approval Date: October 23, 2014  
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

**A. DRAWINGS**

1. Manufacturer's die drawings and sections.
2. Drawing No. **M14-01**, Series titled "**Aluminum Tube Mullion**", sheets 01 through 09 of 09, dated 05/19/14 with the latest revision dated 05/23/14, prepared by Al-Farooq Corporation, signed and sealed by Javad Ahmad, P. E.

**B. TESTS**

1. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94  
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94  
3) Water Resistance Test, per FBC, TAS 202-94  
along with marked-up drawings and installation diagram of a clipped aluminum mullion at fixed windows, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-08-2192A**, dated 01/15/09, signed and sealed by Candido F. Font, P. E.
2. Test reports on: 1) Large Missile Impact Test per FBC, TAS 201-94  
2) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of a clipped aluminum mullion at a fixed window/ a single hung window, prepared by Hurricane Engineering & Testing, Inc., Test Reports No.'s **HETI-08-2192B** and **HETI-08-2166C**, both dated 01/15/09, signed and sealed by Candido F. Font, P. E.
4. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94  
2) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94  
3) Water Resistance Test, per FBC, TAS 202-94  
4) Forced Entry Test, per FBC 2411.3.2.1, and TAS 202-94  
along with marked-up drawings and installation diagram of a clipped aluminum mullion single hung window, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-08-2166A**, dated 01/15/09, signed and sealed by Candido F. Font, P. E.

**C. CALCULATIONS**

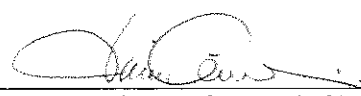
1. Anchor verification calculations and structural analysis, complying with **FBC-2010** and **FBC 5<sup>th</sup> Edition (2014)**, prepared by Al-Farooq Corporation, dated 05/05/14, signed and sealed by Javad Ahmad, P. E.

**D. QUALITY ASSURANCE**

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

**E. MATERIAL CERTIFICATIONS**

1. None.

  
Jaime D. Gascon, P. E.  
Product Control Section Supervisor  
NOA No. 14-0529.16  
Expiration Date: October 23, 2019  
Approval Date: October 23, 2014

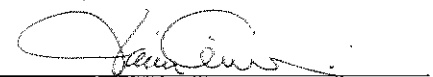
NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

**F. STATEMENTS**

1. Statement letter of no financial interest, conformance to and complying with **FBC-2010** and **FBC 5<sup>th</sup> Edition (2014)**, issued by Al-Farooq Corporation, dated 05/23/14, signed and sealed by Javad Ahmad, P. E.
2. Department of State Certification of **Eco Window Systems, LLC** as a limited liability company, active and organized under the laws of the State of Florida, dated 03/21/13 and signed by Kurt S. Browning, Secretary of State.
3. Laboratory compliance letter for Test Reports No.'s **HETI-08-2192A**, **HETI-08-2192B**, **HETI-08-2166A** and **HETI-08-2166C**, all issued by Hurricane Engineering & Testing, Inc., dated 01/15/09, signed and sealed by Candido F. Font, P. E.
4. Proposal No. **08-0236** issued by the Product Control, dated 06/04/08, signed by Manuel Perez, P. E.

**G. OTHERS**

1. None.



Jaime D. Gascon, P. E.  
Product Control Section Supervisor  
NOA No. 14-0529.16  
Expiration Date: October 23, 2019  
Approval Date: October 23, 2014

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

**RECTANGULAR ALUMINUM TUBE MULLIONS  
USING MULLION PROPERTIES ONLY**

**NOTES:**

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

WOOD BUCKS BY OTHERS, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE.

ANCHORS SHALL BE AS LISTED, SPACED AS SHOWN ON DETAILS, EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL COVERING (STUCCO, TILE ETC.).

ANCHORING CONDITIONS OTHER THAN THOSE SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.

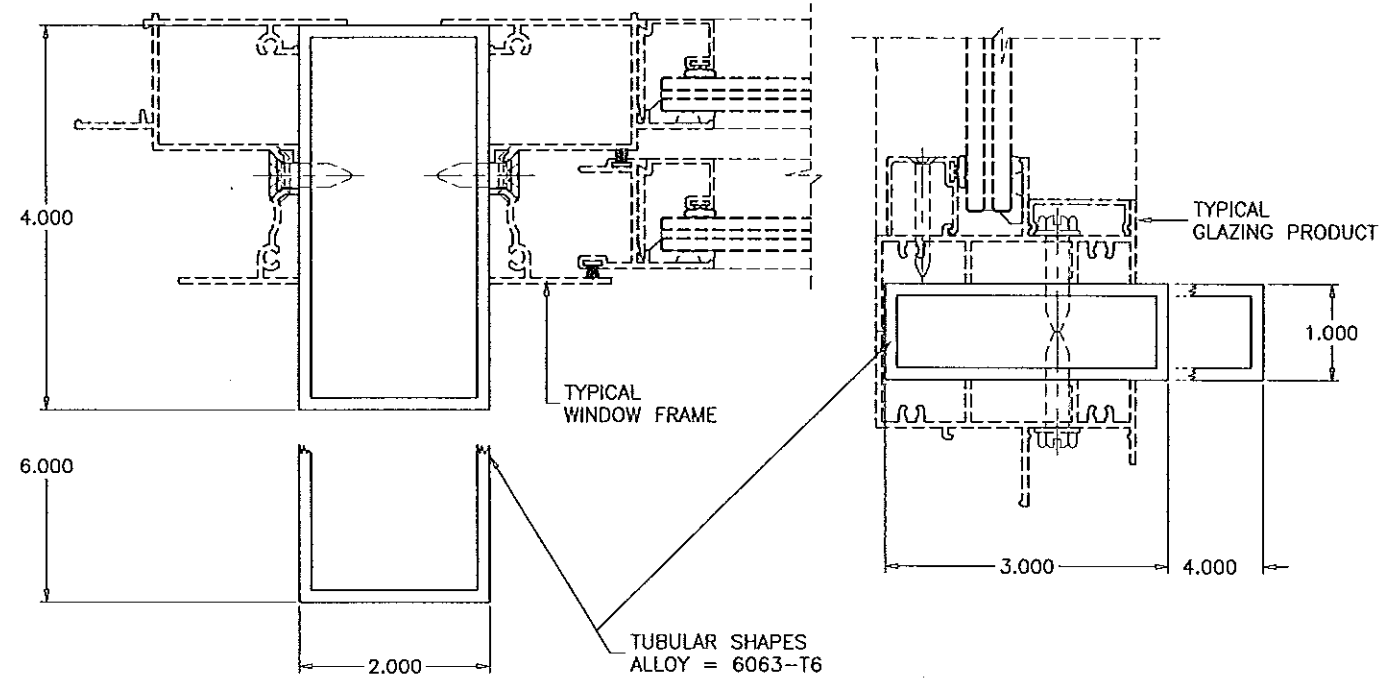
A LOAD DURATION INCREASE IS USED IN DESIGN OF ANCHORS INTO WOOD ONLY.

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

**INSTRUCTIONS:**

USE CHARTS AND GRAPHS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN LOAD REQUIRED PER ASCE 7 FOR PARTICULAR OPENING.
- STEP 2** USE MIAMI-DADE COUNTY APPROVED GLAZING PRODUCTS MEETING ABOVE LOAD REQUIREMENTS.
- STEP 3** USE CONNECTION TO MULLION AS PER PRODUCT APPROVAL.
- STEP 4** USING CHARTS ON SHEET 3 SELECT MULLION SIZE WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 5** USING ANCHOR TYPES ON SHEETS 5 THRU 9 AND ANCHOR CHARTS ON SHEET 4, SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.



**MULLIONS CONTAINING TYPICAL GLAZING PRODUCTS  
HORIZONTAL OR VERTICAL**

SEE WINDOW OR DOOR APPROVAL FOR FASTENERS SIZES AND SPACING

Approved as complying with the Florida Building Code  
Date 10/23/2014  
NOA# 14-0529.16  
Miami Dade Product Control  
By *[Signature]*

Engr: JAVAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538  
MAY 23 2014

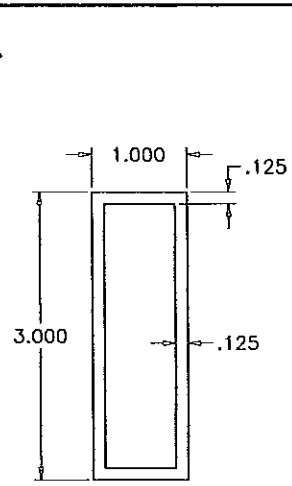
**afc**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
MULLION\M14-01ESW

ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
9114 N.W. 106 STREET  
MEDLEY, FL. 33178  
TEL. (305) 885-5299 FAX (305) 885-5902

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

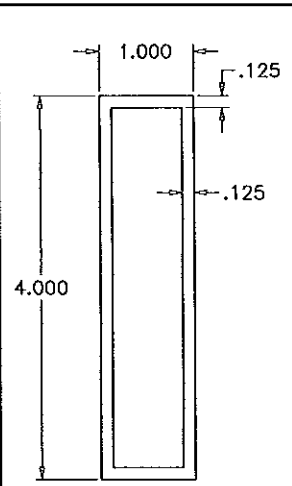
date: 05-19-14  
scale: 1/2" = 1"  
dr. by: H-AMID  
chk. by:

drawing no.  
**M14-01**  
sheet 1 of 9



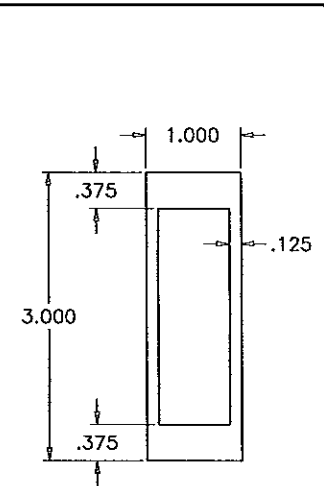
$I_x = .9502 \text{ IN}^4$   
 $S_x = .6335 \text{ IN}^3$

**1 X 3  
 STD. MULLION**  
 6063-T6



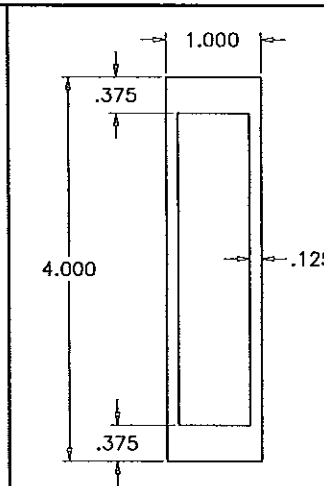
$I_x = 2.0374 \text{ IN}^4$   
 $S_x = 1.0187 \text{ IN}^3$

**1 X 4  
 STD. MULLION**  
 6063-T6



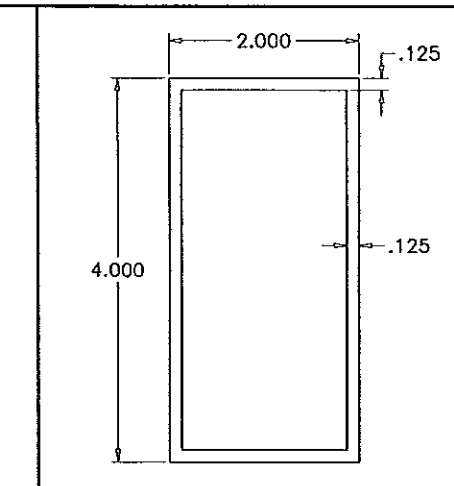
$I_x = 1.538 \text{ IN}^4$   
 $S_x = 1.0254 \text{ IN}^3$

**1 X 3  
 CUSTOM MULLION**  
 6063-T6



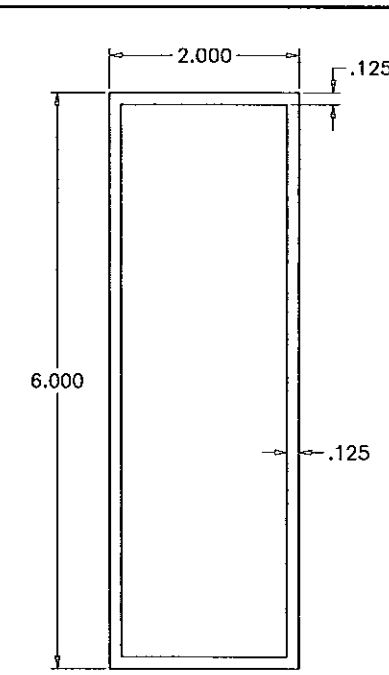
$I_x = 3.1878 \text{ IN}^4$   
 $S_x = 1.5939 \text{ IN}^3$

**1 X 4  
 CUSTOM MULLION**  
 6063-T6



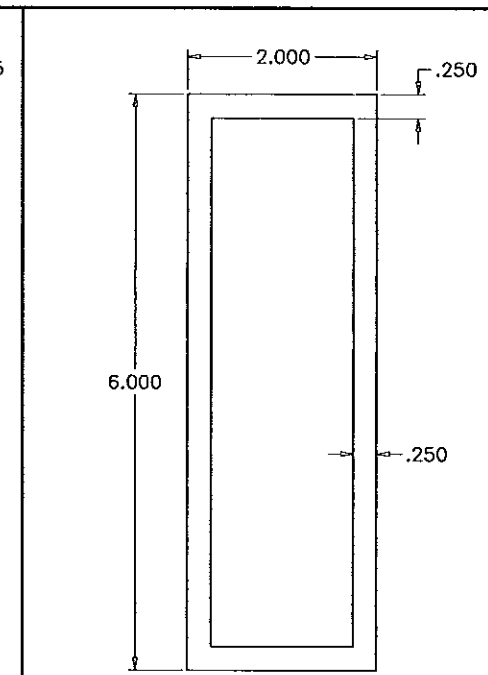
$I_x = 2.9762 \text{ IN}^4$   
 $S_x = 1.4881 \text{ IN}^3$

**2 X 4  
 STD. MULLION**  
 6063-T6



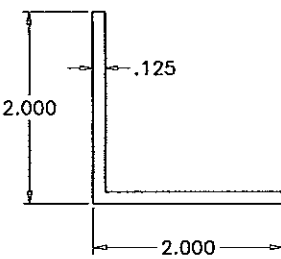
$I_x = 8.2757 \text{ IN}^4$   
 $S_x = 2.7586 \text{ IN}^3$

**2 X 6  
 STD. MULLION**  
 6063-T6

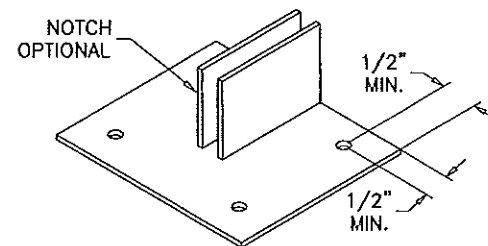
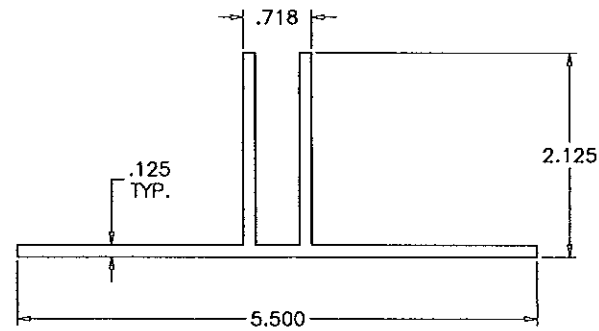


$I_x = 15.2031 \text{ IN}^4$   
 $S_x = 5.0677 \text{ IN}^3$

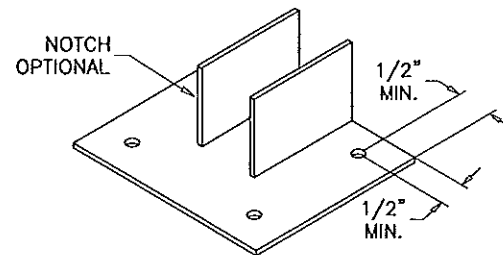
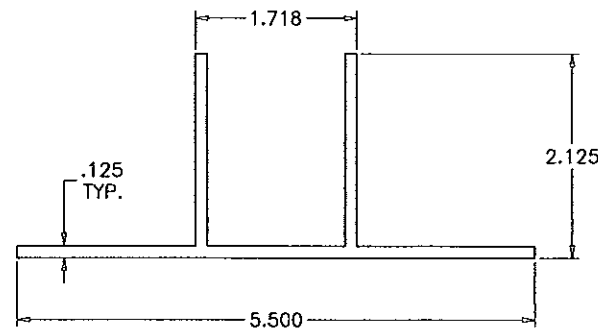
**2 X 6  
 HEAVY MULLION**  
 6063-T6



**ANGLE CLIP**  
 6063-T6



**MULLION CLIP**  
 6063-T6



**MULLION CLIP**  
 6063-T6

Approved as complying with the  
 Florida Building Code  
 Date: 10/23/2014  
 NOA# 14-0529-16  
 Miami Data Product Control  
 By: [Signature]

Engr: JAVAD AHMAD  
 CIVIL  
 FLA. PE # 70592  
 C.A.N. 3538

MAY 23 2014

**afC**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL (305) 264-8100 FAX (305) 262-6978  
 MULLION\M14-01ESW

ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
 9114 N.W. 106 STREET  
 MEDLEY, FL. 33178  
 TEL (305) 885-5299 FAX (305) 886-5902

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

date: 05-19-14  
 scale: 1/2" = 1"  
 dr. by: HAMID  
 chk. by: [Signature]

drawing no.  
**M14-01**

sheet 2 of 9

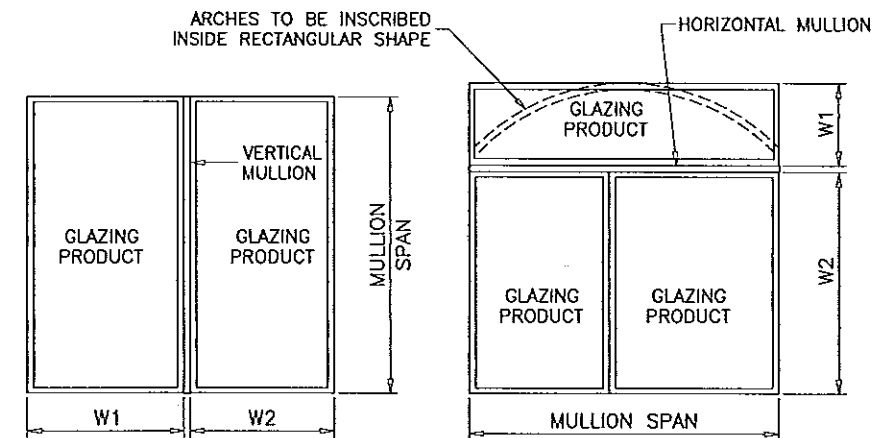
| DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS) |           |       |       |        |        |       |       |       |
|--|-----------|-------|-------|--------|--------|-------|-------|-------|
| WINDOW DIMS.                               |           | 1 X 3 | 1 X 4 | 1 X 3  | 1 X 4  | 2 X 4 | 2 X 6 | 2 X 6 |
| WIDTH (W)                                  | MULL SPAN | STD.  | STD.  | CUSTOM | CUSTOM | STD.  | STD.  | HEAVY |
| 19-1/8"                                    | 38-3/8"   | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 30"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 37"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 42"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 48"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 54"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 60"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 66"  |           | 112.5 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 72"  | 103.2     | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 |       |
| 19-1/8"                                    | 42"       | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 30"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 37"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 42"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 48"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 54"  |           | 114.8 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 60"  |           | 103.3 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 66"  |           | 94.0  | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 72"  | 86.1      | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 |       |
| 19-1/8"                                    | 50-5/8"   | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 30"  |           | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 37"  |           | 115.3 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 42"  |           | 101.6 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 48"  |           | 88.9  | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 54"  |           | 79.0  | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 60"  |           | 71.1  | 114.5 | 115.2  | 120.0  | 120.0 | 120.0 | 120.0 |
| 66"  |           | 64.7  | 104.1 | 104.7  | 120.0  | 120.0 | 120.0 | 120.0 |
| 72"  | 59.3      | 95.4  | 96.0  | 120.0  | 120.0  | 120.0 | 120.0 |       |
| 19-1/8"                                    | 63"       | 120.0 | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 88.1  | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 30"  |           | 77.8  | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 37"  |           | 63.1  | 119.9 | 102.1  | 120.0  | 120.0 | 120.0 | 120.0 |
| 42"  |           | 55.6  | 105.6 | 90.0   | 120.0  | 120.0 | 120.0 | 120.0 |
| 48"  |           | 48.6  | 92.4  | 78.7   | 120.0  | 120.0 | 120.0 | 120.0 |
| 54"  |           | 43.2  | 82.2  | 70.0   | 120.0  | 120.0 | 120.0 | 120.0 |
| 60"  |           | 38.9  | 73.9  | 63.0   | 115.7  | 108.0 | 120.0 | 120.0 |
| 66"  |           | 35.4  | 67.2  | 57.3   | 105.1  | 98.2  | 120.0 | 120.0 |
| 72"  | 32.4      | 61.6  | 52.5  | 96.4   | 90.0   | 120.0 | 120.0 |       |

| DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS) |           |       |       |        |        |       |       |       |
|--|-----------|-------|-------|--------|--------|-------|-------|-------|
| WINDOW DIMS.                               |           | 1 X 3 | 1 X 4 | 1 X 3  | 1 X 4  | 2 X 4 | 2 X 6 | 2 X 6 |
| WIDTH (W)                                  | MULL SPAN | STD.  | STD.  | CUSTOM | CUSTOM | STD.  | STD.  | HEAVY |
| 19-1/8"                                    | 74-1/4"   | 74.6  | 120.0 | 120.0  | 120.0  | 120.0 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 53.8  | 115.4 | 87.1   | 120.0  | 120.0 | 120.0 | 120.0 |
| 30"  |           | 47.5  | 101.9 | 76.9   | 120.0  | 120.0 | 120.0 | 120.0 |
| 37"  |           | 38.5  | 82.6  | 62.4   | 120.0  | 120.0 | 120.0 | 120.0 |
| 42"  |           | 33.9  | 72.8  | 55.0   | 113.9  | 106.4 | 120.0 | 120.0 |
| 48"  |           | 29.7  | 63.7  | 48.1   | 99.7   | 93.1  | 120.0 | 120.0 |
| 54"  |           | 26.4  | 56.6  | 42.7   | 88.6   | 82.7  | 120.0 | 120.0 |
| 60"  |           | 23.8  | 51.0  | 38.5   | 79.7   | 74.4  | 120.0 | 120.0 |
| 66"  |           | 21.6  | 46.3  | 35.0   | 72.5   | 67.7  | 120.0 | 120.0 |
| 72"  | -         | 42.5  | 32.1  | 66.5   | 62.0   | 120.0 | 120.0 |       |
| 19-1/8"                                    | 84"       | 51.5  | 110.4 | 83.4   | 120.0  | 120.0 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 37.2  | 79.7  | 60.2   | 120.0  | 116.4 | 120.0 | 120.0 |
| 30"  |           | 32.8  | 70.4  | 53.1   | 110.2  | 102.8 | 120.0 | 120.0 |
| 37"  |           | 26.6  | 57.1  | 43.1   | 89.3   | 83.4  | 120.0 | 120.0 |
| 42"  |           | 23.4  | 50.3  | 38.0   | 78.7   | 73.5  | 120.0 | 120.0 |
| 48"  |           | 20.5  | 44.0  | 33.2   | 68.8   | 64.3  | 120.0 | 120.0 |
| 54"  |           | -     | 39.1  | 29.5   | 61.2   | 57.1  | 120.0 | 120.0 |
| 60"  |           | -     | 35.2  | 26.6   | 55.1   | 51.4  | 112.6 | 120.0 |
| 66"  |           | -     | 32.0  | 24.2   | 50.1   | 46.7  | 102.4 | 120.0 |
| 72"  | -         | 29.3  | 22.1  | 45.9   | 42.8   | 93.8  | 120.0 |       |
| 19-1/8"                                    | 96"       | 34.5  | 74.0  | 55.8   | 115.8  | 108.1 | 120.0 | 120.0 |
| 26-1/2"                                    |           | 24.9  | 53.4  | 40.3   | 83.5   | 78.0  | 120.0 | 120.0 |
| 30"  |           | 22.0  | 47.2  | 35.6   | 73.8   | 68.9  | 120.0 | 120.0 |
| 37"  |           | -     | 38.2  | 28.9   | 59.8   | 55.9  | 120.0 | 120.0 |
| 42"  |           | -     | 33.7  | 25.4   | 52.7   | 49.2  | 120.0 | 120.0 |
| 48"  |           | -     | 29.5  | 22.3   | 46.1   | 43.1  | 107.8 | 120.0 |
| 54"  |           | -     | 26.2  | -      | 41.0   | 38.3  | 95.8  | 120.0 |
| 60"  |           | -     | 23.6  | -      | 36.9   | 34.4  | 86.2  | 120.0 |
| 66"  |           | -     | 21.4  | -      | 33.5   | 31.3  | 78.4  | 120.0 |
| 72"  | -         | -     | -     | 30.7   | 28.7   | 71.8  | 120.0 |       |
| 19-1/8"                                    | 108"      | -     | -     | -      | 81.3   | 75.9  | 120.0 | 120.0 |
| 26-1/2"                                    |           | -     | -     | -      | 58.7   | 54.8  | 120.0 | 120.0 |
| 30"  |           | -     | -     | -      | 51.8   | 48.4  | 120.0 | 120.0 |
| 37"  |           | -     | -     | -      | 42.0   | 39.2  | 109.1 | 120.0 |
| 42"  |           | -     | -     | -      | 37.0   | 34.6  | 96.1  | 120.0 |
| 48"  |           | -     | -     | -      | 32.4   | 30.2  | 84.1  | 120.0 |
| 54"  |           | -     | -     | -      | 28.8   | 26.9  | 74.7  | 120.0 |
| 60"  |           | -     | -     | -      | 25.9   | 24.2  | 67.3  | 120.0 |
| 66"  |           | -     | -     | -      | 23.6   | 22.0  | 61.2  | 112.3 |
| 72"  | -         | -     | -     | 21.6   | 20.2   | 56.1  | 103.0 |       |

| DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS) |           |       |       |        |        |       |       |       |
|--|-----------|-------|-------|--------|--------|-------|-------|-------|
| WINDOW DIMS.                               |           | 1 X 3 | 1 X 4 | 1 X 3  | 1 X 4  | 2 X 4 | 2 X 6 | 2 X 6 |
| WIDTH (W)                                  | MULL SPAN | STD.  | STD.  | CUSTOM | CUSTOM | STD.  | STD.  | HEAVY |
| 19-1/8"                                    | 120"      | -     | -     | -      | 59.3   | 55.3  | 120.0 | 120.0 |
| 26-1/2"                                    |           | -     | -     | -      | 42.8   | 39.9  | 111.0 | 120.0 |
| 30"  |           | -     | -     | -      | 37.8   | 35.3  | 98.1  | 120.0 |
| 37"  |           | -     | -     | -      | 30.6   | 28.6  | 79.5  | 120.0 |
| 42"  |           | -     | -     | -      | 27.0   | 25.2  | 70.1  | 120.0 |
| 48"  |           | -     | -     | -      | 23.6   | 22.0  | 61.3  | 112.6 |
| 54"  |           | -     | -     | -      | 21.0   | -     | 54.5  | 100.1 |
| 60"  |           | -     | -     | -      | -      | -     | 49.0  | 90.1  |
| 66"  |           | -     | -     | -      | -      | -     | 44.6  | 81.9  |
| 72"  | -         | -     | -     | -      | -      | 40.9  | 75.1  |       |
| 19-1/8"                                    | 132"      | -     | -     | -      | 44.5   | 41.6  | 115.6 | 120.0 |
| 26-1/2"                                    |           | -     | -     | -      | 32.1   | 30.0  | 83.4  | 120.0 |
| 30"  |           | -     | -     | -      | 28.4   | 26.5  | 73.7  | 120.0 |
| 37"  |           | -     | -     | -      | 23.0   | 21.5  | 59.8  | 109.8 |
| 42"  |           | -     | -     | -      | 20.3   | -     | 52.6  | 96.7  |
| 48"  |           | -     | -     | -      | -      | -     | 46.1  | 84.6  |
| 54"  |           | -     | -     | -      | -      | -     | 40.9  | 75.2  |
| 60"  |           | -     | -     | -      | -      | -     | 36.8  | 67.7  |
| 66"  |           | -     | -     | -      | -      | -     | 33.5  | 61.5  |
| 72"  | -         | -     | -     | -      | -      | 30.7  | 56.4  |       |
| 19-1/8"                                    | 144"      | -     | -     | -      | 34.3   | 32.0  | 89.0  | 120.0 |
| 26-1/2"                                    |           | -     | -     | -      | 24.8   | 23.1  | 64.3  | 118.0 |
| 30"  |           | -     | -     | -      | 21.9   | 20.4  | 56.8  | 104.3 |
| 37"  |           | -     | -     | -      | -      | -     | 46.0  | 84.5  |
| 42"  |           | -     | -     | -      | -      | -     | 40.5  | 74.5  |
| 48"  |           | -     | -     | -      | -      | -     | 35.5  | 65.2  |
| 54"  |           | -     | -     | -      | -      | -     | 31.5  | 57.9  |
| 60"  |           | -     | -     | -      | -      | -     | 28.4  | 52.1  |
| 66"  |           | -     | -     | -      | -      | -     | 25.8  | 47.4  |
| 72"  | -         | -     | -     | -      | -      | 23.7  | 43.4  |       |

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

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



TYPICAL MULLION ARRANGEMENTS

Approved as complying with the  
Florida Building Code  
Date 10/23/2014  
NOAH 14-0529-16  
Miami Data Product Control  
By [Signature]

Engr: JAWAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538  
MAY 23 2014

MULLIONS

**af c**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL (305) 264-8100 FAX (305) 262-6978  
MULLION M14-01ESW

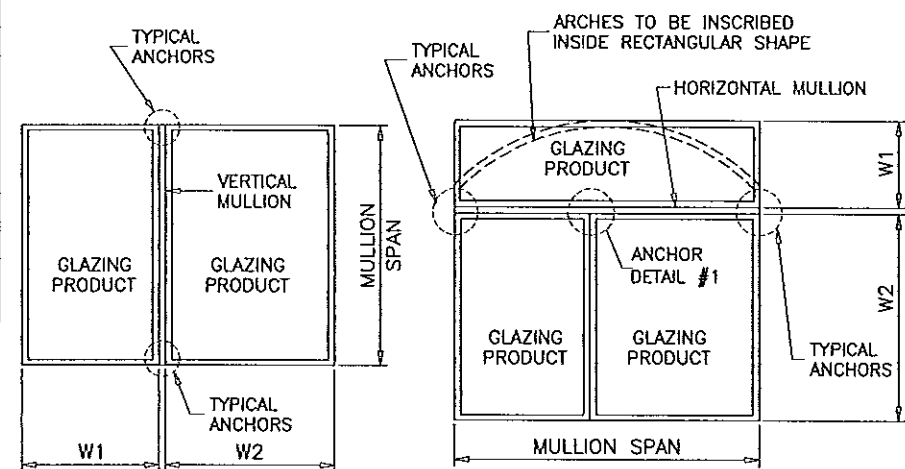
ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
9114 N.W. 106 STREET  
MEDLEY, FL. 33178  
TEL (305) 885-5299 FAX (305) 885-5902

|             |          |          |    |             |
|-------------|----------|----------|----|-------------|
| Revisions:  | no       | date     | by | description |
|             |          |          |    |             |
| date:       | 05-19-14 | scale:   |    |             |
| dr. by:     | HAMID    | chk. by: |    |             |
| drawing no. | M14-01   |          |    |             |
| sheet       | 3 of 9   |          |    |             |

| DESIGN LOAD CAPACITY - PSF |           |              |       |       |       |       |       |
|----------------------------|-----------|--------------|-------|-------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS TYPE |       |       |       |       |       |
| WIDTH (W)                  | MULL SPAN | A2           | A4    | A6    | B2    | B4a   | B4b   |
| 19-1/8"                    | 38-3/8"   | 120.0        | 120.0 | 120.0 | 120.0 | 120.0 | 120.0 |
| 26-1/2"                    |           | 120.0        | 120.0 | 120.0 | 120.0 | 120.0 | 120.0 |
| 30"                        |           | 120.0        | 120.0 | 120.0 | 120.0 | 120.0 | 120.0 |
| 37"                        |           | 120.0        | 120.0 | 120.0 | 101.4 | 120.0 | 120.0 |
| 42"                        |           | 120.0        | 120.0 | 120.0 | 89.3  | 120.0 | 120.0 |
| 48"                        |           | 120.0        | 120.0 | 120.0 | 78.2  | 112.6 | 120.0 |
| 54"                        |           | 108.4        | 120.0 | 120.0 | 69.5  | 100.1 | 120.0 |
| 60"                        |           | 97.6         | 120.0 | 120.0 | 62.5  | 90.1  | 120.0 |
| 66"                        |           | 88.7         | 120.0 | 120.0 | 56.9  | 81.9  | 113.7 |
| 72"                        | 81.3      | 120.0        | 120.0 | 52.1  | 75.0  | 104.2 |       |
| 19-1/8"                    | 42"       | 120.0        | 120.0 | 120.0 | 120.0 | 120.0 | 120.0 |
| 26-1/2"                    |           | 120.0        | 120.0 | 120.0 | 120.0 | 120.0 | 120.0 |
| 30"                        |           | 120.0        | 120.0 | 120.0 | 114.3 | 120.0 | 120.0 |
| 37"                        |           | 120.0        | 120.0 | 120.0 | 92.7  | 120.0 | 120.0 |
| 42"                        |           | 120.0        | 120.0 | 120.0 | 81.6  | 117.6 | 120.0 |
| 48"                        |           | 111.4        | 120.0 | 120.0 | 71.4  | 102.9 | 120.0 |
| 54"                        |           | 99.0         | 120.0 | 120.0 | 63.5  | 91.4  | 120.0 |
| 60"                        |           | 89.1         | 120.0 | 120.0 | 57.1  | 82.3  | 114.3 |
| 66"                        |           | 81.0         | 120.0 | 120.0 | 51.9  | 74.8  | 103.9 |
| 72"                        | 74.3      | 120.0        | 120.0 | 47.6  | 68.6  | 95.2  |       |
| 19-1/8"                    | 50-5/8"   | 120.0        | 120.0 | 120.0 | 120.0 | 120.0 | 120.0 |
| 26-1/2"                    |           | 120.0        | 120.0 | 120.0 | 107.3 | 120.0 | 120.0 |
| 30"                        |           | 120.0        | 120.0 | 120.0 | 94.8  | 120.0 | 120.0 |
| 37"                        |           | 119.9        | 120.0 | 120.0 | 76.9  | 110.7 | 120.0 |
| 42"                        |           | 105.7        | 120.0 | 120.0 | 67.7  | 97.5  | 120.0 |
| 48"                        |           | 92.4         | 120.0 | 120.0 | 59.3  | 85.3  | 118.5 |
| 54"                        |           | 82.2         | 120.0 | 120.0 | 52.7  | 75.9  | 105.3 |
| 60"                        |           | 74.0         | 120.0 | 120.0 | 47.4  | 68.3  | 94.8  |
| 66"                        |           | 67.2         | 117.2 | 120.0 | 43.1  | 62.1  | 86.2  |
| 72"                        | 61.6      | 107.5        | 120.0 | 39.5  | 56.9  | 79.0  |       |
| 19-1/8"                    | 63"       | 120.0        | 120.0 | 120.0 | 119.5 | 120.0 | 120.0 |
| 26-1/2"                    |           | 120.0        | 120.0 | 120.0 | 86.3  | 120.0 | 120.0 |
| 30"                        |           | 118.9        | 120.0 | 120.0 | 76.2  | 109.7 | 120.0 |
| 37"                        |           | 96.4         | 120.0 | 120.0 | 61.8  | 89.0  | 120.0 |
| 42"                        |           | 84.9         | 120.0 | 120.0 | 54.4  | 78.4  | 108.8 |
| 48"                        |           | 74.3         | 120.0 | 120.0 | 47.6  | 68.6  | 95.2  |
| 54"                        |           | 66.0         | 115.1 | 120.0 | 42.3  | 61.0  | 84.7  |
| 60"                        |           | 59.4         | 103.6 | 120.0 | 38.1  | 54.9  | 76.2  |
| 66"                        |           | 54.0         | 94.2  | 120.0 | 34.6  | 49.9  | 69.3  |
| 72"                        | 49.5      | 86.3         | 120.0 | 31.7  | 45.7  | 63.5  |       |

| DESIGN LOAD CAPACITY - PSF |           |              |       |       |       |       |       |
|----------------------------|-----------|--------------|-------|-------|-------|-------|-------|
| WINDOW DIMS.               |           | ANCHORS TYPE |       |       |       |       |       |
| WIDTH (W)                  | MULL SPAN | A2           | A4    | A6    | B2    | B4a   | B4b   |
| 19-1/8"                    | 74-1/4"   | 120.0        | 120.0 | 120.0 | 101.4 | 120.0 | 120.0 |
| 26-1/2"                    |           | 114.2        | 120.0 | 120.0 | 73.2  | 105.4 | 120.0 |
| 30"                        |           | 100.8        | 120.0 | 120.0 | 64.6  | 93.1  | 120.0 |
| 37"                        |           | 81.8         | 120.0 | 120.0 | 52.4  | 75.5  | 104.8 |
| 42"                        |           | 72.0         | 120.0 | 120.0 | 46.2  | 66.5  | 92.4  |
| 48"                        |           | 63.0         | 109.9 | 120.0 | 40.4  | 58.2  | 80.8  |
| 54"                        |           | 56.0         | 97.7  | 120.0 | 35.9  | 51.7  | 71.8  |
| 60"                        |           | 50.4         | 87.9  | 120.0 | 32.3  | 46.5  | 64.6  |
| 66"                        |           | 45.8         | 79.9  | 119.9 | 29.4  | 42.3  | 58.8  |
| 72"                        | 42.0      | 73.3         | 109.9 | 26.9  | 38.8  | 53.9  |       |
| 19-1/8"                    | 84"       | 120.0        | 120.0 | 120.0 | 89.6  | 120.0 | 120.0 |
| 26-1/2"                    |           | 100.9        | 120.0 | 120.0 | 64.7  | 93.2  | 120.0 |
| 30"                        |           | 89.1         | 120.0 | 120.0 | 57.1  | 82.3  | 114.3 |
| 37"                        |           | 72.3         | 120.0 | 120.0 | 46.3  | 66.7  | 92.7  |
| 42"                        |           | 63.7         | 111.0 | 120.0 | 40.8  | 58.8  | 81.6  |
| 48"                        |           | 55.7         | 97.1  | 120.0 | 35.7  | 51.4  | 71.4  |
| 54"                        |           | 49.5         | 86.3  | 120.0 | 31.7  | 45.7  | 63.5  |
| 60"                        |           | 44.6         | 77.7  | 116.6 | 28.6  | 41.1  | 57.1  |
| 66"                        |           | 40.5         | 70.6  | 106.0 | 26.0  | 37.4  | 51.9  |
| 72"                        | 37.1      | 64.8         | 97.1  | 23.8  | 34.3  | 47.6  |       |
| 19-1/8"                    | 96"       | 120.0        | 120.0 | 120.0 | 78.4  | 112.9 | 120.0 |
| 26-1/2"                    |           | 88.3         | 120.0 | 120.0 | 56.6  | 81.5  | 113.2 |
| 30"                        |           | 78.0         | 120.0 | 120.0 | 50.0  | 72.0  | 100.0 |
| 37"                        |           | 63.2         | 110.3 | 120.0 | 40.5  | 58.4  | 81.1  |
| 42"                        |           | 55.7         | 97.1  | 120.0 | 35.7  | 51.4  | 71.4  |
| 48"                        |           | 48.8         | 85.0  | 120.0 | 31.3  | 45.0  | 62.5  |
| 54"                        |           | 43.3         | 75.6  | 113.3 | 27.8  | 40.0  | 55.6  |
| 60"                        |           | 39.0         | 68.0  | 102.0 | 25.0  | 36.0  | 50.0  |
| 66"                        |           | 35.5         | 61.8  | 92.7  | 22.7  | 32.7  | 45.5  |
| 72"                        | 32.5      | 56.7         | 85.0  | 20.8  | 30.0  | 41.7  |       |
| 19-1/8"                    | 108"      | 108.8        | 120.0 | 120.0 | 69.7  | 100.4 | 120.0 |
| 26-1/2"                    |           | 78.5         | 120.0 | 120.0 | 50.3  | 72.5  | 100.6 |
| 30"                        |           | 69.3         | 120.0 | 120.0 | 44.4  | 64.0  | 88.9  |
| 37"                        |           | 56.2         | 98.0  | 120.0 | 36.0  | 51.9  | 72.1  |
| 42"                        |           | 49.5         | 86.3  | 120.0 | 31.7  | 45.7  | 63.5  |
| 48"                        |           | 43.3         | 75.6  | 113.3 | 27.8  | 40.0  | 55.6  |
| 54"                        |           | 38.5         | 67.2  | 100.7 | 24.7  | 35.6  | 49.4  |
| 60"                        |           | 34.7         | 60.4  | 90.7  | 22.2  | 32.0  | 44.4  |
| 66"                        |           | 31.5         | 54.9  | 82.4  | 20.2  | 29.1  | 40.4  |
| 72"                        | 28.9      | 50.4         | 75.6  | -     | 26.7  | 37.0  |       |

| DESIGN LOAD CAPACITY - PSF |           |              |       |       |      |      |       |
|----------------------------|-----------|--------------|-------|-------|------|------|-------|
| WINDOW DIMS.               |           | ANCHORS TYPE |       |       |      |      |       |
| WIDTH (W)                  | MULL SPAN | A2           | A4    | A6    | B2   | B4a  | B4b   |
| 19-1/8"                    | 120"      | 97.9         | 120.0 | 120.0 | 62.7 | 90.4 | 120.0 |
| 26-1/2"                    |           | 70.6         | 120.0 | 120.0 | 45.3 | 65.2 | 90.6  |
| 30"                        |           | 62.4         | 108.8 | 120.0 | 40.0 | 57.6 | 80.0  |
| 37"                        |           | 50.6         | 88.2  | 120.0 | 32.4 | 46.7 | 64.9  |
| 42"                        |           | 44.6         | 77.7  | 116.6 | 28.6 | 41.1 | 57.1  |
| 48"                        |           | 39.0         | 68.0  | 102.0 | 25.0 | 36.0 | 50.0  |
| 54"                        |           | 34.7         | 60.4  | 90.7  | 22.2 | 32.0 | 44.4  |
| 60"                        |           | 31.2         | 54.4  | 81.6  | 20.0 | 28.8 | 40.0  |
| 66"                        |           | 28.4         | 49.5  | 74.2  | -    | 26.2 | 36.4  |
| 72"                        | 26.0      | 45.3         | 68.0  | -     | 24.0 | 33.3 |       |
| 19-1/8"                    | 132"      | 89.0         | 120.0 | 120.0 | 57.0 | 82.1 | 114.1 |
| 26-1/2"                    |           | 64.2         | 112.0 | 120.0 | 41.2 | 59.3 | 82.3  |
| 30"                        |           | 56.7         | 98.9  | 120.0 | 36.4 | 52.4 | 72.7  |
| 37"                        |           | 46.0         | 80.2  | 120.0 | 29.5 | 42.5 | 59.0  |
| 42"                        |           | 40.5         | 70.6  | 106.0 | 26.0 | 37.4 | 51.9  |
| 48"                        |           | 35.5         | 61.8  | 92.7  | 22.7 | 32.7 | 45.5  |
| 54"                        |           | 31.5         | 54.9  | 82.4  | 20.2 | 29.1 | 40.4  |
| 60"                        |           | 28.4         | 49.5  | 74.2  | -    | 26.2 | 36.4  |
| 66"                        |           | 25.8         | 45.0  | 67.4  | -    | 23.8 | 33.1  |
| 72"                        | 23.6      | 41.2         | 61.8  | -     | 21.8 | 30.3 |       |
| 19-1/8"                    | 144"      | 81.6         | 120.0 | 120.0 | 52.3 | 75.3 | 104.6 |
| 26-1/2"                    |           | 58.9         | 102.6 | 120.0 | 37.7 | 54.3 | 75.5  |
| 30"                        |           | 52.0         | 90.7  | 120.0 | 33.3 | 48.0 | 66.7  |
| 37"                        |           | 42.2         | 73.5  | 110.3 | 27.0 | 38.9 | 54.1  |
| 42"                        |           | 37.1         | 64.8  | 97.1  | 23.8 | 34.3 | 47.6  |
| 48"                        |           | 32.5         | 56.7  | 85.0  | 20.8 | 30.0 | 41.7  |
| 54"                        |           | 28.9         | 50.4  | 75.6  | -    | 26.7 | 37.0  |
| 60"                        |           | 26.0         | 45.3  | 68.0  | -    | 24.0 | 33.3  |
| 66"                        |           | 23.6         | 41.2  | 61.8  | -    | 21.8 | 30.3  |
| 72"                        | 21.7      | 37.8         | 56.7  | -     | 20.0 | 27.8 |       |



TYPICAL MULLION ARRANGEMENTS

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

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

**NOTE:**  
 ANY ANCHOR CONDITION SHOWN HEREIN MAY COVER LOCATIONS AT HEAD, SILL OR JAMB ENDS.  
 FOR ANCHORS DESCRIPTION SEE SHEETS 5 THRU 9.  
 (INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)

**ANCHORS**

Approved as complying with the Florida Building Code  
 Date 10/23/2014  
 NOA# 14-0529.16  
 Miami Date Product Control  
 By [Signature]

Engr: JAVAD AHMAD  
 CML  
 FLA. PE # 70592  
 C.A.N. 3538

MAY 23 2014

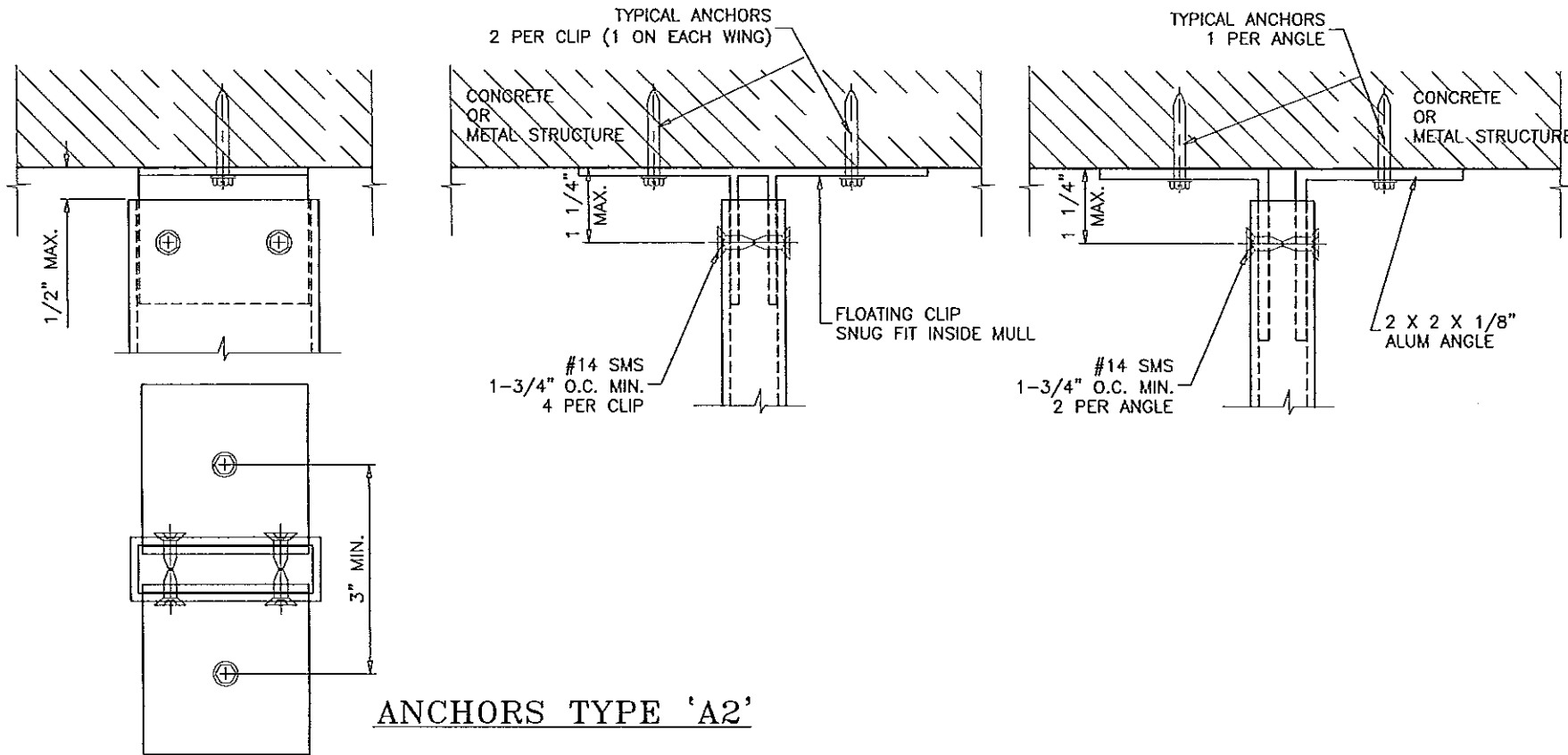
**afC**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL: (305) 262-6978 FAX: (305) 262-6978  
 MULLION\M14-01ESW

ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
 9114 N.W. 106 STREET  
 MEDLEY, FL. 33178  
 TEL: (305) 885-5299 FAX: (305) 885-5902

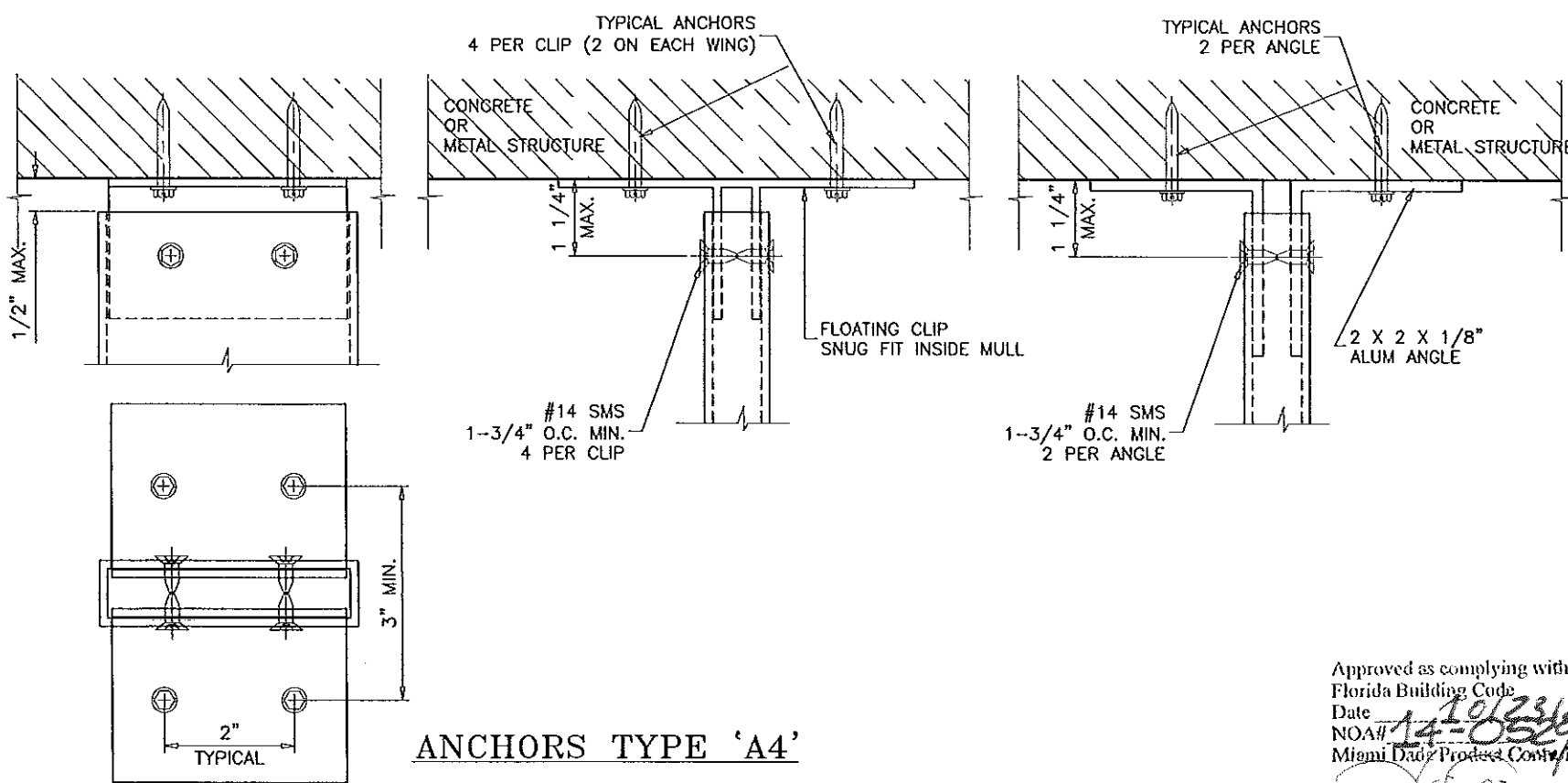
| no | date | description |
|----|------|-------------|
|    |      |             |
|    |      |             |
|    |      |             |
|    |      |             |

date: 05-19-14  
 scale:  
 dr. by: HAMID  
 chk. by:

drawing no.  
**M14-01**  
 sheet 4 of 9



ANCHORS TYPE 'A2'



ANCHORS TYPE 'A4'

**TYPICAL ANCHORS:**

| ANCHOR TYPES  | SUBSTRATE | MIN. EMBED. | MIN. EDGE DIST. |
|---|-----------|-------------|-----------------|
| 1/4" DIA. ULTRACONS BY 'ELCO'<br>(Fu=177 KSI, Fy=155 KSI) | CONCRETE  | 1-3/4"      | 2-1/2"          |
| 1/4" DIA. SELF DRILLING SCREWS<br>(GRADE 5 CRS)           | METAL     | 1/8"        | 3/4"            |

CONCRETE =  $f'_c$  = 3000 PSI MIN.  
 METAL = 1/8" MIN. THK. STEEL  $F_y$  = 36 KSI MIN.  
 1/8" MIN. THK. ALUMINUM (6063-T5 MIN.)

ANCHORS MAY BE HEX OR FLAT HEAD.

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

Approved as complying with the  
 Florida Building Code  
 Date 10/23/2014  
 NOA# 14-0529-16  
 Miami-Dade Product Control  
 By [Signature]

Engr: JAVAD AHMAD  
 CIVIL  
 FLA. PE # 70592  
 C.A.N. 3538  
 MAY 23 2014

**af c**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL (305) 264-8100 FAX (305) 262-6978  
 MULLION\M14-01ESW

ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
 9114 N.W. 106 STREET  
 MEDLEY, FL. 33178  
 TEL (305) 885-5299 FAX (305) 885-5902

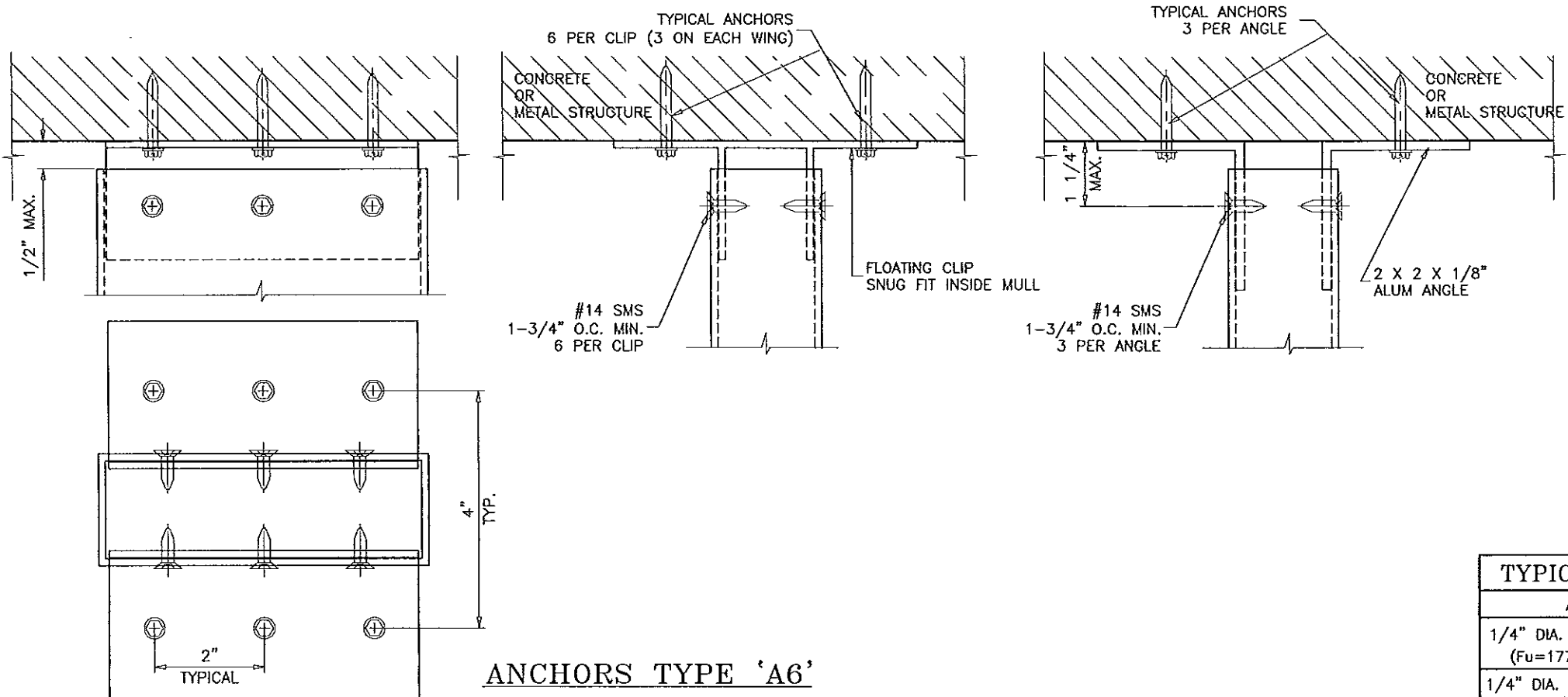
Revisions:

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

date: 05-19-14  
 scale: 3/8" = 1"  
 dr. by: HAMID  
 chk. by:

drawing no.  
**M14-01**  
 sheet 5 of 9





ANCHORS TYPE 'A6'

| TYPICAL ANCHORS:  |           |             |                 |
|---|-----------|-------------|-----------------|
| ANCHOR TYPES  | SUBSTRATE | MIN. EMBED. | MIN. EDGE DIST. |
| 1/4" DIA. ULTRACONS BY 'ELCO'<br>(Fu=177 KSI, Fy=155 KSI) | CONCRETE  | 1-3/4"      | 2-1/2"          |
| 1/4" DIA. SELF DRILLING SCREWS<br>(GRADE 5 CRS)           | METAL     | 1/8"        | 3/4"            |

CONCRETE = f'c = 3000 PSI MIN.  
 METAL = 1/8" MIN. THK. STEEL Fy = 36 KSI MIN.  
 1/8" MIN. THK. ALUMINUM (6063-T5 MIN.)

ANCHORS MAY BE HEX OR FLAT HEAD.

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

Approved as complying with the  
 Florida Building Code  
 Date 10/23/2014  
 NOA# 14-0529.16  
 Miami-Dade Product Control  
 By [Signature]

Engr: JAVAD AHMAD  
 CIVIL  
 FLA. PE # 70592  
 C.A.N. 3538  
 MAY 23 2014

**af c**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL (305) 264-8100 FAX (305) 262-6978  
 MULLION\M14-01ESW

---

ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
 9114 N.W. 106 STREET  
 MEDLEY, FL. 33178  
 TEL (305) 885-5299 FAX (305) 885-5902

---

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

---

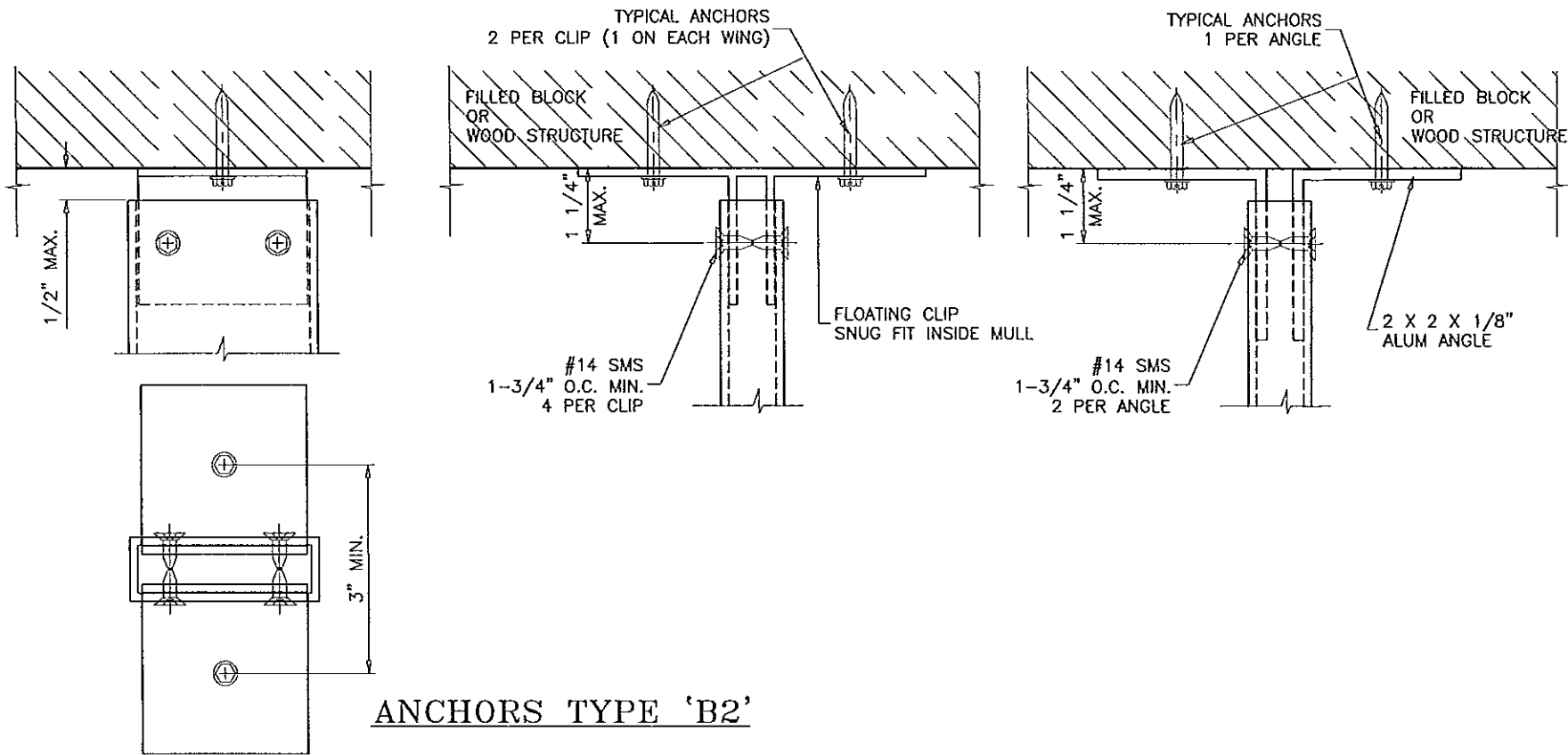
date: 05-19-14  
 scale: 3/8" = 1"  
 dr. by: HAMID  
 chk. by:  

---

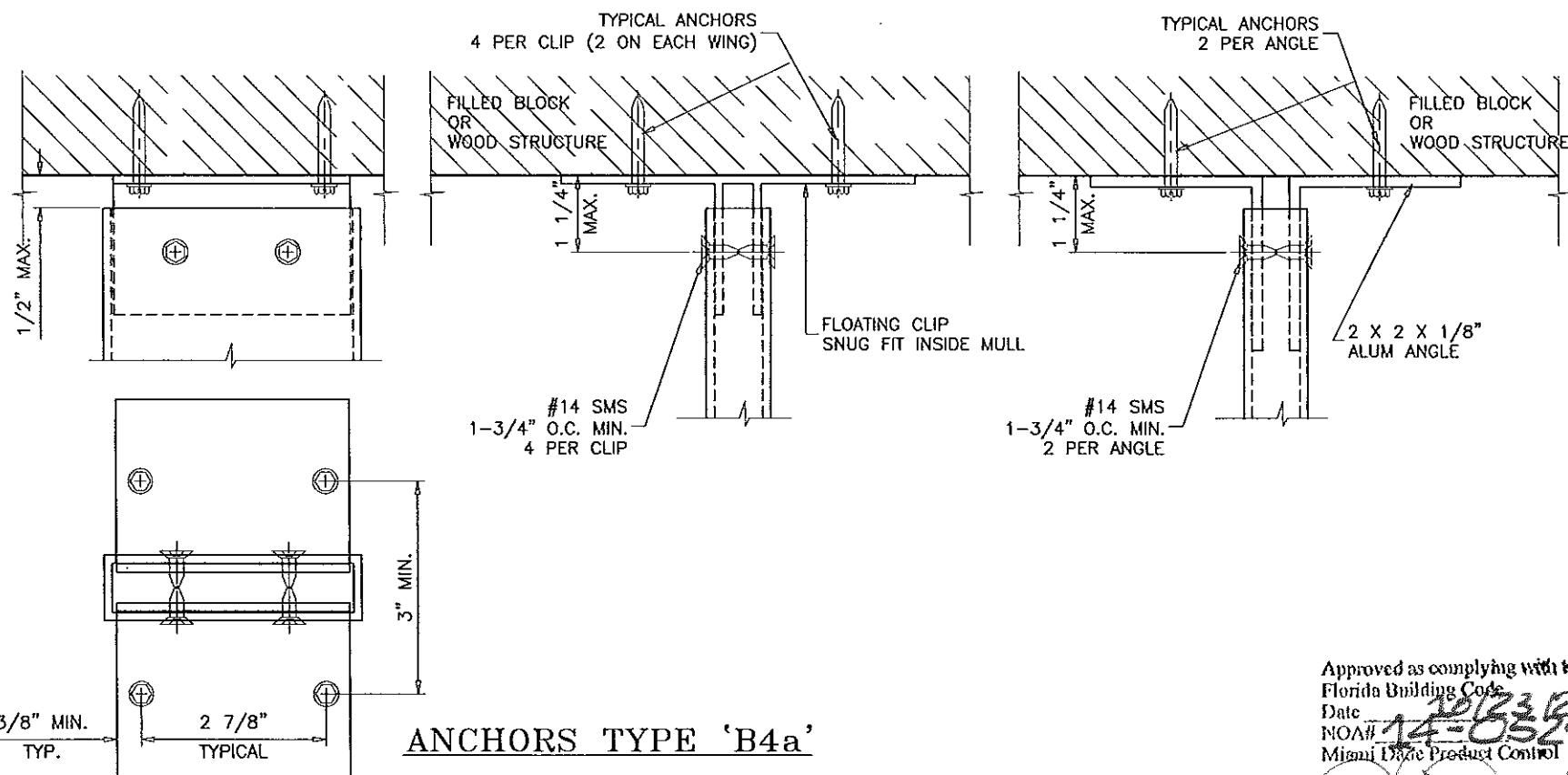
drawing no.  
**M14-01**

---

sheet 6 of 9



**ANCHORS TYPE 'B2'**



**ANCHORS TYPE 'B4a'**

**TYPICAL ANCHORS:**

| ANCHOR TYPES  | SUBSTRATE | MIN. EMBED. | MIN. EDGE DIST. |
|---|-----------|-------------|-----------------|
| 1/4" DIA. ULTRACONS BY 'ELCO'<br>(Fu=177 KSI, Fy=155 KSI) | MASONRY   | 1-3/4"      | 2-1/2"          |
|   | WOOD      | 1-1/2"      | 1"              |

WOOD = 2BY WOOD BUCKS OR WOOD STRUCTURE S.G. = 0.55 MIN.  
 MASONRY = C-90 HOLLOW/FILLED BLOCK f'm = 2000 PSI MIN.

1BY OR 2BY WOOD BUCKS NOT BY ECO WINDOW  
 MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER  
 THEM TO BUILDING STRUCTURE.

ANCHORS MAY BE HEX OR FLAT HEAD.

Approved as complying with the  
 Florida Building Code  
 Date 10/23/2014  
 NOA# 14-0529.16  
 Miami Dade Product Control  
 By *[Signature]*

Engr: JAVAD AHMAD  
 CIVIL  
 FLA. PE # 70592  
 C.A.N. 3538

MAY 23 2014

**af c**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL (305) 264-8100 FAX (305) 262-6978  
 MULLION\M14-01ESW

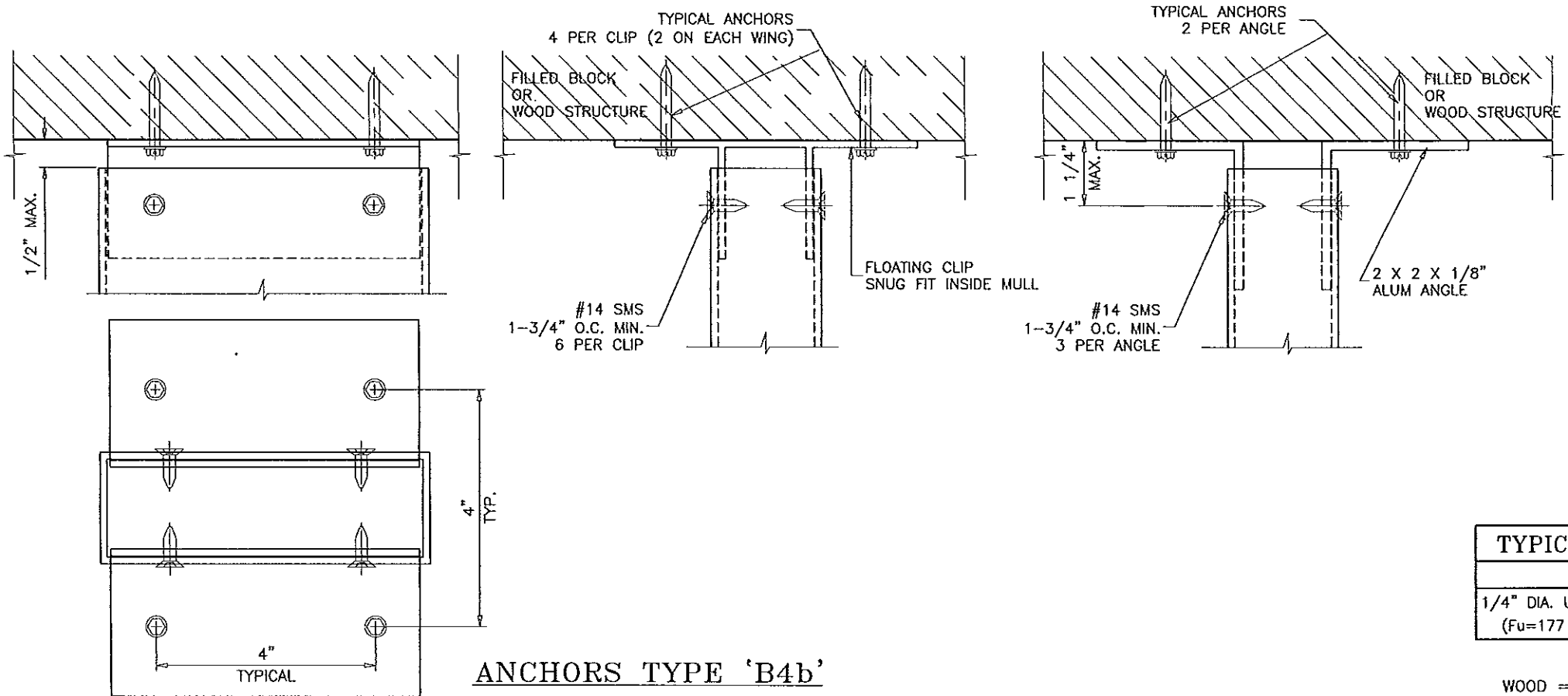
ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
 9114 N.W. 106 STREET  
 MEDLEY, FL. 33178  
 TEL. (305) 885-5299 FAX (305) 885-5902

Revisions:

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

date: 05-19-14  
 scale: 3/8" = 1"  
 dr. by: HAMID  
 chk. by:

drawing no.  
**M14-01**  
 sheet 7 of 9



**ANCHORS TYPE 'B4b'**

**TYPICAL ANCHORS:**

| ANCHOR TYPES  | SUBSTRATE | MIN. EMBED. | MIN. EDGE DIST. |
|---|-----------|-------------|-----------------|
| 1/4" DIA. ULTRACONS BY 'ELCO'<br>(Fu=177 KSI, Fy=155 KSI) | MASONRY   | 1-3/4"      | 2-1/2"          |
|   | WOOD      | 1-1/2"      | 1"              |

WOOD = 2BY WOOD BUCKS OR WOOD STRUCTURE S.G. = 0.55 MIN.  
 MASONRY = C-90 HOLLOW/FILLED BLOCK f'm = 2000 PSI MIN.

1BY OR 2BY WOOD BUCKS NOT BY ECO WINDOW  
 MUST SUSTAIN LOADS IMPOSED BY GLAZING SYSTEM AND TRANSFER THEM TO BUILDING STRUCTURE.

ANCHORS MAY BE HEX OR FLAT HEAD.

Approved as complying with the  
 Florida Building Code  
 Date 10/23/2014  
 NOA# 14-0329-16  
 Miami Dade Product Control  
 By [Signature]

Engr: JAVAD AHMAD  
 CIVIL  
 FLA. PE # 70592  
 C.A.N. 3538  
 MAY 23 2014

**af c**  
**AL-FAROOQ CORPORATION**  
 ENGINEERS & PRODUCT DEVELOPMENT  
 1235 S.W. 87 AVE  
 MIAMI, FLORIDA 33174  
 TEL. (305) 264-8100 FAX. (305) 262-6978  
 MULLION\M14-01ESW

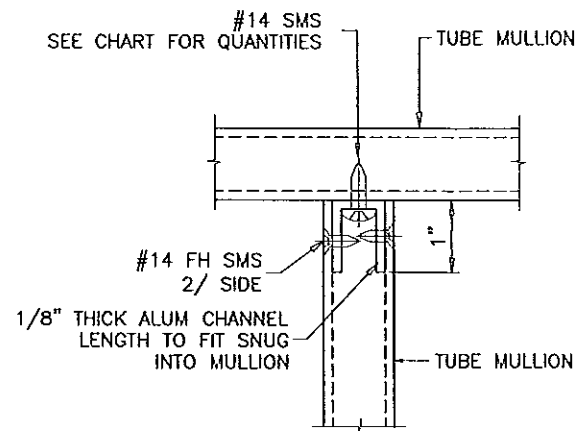
ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
 9114 N.W. 106 STREET  
 MEDLEY, FL. 33178  
 TEL. (305) 885-5299 FAX (305) 885-5902

Revisions:

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

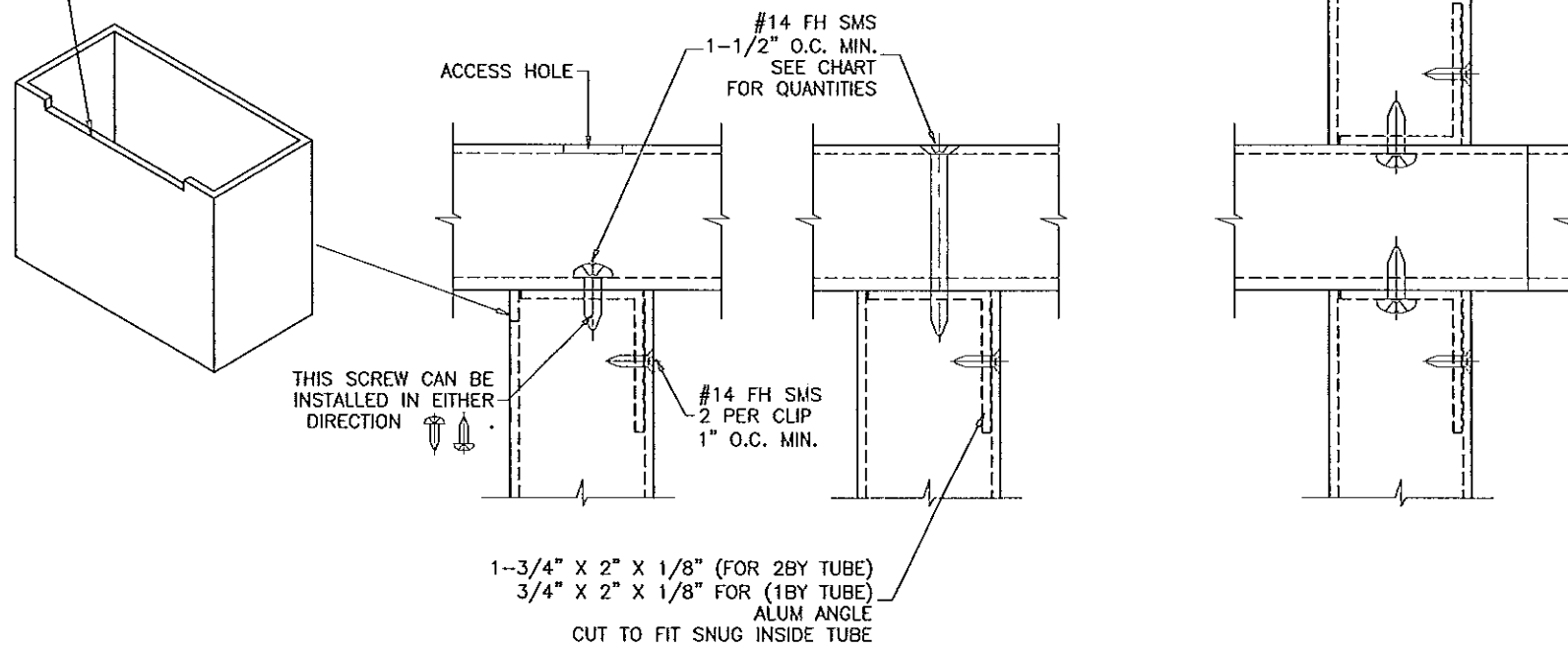
date: 05-19-14  
 scale: 3/8" = 1"  
 dr. by: HAMID  
 chk. by:

drawing no.  
**M14-01**  
 sheet 8 of 9



| ANCHOR CHART | NO. OF SCREWS |
|--------------|---------------|
| TYPE A2      | 2             |
| TYPE A4      | 3             |
| TYPE A6      | 4             |

TUBES MAY BE NOTCHED AS SHOWN TO ALLOW INSTALLATION OF CLIP ANGLE  
CAULK JOINT AFTER ASSEMBLY



**ANCHORS DETAIL #1**  
METAL TO METAL CONNECTION

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

Approved as complying with the Florida Building Code  
Date APR 23 2014  
NOAH 14-0529.16  
Miami Date Product Control  
By [Signature]

Engr: JAYAD AHMAD  
CIVIL  
FLA. PE # 70592  
C.A.N. 3538  
[Signature]  
MAY 23 2014

**af c**  
**AL-FAROOQ CORPORATION**  
ENGINEERS & PRODUCT DEVELOPMENT  
1235 S.W. 87 AVE  
MIAMI, FLORIDA 33174  
TEL. (305) 264-8100 FAX. (305) 262-6978  
MULLION\M14-01ESW

ALUMINUM TUBE MULLIONS  
**ECO WINDOW SYSTEMS, LLC.**  
9114 N.W. 106 STREET  
MEDLEY, FL. 33178  
TEL. (305) 885-5299 FAX (305) 885-5902

revisions:

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

date: 05-19-14  
scale: 3/8" = 1"  
dr. by: HAMID  
chk. by:

drawing no.  
**M14-01**  
sheet 9 of 9