



**BUILDING CODE COMPLIANCE OFFICE (BCCO)
PRODUCT CONTROL DIVISION**

**MIAMI-DADE COUNTY, FLORIDA
METRO-DADE FLAGLER BUILDING
140 WEST FLAGLER STREET, SUITE 1603
MIAMI, FLORIDA 33130-1563
(305) 375-2901 FAX (305) 375-2908**

NOTICE OF ACCEPTANCE (NOA)

**E.S. Windows
10653 N.E. Quaybridge Ct.
Miami, FL 33158**

SCOPE:

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed by the BCCO and accepted by the Building Code and Product Review Committee (BCPRC) 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 BCCO (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. BCPRC reserves the right to revoke this acceptance, if it is determined by BCCO 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: Aluminum Tubular Mullions

APPROVAL DOCUMENT: Drawing No. **M04-04**, titled "Aluminum Tube Mullions," sheets 1 through 8 of 8, prepared by AL-Farooq Corporation, dated 04/26/04 revision "A" dated 08/06/04; signed and sealed by Humayoun Farooq, P.E., bearing the Miami-Dade County Product Control Approval stamp with the Notice of Acceptance number and approval date by the Miami-Dade County Product Control Division.

MISSILE IMPACT RATING: Large and Small Missile Impact

LABELING: Each unit shall bear a permanent label with the manufacturer's name or logo, city, state 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 **Herminio F. Gonzalez, P.E., Director, BCCO**

Jay
8/25/04



**NOA No 04-0712.01
Expiration Date: September 16, 2009
Approval Date: September 16, 2004
Page 1**

E.S. Windows

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

A. DRAWINGS


1. Manufacturer's die drawings and sections.
2. Drawing No. **M04-04**, titled "Aluminum Tube Mullions," Sheets 1 through 8 of 8, prepared by AL-Farooq Corporation, dated 04/26/04 revision "A" dated 08/06/04, signed and sealed by Humayoun Farooq, 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
4) Large Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Forced Entry Test, per FBC 2411.3.2.1 and TAS 202-94
along with installation diagram of a aluminum single hung window mulled together, prepared by Fenestration Testing Laboratory, Inc., Test Report No.**FTL-3820**, dated 06/09/03, signed and sealed by Joseph Chan, P.E.
2. 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) Small Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Forced Entry Test, per FBC 2411.3.2.1 and TAS 202-94
along with installation diagram of a aluminum single hung window mulled together, prepared by Fenestration Testing Laboratory, Inc., Test Report No.**FTL-3810**, dated 06/09/03, signed and sealed by Joseph Chan, P.E.
3. 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) Small Missile Impact Test per FBC, TAS 201-94
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94
6) Forced Entry Test, per FBC 2411.3.2.1 and TAS 202-94
along with installation diagram of a aluminum single hung window mulled together, prepared by Fenestration Testing Laboratory, Inc., Test Report No.**FTL-3819**, dated 06/09/03, signed and sealed by Joseph Chan, P.E.

C. CALCULATIONS:

1. Anchor Calculations, ASTM-E1300, structural analysis, prepared, signed and sealed by Humayoun Farooq, P.E dated 06/07/04.



Herminio F. Gonzalez, P.E.

Director, Product Control Division

NOA No 04-0712.01

Expiration Date: September 16, 2009

Approval Date: September 16, 2004

E.S. Windows

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

D. QUALITY ASSURANCE

1. Miami Dade Building Code Compliance Office (BCCO)

E. MATERIAL CERTIFICATIONS

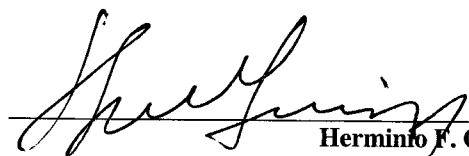
1. None

F. STATEMENTS

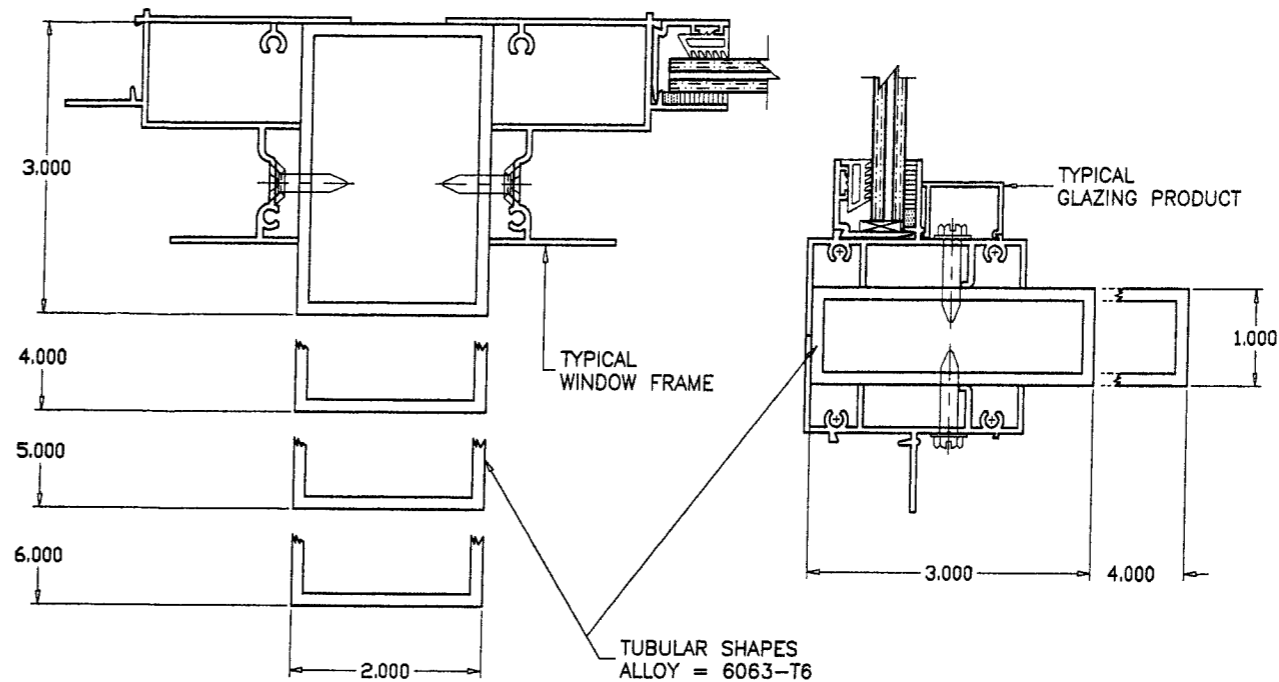
1. Statement letter of conformance and no financial interest, 06/07/04, signed and sealed by Humayoun Farooq, P.E.
2. Statement letter of conformance and no financial interest, 06/07/04, signed and sealed by Humayoun Farooq, P.E.

G. OTHER

1. Letter from the consultant stating that the product is in compliance with the Florida Building Code (FBC)



Herminio F. Gonzalez, P.E.
Director, Product Control Division
NOA No 04-0712.01
Expiration Date: September 16, 2009
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**MULLIONS CONTAINING TYPICAL GLAZING PRODUCTS
HORIZONTAL OR VERTICAL**

SEE WINDOW OR DOOR APPROVAL FOR FASTENERS SIZES AND SPACING

THESE MULLIONS ARE RATED FOR LARGE MISSILE IMPACT

**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.

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 33% INCREASE IN ALLOWABLE STRESS IS USED IN DESIGN OF ANCHORS.

INSTRUCTIONS:

USE CHARTS AND GRAPHS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN LOAD REQUIRED PER ASCE 7 FOR PARTICULAR OPENING.
- STEP 2** USE 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 8 AND ANCHOR CHARTS ON SHEET 4, SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.

Approved as complying with the
Florida Building Code
Date 09/16/04
NOA# 04-0312.01
Miami Date Product Control
Division
By [Signature]

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

[Signature]
AUG 10 2004

afc

AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
MULLION M04-04ESW

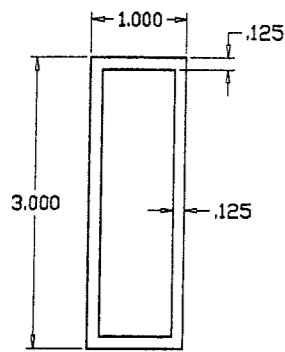
ALUMINUM TUBE MULLIONS
E.S. WINDOWS
5220 N.W. 72 AVE. BAY #4
MIAMI, FL. 33166
TEL. (305) 640-9857 FAX. (305) 593-2074

no.	date	by	description	REV.	PER	COMMENTS
A	08.06.04					

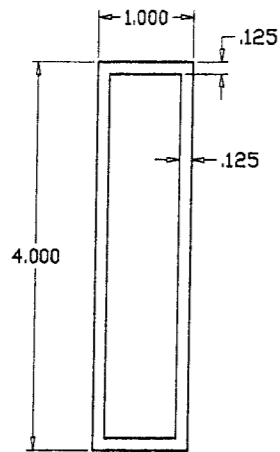
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chk. by:

drawing no.
M04-04

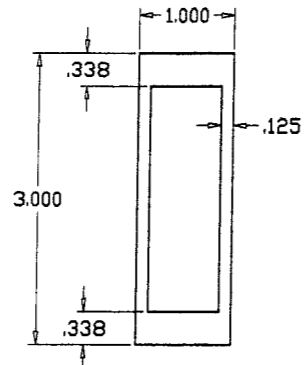
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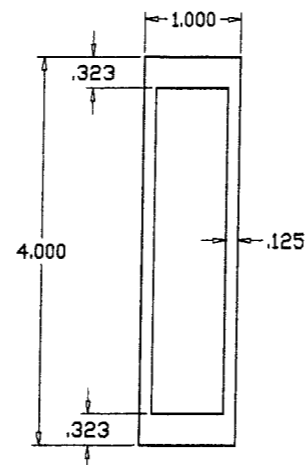
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STD. MULLION
6063-T6



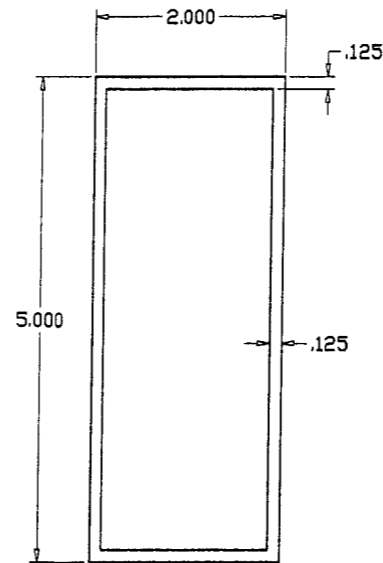
1 X 4
STD. MULLION
6063-T6



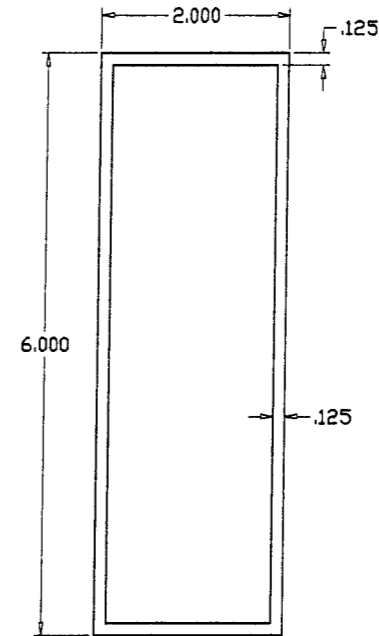
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CUSTOM MULLION
6063-T6



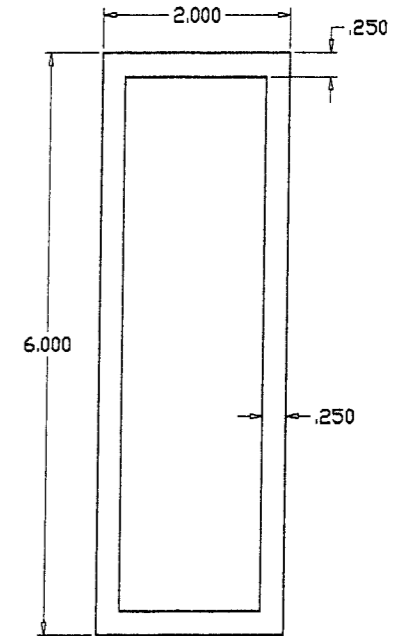
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CUSTOM MULLION
6063-T6



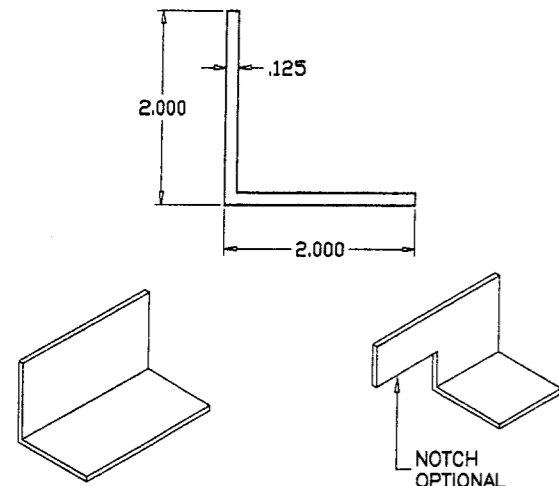
2 X 5
STD. MULLION
6063-T6



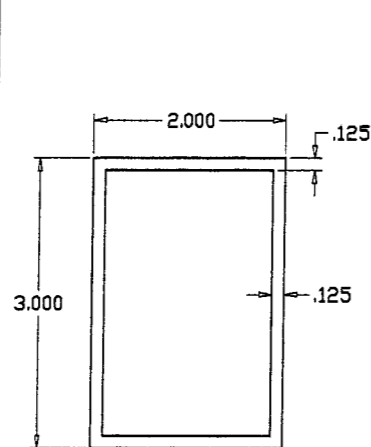
2 X 6
STD. MULLION
6063-T6



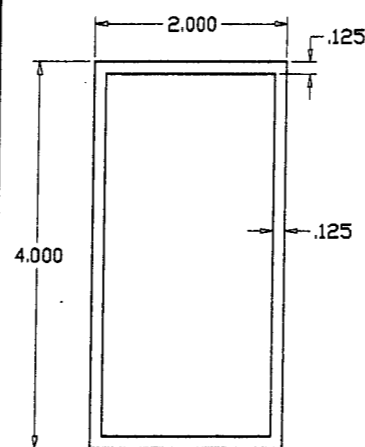
2 X 6
HEAVY MULLION
6063-T6



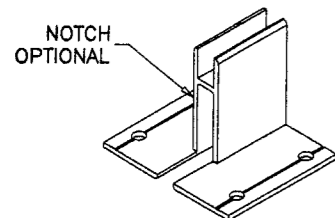
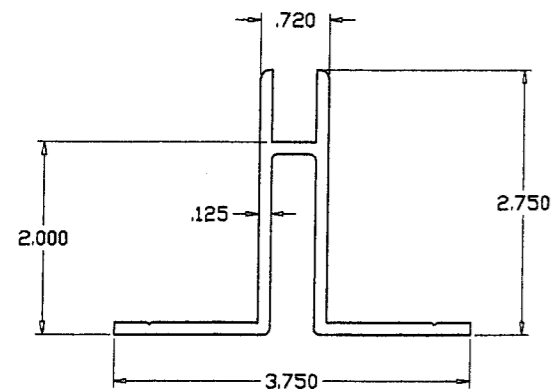
ANGLE CLIP
6063-T5



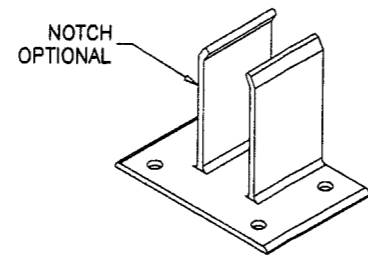
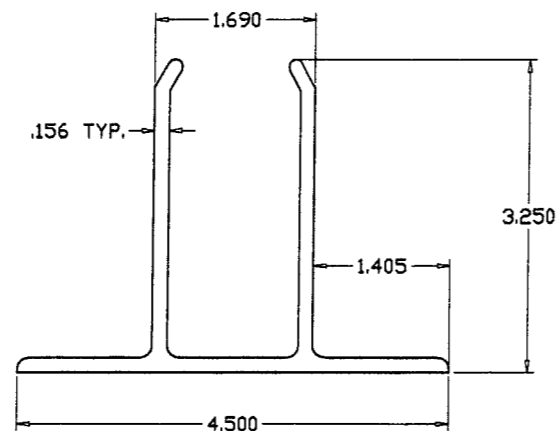
2 X 3
STD. MULLION
6063-T6



2 X 4
STD. MULLION
6063-T6



MULLION CLIP
6063-T6



MULLION CLIP
6063-T6

Approved as complying with the
Florida Building Code
Date 09/16/04
NOA# 04-0312-01
Miami Made Product Control
Division
By [Signature]

Engr. DR. HUMAYOON FAROOQ
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no	date	description
A	08.06.04	NO CHANGE THIS SHEET

date: 04-26-04
scale: 1/2" = 1"
dr. by: HAMID
chk. by:

drawing no.
M04-04

sheet 2 of 8

MULLION\M04-04ESW

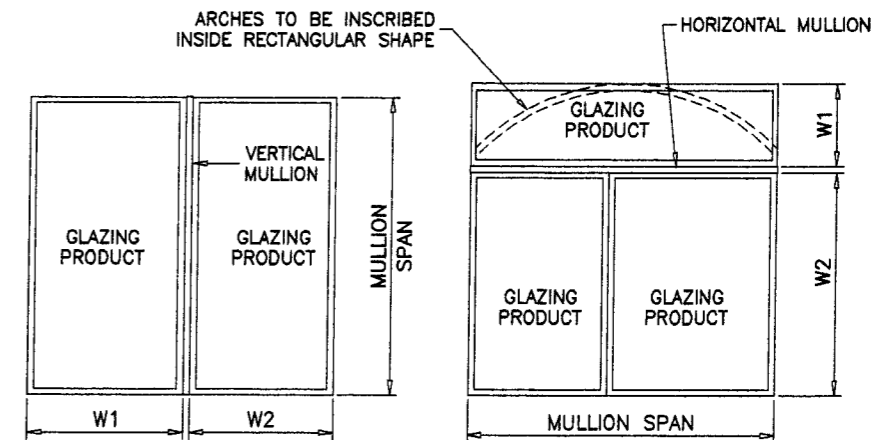
DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS)								
WINDOW DIMS.		1 X 3	1 X 4	1 X 3	1 X 4	2 X 5	2 X 6	2 X 6
WIDTH (W)	MULL SPAN	STD.	STD.	CUSTOM	CUSTOM	STD.	STD.	HEAVY
19-1/8"	38-3/8"	150.0	150.0	150.0	150.0	150.0	150.0	150.0
26-1/2"		150.0	150.0	150.0	150.0	150.0	150.0	150.0
30"		150.0	150.0	150.0	150.0	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"		150.0	150.0	150.0	150.0	150.0	150.0	150.0
54"		150.0	150.0	150.0	150.0	150.0	150.0	150.0
60"		150.0	150.0	150.0	150.0	150.0	150.0	150.0
66"		140.9	150.0	150.0	150.0	150.0	150.0	150.0
72"		129.2	150.0	150.0	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"		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"		121.6	150.0	150.0	150.0	150.0	150.0	150.0
42"		107.1	150.0	150.0	150.0	150.0	150.0	150.0
48"		93.7	150.0	144.7	150.0	150.0	150.0	150.0
54"		83.3	150.0	128.6	150.0	150.0	150.0	150.0
60"		75.0	143.0	115.8	150.0	150.0	150.0	150.0
66"		68.2	130.0	105.3	150.0	150.0	150.0	150.0
72"		62.5	119.2	96.5	150.0	150.0	150.0	150.0
19-1/8"	58"	150.0	150.0	150.0	150.0	150.0	150.0	150.0
26-1/2"		112.9	150.0	150.0	150.0	150.0	150.0	150.0
30"		99.7	150.0	150.0	150.0	150.0	150.0	150.0
37"		80.9	150.0	124.9	150.0	150.0	150.0	150.0
42"		71.2	150.0	110.0	150.0	150.0	150.0	150.0
48"		62.3	133.6	96.2	150.0	150.0	150.0	150.0
54"		55.4	118.8	85.5	150.0	150.0	150.0	150.0
60"		49.9	106.9	77.0	150.0	150.0	150.0	150.0
66"		45.3	97.2	70.0	142.0	150.0	150.0	150.0
72"		41.5	89.1	64.2	130.2	150.0	150.0	150.0
19-1/8"	63"	122.1	150.0	150.0	150.0	150.0	150.0	150.0
26-1/2"		88.1	150.0	136.0	150.0	150.0	150.0	150.0
30"		77.8	150.0	120.2	150.0	150.0	150.0	150.0
37"		63.1	135.3	97.4	150.0	150.0	150.0	150.0
42"		55.6	119.2	85.8	150.0	150.0	150.0	150.0
48"		48.6	104.3	75.1	150.0	150.0	150.0	150.0
54"		43.2	92.7	66.8	135.4	150.0	150.0	150.0
60"		38.9	83.4	60.1	121.9	150.0	150.0	150.0
66"		35.4	75.8	54.6	110.8	150.0	150.0	150.0
72"		32.4	69.5	50.1	101.6	150.0	150.0	150.0

DESIGN LOAD CAPACITY - PSF (TUBE MULLIONS)								
WINDOW DIMS.		1 X 3	1 X 4	1 X 3	1 X 4	2 X 5	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	150.0	115.1	150.0	150.0	150.0	150.0
26-1/2"		53.8	115.4	83.1	150.0	150.0	150.0	150.0
30"		47.5	101.9	73.4	148.9	150.0	150.0	150.0
37"		38.5	82.6	59.5	120.7	150.0	150.0	150.0
42"		33.9	72.8	52.4	106.4	150.0	150.0	150.0
48"		29.7	63.7	45.9	93.1	150.0	150.0	150.0
54"		26.4	56.6	40.8	82.7	144.6	150.0	150.0
60"		23.8	51.0	36.7	74.4	130.2	150.0	150.0
66"		21.6	46.3	33.4	67.7	118.3	150.0	150.0
72"		-	42.5	30.6	62.0	108.5	150.0	150.0
19-1/8"	84"	51.5	110.4	79.5	150.0	150.0	150.0	150.0
26-1/2"		37.2	79.7	57.4	116.4	150.0	150.0	150.0
30"		32.8	70.4	50.7	102.8	150.0	150.0	150.0
37"		26.6	57.1	41.1	83.4	145.8	150.0	150.0
42"		23.4	50.3	36.2	73.5	128.4	150.0	150.0
48"		20.5	44.0	31.7	64.3	112.4	150.0	150.0
54"		-	39.1	28.2	57.1	99.9	150.0	150.0
60"		-	35.2	25.3	51.4	89.9	140.7	150.0
66"		-	32.0	23.0	46.7	81.7	127.9	150.0
72"		-	29.3	21.1	42.8	74.9	117.3	150.0
19-1/8"	96"	34.5	74.0	53.3	108.1	150.0	150.0	150.0
26-1/2"		24.9	53.4	38.4	78.0	136.4	150.0	150.0
30"		22.0	47.2	34.0	68.9	120.5	150.0	150.0
37"		-	38.2	27.5	55.9	97.7	150.0	150.0
42"		-	33.7	24.3	49.2	86.0	136.8	150.0
48"		-	29.5	21.2	43.1	75.3	119.7	150.0
54"		-	26.2	-	38.3	66.9	106.4	150.0
60"		-	23.6	-	34.4	60.2	95.8	150.0
66"		-	21.4	-	31.3	54.8	87.1	150.0
72"		-	-	-	28.7	50.2	79.8	146.6
19-1/8"	108"	24.2	51.9	37.4	75.9	132.7	150.0	150.0
26-1/2"		-	37.5	27.0	54.8	95.8	150.0	150.0
30"		-	33.1	23.9	48.4	84.6	134.5	150.0
37"		-	26.9	-	39.2	68.6	109.1	150.0
42"		-	23.7	-	34.6	60.4	96.1	150.0
48"		-	20.7	-	30.2	52.9	84.1	150.0
54"		-	-	-	26.9	47.0	74.7	137.3
60"		-	-	-	24.2	42.3	67.3	123.6
66"		-	-	-	22.0	38.5	61.2	112.3
72"		-	-	-	20.2	35.3	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 5	2 X 6	2 X 6
WIDTH (W)	MULL SPAN	STD.	STD.	CUSTOM	CUSTOM	STD.	STD.	HEAVY
19-1/8"	120"	-	37.9	27.3	55.3	96.7	150.0	150.0
26-1/2"		-	27.3	-	39.9	69.8	111.0	150.0
30"		-	24.1	-	35.3	61.7	98.1	150.0
37"		-	-	-	28.6	50.0	79.5	146.1
42"		-	-	-	25.2	44.1	70.1	128.7
48"		-	-	-	22.0	38.5	61.3	112.6
54"		-	-	-	-	34.3	54.5	100.1
60"		-	-	-	-	30.8	49.0	90.1
66"		-	-	-	-	28.0	44.6	81.9
72"		-	-	-	-	25.7	40.9	75.1
19-1/8"	132"	-	28.5	20.5	41.6	72.7	115.6	150.0
26-1/2"		-	20.5	-	30.0	52.5	83.4	150.0
30"		-	-	-	26.5	46.3	73.7	135.4
37"		-	-	-	21.5	37.6	59.7	109.8
42"		-	-	-	-	33.1	52.6	96.7
48"		-	-	-	-	29.0	46.1	84.6
54"		-	-	-	-	25.7	40.9	75.2
60"		-	-	-	-	23.2	36.8	67.7
66"		-	-	-	-	21.1	33.5	61.5
72"		-	-	-	-	-	30.7	56.4
19-1/8"	144"	-	21.9	-	32.0	56.0	89.0	150.0
26-1/2"		-	-	-	23.1	40.4	64.3	118.0
30"		-	-	-	20.4	35.7	56.8	104.3
37"		-	-	-	-	28.9	46.0	84.5
42"		-	-	-	-	25.5	40.5	74.5
48"		-	-	-	-	22.3	35.5	65.2
54"		-	-	-	-	-	31.5	57.9
60"		-	-	-	-	-	28.4	52.1
66"		-	-	-	-	-	25.8	47.4
72"		-	-	-	-	-	23.6	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

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

MULLIONS

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

Approved as complying with the
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Date 09/16/04
NOA# 04-0712-01
Miami Dade Product Control
Division
By

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AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
MULLION M04-04ESW

ALUMINUM TUBE MULLIONS

E.S. WINDOWS
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MIAMI, FL. 33166
TEL. (305) 640-9857 FAX. (305) 593-2074

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sheet 3 of 8

DESIGN LOAD CAPACITY - PSF						
WINDOW DIMS.		ANCHORS TYPE				
WIDTH (W)	MULL SPAN	A	B	C	D	E
19-1/8"	38-3/8"	150.0	150.0	150.0	150.0	150.0
26-1/2"		110.4	145.0	150.0	150.0	150.0
30"		97.6	128.1	150.0	150.0	150.0
37"		79.1	103.9	150.0	150.0	150.0
42"		69.7	91.5	139.4	150.0	150.0
48"		61.0	80.1	122.0	150.0	150.0
54"		54.2	71.2	108.4	150.0	150.0
60"		48.8	64.0	97.6	150.0	150.0
66"		44.3	58.2	88.7	140.1	150.0
72"		40.7	53.4	81.3	128.4	150.0
19-1/8"	50-5/8"	116.0	150.0	150.0	150.0	150.0
26-1/2"		83.7	109.9	150.0	150.0	150.0
30"		74.0	97.1	147.9	150.0	150.0
37"		60.0	78.7	119.9	150.0	150.0
42"		52.8	69.4	105.7	150.0	150.0
48"		46.2	60.7	92.4	146.0	150.0
54"		41.1	53.9	82.2	129.8	150.0
60"		37.0	48.5	74.0	116.8	150.0
66"		33.6	44.1	67.2	106.2	150.0
72"		30.8	40.5	61.6	97.3	150.0
19-1/8"	58"	101.3	132.9	150.0	150.0	150.0
26-1/2"		73.1	95.9	146.2	150.0	150.0
30"		64.6	84.7	129.1	150.0	150.0
37"		52.3	68.7	104.7	150.0	150.0
42"		46.1	60.5	92.2	145.7	150.0
48"		40.3	53.0	80.7	127.4	150.0
54"		35.9	47.1	71.7	113.3	150.0
60"		32.3	42.4	64.6	102.0	150.0
66"		29.3	38.5	58.7	92.7	150.0
72"		26.9	35.3	53.8	85.0	150.0
19-1/8"	63"	93.2	122.4	150.0	150.0	150.0
26-1/2"		67.3	88.3	134.6	150.0	150.0
30"		59.4	78.0	118.9	150.0	150.0
37"		48.2	63.3	98.4	150.0	150.0
42"		42.4	55.7	84.9	134.1	150.0
48"		37.1	48.8	74.3	117.3	150.0
54"		33.0	43.3	66.0	104.3	150.0
60"		29.7	39.0	59.4	93.9	150.0
66"		27.0	35.5	54.0	85.3	150.0
72"		24.8	32.5	49.5	78.2	150.0

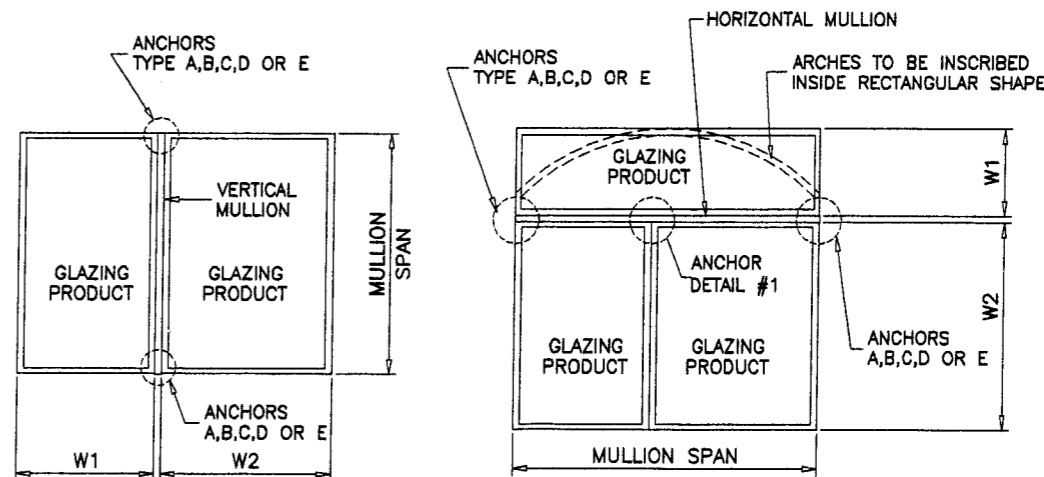
DESIGN LOAD CAPACITY - PSF						
WINDOW DIMS.		ANCHORS TYPE				
WIDTH (W)	MULL SPAN	A	B	C	D	E
19-1/8"	74-1/4"	79.1	103.8	150.0	150.0	150.0
26-1/2"		57.1	74.9	114.2	150.0	150.0
30"		50.4	66.2	100.8	150.0	150.0
37"		40.9	53.7	81.8	129.2	150.0
42"		36.0	47.3	72.0	113.8	150.0
48"		31.5	41.4	63.0	99.6	150.0
54"		28.0	36.8	56.0	88.5	150.0
60"		25.2	33.1	50.4	79.6	150.0
66"		22.9	30.1	45.8	72.4	144.8
72"		21.0	27.6	42.0	66.4	132.7
19-1/8"	84"	69.9	91.8	139.8	150.0	150.0
26-1/2"		50.5	66.2	100.9	150.0	150.0
30"		44.6	58.5	89.1	140.8	150.0
37"		36.1	47.4	72.3	114.2	150.0
42"		31.8	41.8	63.7	100.6	150.0
48"		27.9	36.6	55.7	88.0	150.0
54"		24.8	32.5	49.5	78.2	150.0
60"		22.3	29.3	44.6	70.4	140.8
66"		20.3	26.6	40.5	64.0	128.0
72"		-	24.4	37.1	58.7	117.3
19-1/8"	96"	61.2	80.3	122.4	150.0	150.0
26-1/2"		44.2	58.0	88.3	139.5	150.0
30"		39.0	51.2	78.0	123.2	150.0
37"		31.6	41.5	63.2	99.9	150.0
42"		27.9	36.6	55.7	88.0	150.0
48"		24.4	32.0	48.8	77.0	150.0
54"		21.7	28.4	43.3	68.4	136.9
60"		-	25.6	39.0	61.6	123.2
66"		-	23.3	35.5	56.0	112.0
72"		-	21.3	32.5	51.3	102.7
19-1/8"	108"	54.4	71.4	108.8	150.0	150.0
26-1/2"		39.2	51.5	78.5	124.0	150.0
30"		34.7	45.5	69.3	109.5	150.0
37"		28.1	36.9	56.2	88.8	150.0
42"		24.8	32.5	49.5	78.2	150.0
48"		21.7	28.4	43.3	68.4	136.9
54"		-	25.3	38.5	60.8	121.7
60"		-	22.8	34.7	54.8	109.5
66"		-	20.7	31.5	49.8	99.6
72"		-	-	28.9	45.6	91.3

DESIGN LOAD CAPACITY - PSF						
WINDOW DIMS.		ANCHORS TYPE				
WIDTH (W)	MULL SPAN	A	B	C	D	E
19-1/8"	120"	48.9	64.3	97.9	150.0	150.0
26-1/2"		35.3	46.4	70.6	111.6	150.0
30"		31.2	41.0	62.4	98.6	150.0
37"		25.3	33.2	50.6	79.9	150.0
42"		22.3	29.3	44.6	70.4	140.8
48"		-	25.6	39.0	61.6	123.2
54"		-	22.8	34.7	54.8	109.5
60"		-	20.5	31.2	49.3	98.6
66"		-	-	28.4	44.8	89.6
72"		-	-	26.0	41.1	82.1
19-1/8"	132"	44.5	58.4	89.0	140.5	150.0
26-1/2"		32.1	42.2	64.2	101.4	150.0
30"		28.4	37.2	56.7	89.6	150.0
37"		23.0	30.2	46.0	72.6	145.3
42"		20.3	26.6	40.5	64.0	128.0
48"		-	23.3	35.5	56.0	112.0
54"		-	20.7	31.5	49.8	99.6
60"		-	-	28.4	44.8	89.6
66"		-	-	25.8	40.7	81.5
72"		-	-	23.6	37.3	74.7
19-1/8"	144"	40.8	53.5	81.6	128.8	150.0
26-1/2"		29.4	38.6	58.9	93.0	150.0
30"		26.0	34.1	52.0	82.1	150.0
37"		21.1	27.7	42.2	66.6	133.2
42"		-	24.4	37.1	58.7	117.3
48"		-	21.3	32.5	51.3	102.7
54"		-	-	28.9	45.6	91.3
60"		-	-	26.0	41.1	82.1
66"		-	-	23.6	37.3	74.7
72"		-	-	21.7	34.2	68.4

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 8.
(INTERPOLATION BETWEEN WIDTHS OR SPANS ALLOWED)



TYPICAL MULLION ARRANGEMENTS

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

ANCHORS

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

AUG 10 2004

Approved as complying with the
Florida Building Code
Date 09/16/04
NOA# 02-0312-01
Miami Code Product Control
Division

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AL-FAROOQ CORPORATION
ENGINEERS, PLANNERS & PRODUCT DESIGN
1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978

MULLION M04-04ESW

ALUMINUM TUBE MULLIONS

E.S. WINDOWS
5220 N.W. 72 AVE. BAY #4
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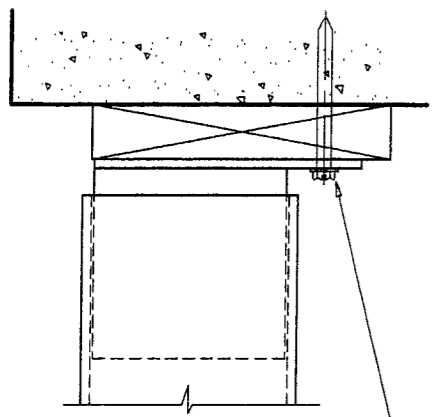
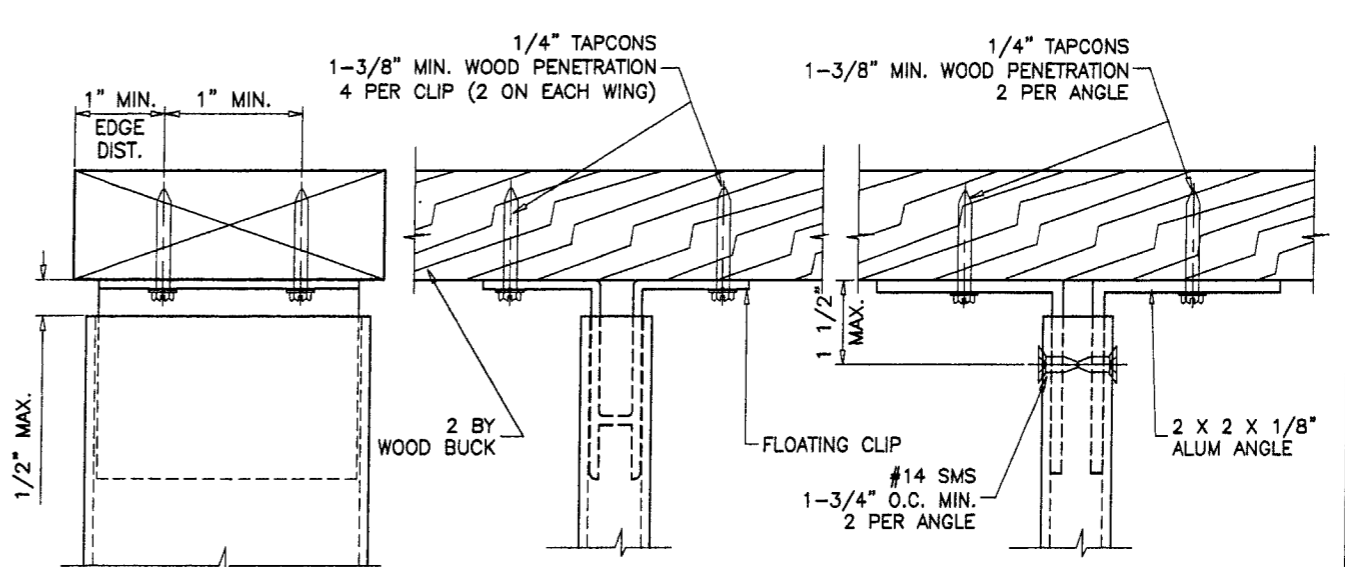
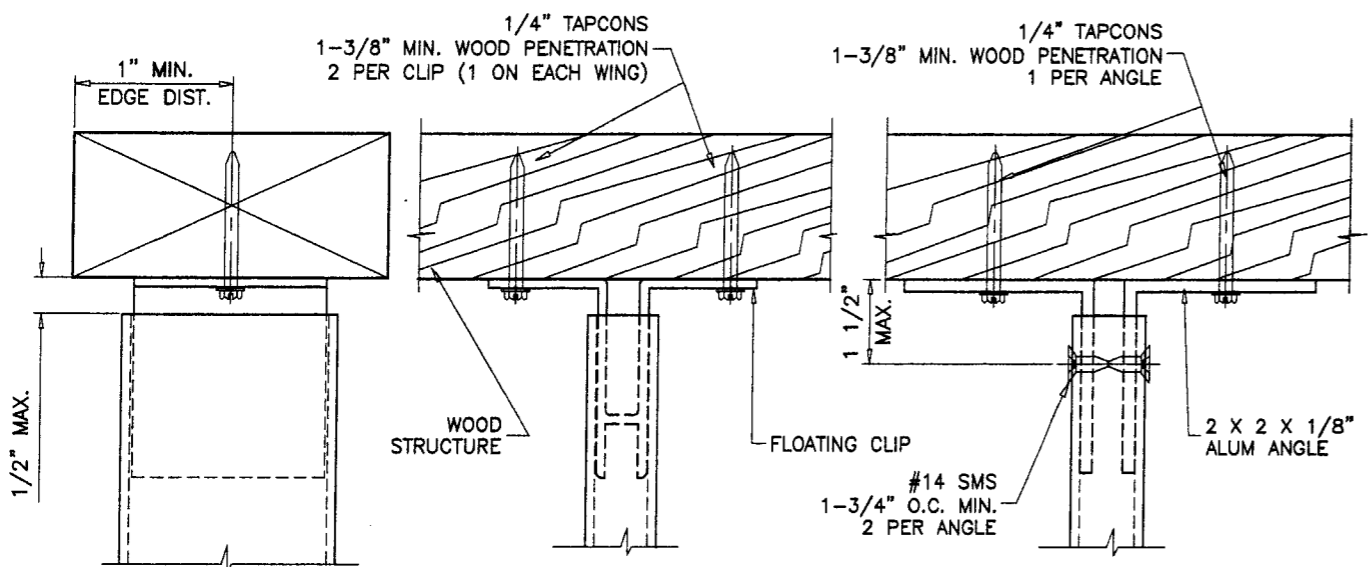
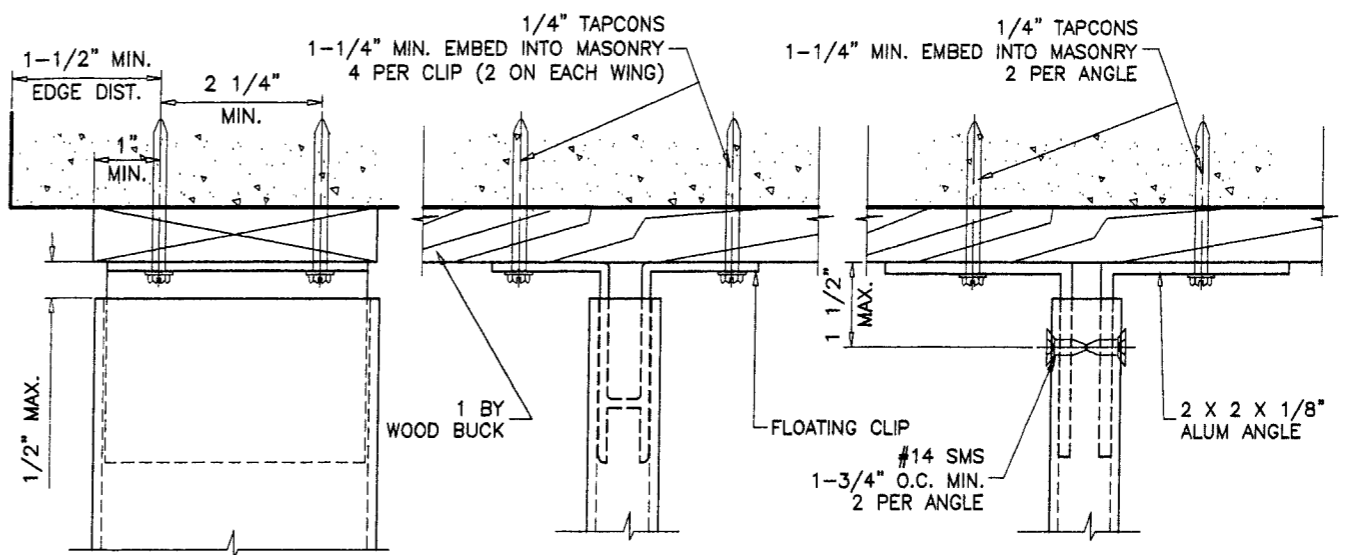
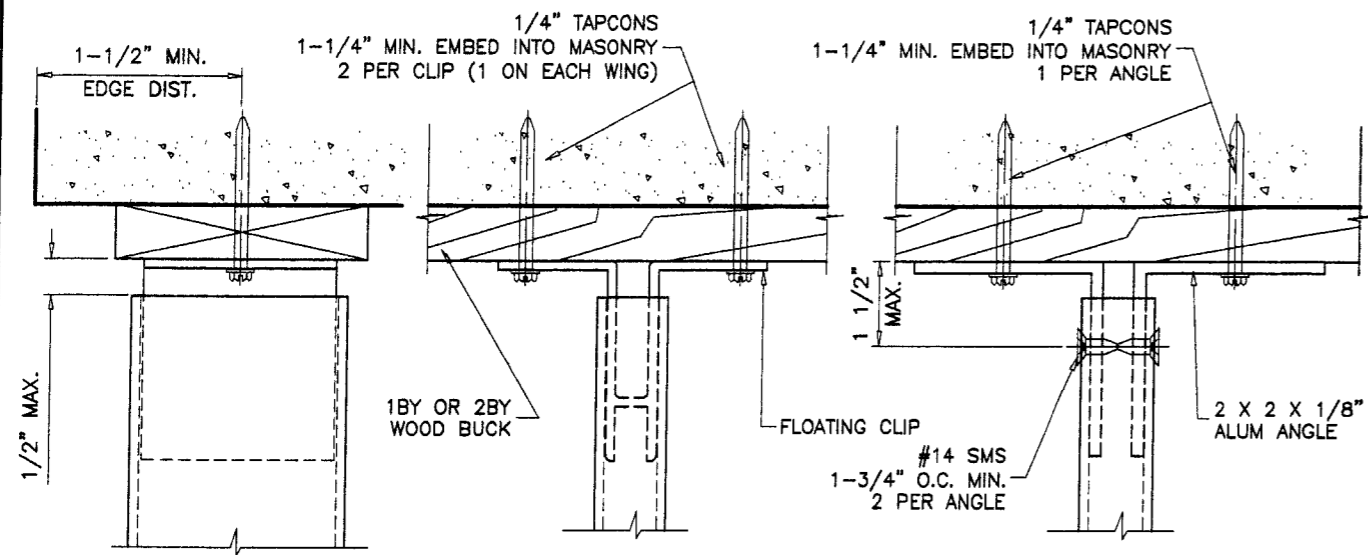
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date: 04-26-04
scale:
dr. by: HAMID
chk. by:

drawing no.
M04-04

sheet 4 of 8



ALTERNATE ANCHOR LOCATION

ANCHORS TYPE 'A'

ANCHORS TYPE 'C'

ALL CLIPS AND ANGLES TO FIT SNUG INTO TUBE MULLIONS. TAPCONS MAY BE HEX OR FLAT HEAD.

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

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Division
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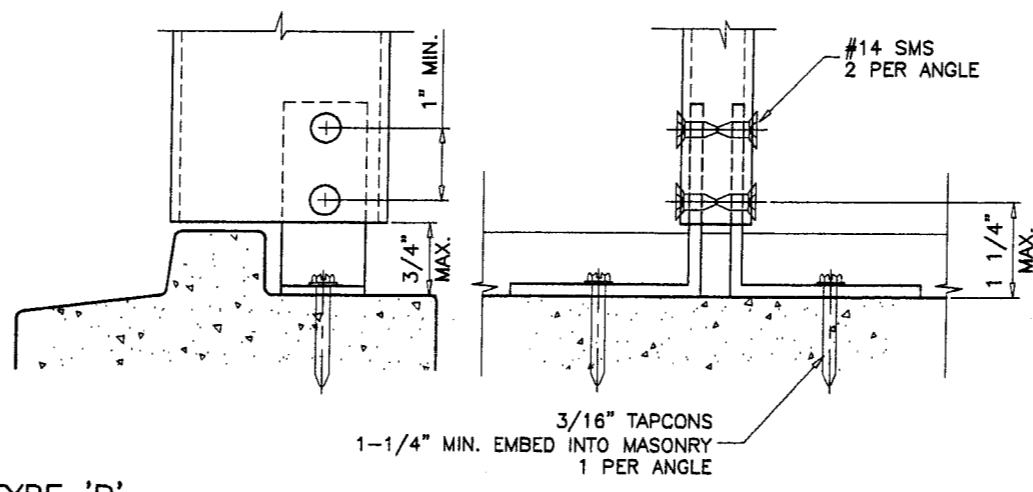
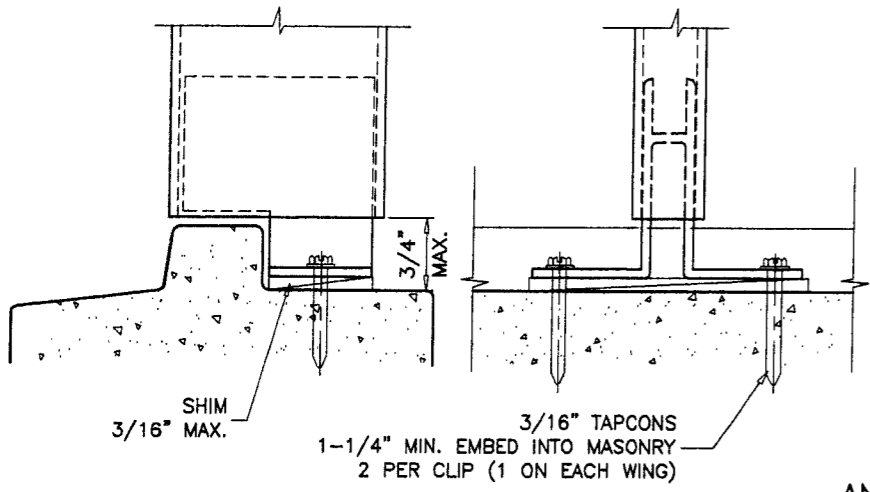
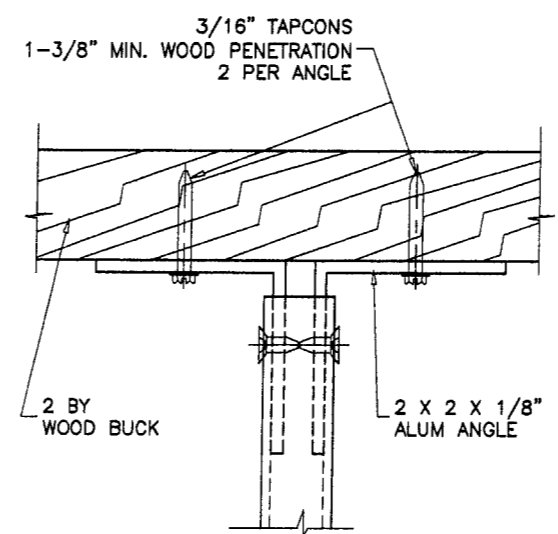
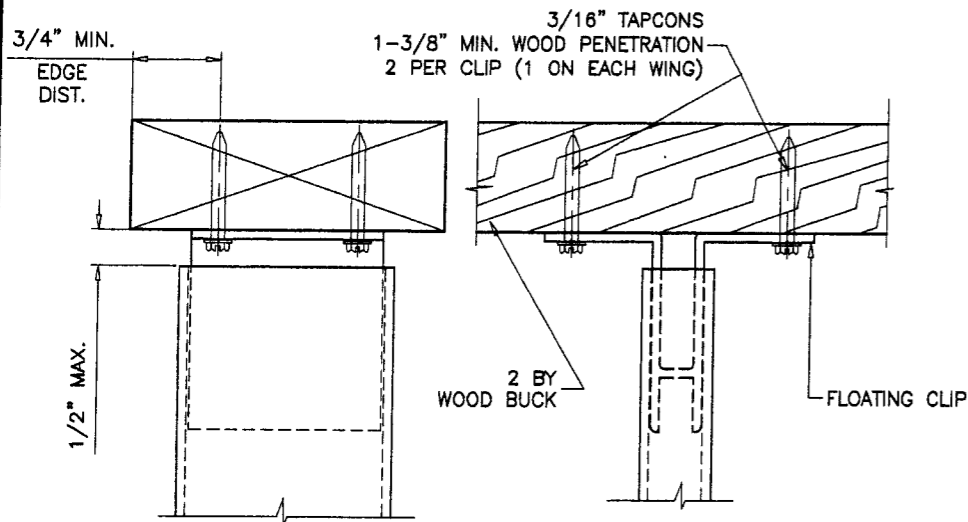
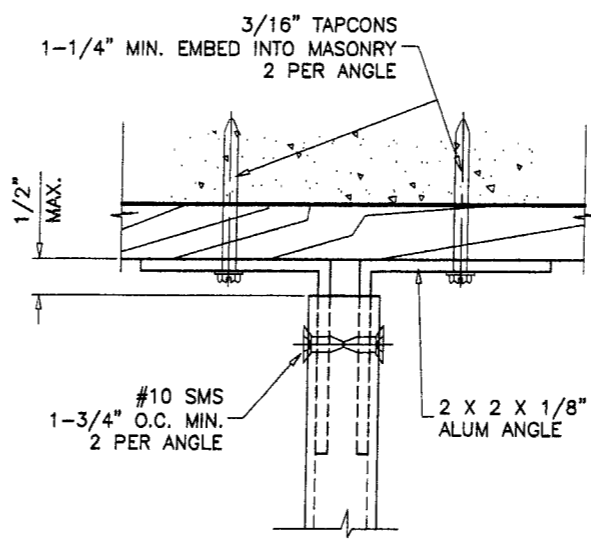
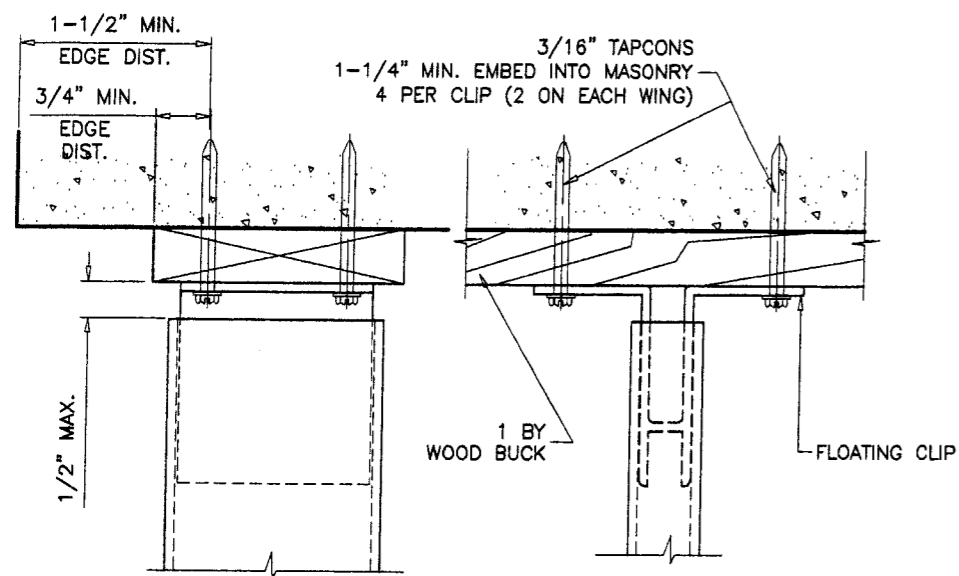
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MIAMI, FLORIDA 33174
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MULLION/M04-04ESW

ALUMINUM TUBE MULLIONS
E.S. WINDOWS
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MIAMI, FL. 33166
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dr. by: HAMID
chk. by:

drawing no.
M04-04
sheet 5 of 8



ALL CLIPS AND ANGLES TO FIT SNUG INTO TUBE MULLIONS. TAPCONS MAY BE HEX OR FLAT HEAD.

ANCHORS TYPE 'B'

Engr: DR. HUMAYGUN FAROOQ
STRUCTURES
FLA. PE # 16557
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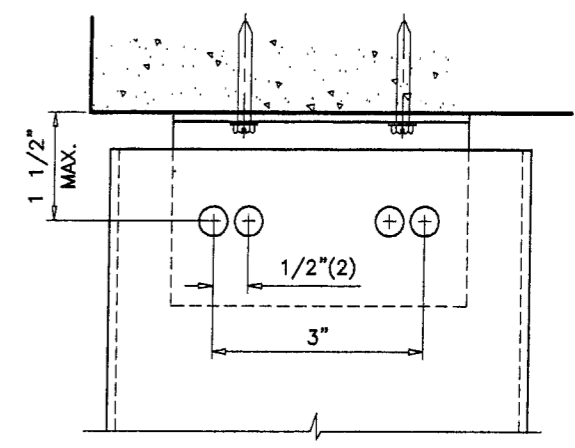
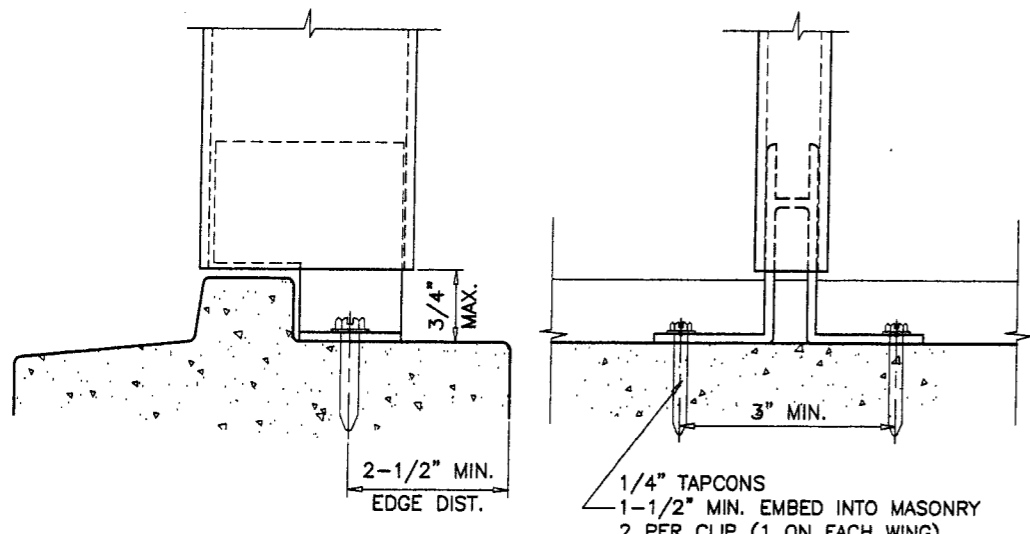
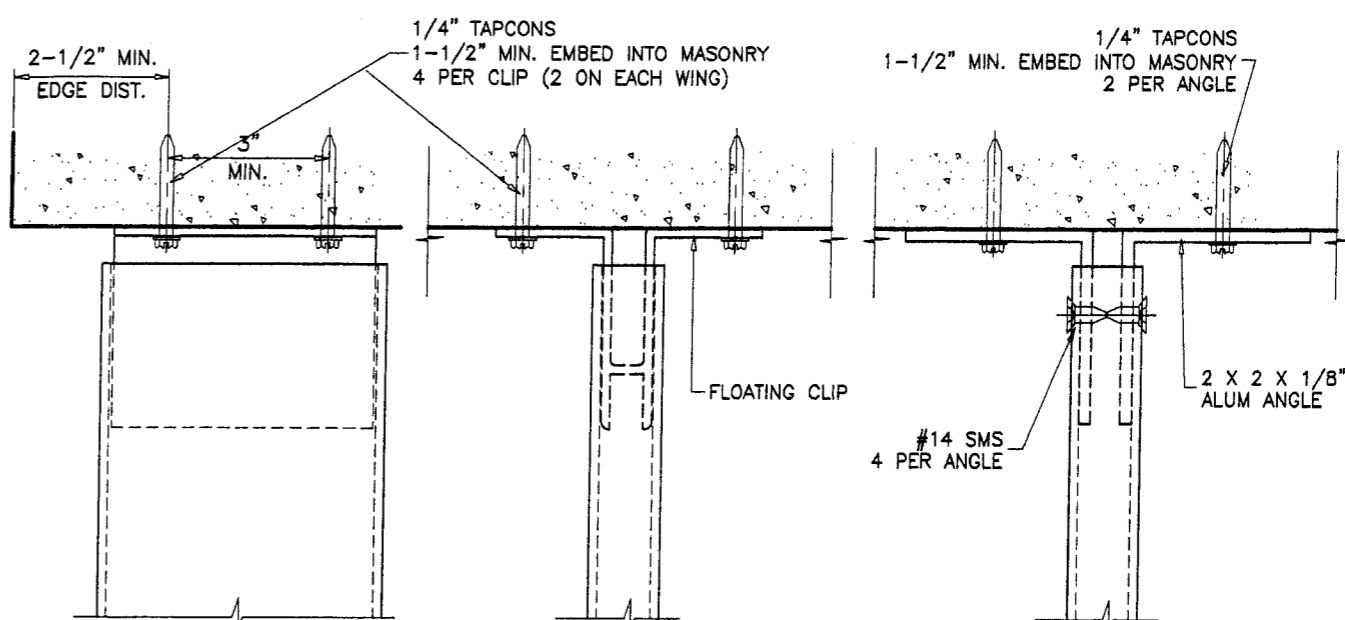
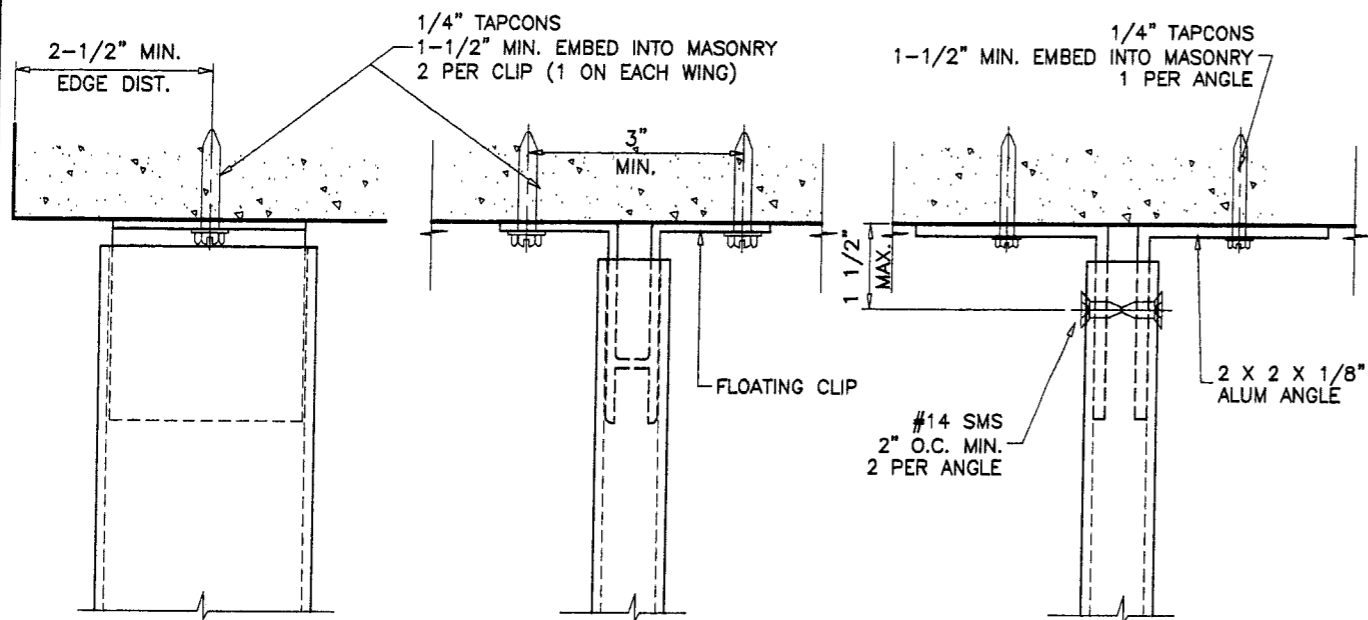
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1235 SW 87 AVE
MIAMI, FLORIDA 33174
TEL. (305) 264-8100 FAX. (305) 262-6978
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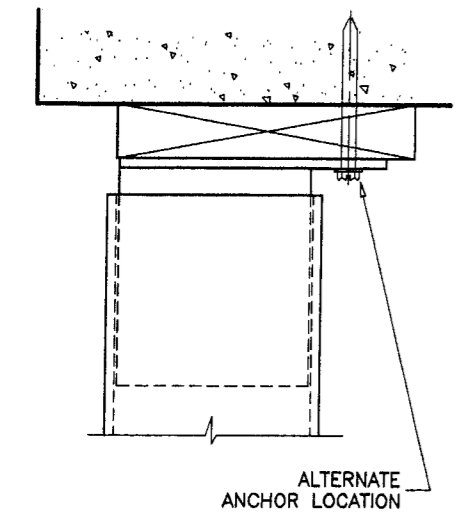
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dr. by: HAMID
chk. by:

drawing no.
M04-04
sheet 6 of 8



LOCATION OF SCREWS CONNECTING ANGLES TO TUBES

ANCHORS TYPE 'E'



ALTERNATE ANCHOR LOCATION

ANCHORS TYPE 'D'

ALL CLIPS AND ANGLES TO FIT SNUG INTO TUBE MULLIONS. TAPCONS MAY BE HEX OR FLAT HEAD.

CLIPS OR ANGLES CONNECTED DIRECTLY TO MASONRY TO BE PROTECTED WITH ALKALI-RESISTANT COATINGS, SUCH AS BITUMINOUS PAINT OR WATER-WHITE METHACRYLATE LACQUER.

Engr: DR. HUMAYOUN FAROOQ
STRUCTURES
FLA. PE # 16557
C.A.N. 3538

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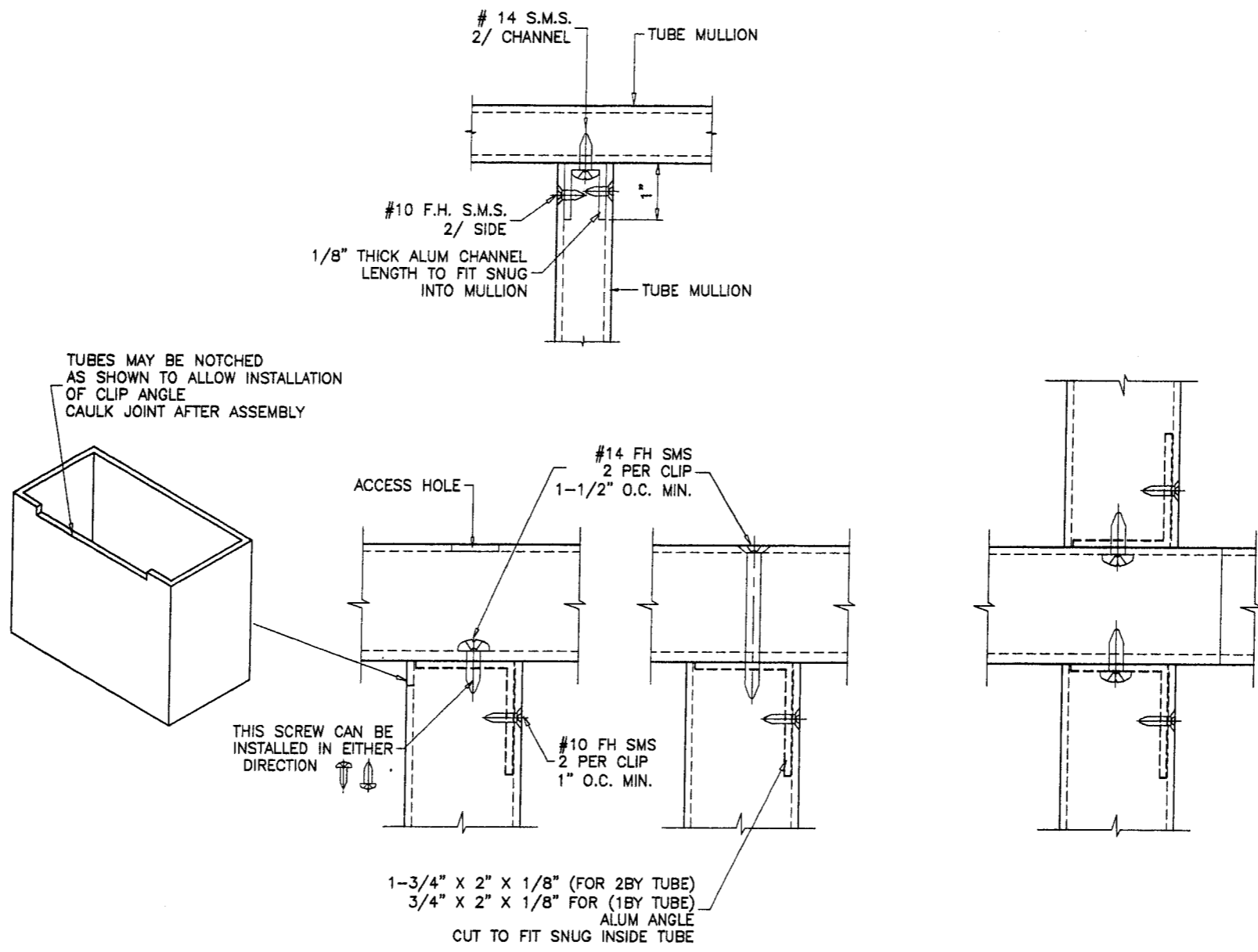
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date: 04-26-04
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chk. by:

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M04-04
sheet 7 of 8



ANCHORS DETAIL #1

METAL TO METAL CONNECTION

USE CHARTS FOR ANCHOR TYPE 'D' TO VERIFY CAPACITY OF CONNECTION



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

drawing no.
M04-04

sheet 8 of 8

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