



DEPARTMENT OF PERMITTING, ENVIRONMENT, AND REGULATORY  
AFFAIRS (PERA)  
BOARD AND CODE ADMINISTRATION DIVISION

MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION  
11805 SW 26 Street, Room 208  
Miami, Florida 33175-2474  
T (786) 315-2590 F (786) 315-2599

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

**NOTICE OF ACCEPTANCE (NOA)**

Lawson Industries, Inc.  
8501 NW 90 Street  
Medley, FL 33166

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County PERA - 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. PERA reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

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

**DESCRIPTION: Clipped Extruded Aluminum Tube Mullion w/ and w/o Steel Reinforcement – L.M.I.**

**APPROVAL DOCUMENT:** Drawing No. LAW-ML-1001, titled "Aluminum Tube Mullions" Sheets 1 through 10 of 10, dated 04/27/10 with revision A dated 01/25/12, prepared by manufacturer, signed and sealed by Thomas J. Sotos, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

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

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

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

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

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

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official. This NOA revises and renews NOA # 10-0610.02 and consists of this page 1 and evidence pages E-1 and E-2, as well as approval document mentioned above.

The submitted documentation was reviewed by **Manuel Perez, P.E.**



*MP*  
3/19/12

NOA No. 12-0127.07  
Expiration Date: May 30, 2017  
Approval Date: March 29, 2012  
Page 1

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

**A. DRAWINGS**

1. Manufacturer's die drawings and sections.
2. Drawing No. **LAW-ML-1001**, titled "Aluminum Tube Mullions" Sheets 1 through 10 of 10, dated 04/27/10 with revision A dated 01/25/12, prepared by manufacturer, signed and sealed by Thomas J. Sotos, P.E.

**B. TESTS**

1. Test report on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 20294 along with marked-up drawings and installation diagram of 120" span aluminum tube mullions with C4 x 4.5 steel channel reinforcement, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-02-1714**, dated 8/27/02, signed and sealed by Rafael E. Droz-Seda, P.E.  
*(Submitted under NOA# 03-0225.07)*
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 120" span aluminum tube mullions with C4 x 4.5 steel channel reinforcement, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-02-1716**, dated 8/27/02, signed and sealed by Rafael E. Droz-Seda, P.E.  
*(Submitted under NOA# 03-0225.07)*
3. Tensile Test report on 0.10" thick wall aluminum tube mullion, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-02-T071**, dated 09/16/02, tested per **ASTM E8**, signed and sealed by Rafael E. Droz-Seda, P.E.  
*(Submitted under NOA# 03-0225.07)*
4. Test report on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94 along with marked-up drawings and installation diagram of two aluminum horizontal sliding windows mullied at top with a 90" span mullion and a 45" high fixed window on top, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-1383**, dated 2/13/96, signed and sealed by Gilbert Diamond, P.E.  
*(Submitted under NOA# 02-0501.05)*
5. 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 an aluminum sliding glass door, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-02-1718**, dated 8/27/02, signed and sealed by Rafael E. Droz-Seda, P.E.  
*(Submitted under NOA# 03-0225.06)*

  
Manuel Perez, P.E.  
Product Control Examiner

NOA No. 12-0127.07

Expiration Date: May 30, 2017

Approval Date: March 29, 2012

**NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED**

**B. TESTS (CONTINUED)**

6. Test report on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 20294 along with marked-up drawings and installation diagram of an aluminum sliding glass door, prepared by Hurricane Engineering & Testing, Inc., Test Report No. **HETI-02-1717**, dated 8/27/02, signed and sealed by Rafael E. Droz-Seda, P.E. **(Submitted under NOA# 03-0225.06)**
7. Test report on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 20294 along with marked-up drawings and installation diagram of an aluminum sliding glass door, prepared by Fenestration Testing Laboratory, Inc., Test Report No. **FTL-1376**, dated 1/31/96, signed and sealed by Gilbert Diamond, P.E. **(Submitted under NOA# 03-0225.06)**

**C. CALCULATIONS**

1. Anchor verification calculations and structural analysis, complying with FBC-2010, dated 05/17/10 and updated on 01/25/12, prepared, signed and sealed by Thomas J. Sotos, P.E.
2. Glazing complies with ASTM E1300-04

**D. QUALITY ASSURANCE**

1. Miami-Dade Department of Permitting, Environment, and Regulatory Affairs (PERA).

**E. MATERIAL CERTIFICATIONS**


1. None.

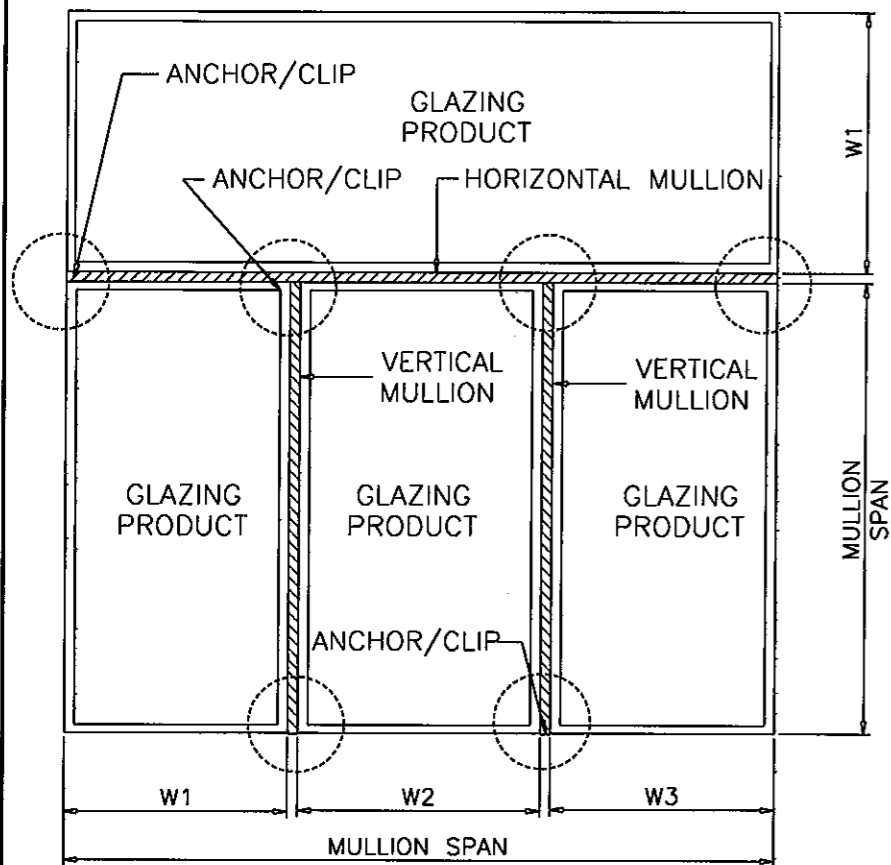
**F. STATEMENTS**

1. Statement letter of conformance, complying with FBC-2010, dated January 25, 2012, signed and sealed by Thomas J. Sotos, P.E.
2. Statement letter of no financial interest, dated May 20, 2010, signed and sealed by Thomas J. Sotos, P.E.

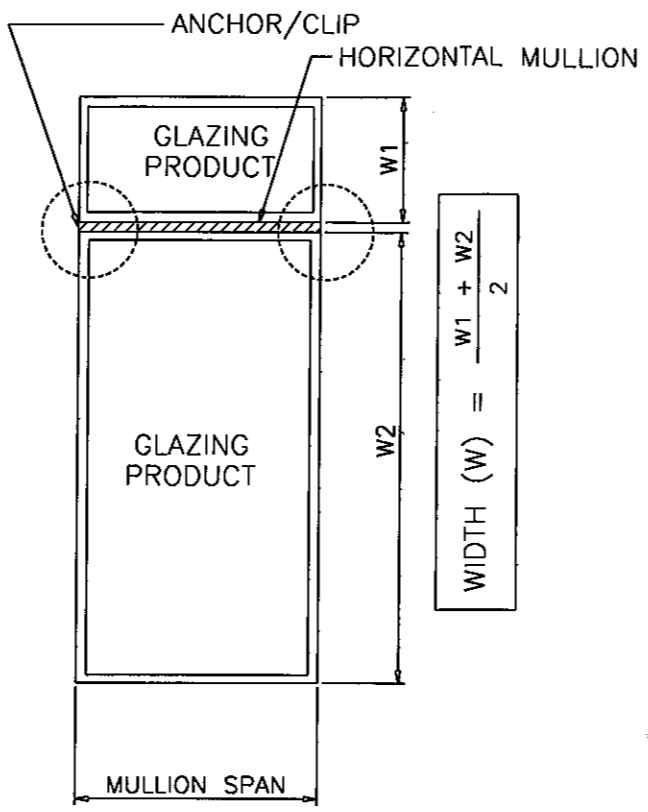
**G. OTHERS**

1. Notice of Acceptance No. **10-0610.02**, issued to Lawson Industries, Inc. for their Clipped Aluminum Tube Mullion w/ and w/o Steel Reinforcement – L.M.I., approved on 10/06/10 and expiring on 05/30/12.

  
Manuel Perez, P.E.  
Product Control Examiner  
NOA No. 12-0127.07  
Expiration Date: May 30, 2017  
Approval Date: March 29, 2012

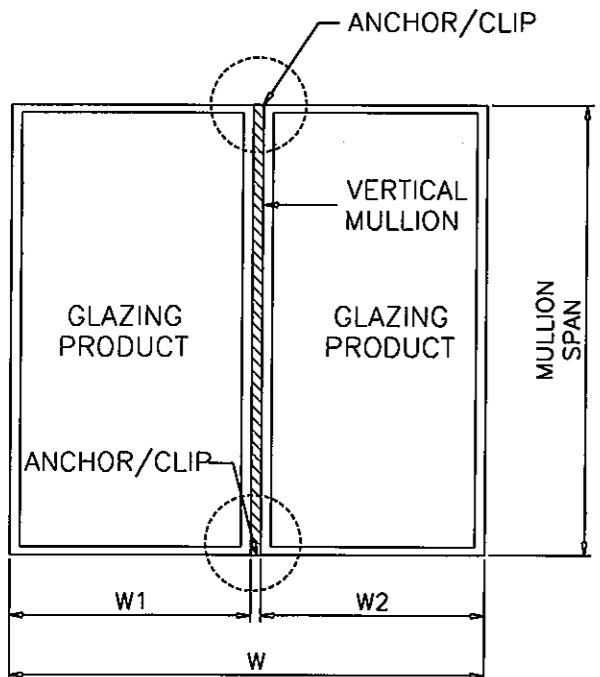


$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

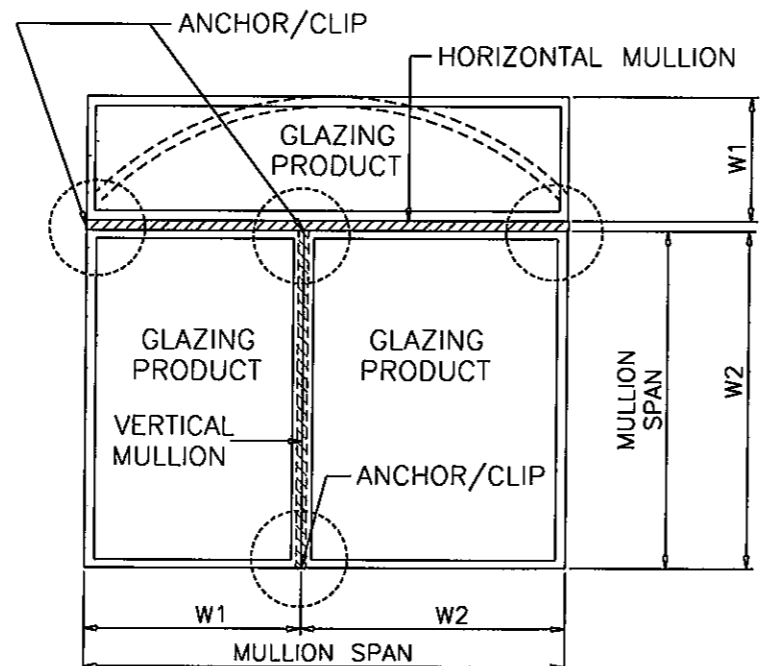


$$\text{WIDTH (W)} = \frac{W1 + W2}{2}$$

$$\text{WIDTH (W)} = \frac{W1 + W2 + W3}{2}$$



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



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

TYPICAL MULLION ARRANGEMENTS

THESE MULLIONS ARE RATED FOR LARGE MISSILE IMPACT AND CAN BE USED WITH ALL LAWSON'S MIAMI-DADE COUNTY APPROVED IMPACT AND NON-IMPACT PRODUCTS.

RECTANGULAR ALUMINUM TUBE MULLIONS USING MULLION PROPERTIES ONLY

GENERAL NOTES:

1. THIS PRODUCT HAS BEEN DESIGNED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2010 EDITION INCLUDING HIGH VELOCITY HURRICANE ZONE (HVHZ).
2. ALL GLAZING PRODUCTS USED WITH THESE MULLIONS MUST MEET THE APPLICABLE FLORIDA BLDG. CODE REQUIREMENTS I.E: WIND LOAD, WATER INFILTRATION, FORCED ENTRY RESISTANCE, SAFEGUARDS ETC.
3. MULLIONS ARE APPROVED FOR IMPACT AND NON-IMPACT APPLICATIONS, INCLUDING WINDOWS, DOORS OR COMBINATIONS MAY BE MULLED.
4. WOOD BUCKS BY OTHERS, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE.
5. ANCHORS SHALL BE AS LISTED, SPACED AS SHOWN ON DETAILS, ANCHORS EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
6. ANCHORING OR LOADING CONDITIONS NOT SHOWN IN THESE DETAILS ARE NOT PART OF THIS APPROVAL.
7. A LOAD DURATION INCREASE IN ALLOWABLE STRESS IS USED IN DESIGN OF WOOD ANCHORS ONLY.
8. MATERIALS INCLUDING BUT NOT LIMITED TO STEEL OR METAL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF THE 2010 FLORIDA BLDG. CODE - SECTION 2003.8.4.

MULLION & CLIP NOTES:

1. FOR MULLIONS WITHOUT REINFORCEMENT REFER TO SHEET 2 OF 10 FOR DETAILS AND NOTES.  
\* REFER TO SHEET 3 OF 10 FOR MAX. MULL DESIGN PRESSURE CHARTS
2. FOR MULLIONS WITH STEEL REINFORCEMENT REFER TO SHEET 4 OF 10 FOR DETAILS AND NOTES.  
\* REFER TO SHEET 5 OF 10 FOR MAX. MULL DESIGN PRESSURE CHARTS
3. FOR CLIP TYPES AND ANCHOR CONDITIONS REFER TO SHEETS 6, 7, 8, & 9 OF 10 FOR DETAILS AND NOTES.  
\* REFER TO SHEET 10 OF 10 FOR MAX. ANCHOR DESIGN PRESSURE CHARTS

PRODUCT REVISED as complying with the Florida Building Code  
Acceptance No 12-0127.07  
Expiration Date 12/30/2017  
By *Manuel Perez*  
Miami Dade Product Control

**LAWSON**  
INDUSTRIES, INC.

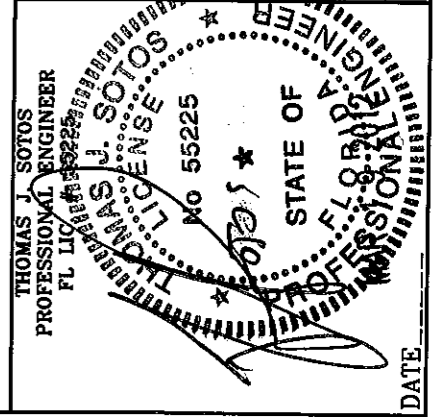
8501 N.W. 90 ST.  
MEDLEY, FLORIDA 33166  
PH No. (305) 696-8660

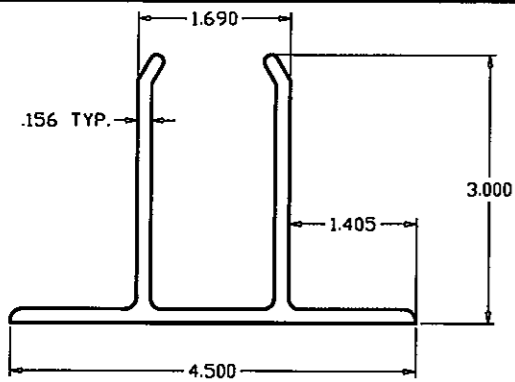
MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS

ALUMINUM TUBE MULLIONS

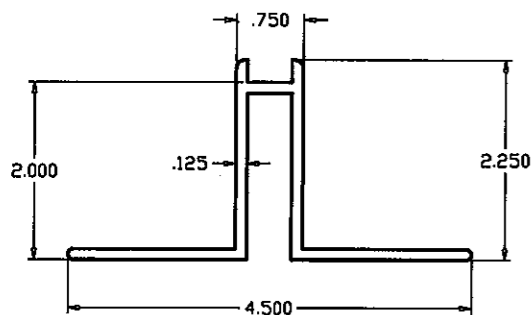
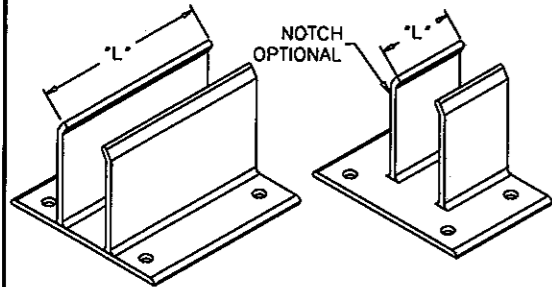
TYPICAL MULL ARRANGEMENTS, AND GENERAL NOTES

Revision Notes:	"A" - Revised date for the FBC-2010
Drawn By:	N. ERAZO
Reviewed By:	N. ERAZO
Date Drawn:	04/27/10
Date Revised:	01/25/12
Scale:	

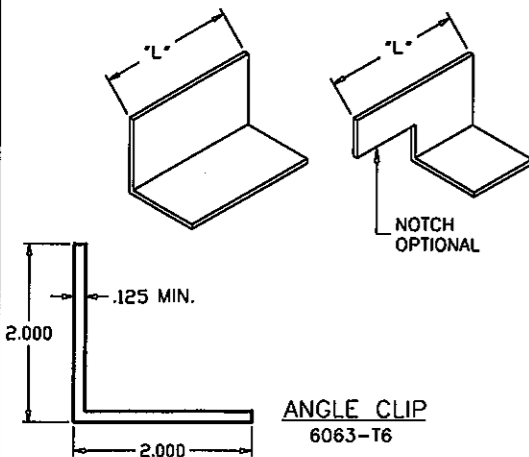
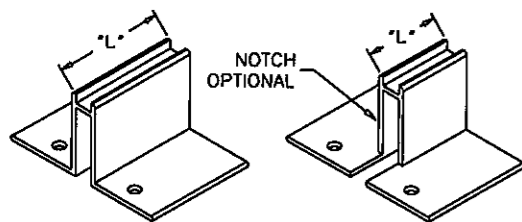




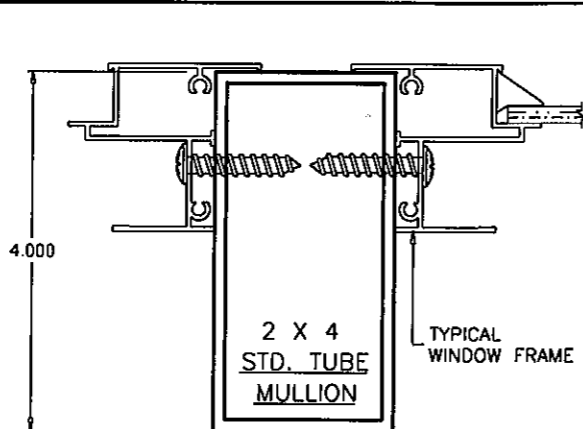
**2X MULLION CLIP**  
6063-T6



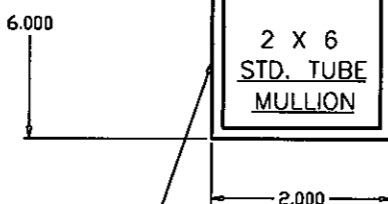
**1X MULLION CLIP**  
6063-T6



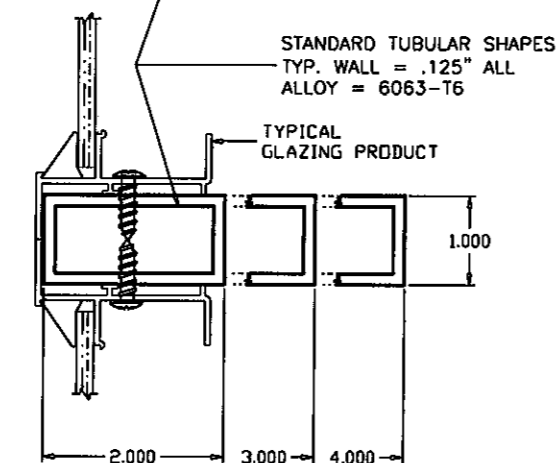
**ANGLE CLIP**  
6063-T6



**2 X 4  
STD. TUBE  
MULLION**



**2 X 6  
STD. TUBE  
MULLION**



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

SEE WINDOW OR DOOR APPROVAL FOR FASTENERS SIZES AND SPACING

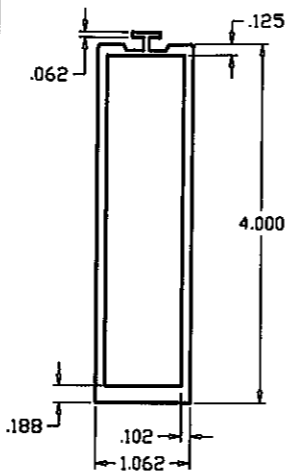
CLIP LENGTH	
MULL	"L"
1 X 2	1.688"
1 X 3	2.688"
1 X 4	3.688"
2 X 4	3.688"
2 X 6	5.688"

1. ALL CLIPS AND ANGLES ARE TO FIT SNUG INTO TUBE MULLIONS.
2. WHERE ANGLES ARE NOT FIT SNUG INTO TUBE MULLIONS, SEE OPTIONAL ANCHOR DETAIL AT SHEET 9 OF 10.

**INSTRUCTIONS:**

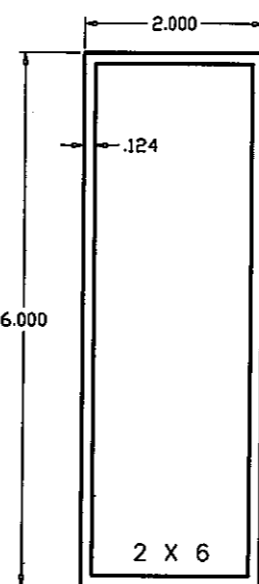
USE CHARTS AND GRAPHS AS FOLLOWS.

- STEP 1** DETERMINE DESIGN LOAD REQUIRED 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** SPECIFY MAXIMUM SHIM SPACING.
- STEP 5** USING CHARTS ON SHEET 3 OF 10 SELECT MULLION SIZE WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 6** USING ANCHOR TYPES ON SHEET 6 THRU 9 AND ANCHOR CHARTS ON SHEET 9, SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.



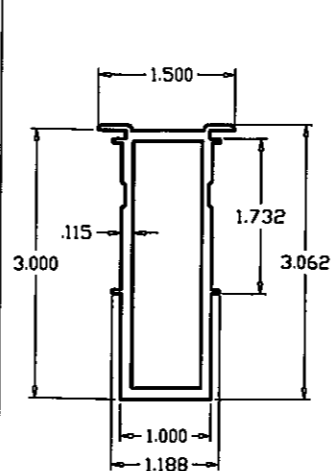
**1 X 4  
CUSTOM MULLION**  
6063-T6

Ixx: 2.070 in.<sup>4</sup>  
Sxx: 1.035 in.<sup>3</sup>  
(FLANGE FRAME)



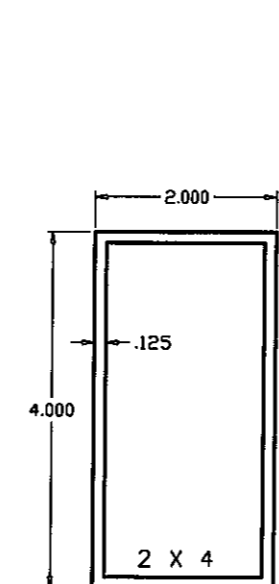
**STD. TUBE MULLION**  
6063-T6

Ixx: 8.280 in.<sup>4</sup>  
Sxx: 2.760 in.<sup>3</sup>



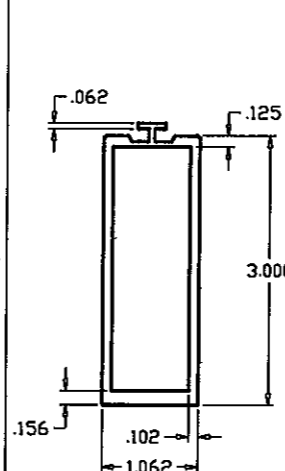
**1 X 3  
CUSTOM MULLION**  
6063-T6

Ixx: 1.000 in.<sup>4</sup>  
Sxx: 0.667 in.<sup>3</sup>  
(FIN FRAME)



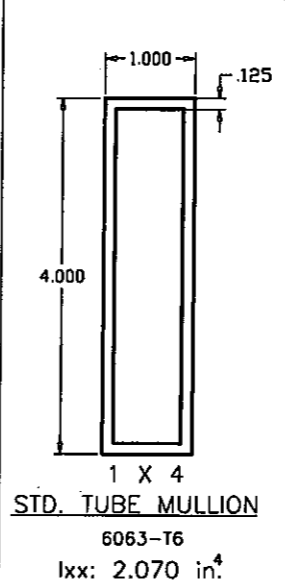
**STD. TUBE MULLION**  
6063-T6

Ixx: 2.980 in.<sup>4</sup>  
Sxx: 1.490 in.<sup>3</sup>



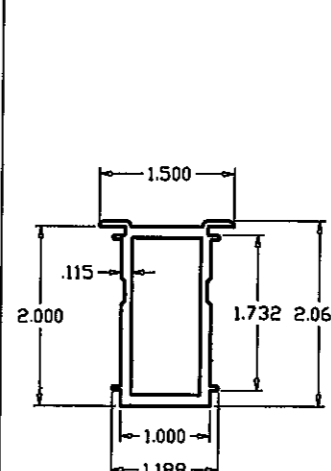
**1 X 3  
CUSTOM MULLION**  
6063-T6

Ixx: 0.950 in.<sup>4</sup>  
Sxx: 0.633 in.<sup>3</sup>  
(FLANGE FRAME)



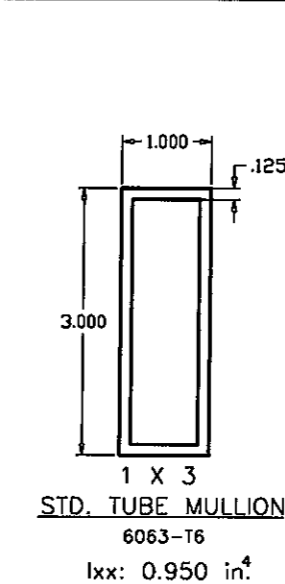
**1 X 4  
STD. TUBE MULLION**  
6063-T6

Ixx: 2.070 in.<sup>4</sup>  
Sxx: 1.035 in.<sup>3</sup>



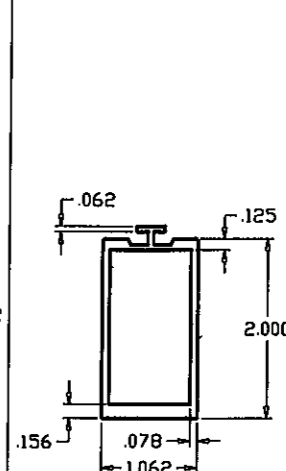
**1 X 2  
CUSTOM MULLION**  
6063-T6

Ixx: 0.370 in.<sup>4</sup>  
Sxx: 0.370 in.<sup>3</sup>  
(FIN FRAME)



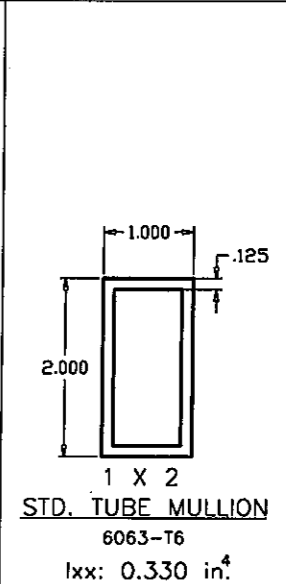
**1 X 3  
STD. TUBE MULLION**  
6063-T6

Ixx: 0.950 in.<sup>4</sup>  
Sxx: 0.633 in.<sup>3</sup>



**1 X 2  
CUSTOM MULLION**  
6063-T6

Ixx: 0.330 in.<sup>4</sup>  
Sxx: 0.330 in.<sup>3</sup>  
(FLANGE FRAME)



**1 X 2  
STD. TUBE MULLION**  
6063-T6

Ixx: 0.330 in.<sup>4</sup>  
Sxx: 0.330 in.<sup>3</sup>

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

THESE MULLIONS ARE RATED FOR LARGE MISSILE IMPACT AND CAN BE USED WITH ALL LAWSON'S MIAMI-DADE COUNTY APPROVED IMPACT AND NON-IMPACT PRODUCTS.

**NOTES:**

1. REFER TO THE GENERAL NOTES ON SHEET 1 OF 10 FOR BUILDING CODE COMPLIANCE.
2. MULLIONS MAY BE ORIENTED VERTICALLY OR HORIZONTALLY.
3. REFER TO SHEET 1 OF 10 FOR TYPICAL MULLION ARRANGEMENTS OR STACK CONFIGURATIONS.

**LAWSON**  
INDUSTRIES, INC.

8501 N.W. 90 ST.  
MEDLEY, FLORIDA 33166  
PH No. (305) 696-8660

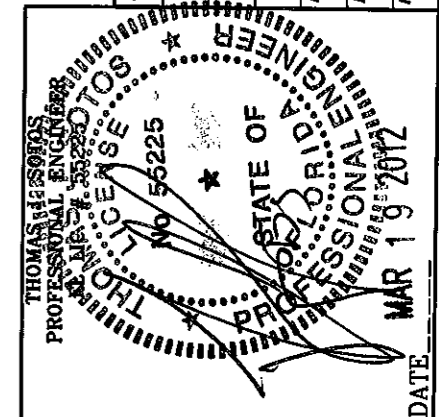
MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS

ALUMINUM TUBE MULLIONS

MULL AND CLIPS CROSS SECTIONS, AND GENERAL NOTES

Revision Notes: "A" - No change this sheet

Date Drawn:	04/27/10
Drawn By:	N. ERAZO
Date Revised:	01/25/12
Revised By:	N. ERAZO
Scale:	



		TUBE MULLIONS							TUBE MULLIONS							TUBE MULLIONS				
Width (w)	MULL SPAN	1 X 2	1 X 3	1 X 4	2 X 4	2 X 6	Width (w)	MULL SPAN	1 X 2	1 X 3	1 X 4	2 X 4	2 X 6	Width (w)	MULL SPAN	1 X 2	1 X 3	1 X 4	2 X 4	2 X 6
18	38-3/8"	150.0	150.0	150.0	150.0	150.0	18	74-1/4"	28.3	81.5	150.0	150.0	150.0	18	120"	-	19.3	42.1	60.5	150.0
24		150.0	150.0	150.0	150.0	150.0	24		21.2	61.1	133.2	150.0	150.0	24		-	-	31.5	45.4	126.2
30		123.0	150.0	150.0	150.0	150.0	30		17.0	48.9	106.5	150.0	150.0	30		-	-	25.2	36.3	100.9
36		102.5	150.0	150.0	150.0	150.0	36		-	40.7	88.8	127.8	150.0	36		-	-	21.0	30.3	84.1
42		87.9	150.0	150.0	150.0	150.0	42		-	34.9	76.1	109.5	150.0	42		-	-	18.0	25.9	72.1
48		76.9	150.0	150.0	150.0	150.0	48		-	30.6	66.6	95.8	150.0	48		-	-	15.8	22.7	63.1
54		68.3	137.6	150.0	150.0	150.0	54		-	27.2	59.2	85.2	150.0	54		-	-	-	20.2	56.1
60		61.5	123.9	150.0	150.0	150.0	60		-	24.4	53.3	76.7	144.2	60		-	-	-	18.2	50.5
66		55.9	112.6	150.0	150.0	150.0	66		-	22.2	48.4	69.7	131.1	66		-	-	-	16.5	45.9
72		51.3	103.2	150.0	150.0	150.0	72		-	20.4	44.4	63.9	120.2	72		-	-	-	15.1	42.1
78	47.3	95.3	150.0	150.0	150.0	78	-	18.8	41.0	59.0	110.9	78	-	-	-	-	38.8			
18	50-5/8"	89.3	150.0	150.0	150.0	150.0	18	84"	-	56.3	122.6	150.0	150.0	18	132"	-	-	31.6	45.5	126.4
24		67.0	150.0	150.0	150.0	150.0	24		-	42.2	92.0	132.4	150.0	24		-	-	23.7	34.1	94.8
30		53.6	142.3	150.0	150.0	150.0	30		-	33.8	73.6	105.9	150.0	30		-	-	19.0	27.3	75.8
36		44.6	118.6	150.0	150.0	150.0	36		-	28.1	61.3	88.3	150.0	36		-	-	15.8	22.7	63.2
42		38.3	101.7	150.0	150.0	150.0	42		-	24.1	52.6	75.7	150.0	42		-	-	-	19.5	54.2
48		33.5	89.0	145.4	150.0	150.0	48		-	21.1	46.0	66.2	140.8	48		-	-	-	17.1	47.4
54		29.8	79.1	129.2	150.0	150.0	54		-	18.8	40.9	58.8	125.2	54		-	-	-	15.2	42.1
60		26.8	71.2	116.3	150.0	150.0	60		-	16.9	36.8	53.0	112.7	60		-	-	-	-	37.9
66		24.4	64.7	105.7	150.0	150.0	66		-	15.3	33.4	48.1	102.4	66		-	-	-	-	34.5
72		22.3	59.3	96.9	139.5	150.0	72		-	-	30.7	44.1	93.9	72		-	-	-	-	31.6
78	20.6	54.7	89.5	128.8	150.0	78	-	-	28.3	40.7	86.7	78	-	-	-	-	29.2			
18	57"	62.6	150.0	150.0	150.0	150.0	18	96"	-	37.7	82.1	118.3	150.0	18	144"	-	-	24.3	35.0	97.4
24		46.9	135.1	150.0	150.0	150.0	24		-	28.3	61.6	88.7	150.0	24		-	-	18.3	26.3	73.0
30		37.5	108.1	150.0	150.0	150.0	30		-	22.6	49.3	71.0	150.0	30		-	-	-	21.0	58.4
36		31.3	90.1	150.0	150.0	150.0	36		-	18.8	41.1	59.1	143.8	36		-	-	-	17.5	48.7
42		26.8	77.2	131.1	150.0	150.0	42		-	16.2	35.2	50.7	123.2	42		-	-	-	15.0	41.7
48		23.5	67.5	114.7	150.0	150.0	48		-	-	30.8	44.3	107.8	48		-	-	-	-	36.5
54		20.9	60.0	101.9	146.8	150.0	54		-	-	27.4	39.4	95.8	54		-	-	-	-	32.5
60		18.8	54.0	91.7	132.1	150.0	60		-	-	24.6	35.5	86.3	60		-	-	-	-	29.2
66		17.1	49.1	83.4	120.1	150.0	66		-	-	22.4	32.3	78.4	66		-	-	-	-	26.6
72		15.6	45.0	76.5	110.1	150.0	72		-	-	20.5	29.6	71.9	72		-	-	-	-	24.3
78	-	41.6	70.6	101.6	150.0	78	-	-	19.0	27.3	66.3	78	-	-	-	-	22.5			
18	63"	46.3	133.4	150.0	150.0	150.0	18	108"	-	26.5	57.7	83.1	150.0	18	150"	-	-	-	31.0	86.1
24		34.8	100.0	150.0	150.0	150.0	24		-	19.9	43.3	62.3	150.0	24		-	-	-	23.3	64.6
30		27.8	80.0	150.0	150.0	150.0	30		-	15.9	34.6	49.8	136.3	30		-	-	-	18.6	51.7
36		23.2	66.7	125.2	150.0	150.0	36		-	-	28.8	41.5	113.6	36		-	-	-	15.5	43.1
42		19.9	57.2	107.3	150.0	150.0	42		-	-	24.7	35.6	97.4	42		-	-	-	-	36.9
48		17.4	50.0	93.9	135.1	150.0	48		-	-	21.6	31.1	85.2	48		-	-	-	-	32.3
54		15.4	44.5	83.4	120.1	150.0	54		-	-	19.2	27.7	75.7	54		-	-	-	-	28.7
60		-	40.0	75.1	108.1	150.0	60		-	-	17.3	24.9	68.1	60		-	-	-	-	25.8
66		-	36.4	68.3	98.3	150.0	66		-	-	15.7	22.7	62.0	66		-	-	-	-	23.5
72		-	33.3	62.6	90.1	150.0	72		-	-	-	20.8	56.8	72		-	-	-	-	21.5
78	-	30.8	57.8	83.2	150.0	78	-	-	-	19.2	52.4	78	-	-	-	-	19.9			

**LAWSON**  
INDUSTRIES, INC.

8501 N.W. 90 ST.  
MEDLEY, FLORIDA 33166  
PH No. (305) 696-8660

MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS

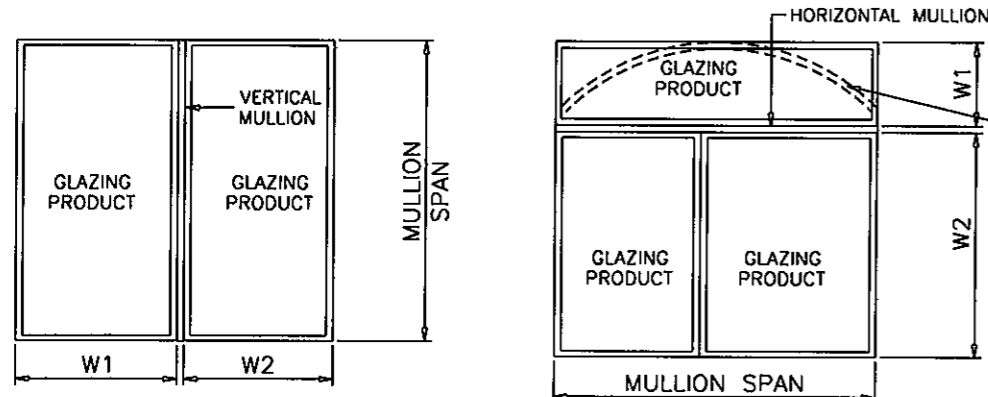
ALUMINUM TUBE MULLIONS

UNREINFORCED TUBE MULLIONS DESIGN PRESSURE CHARTS AND GENERAL NOTES

Revision Notes:  
"A" - No change this sheet

Drawn By:	N. ERAZO	Date Drawn:	04/27/10
Revised By:	N. ERAZO	Date Revised:	01/25/12
Revision Level:		Scale:	

Product Reference Number: LAW-ML-1001  
Drawing Number: 3 OF 10  
Revision #: "A"



TYPICAL MULLION ARRANGEMENTS

ARCHES TO BE INSCRIBED INSIDE RECTANGULAR SHAPE

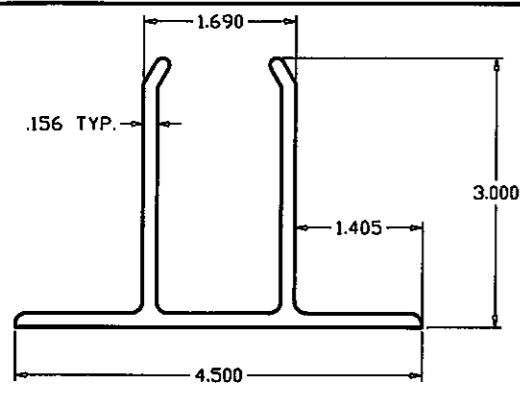
NOTE:  
MULLIONS RATED IN THESE CHARTS MAY BE ORIENTED VERTICALLY OR HORIZONTALLY.  
(INTERPOLATION BETWEEN WIDTHS ALLOWED)

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

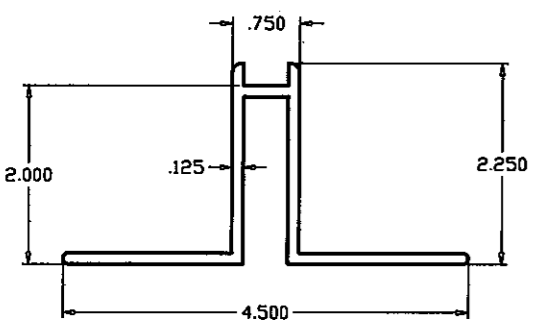
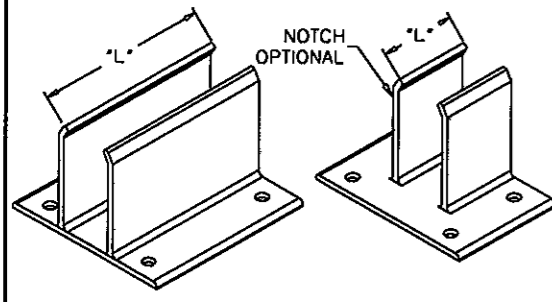
PRODUCT REVISED as complying with the Florida Building Code  
Acceptance No 12-0127-07  
Expiration Date MAY 30, 2017  
By *Manuel Puga*  
Miami Dade Product Control

THOMAS J. SOTOS  
PROFESSIONAL ENGINEER  
LICENSE # 35587  
NO. 55225  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

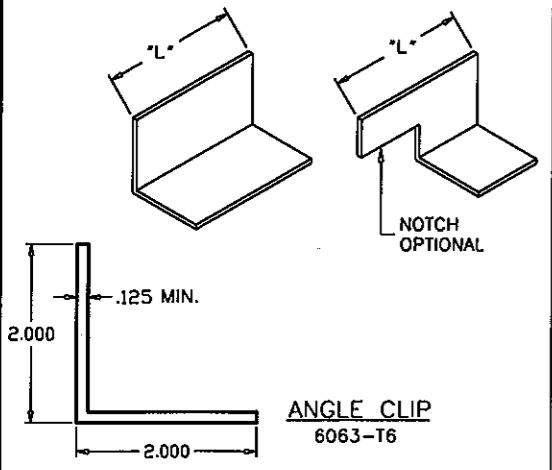
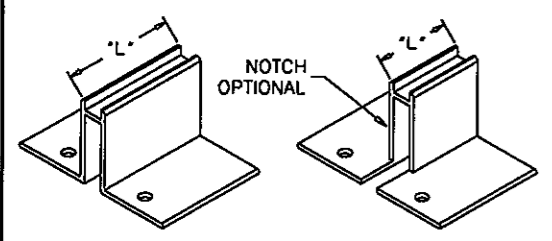
DATE



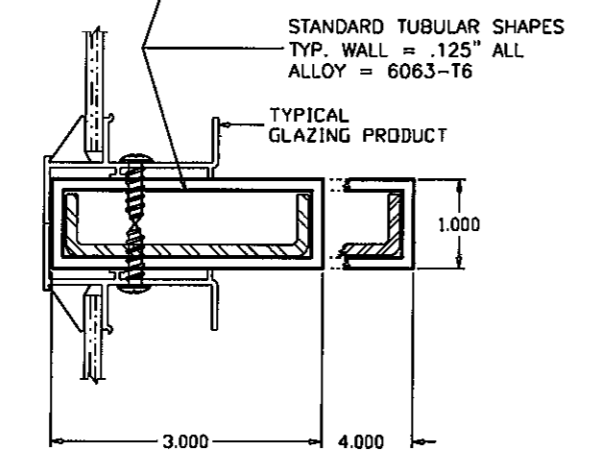
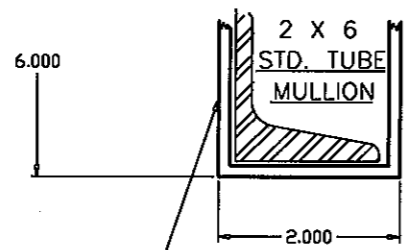
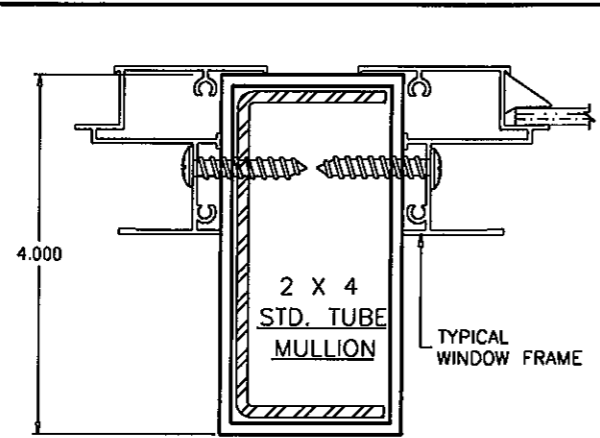
**2X MULLION CLIP**  
6063-T6



**1X MULLION CLIP**  
6063-T6



**ANGLE CLIP**  
6063-T6

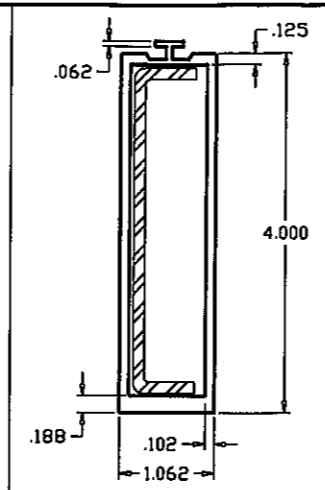


**MULLIONS CONTAINING  
TYPICAL GLAZING PRODUCTS  
HORIZONTAL OR VERTICAL**

SEE WINDOW OR DOOR APPROVAL FOR  
FASTENERS SIZES AND SPACING

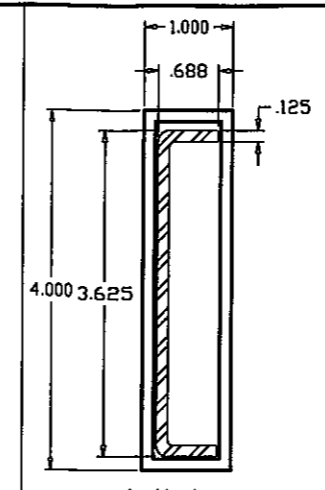
CLIP LENGTH	
MULL	"L"
1 X 2	1.688"
1 X 3	2.688"
1 X 4	3.688"
2 X 4	3.688"
2 X 6	5.688"

1. ALL CLIPS AND ANGLES ARE TO FIT SNUG INTO TUBE MULLIONS.
2. WHERE ANGLES ARE NOT FIT SNUG INTO TUBE MULLIONS, SEE OPTIONAL ANCHOR DETAIL AT SHEET 9 OF 10.



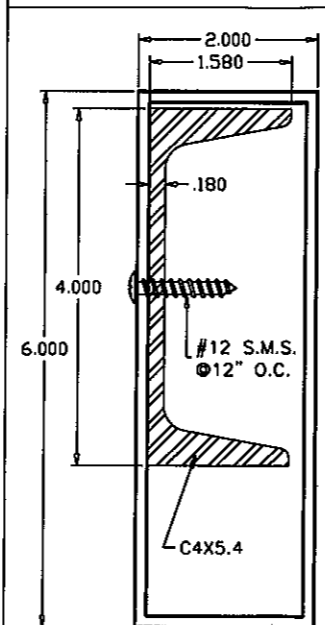
**1 X 4  
CUSTOM MULLION**  
6063-T6

Ixx: 4.709 in.<sup>4</sup>  
Sxx: 2.355 in.<sup>3</sup>  
(FLANGE FRAME)



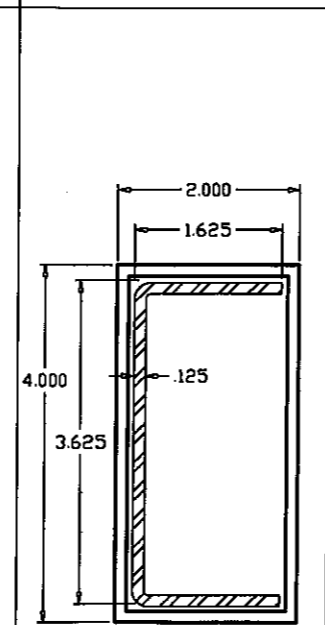
**1 X 4  
STD. TUBE MULLION**  
6063-T6

Ixx: 4.709 in.<sup>4</sup>  
Sxx: 2.355 in.<sup>3</sup>



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

Ixx: 19.648 in.<sup>4</sup>  
Sxx: 6.549 in.<sup>3</sup>



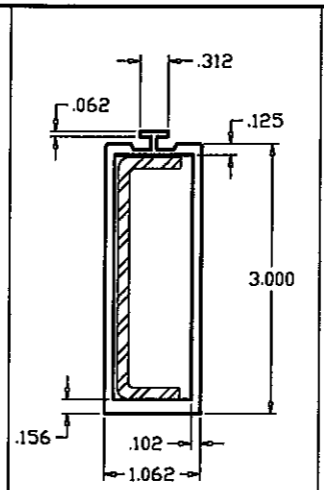
**2 X 4  
STD. TUBE MULLION**  
6063-T6

Ixx: 7.649 in.<sup>4</sup>  
Sxx: 3.825 in.<sup>3</sup>

**INSTRUCTIONS:**

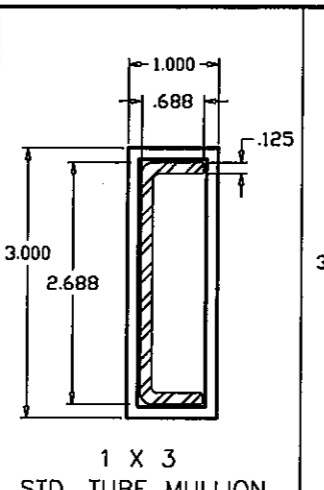
USE CHARTS AND GRAPHS AS FOLLOWS.

- STEP 1 DETERMINE DESIGN LOAD REQUIRED 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 SPECIFY MAXIMUM SHIM SPACING.
- STEP 5 USING CHARTS ON SHEET 5 OF 10 SELECT MULLION SIZE WITH DESIGN RATING MORE THAN DESIGN LOAD SPECIFIED IN STEP 1 ABOVE.
- STEP 6 USING ANCHOR TYPES ON SHEET 6 THRU 9 AND ANCHOR CHARTS ON SHEET 9, SELECT ANCHOR TYPE WITH DESIGN RATING MORE THAN THE DESIGN LOADS SPECIFIED IN STEP 1 ABOVE.



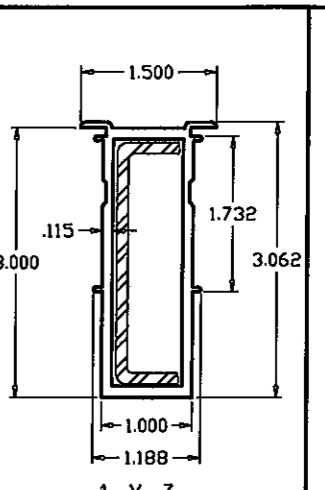
**1 X 3  
CUSTOM MULLION**  
6063-T6

Ixx: 2.168 in.<sup>4</sup>  
Sxx: 1.445 in.<sup>3</sup>  
(FLANGE FRAME)



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

Ixx: 2.168 in.<sup>4</sup>  
Sxx: 1.445 in.<sup>3</sup>



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

Ixx: 2.218 in.<sup>4</sup>  
Sxx: 1.479 in.<sup>3</sup>  
(FIN FRAME)

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

THESE MULLIONS ARE RATED FOR LARGE MISSILE IMPACT AND CAN BE USED WITH ALL LAWSON'S MIAMI-DADE COUNTY APPROVED IMPACT AND NON-IMPACT PRODUCTS.

**NOTES:**

1. REFER TO THE GENERAL NOTES ON SHEET 1 OF 10 FOR BUILDING CODE COMPLIANCE.
2. MULLIONS MAY BE ORIENTED VERTICALLY OR HORIZONTALLY.
3. REFER TO SHEET 1 OF 10 FOR TYPICAL MULLION ARRANGEMENTS OR STACK CONFIGURATIONS.

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-0127-07  
Expiration Date MAY 30, 2017  
By *Manuel Perez*  
Miami Dade Product Control

**LAWSON INDUSTRIES, INC.**

8501 N.W. 90 ST.  
MEDLEY, FLORIDA 33166  
PH No. (305) 696-8660

MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS

ALUMINUM TUBE MULLIONS

MULL & CLIPS CROSS SECTIONS, REINFORCEMENTS AND GENERAL NOTES

Drawing Number: LAW-ML-1001      Sheet: 4 OF 10      Revision #: "A"

Revision Notes:	"A" - No change this sheet
Date Drawn:	04/27/10
Date Revised:	01/25/12
Scale:	
Drawn By:	N. ERAZO
Revised By:	N. ERAZO
Revision Level:	

THOMAS J. SOTAS  
PROFESSIONAL ENGINEER  
FL. REG. NO. 55225

STATE OF FLORIDA  
PROFESSIONAL ENGINEER

DATE

		STEEL REINFORCED TUBE MULLIONS						STEEL REINFORCED TUBE MULLIONS						STEEL REINFORCED TUBE MULLIONS			
Width (w)	MULL SPAN	1 X 3	1 X 4	2 X 4	2 X 6	Width (w)	MULL SPAN	1 X 3	1 X 4	2 X 4	2 X 6	Width (w)	MULL SPAN	1 X 3	1 X 4	2 X 4	2 X 6
18	38-3/8"	150.0	150.0	150.0	150.0	18	74-1/4"	150.0	150.0	150.0	150.0	18	120"	44.0	95.7	150.0	150.0
24		150.0	150.0	150.0	150.0	24		139.5	150.0	150.0	150.0	24		33.0	71.8	116.6	150.0
30		150.0	150.0	150.0	150.0	30		111.6	150.0	150.0	150.0	30		26.4	57.4	93.2	150.0
36		150.0	150.0	150.0	150.0	36		93.0	150.0	150.0	150.0	36		22.0	47.8	77.7	150.0
42		150.0	150.0	150.0	150.0	42		79.7	150.0	150.0	150.0	42		18.9	41.0	66.6	150.0
48		150.0	150.0	150.0	150.0	48		69.7	150.0	150.0	150.0	48		16.5	35.9	58.3	149.7
54		150.0	150.0	150.0	150.0	54		62.0	134.6	150.0	150.0	54		-	31.9	51.8	133.1
60		150.0	150.0	150.0	150.0	60		55.8	121.2	150.0	150.0	60		-	28.7	46.6	119.8
66		150.0	150.0	150.0	150.0	66		50.7	110.1	150.0	150.0	66		-	26.1	42.4	108.9
72		150.0	150.0	150.0	150.0	72		46.5	101.0	150.0	150.0	72		-	23.9	38.9	99.8
78	150.0	150.0	150.0	150.0	78	42.9	93.2	150.0	150.0	78	-	22.1	35.9	92.1			
18	50-5/8"	150.0	150.0	150.0	150.0	18	84"	128.4	150.0	150.0	150.0	18	132"	33.1	71.9	116.8	150.0
24		150.0	150.0	150.0	150.0	24		96.3	150.0	150.0	150.0	24		24.8	53.9	87.6	150.0
30		150.0	150.0	150.0	150.0	30		77.1	150.0	150.0	150.0	30		19.9	43.1	70.1	150.0
36		150.0	150.0	150.0	150.0	36		64.2	139.5	150.0	150.0	36		16.5	35.9	58.4	150.0
42		150.0	150.0	150.0	150.0	42		55.0	119.5	150.0	150.0	42		-	30.8	50.0	128.5
48		150.0	150.0	150.0	150.0	48		48.2	104.6	150.0	150.0	48		-	27.0	43.8	112.5
54		150.0	150.0	150.0	150.0	54		42.8	93.0	150.0	150.0	54		-	24.0	38.9	100.0
60		150.0	150.0	150.0	150.0	60		38.5	83.7	135.9	150.0	60		-	21.6	35.0	90.0
66		147.7	150.0	150.0	150.0	66		35.0	76.1	123.6	150.0	66		-	19.6	31.8	81.8
72		135.3	150.0	150.0	150.0	72		32.1	69.7	113.3	150.0	72		-	18.0	29.2	75.0
78	124.9	150.0	150.0	150.0	78	29.6	64.4	104.6	150.0	78	-	16.6	26.9	69.2			
18	57"	150.0	150.0	150.0	150.0	18	96"	86.0	150.0	150.0	150.0	18	144"	25.5	55.4	89.9	150.0
24		150.0	150.0	150.0	150.0	24		64.5	140.1	150.0	150.0	24		19.1	41.5	67.5	150.0
30		150.0	150.0	150.0	150.0	30		51.6	112.1	150.0	150.0	30		15.3	33.2	54.0	138.6
36		150.0	150.0	150.0	150.0	36		43.0	93.4	150.0	150.0	36		-	27.7	45.0	115.5
42		150.0	150.0	150.0	150.0	42		36.9	80.1	130.1	150.0	42		-	23.7	38.5	99.0
48		150.0	150.0	150.0	150.0	48		32.3	70.1	113.8	150.0	48		-	20.8	33.7	86.6
54		137.0	150.0	150.0	150.0	54		28.7	62.3	101.2	150.0	54		-	18.5	30.0	77.0
60		123.3	150.0	150.0	150.0	60		25.8	56.1	91.1	150.0	60		-	16.6	27.0	69.3
66		112.1	150.0	150.0	150.0	66		23.5	51.0	82.8	150.0	66		-	15.1	24.5	63.0
72		102.8	150.0	150.0	150.0	72		21.5	46.7	75.9	150.0	72		-	-	22.5	57.8
78	94.8	150.0	150.0	150.0	78	19.9	43.1	70.0	150.0	78	-	-	20.8	53.3			
18	63"	150.0	150.0	150.0	150.0	18	108"	60.4	131.2	150.0	150.0	18	150"	22.6	49.0	79.6	150.0
24		150.0	150.0	150.0	150.0	24		45.3	98.4	150.0	150.0	24		16.9	36.7	59.7	150.0
30		150.0	150.0	150.0	150.0	30		36.3	78.7	127.9	150.0	30		-	29.4	47.7	122.6
36		150.0	150.0	150.0	150.0	36		30.2	65.6	106.6	150.0	36		-	24.5	39.8	102.2
42		130.5	150.0	150.0	150.0	42		25.9	56.2	91.4	150.0	42		-	21.0	34.1	87.6
48		114.2	150.0	150.0	150.0	48		22.7	49.2	79.9	150.0	48		-	18.4	29.8	76.6
54		101.5	150.0	150.0	150.0	54		20.1	43.7	71.1	150.0	54		-	16.3	26.5	68.1
60		91.3	150.0	150.0	150.0	60		18.1	39.4	64.0	150.0	60		-	-	23.9	61.3
66		83.0	150.0	150.0	150.0	66		16.5	35.8	58.1	147.0	66		-	-	21.7	55.7
72		76.1	142.4	150.0	150.0	72		15.1	32.8	53.3	134.8	72		-	-	19.9	51.1
78	70.2	131.4	150.0	150.0	78	-	30.3	49.2	124.4	78	-	-	18.4	47.2			

**LAWSON INDUSTRIES, INC.**

8501 N.W. 90 ST.  
MEDLEY, FLORIDA 33166  
PH No. (305) 696-8660

MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND CLASS DOORS

ALUMINUM TUBE MULLIONS

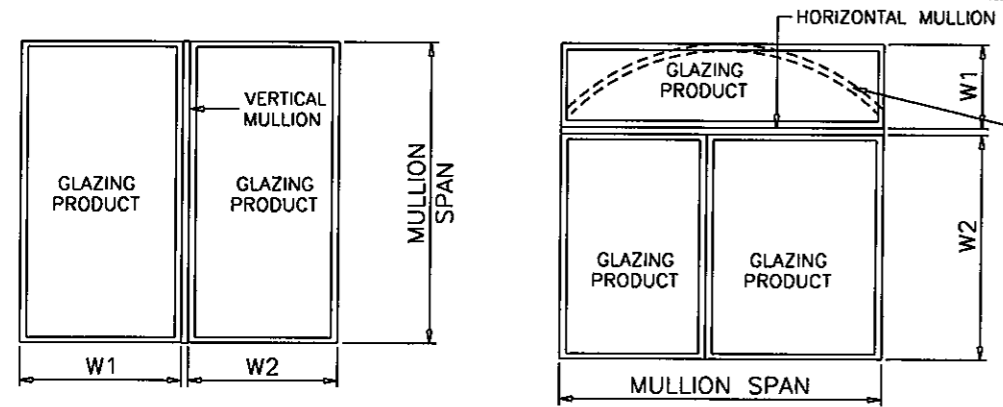
REINFORCED TUBE MULLIONS DESIGN PRESSURE CHARTS AND GENERAL NOTES

Drawing Number: LAW-ML-1001      Sheet: 5 OF 10      Revision #: "A"

Product Reference Number:

Revision Notes:  
"A" - No change this sheet

Drawn By: N. ERAZO      Date Drawn: 04/27/10  
Revised By: N. ERAZO      Date Revised: 01/25/12  
Revision Level:      Scale:



**TYPICAL MULLION ARRANGEMENTS**

ARCHES TO BE INSCRIBED INSIDE RECTANGULAR SHAPE

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

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

**PRODUCT REVISED**  
as complying with the Florida Building Code  
Acceptance No 12-0127-07  
Expiration Date MAY 30, 2017

By *Manuel Perez*  
Minimum Page Product Control

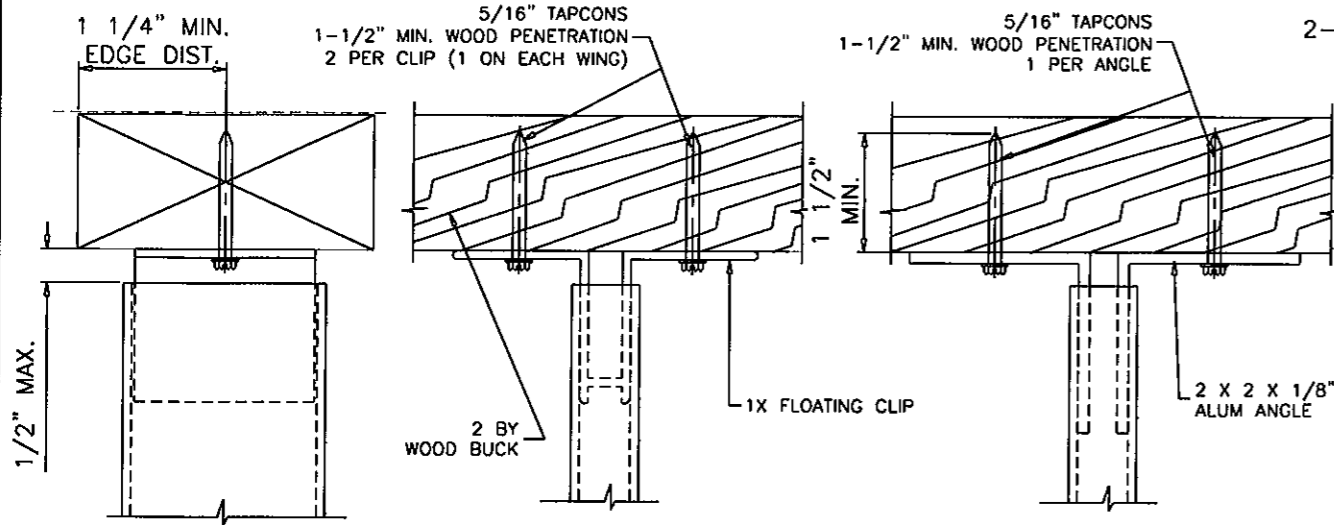
THOMAS J. SOTOS  
PROFESSIONAL ENGINEER  
FL LIC. # 55225

A. SOTOS  
PROFESSIONAL ENGINEER  
FL LIC. # 55225

STATE OF FLORIDA  
PROFESSIONAL ENGINEER

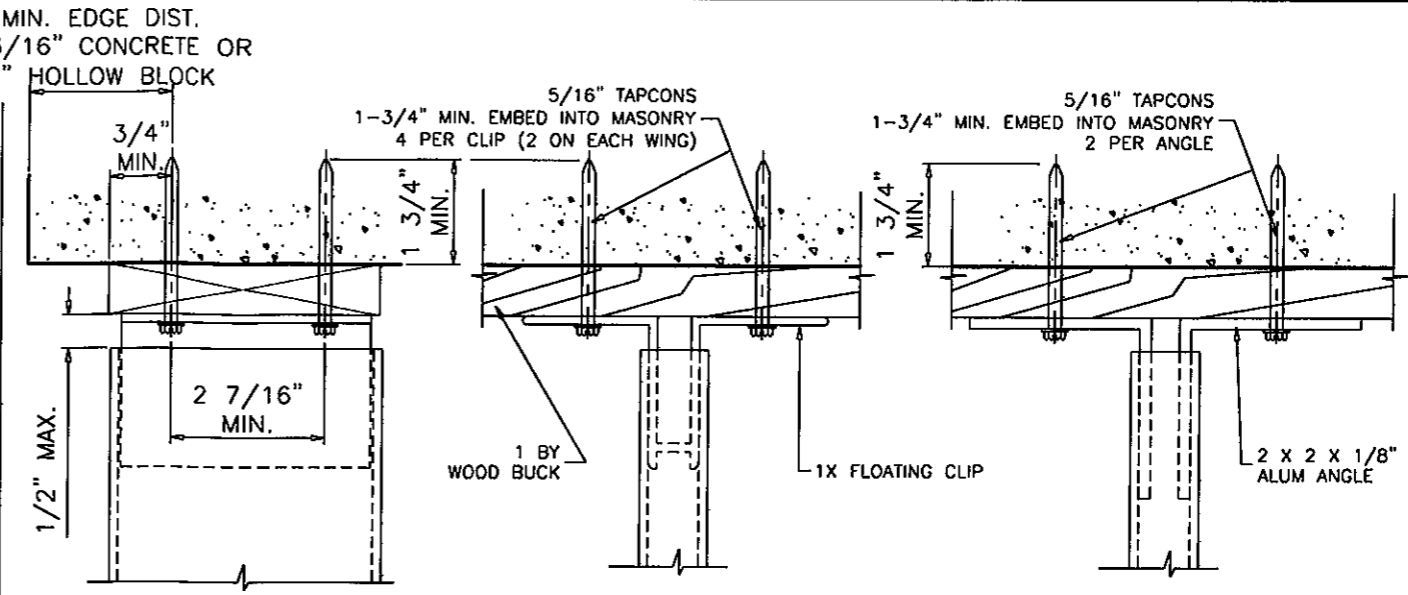
DATE





**ANCHORS TYPE 'A'**  
2 ANCHORS INTO WOOD

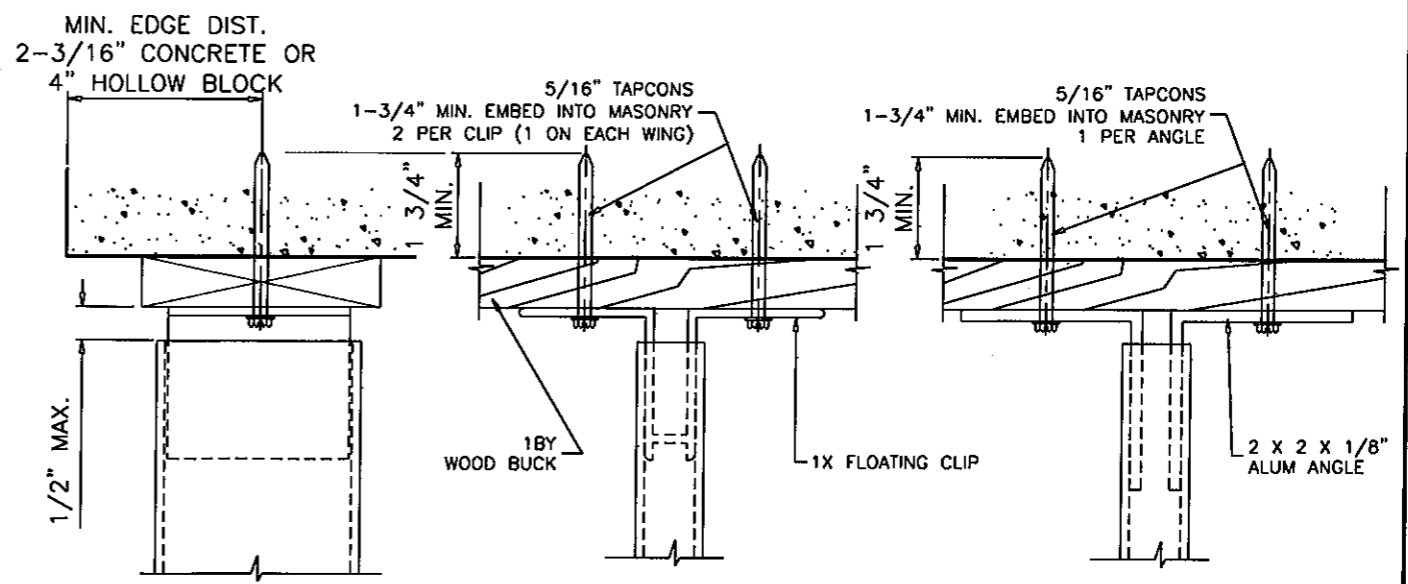
**ANCHORS TYPE 'B'**  
4 ANCHORS INTO WOOD



**ANCHORS TYPE 'D' (INTO BLOCK)**  
**ANCHORS TYPE 'G' (INTO CONCRETE)**

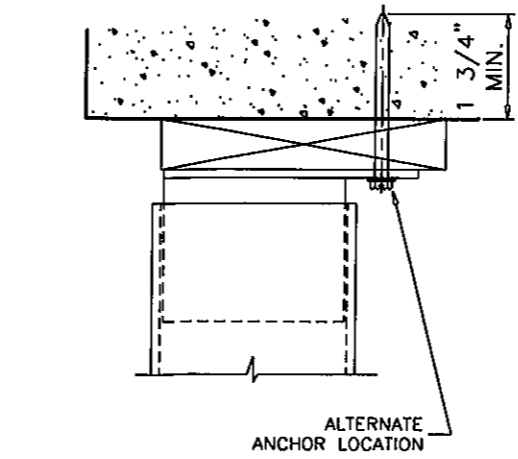
ALL CLIPS AND ANGLES TO FIT SNUG INTO TUBE MULLIONS. TAPCONS MAY BE HEX OR FLAT HEAD.

4 ANCHORS THRU 1X BUCK INTO CONCRETE OR BLOCK  
1"x4" & 2"x4" MULL



**ANCHORS TYPE 'C' (INTO BLOCK)**  
**ANCHORS TYPE 'F' (INTO CONCRETE)**

2 ANCHORS THRU 1X BUCK INTO CONCRETE OR BLOCK



ALTERNATE ANCHOR LOCATION

**LAWSON INDUSTRIES, INC.**

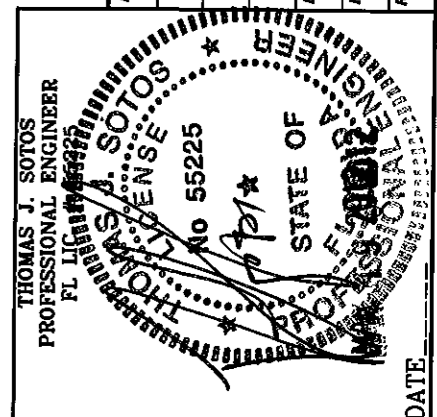
8501 N.W. 90 ST.  
MEDLEY, FLORIDA 33166  
PH No. (305) 696-8660

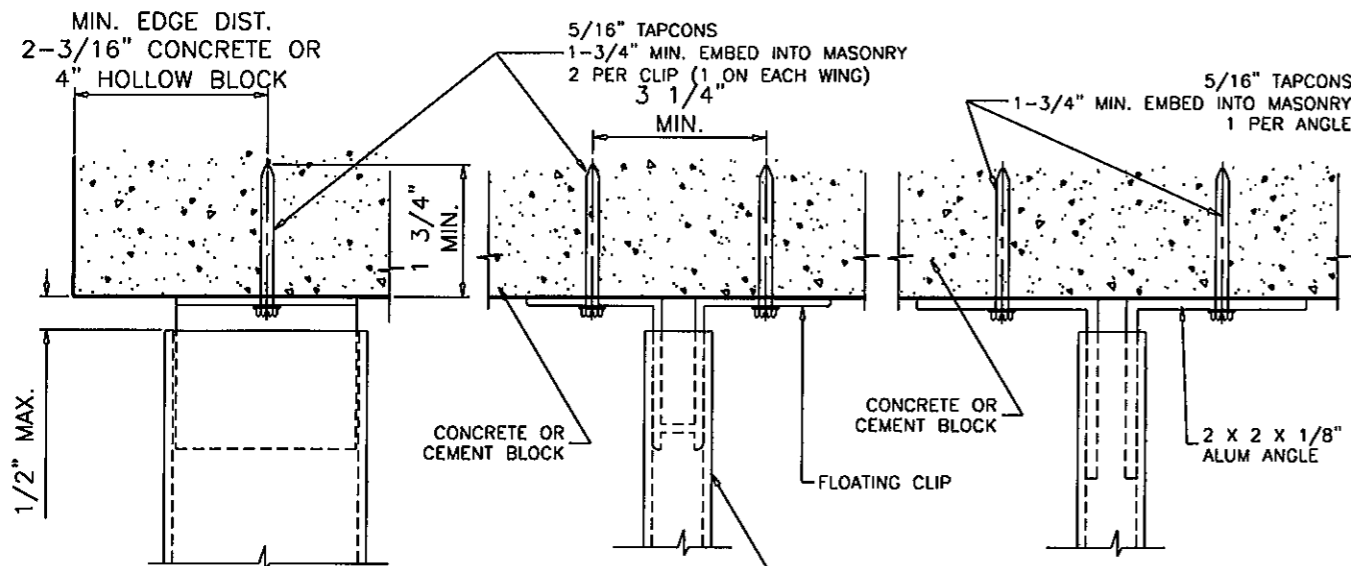
MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS  
ALUMINUM TUBE MULLIONS  
ANCHOR/CLIP TYPES, INSTALLATION DETAILS, AND GENERAL NOTES

Revision Notes:  
'A' - No change this sheet

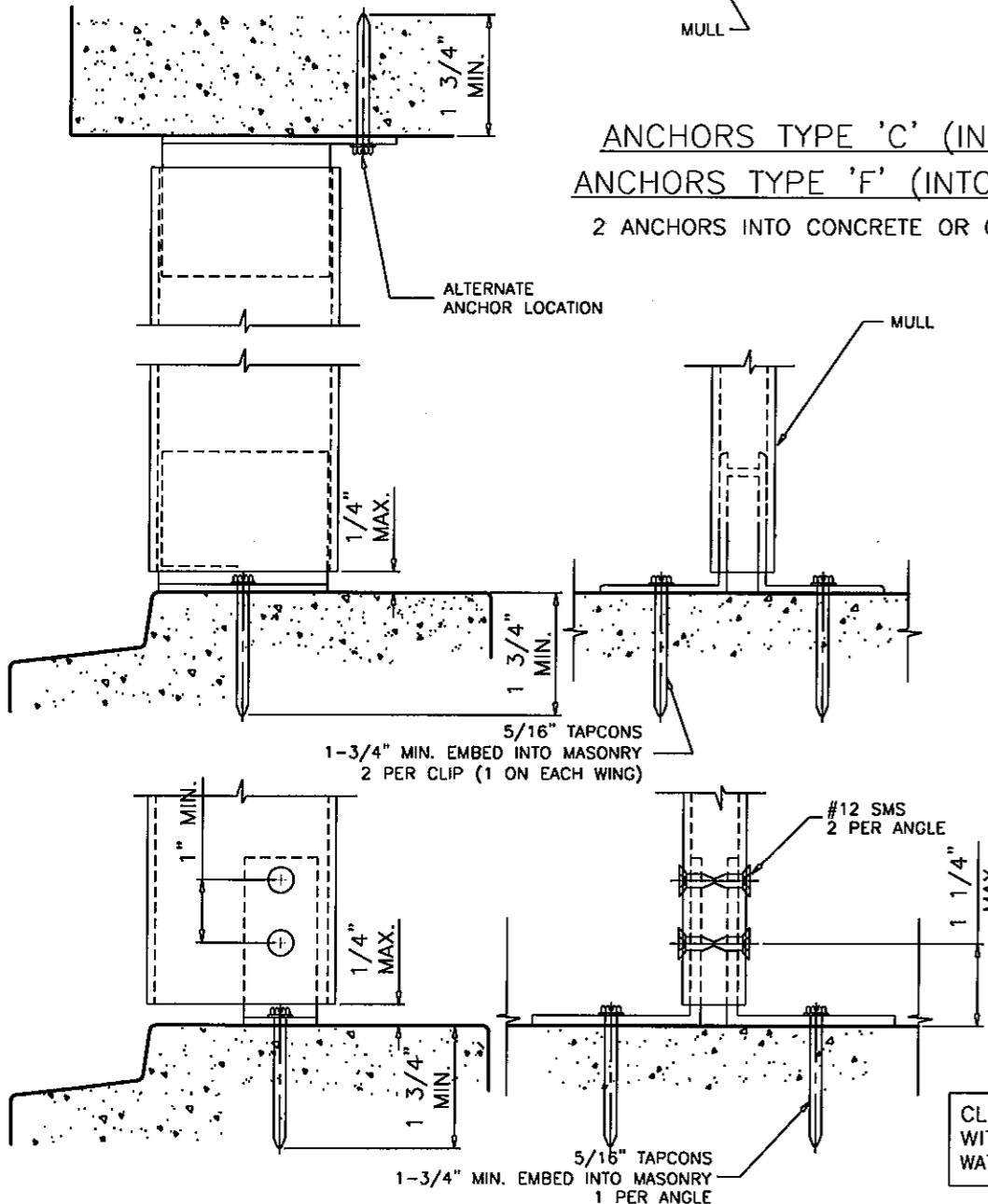
Drawn By:	N. ERAZO	Date Drawn:	04/27/10
Revised By:	N. ERAZO	Date Revised:	01/25/12
Revision Level:		Scale:	

PRODUCT REVISED as complying with the Florida Building Code  
Acceptance No 12-012707  
Expiration Date MAY 30, 2017  
By *Manuel*  
Miami Dade Product Control



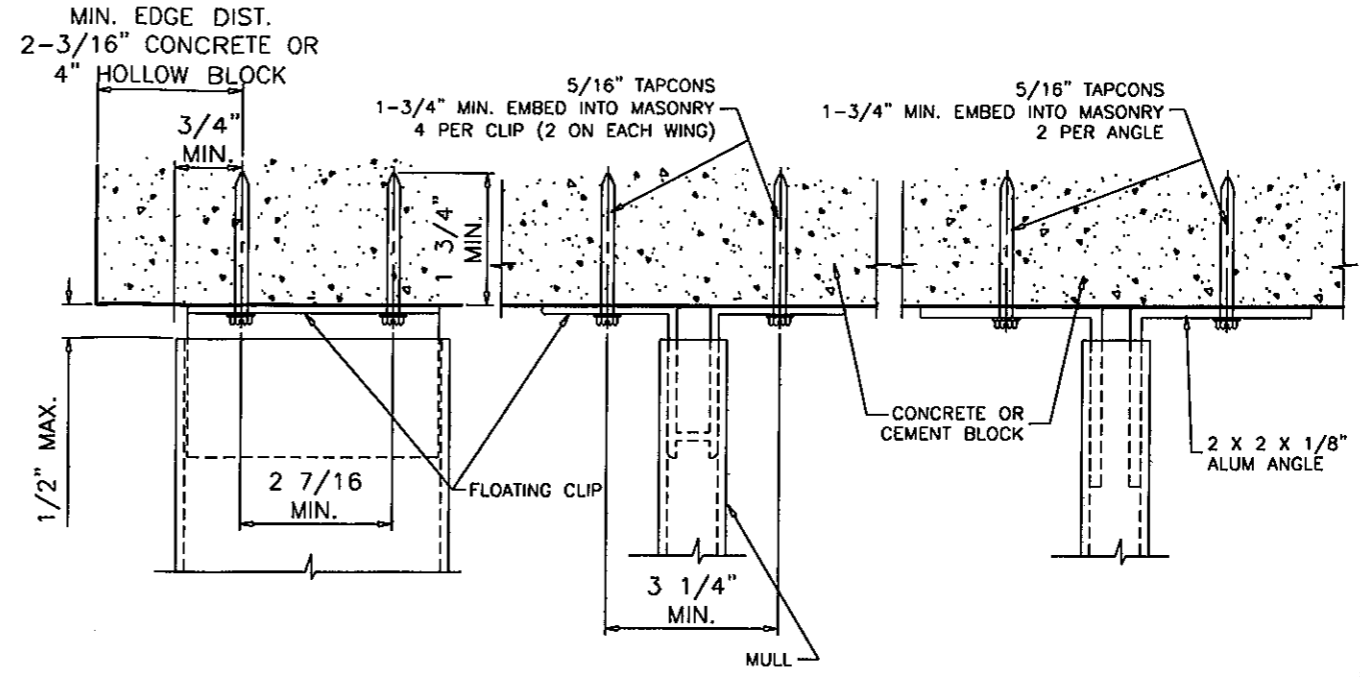


ANCHORS TYPE 'C' (INTO BLOCK)  
 ANCHORS TYPE 'F' (INTO CONCRETE)  
 2 ANCHORS INTO CONCRETE OR CEMENT BLOCK

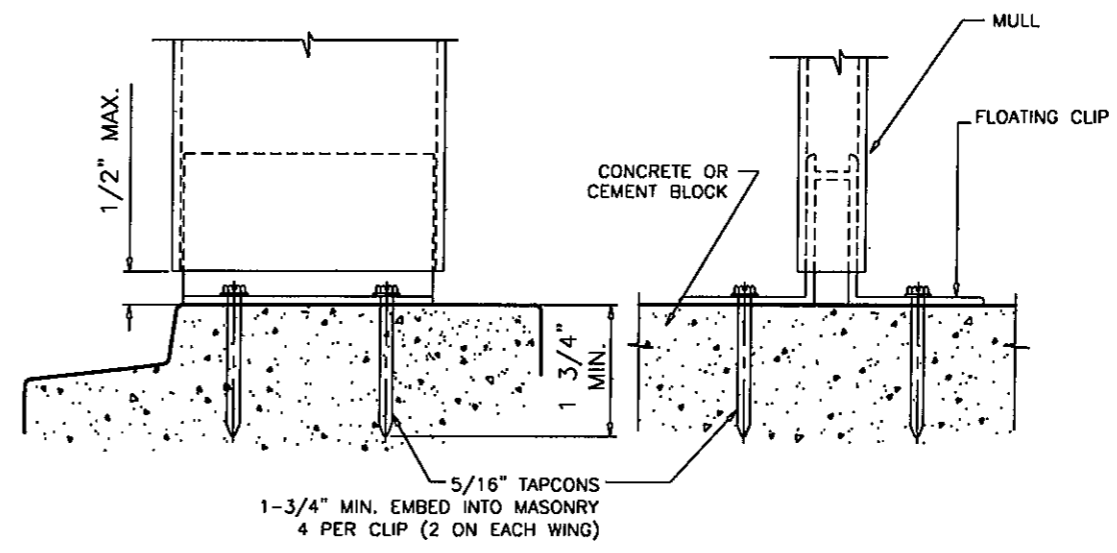


ALL CLIPS AND ANGLES TO FIT SNUG INTO TUBE MULLIONS. TAPCONS MAY BE HEX OR FLAT HEAD.

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



ANCHORS TYPE 'D' (INTO BLOCK)  
 ANCHORS TYPE 'G' (INTO CONCRETE)  
 4 ANCHORS INTO CONCRETE OR CEMENT BLOCK  
 1"x4" & 2"x4" MULL



Revision Notes:  
 'A' - No change this sheet

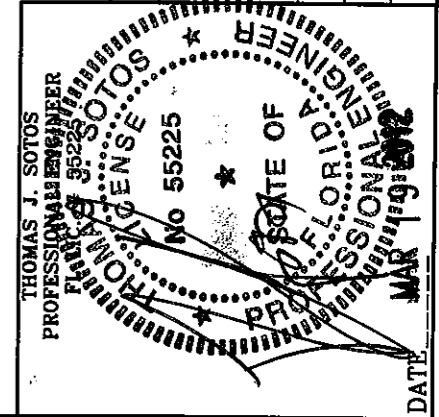
8501 N.W. 90 ST.  
 MEDLEY, FLORIDA 33166  
 PH No. (305) 696-8660

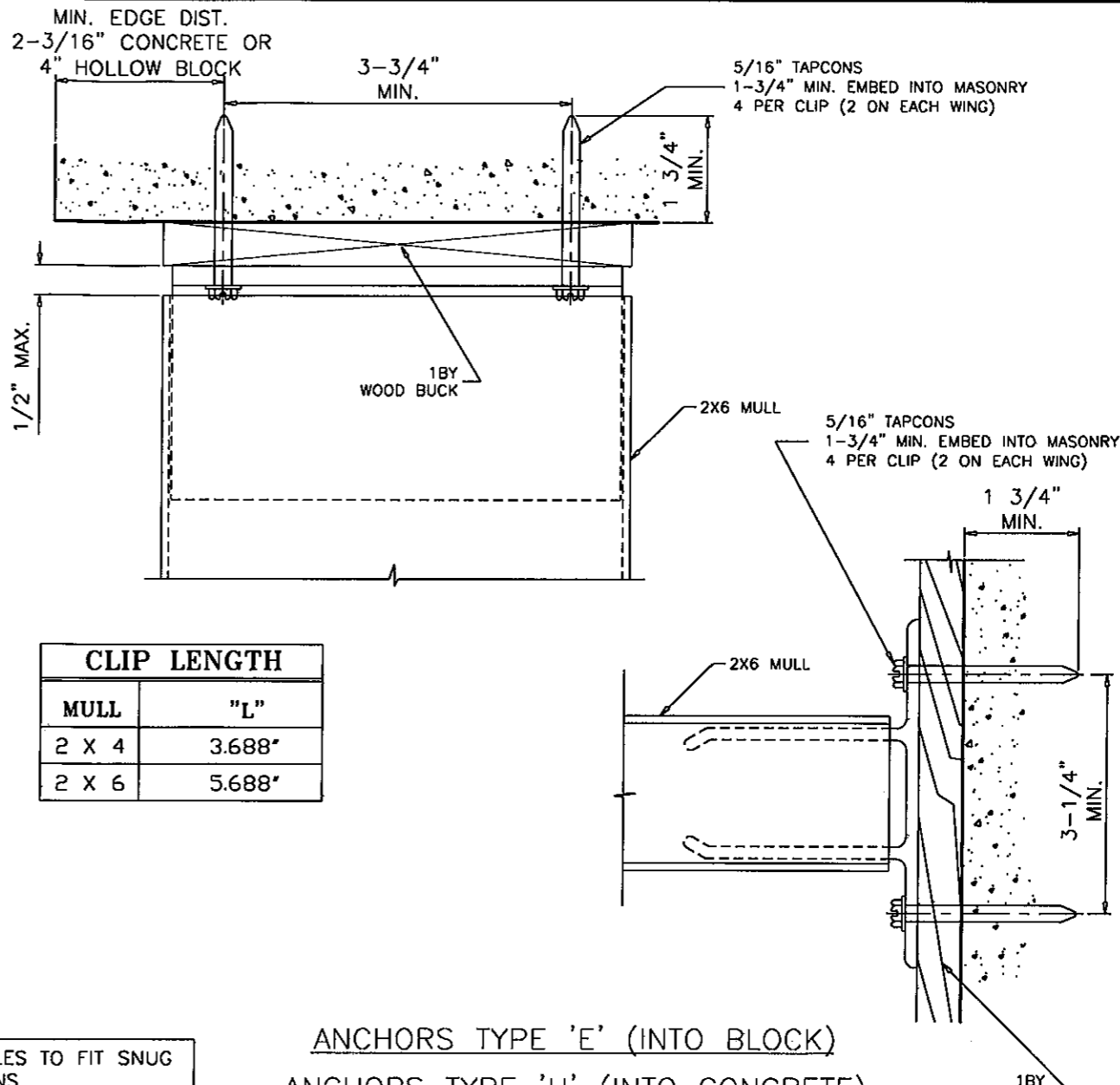
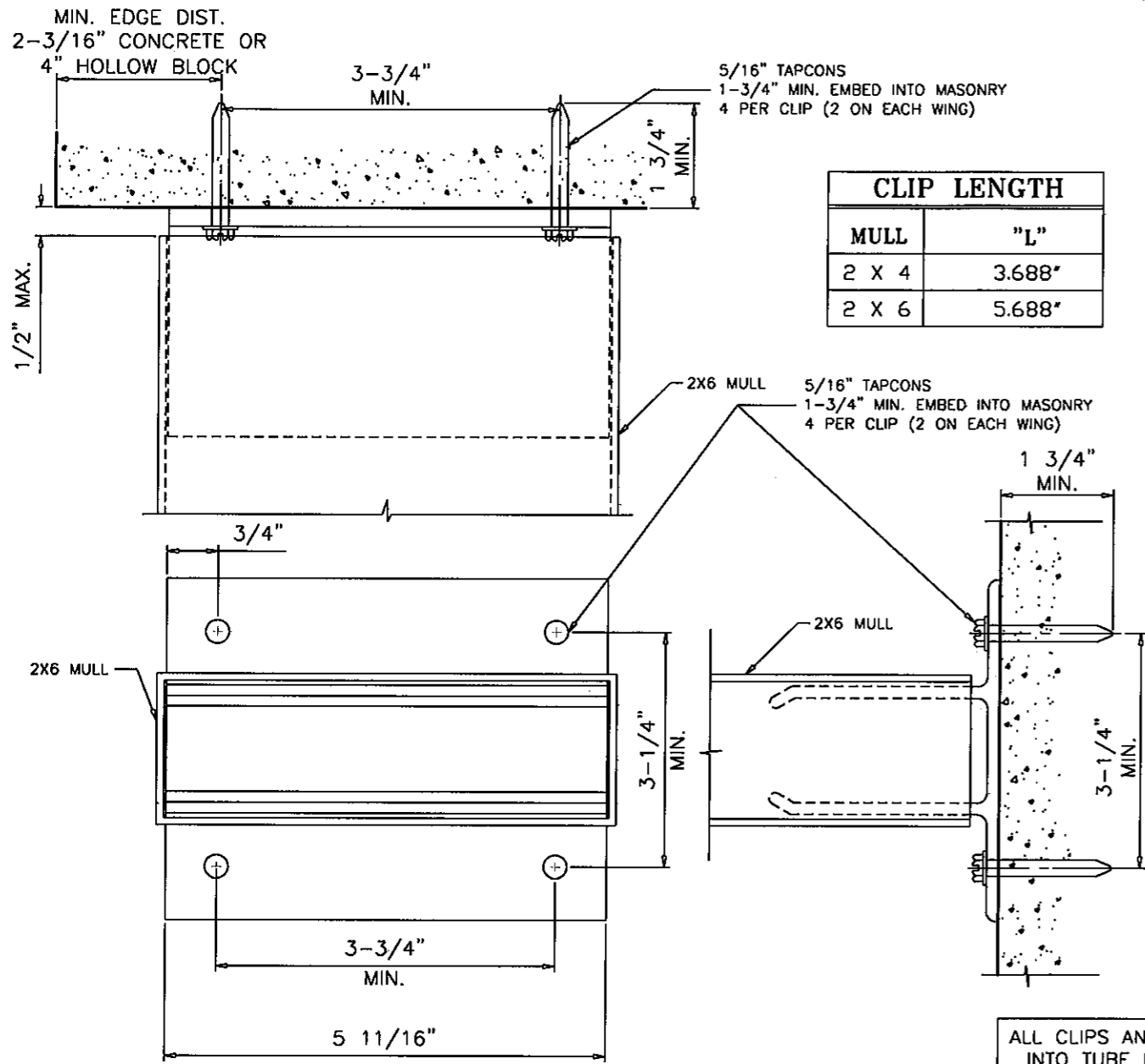
**LAWSON**  
 INDUSTRIES, INC.

MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS  
 ALUMINUM TUBE MULLIONS  
 ANCHOR/CLIP TYPES, INSTALLATION DETAILS, AND GENERAL NOTES

Date Drawn:	04/27/10
Date Revised:	01/25/12
Scale:	
Drawn By:	N. ERAZO
Revised By:	N. ERAZO
Revision Level:	

PRODUCT REVISED as complying with the Florida Building Code  
 Acceptance No. 12-012707  
 Expiration Date MAY 30, 2017  
 By *Manuel Perez*  
 Miami Dade Product Control





ANCHORS TYPE 'E' (INTO BLOCK)

ANCHORS TYPE 'H' (INTO CONCRETE)

ANCHORS INTO CONCRETE or BLOCK  
2"x6" MULL SHOWN

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.

ANCHORS TYPE 'E' (INTO BLOCK)  
ANCHORS TYPE 'H' (INTO CONCRETE)

4 ANCHORS THRU 1X BUCK INTO CONCRETE OR BLOCK  
2"x6" MULL SHOWN

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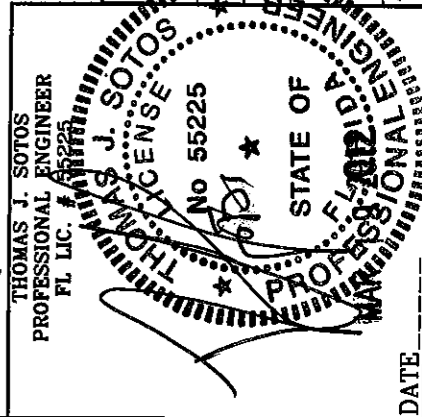
MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS  
ALUMINUM TUBE MULLIONS  
ANCHOR/CLIP TYPES, INSTALLATION DETAILS, AND GENERAL NOTES

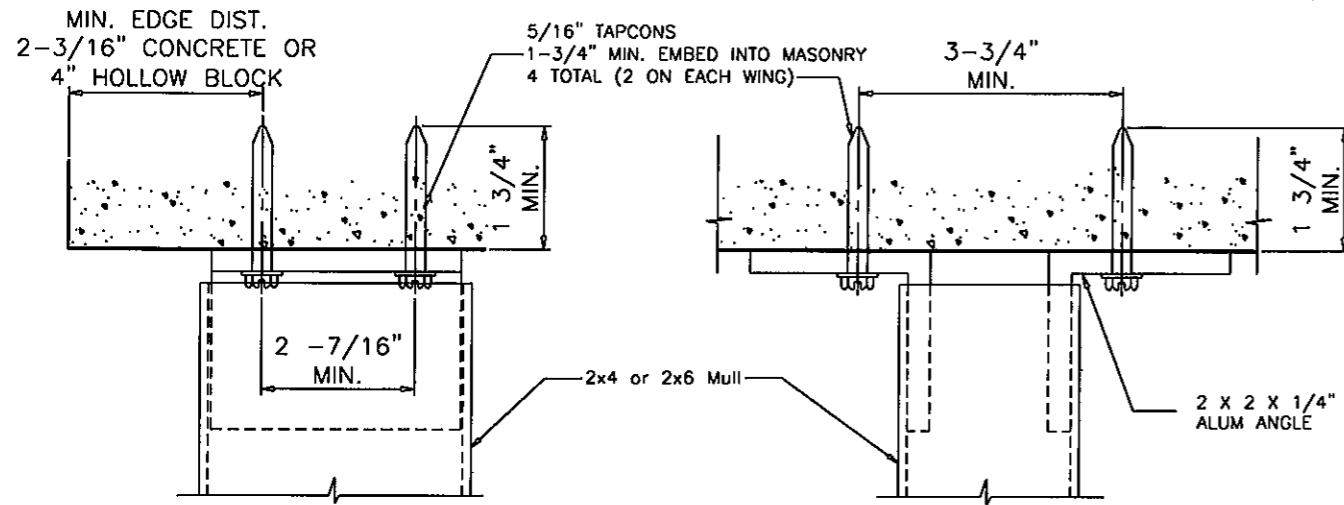
Revision Notes:  
-A- No change this sheet

Date Drawn:	Date Revised:	Scale:
04/27/10	01/25/12	

Drawn By:	Revised By:	Revision Level:
N. ERAZO	N. ERAZO	

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No 12-0127-07  
Expiration Date 08/30/2017  
By *Manuel Perez*  
Miami/Dade Product Control

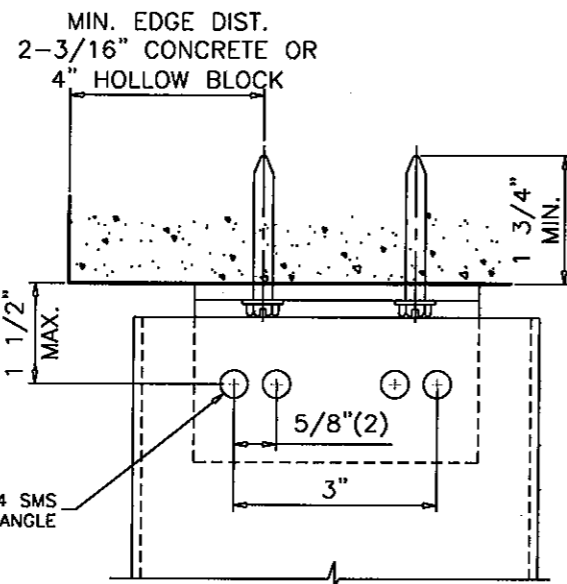




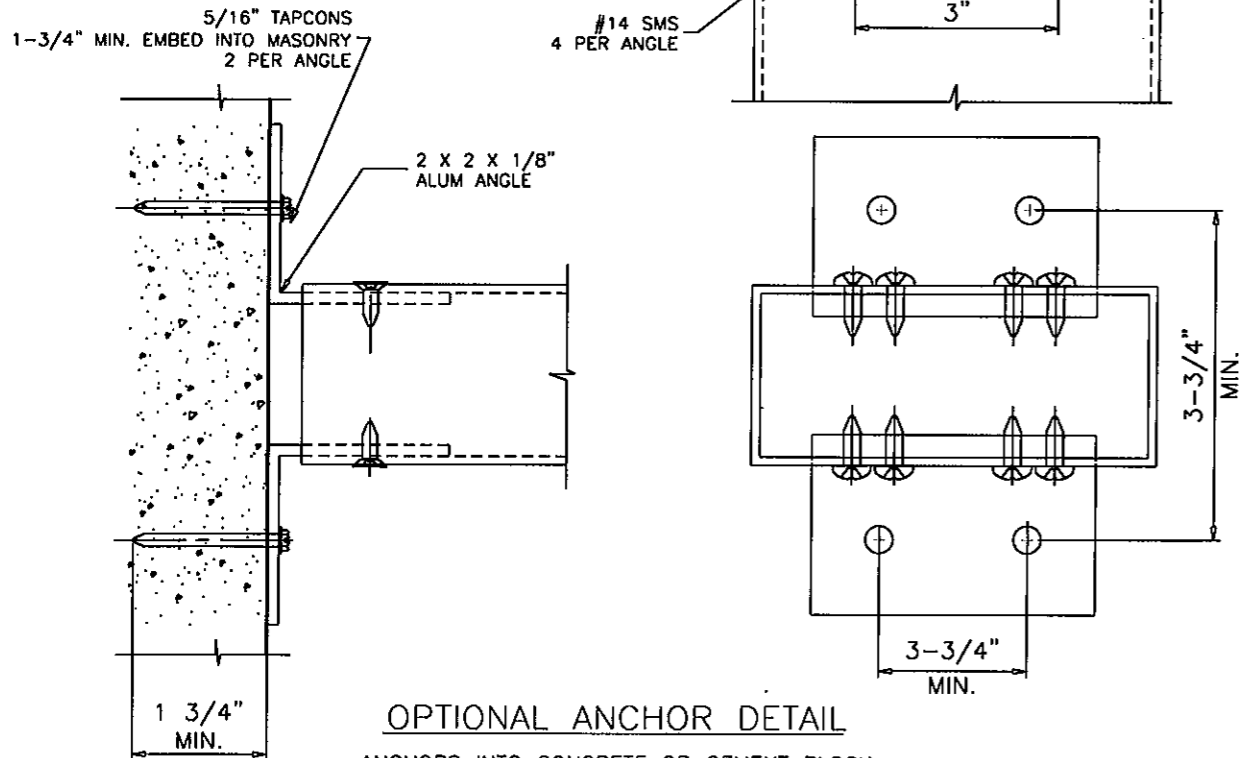
CLIPS OR ANGLES CONNECTED DIRECTLY TO MASONRY TO BE PROTECTED WITH ALKALI-RESISTANT COATINGS, SUCH AS BITUMINOUS PAINT OR WATER-WHITE METHACRYLATE LACQUER.

CLIP LENGTH	
MULL	"L"
1 X 2	1.688"
1 X 3	2.688"
1 X 4	3.688"
2 X 4	3.688"
2 X 6	5.688"

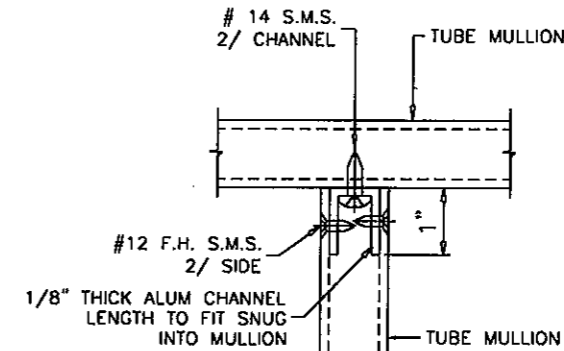
1. ALL CLIPS AND ANGLES ARE TO FIT SNUG INTO TUBE MULLIONS.
2. WHERE ANGLES ARE NOT FIT SNUG INTO TUBE MULLIONS, SEE OPTIONAL ANCHOR DETAIL AT SHEET 9 OF 10.



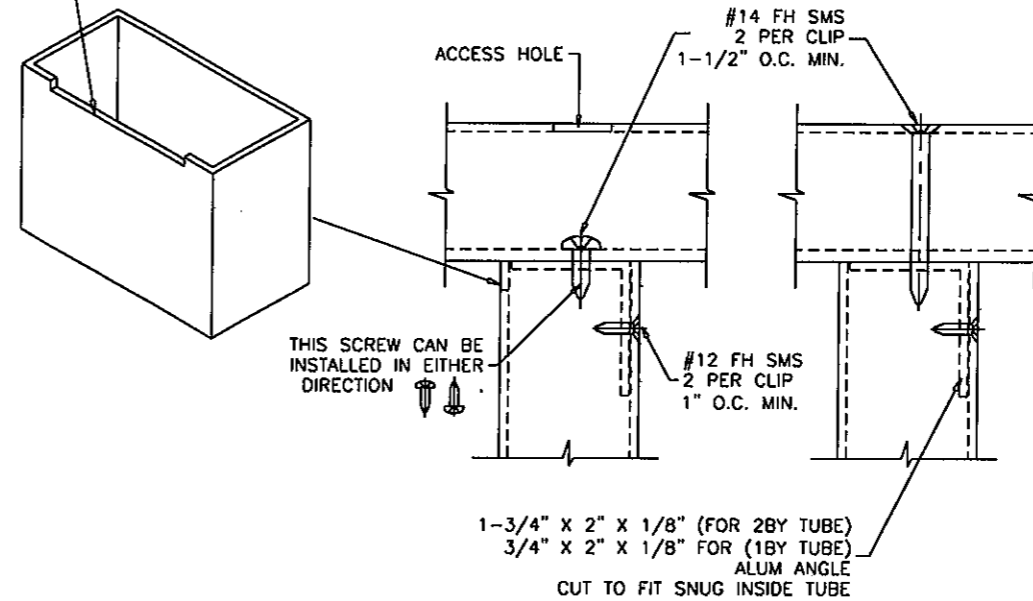
LOCATION OF SCREWS CONNECTING ANGLES TO TUBES WHERE ANGLES ARE NOT FIT SNUG INTO TUBE MULLIONS.



OPTIONAL ANCHOR DETAIL  
ANCHORS INTO CONCRETE OR CEMENT BLOCK



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



ANCHORS TYPE 'I'

METAL TO METAL CONNECTION

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

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

PRODUCT REVISED  
As complying with the Florida  
Building Code  
Acceptance No 12-0127.07  
Expiration Date May 30, 2017  
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Miami Dade Product Control

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MANUFACTURER OF QUALITY ALUMINUM WINDOWS AND GLASS DOORS

ALUMINUM TUBE MULLIONS

ANCHOR/CLIP TYPES, INSTALLATION DETAILS, AND GENERAL NOTES

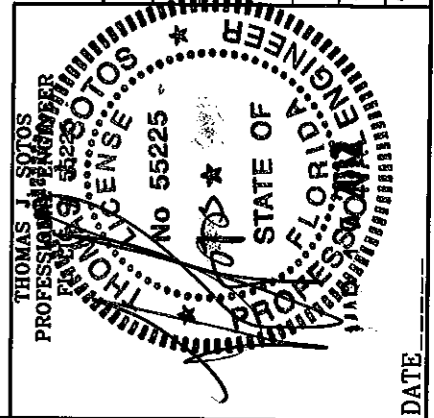
Product Reference Number: LAW-ML-1001

Sheet: 9 OF 10

Revision #: "A"

Revision Notes: "A" - No change this sheet

Drawn By:	N. ERAZO	Date Drawn:	04/27/10
Revised By:	N. ERAZO	Date Revised:	01/25/12
Revision Level:		Scale:	



DATE

