



Product Approval
USER: Public User

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OFFICE OF THE SECRETARY

FL #	FL20400-R1																
Application Type	Revision																
Code Version	2017																
Application Status	Approved																
Comments																	
Archived	<input type="checkbox"/>																
Product Manufacturer	La Finestra, LC																
Address/Phone/Email	2790 NW 104th Court Miami, FL 33172 (305) 599-8093 brunosalvoni@lafinestra.us																
Authorized Signature	Bruno Salvoni brunosalvoni@lafinestra.us																
Technical Representative																	
Address/Phone/Email																	
Quality Assurance Representative																	
Address/Phone/Email																	
Category	Windows																
Subcategory	Mullions																
Compliance Method	Evaluation Report from a Florida Registered Architect or a Licensed Florida Professional Engineer <input type="checkbox"/> Evaluation Report - Hardcopy Received																
Florida Engineer or Architect Name who developed the Evaluation Report	Frank L. Bennardo, P.E.																
Florida License	PE-0046549																
Quality Assurance Entity	National Accreditation and Management Institute																
Quality Assurance Contract Expiration Date	04/30/2018																
Validated By	Troy Bishop, P.E. <input checked="" type="checkbox"/> Validation Checklist - Hardcopy Received																
Certificate of Independence	FL20400_R1_COI_Indep.pdf																
Referenced Standard and Year (of Standard)	<table border="0"> <thead> <tr> <th>Standard</th> <th>Year</th> </tr> </thead> <tbody> <tr> <td>ASTM E1300</td> <td>2009</td> </tr> <tr> <td>ASTM E1886</td> <td>2013</td> </tr> <tr> <td>ASTM E1996</td> <td>2014</td> </tr> <tr> <td>ASTM E330</td> <td>2014</td> </tr> <tr> <td>TAS 201</td> <td>1994</td> </tr> <tr> <td>TAS 202</td> <td>1994</td> </tr> <tr> <td>TAS 203</td> <td>1994</td> </tr> </tbody> </table>	Standard	Year	ASTM E1300	2009	ASTM E1886	2013	ASTM E1996	2014	ASTM E330	2014	TAS 201	1994	TAS 202	1994	TAS 203	1994
Standard	Year																
ASTM E1300	2009																
ASTM E1886	2013																
ASTM E1996	2014																
ASTM E330	2014																
TAS 201	1994																
TAS 202	1994																
TAS 203	1994																
Equivalence of Product Standards Certified By																	
Sections from the Code																	

Product Approval Method

Method 1 Option D

Date Submitted

12/18/2017

Date Validated

12/18/2017

Date Pending FBC Approval

12/23/2017

Date Approved

02/13/2018

Summary of Products

FL #	Model, Number or Name	Description
20400.1	Series Aluminum Mullions	See mullion span tables and attachment details within product installation instructions.
Limits of Use Approved for use in HVHZ: Yes Approved for use outside HVHZ: Yes Impact Resistant: Yes Design Pressure: +120/-120 Other:		Installation Instructions FL20400_R1_II_Dwg.pdf Verified By: Frank L. Bennardo, P.E. PE0046549 Created by Independent Third Party: Yes Evaluation Reports FL20400_R1_AF_Eval.pdf Created by Independent Third Party: Yes

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Product Approval Accepts:



Product Evaluation Report

December 18, 2017

Application Number: FL#20400.1-R1
EX Project Number: 16-3151

Product Manufacturer: La Finestra, LC
Manufacturer Address: 2790 NW 104TH Court.
Miami, FL 33172

Product Name & Description: Series Aluminum Mullions

Scope of Evaluation:

This Product Evaluation Report is being issued in accordance with the requirements of the Florida Department of Business and Professional Regulation (Florida Building Commission) Rule Chapter 61G20-3.005, F.A.C., for statewide acceptance per Method 1(d). The product noted above has been tested and/or evaluated as summarized herein to show compliance with the Florida Building Code Sixth Edition (2017) and is, for the purpose intended, at least equivalent to that required by the Code. Re-evaluation of this product shall be required following pertinent Florida Building Code modifications or revisions.

Substantiating Data:

- **PRODUCT EVALUATION DOCUMENTS**

EX drawing #16-3151 titled "Series Aluminum Mullions", sheets 1- 17, prepared by Engineering Express, signed & sealed by Frank L. Bennardo, P.E. is an integral part of this Evaluation Report.

- **TEST REPORTS**

Uniform static structural performance has been tested in accordance with TAS 202 & ASTM E330-14 test standards per test report(s) HETI-16-5019, HETI-16-5030, by Hurricane Engineering and Testing, Inc. signed by Mr. Rafael E. Droz-Seda, P.E.

Large missile impact resistance and cyclic loading performance have been tested in accordance with TAS 201 & 203 and ASTM E 1886-13a & ASTM E 1996-14 test standards per test report(s) HETI-16-5019, HETI-16-5030 by Hurricane Engineering and Testing, Inc. signed by Mr. Rafael E. Droz-Seda, P.E.

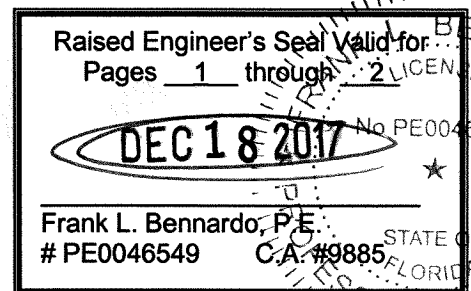
Tensile Tests have been tested in accordance with ASTM E 8-15 H test standards per test reports T-307, T-308, T-312, T-313 signed by Mr. Rafael E. Droz-Seda, P.E.

- **STRUCTURAL ENGINEERING CALCULATIONS**

Structural engineering calculations have been prepared which evaluate the product based on comparative and/or rational analysis to qualify the following design criteria:

1. Anchor Spacing
2. Maximum Allowable Size/Pressure Combinations
3. Glass Capacity
4. Anchor Capacity

No 33% increase in allowable stress has been used in the design of each product.



Impact Resistance:

Large and Small Missile Impact Resistance has been demonstrated as evidenced in previously listed test reports, and is accounted for in the engineering design of this product.

Wind Load Resistance

Each product has been designed to resist wind loads as indicated in the design schedule(s) on its respective Product Evaluation Document (i.e. engineering drawing).

Installation

Each product listed above shall be installed in strict compliance with its respective Product Evaluation Document (i.e. engineering drawing), along with all components noted therein.

Each product component shall be of the material specified in that product's respective Product Evaluation Document (i.e. engineering drawing).

Limitations & Conditions of Use:

Use of each product shall be in strict accordance with its respective Product Evaluation Document (i.e. engineering drawing) as noted herein.

All supporting host structures shall be designed to resist all superimposed loads and shall be of a material listed in each product's respective anchor schedule. Host structure conditions which are not accounted for in each product's respective anchor schedule shall be designed for on a site-specific basis by a registered professional engineer.

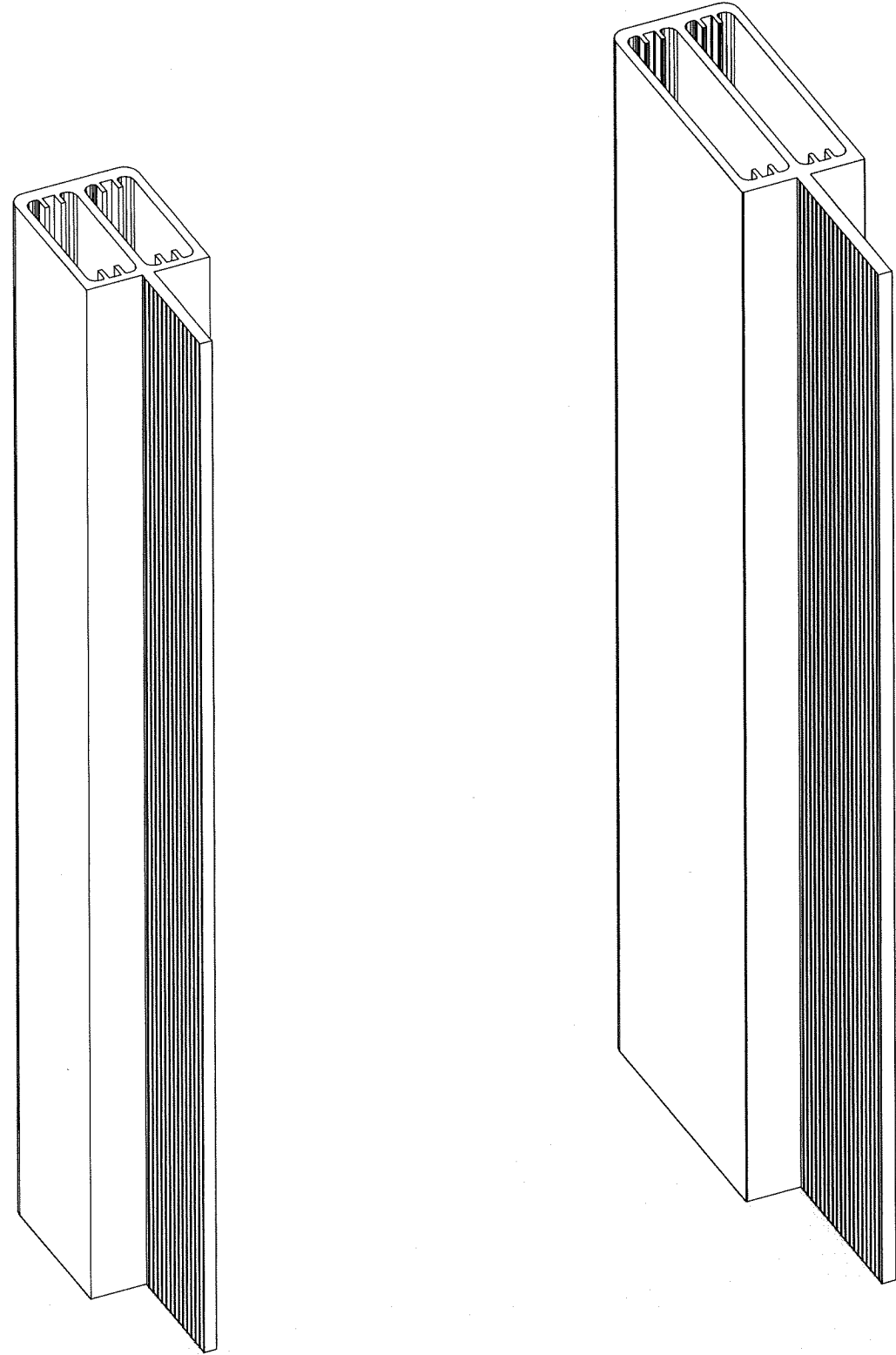
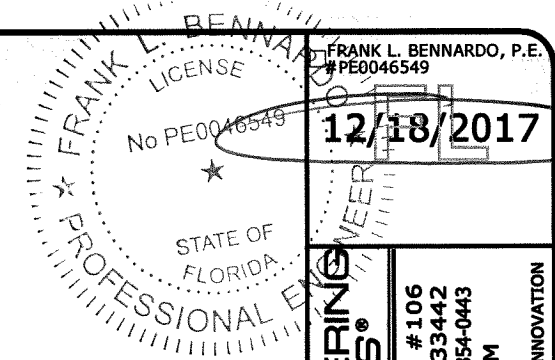
All components which are permanently installed shall be protected against corrosion, contamination, and other such damage at all times.

Each product has been designed for use within and outside of the High Velocity Hurricane Zone (HVHZ).

LA FINESTRA, LC

SERIES ALUMINUM MULLIONS

LARGE MISSILE LEVEL "D" IMPACT RESISTANT



GENERAL NOTES

1. THE SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE, FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE, PER TAS 201 / 202 / 203 & ASTM E1300-09 STANDARDS.
2. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR $C_d=1.6$ HAS BEEN USED FOR WOOD ANCHOR DESIGN.
3. POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE. SITE SPECIFIC LOAD WIND LOAD REQUIREMENTS SHALL BE DETERMINED IN ACCORDANCE WITH ASCE 7 AND THE FLORIDA BUILDING CODE BY SEPARATE ENGINEERING CERTIFICATION AND SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUE LISTED HEREIN FOR ANY ASSEMBLY WITHIN THE LIMITATIONS STATED HEREIN.
4. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
5. PERMIT HOLDER SHALL VERIFY THE ADEQUACY OF THE EXISTING STRUCTURE TO WITHSTAND SUPERIMPOSED LOADS. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
6. ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
7. EXTERIOR SEAM OF FRAME CORNERS, INSTALLATION SCREWS, AND GLAZING BEAD ENDS SHALL BE SEALED WITH SILICONE.
8. ALL DISSIMILAR MATERIALS SHALL BE PAINTED OR PLATED AS PRESCRIBED IN THE FLORIDA BUILDING CODE.
12. APPROVED FOR SMALL AND LARGE MISSILE IMPACT APPLICATIONS.
13. ENGINEER SEAL AFFIXED HERE TO VALIDATES STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
14. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
15. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

HURRICANE ENGINEERING & TESTING INC LAB REPORT NUMBERS
HEITI-16-5030, 16-T312, 16-T313, 16-5019, T-307 & T308

TO BE USED WITH LA FINESTRA
PRODUCTS ONLY

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 FAX: (954) 354-0443
WWW.ENGEXP.COM
CERT. OF AUTH. #8885
A FRANK L. BENNARDO, P.E., INC. INNOVATION

LA FINESTRA, LC
2790 NW 104TH COURT
DORAL, FL
(305) 599-8093
FLORIDA PRODUCT APPROVAL SERIES ALUMINUM MULLIONS
2790 NW 104TH COURT, MIAMI, FL
2017 FLORIDA BUILDING CODE UPDATE

REMARKS	DRWN	CHKD	DATE
INIT ISSUE	JEM	FLB	02/22/16
2017 FBC UPDATE	JEM	FLB	11/28/17

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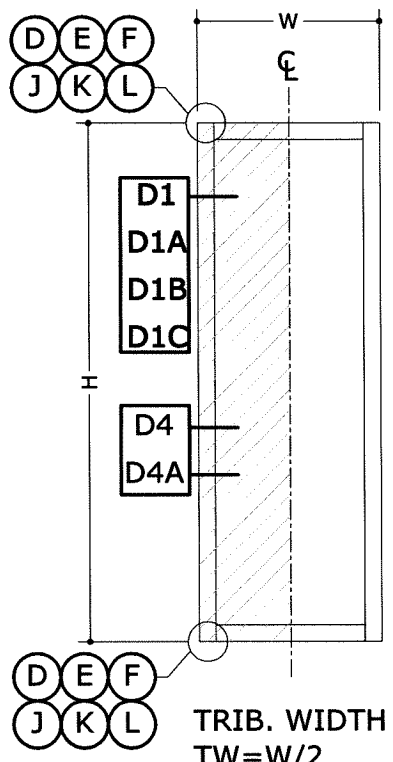
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PAGE DESCRIPTION:

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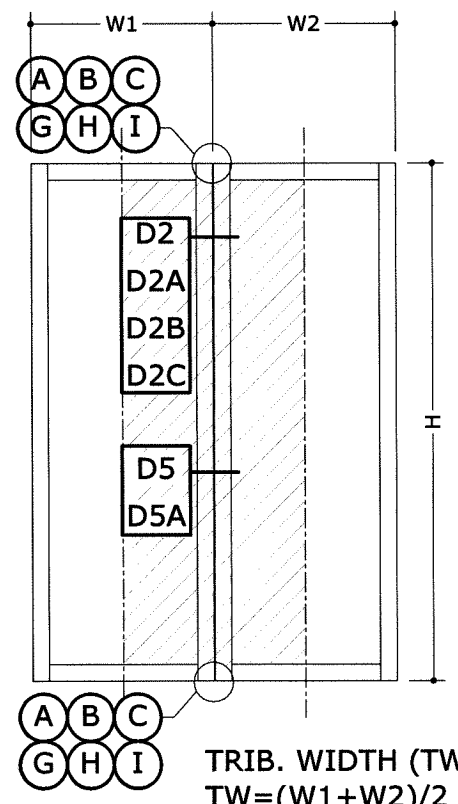
FL#20400.1-R1

V:\Projects\16-3151 Florida Mullion Product Approval\012017 FBC Update\Drawings\Mullion Product Approval.dwg



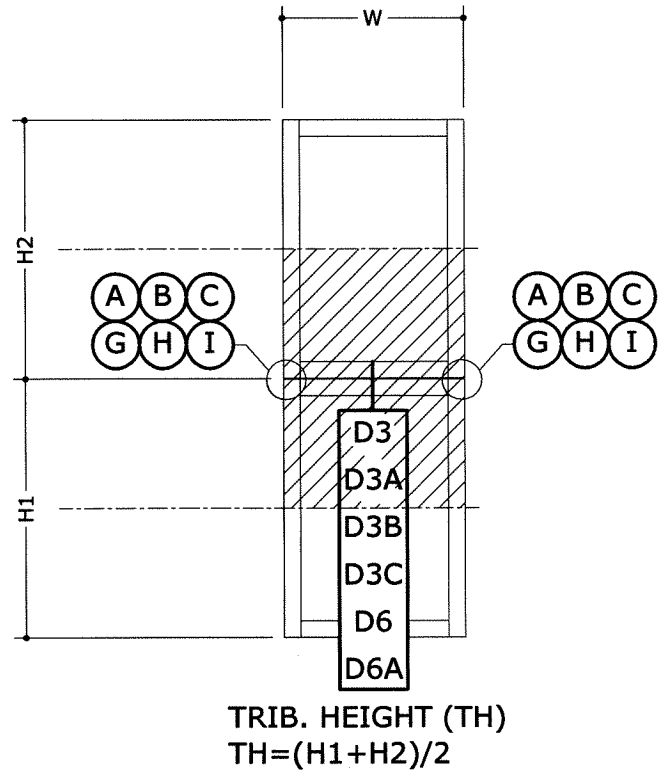
TRIB. WIDTH (TW)
TW=W/2

MULLION AT JAMB



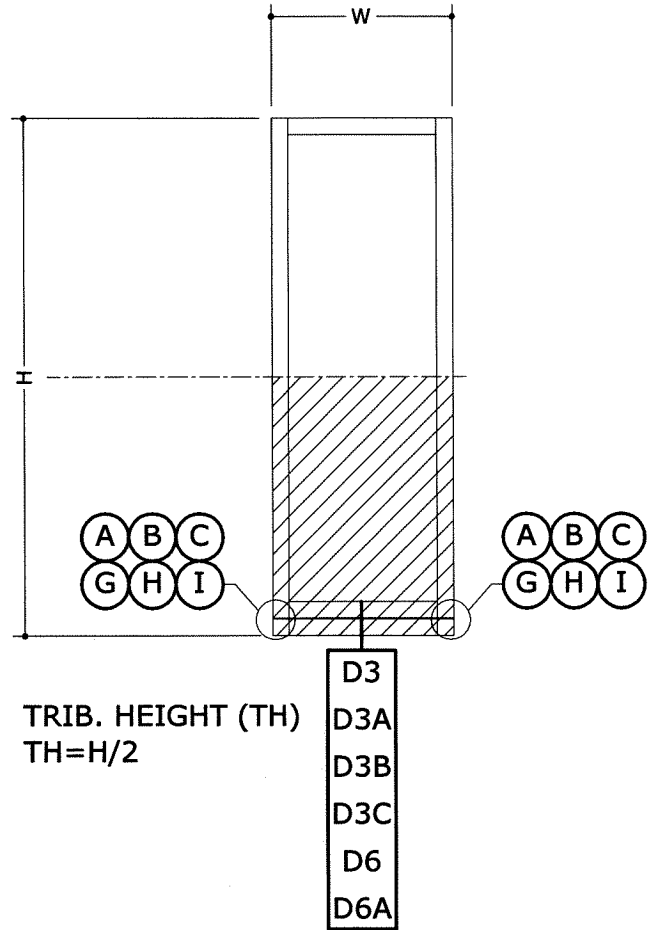
TRIB. WIDTH (TW)
TW=(W1+W2)/2

VERTICAL MULLION



TRIB. HEIGHT (TH)
TH=(H1+H2)/2

HORIZONTAL MULLION



TRIB. HEIGHT (TH)
TH=H/2

MULLION AT HEAD/SILL

TYPICAL ELEVATIONS

FRANK L. BENNARDO, P.E.
LICENSE No PE0046549
12/18/2017
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 Fax: (954) 354-0443
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SMALL MULLION

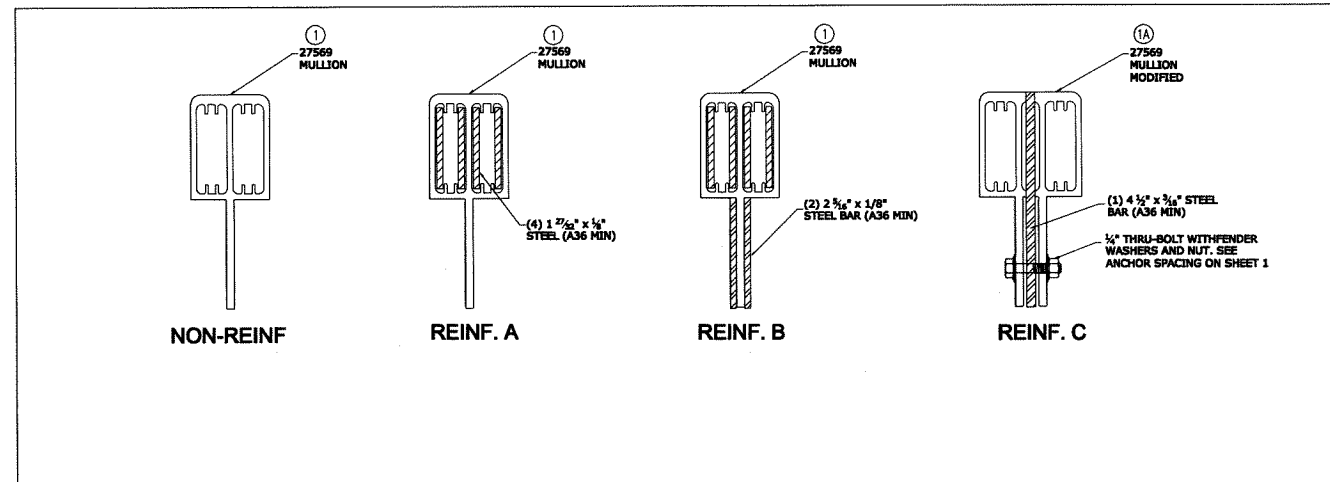
WINDOW DESIGN CAPACITY (PSF) - SMALL MULLION								
NOMINAL DIMS		NON-REINF (+/-) P.S.F	WITH-REINF			# OF ANCHORS AT EACH SIDE		
WIDTH	HEIGHT		Reinf. A	Reinf. B	Reinf. C	WOOD	CONC.	METAL
			(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F
36"	48"	100	100	100	100	2	1	1
42"		100	100	100	100	3	1	1
48"		100	100	100	100	3	1	1
54"		100	100	100	100	3	1	1
60"		100	100	100	100	3	1	1
66"		100	100	100	100	4	1	1
72"		100	100	100	100	4	1	2
78"		100	100	100	100	4	1	2
84"		100	100	100	100	5	1	2
90"		100	100	100	100	5	1	2
96"		100	100	100	100	5	2	2
102"		100	100	100	100	5	2	2
108"		98	98	98	98	6	2	2
114"		93	93	93	93	6	2	2
120"	89	89	89	89	6	2	2	
126"	84	84	84	84	6	2	2	
132"	80	80	80	80	6	2	2	
138"	77	77	77	77	6	2	2	
144"	74	74	74	74	6	2	2	

WINDOW DESIGN CAPACITY (PSF) - SMALL MULLION								
NOMINAL DIMS		NON-REINF (+/-) P.S.F	WITH-REINF			# OF ANCHORS AT EACH SIDE		
WIDTH	HEIGHT		Reinf. A	Reinf. B	Reinf. C	WOOD	CONC.	METAL
			(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F
36"	66"	100	100	100	100	3	1	1
42"		100	100	100	100	3	1	1
48"		100	100	100	100	4	1	2
54"		100	100	100	100	4	1	2
60"		94	94	94	94	4	1	2
66"		85	85	85	85	4	1	2
72"		78	78	78	78	4	1	2
78"		72	72	72	72	4	1	2
84"		67	67	67	67	4	1	2
90"		62	62	62	62	4	1	2
96"		58	58	58	58	4	1	2
102"		55	55	55	55	4	1	2
108"		52	52	52	52	4	1	2
114"		49	49	49	49	4	1	2
120"	47	47	47	47	4	1	2	
126"	44	44	44	44	4	1	2	
132"	42	42	42	42	4	1	2	
138"	40	40	40	40	4	1	2	
144"	39	39	39	39	4	1	2	

36"	54"	100	100	100	100	2	1	1
42"		100	100	100	100	3	1	1
48"		100	100	100	100	3	1	1
54"		100	100	100	100	3	1	1
60"		100	100	100	100	4	1	2
66"		100	100	100	100	4	1	2
72"		100	100	100	100	4	1	2
78"		100	100	100	100	5	1	2
84"		100	100	100	100	5	1	2
90"		93	93	93	93	5	1	2
96"		87	87	87	87	5	1	2
102"		82	82	82	82	5	1	2
108"		78	78	78	78	5	1	2
114"		74	74	74	74	5	1	2
120"	70	70	70	70	5	1	2	
126"	67	67	67	67	5	1	2	
132"	63	63	63	63	5	1	2	
138"	61	61	61	61	5	1	2	
144"	58	58	58	58	5	1	2	

36"	72"	100	100	100	100	3	1	1
42"		100	100	100	100	4	1	1
48"		98	98	98	98	4	1	2
54"		87	87	87	87	4	1	2
60"		79	79	79	79	4	1	2
66"		71	71	71	71	4	1	2
72"		65	65	65	65	4	1	2
78"		60	60	60	60	4	1	2
84"		56	56	56	56	4	1	2
90"		52	52	52	52	4	1	2
96"		49	49	49	49	4	1	2
102"		46	46	46	46	4	1	2
108"		43	43	43	43	4	1	2
114"		41	41	41	41	4	1	2
120"	39	39	39	39	4	1	2	
126"	37	37	37	37	4	1	2	
132"	35	35	35	35	4	1	2	
138"	34	34	34	34	4	1	2	
144"	32	32	32	32	4	1	2	

36"	60"	100	100	100	100	3	1	1
42"		100	100	100	100	3	1	1
48"		100	100	100	100	3	1	1
54"		100	100	100	100	4	1	2
60"		100	100	100	100	4	1	2
66"		100	100	100	100	5	1	2
72"		95	95	95	95	5	1	2
78"		87	87	87	87	5	1	2
84"		81	81	81	81	5	1	2
90"		76	76	76	76	5	1	2
96"		71	71	71	71	5	1	2
102"		67	67	67	67	5	1	2
108"		63	63	63	63	5	1	2
114"		60	60	60	60	5	1	2
120"	57	57	57	57	5	1	2	
126"	54	54	54	54	5	1	2	
132"	51	51	51	51	5	1	2	
138"	49	49	49	49	5	1	2	
144"	47	47	47	47	5	1	2	



FRANK L. BENNARDO, P.E.
#PE0046549
No PE0046549
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STATE OF FLORIDA
PROFESSIONAL ENGINEER

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 Fax: (954) 354-0443
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12/18/2017 - 10:04pm zschr

SMALL MULLION

FRANK L. BENNARDO, P.E.
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12/18/2017
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PROFESSIONAL ENGINEER
No PE0046549

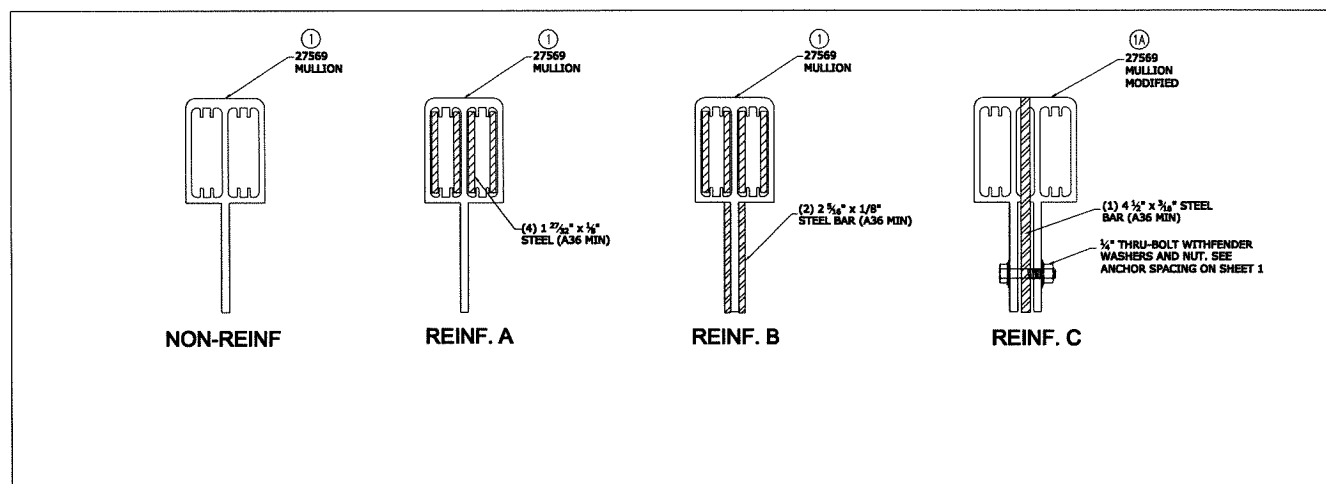
WINDOW DESIGN CAPACITY (PSF) - SMALL MULLION								
NOMINAL DIMS		NON-REINF (+/-) P.S.F	WITH-REINF			# OF ANCHORS AT EACH SIDE		
WIDTH	HEIGHT		Reinf. A	Reinf. B	Reinf. C	WOOD	CONC.	(+) P.S.F
			(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	
36"	78"	100	100	100	100	3	1	1
42"		95	96	96	96	4	1	1
48"		83	84	84	84	4	1	1
54"		74	74	74	74	4	1	1
60"		66	67	67	67	4	1	1
66"		60	61	61	61	4	1	1
72"		55	56	56	56	4	1	1
78"		51	51	51	51	4	1	1
84"		47	48	48	48	4	1	1
90"		44	44	44	44	4	1	1
96"		41	42	42	42	4	1	1
102"		39	39	39	39	4	1	1
108"		37	37	37	37	4	1	1
114"		35	35	35	35	4	1	1
120"		33	33	33	33	4	1	1
126"		31	32	32	32	4	1	1
132"	30	30	30	30	4	1	1	
138"	29	29	29	29	4	1	1	
144"	27	28	28	28	4	1	1	

WINDOW DESIGN CAPACITY (PSF) - SMALL MULLION								
NOMINAL DIMS		NON-REINF (+/-) P.S.F	WITH-REINF			# OF ANCHORS AT EACH SIDE		
WIDTH	HEIGHT		Reinf. A	Reinf. B	Reinf. C	WOOD	CONC.	(+) P.S.F
			(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	(+/-) P.S.F	
36"	96"	59	72	74	74	3	1	1
42"		51	61	63	63	3	1	1
48"		44	54	55	55	3	1	1
54"		39	48	49	49	3	1	1
60"		35	43	44	44	3	1	1
66"		32	39	40	40	3	1	1
72"		29	36	37	37	3	1	1
78"		27	33	34	34	3	1	1
84"		25	30	31	31	3	1	1
90"		23	28	29	29	3	1	1
96"		22	27	27	27	3	1	1
102"		21	25	26	26	3	1	1
108"		-	24	24	24	3	1	1
114"		-	22	23	23	3	1	1
120"		-	21	22	22	3	1	1
126"		-	20	21	21	3	1	1
132"	-	-	20	20	3	1	1	

36"	84"	89	96	96	96	3	1	1
42"		76	83	83	83	3	1	1
48"		66	72	72	72	3	1	1
54"		59	64	64	64	3	1	1
60"		53	58	58	58	3	1	1
66"		48	52	52	52	3	1	1
72"		44	48	48	48	3	1	1
78"		41	44	44	44	3	1	1
84"		38	41	41	41	3	1	1
90"		35	38	38	38	3	1	1
96"		33	36	36	36	3	1	1
102"		31	34	34	34	3	1	1
108"		29	32	32	32	3	1	1
114"		28	30	30	30	3	1	1
120"		26	29	29	29	3	1	1
126"		25	27	27	27	3	1	1
132"	24	26	26	26	3	1	1	
138"	23	25	25	25	3	1	1	
144"	22	24	24	24	3	1	1	

36"	102"	49	60	65	65	3	1	1
42"		42	51	56	56	3	1	1
48"		37	45	49	49	3	1	1
54"		33	40	43	43	3	1	1
60"		29	36	39	39	3	1	1
66"		27	32	35	35	3	1	1
72"		24	30	32	32	3	1	1
78"		22	27	30	30	3	1	1
84"		21	25	28	28	3	1	1
90"		-	24	26	26	3	1	1
96"		-	22	24	24	3	1	1
102"		-	21	23	23	3	1	1
108"		-	20	21	21	3	1	1
114"		-	-	20	20	3	1	1

36"	90"	72	84	84	84	3	1	1
42"		62	72	72	72	3	1	1
48"		54	63	63	63	3	1	1
54"		48	56	56	56	3	1	1
60"		43	50	50	50	3	1	1
66"		39	46	46	46	3	1	1
72"		36	42	42	42	3	1	1
78"		33	38	38	38	3	1	1
84"		31	36	36	36	3	1	1
90"		28	33	33	33	3	1	1
96"		27	31	31	31	3	1	1
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132"	-	23	23	23	3	1	1	
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144"	-	21	21	21	3	1	1	



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FLORIDA PRODUCT APPROVAL SERIES ALUMINUM MULLIONS
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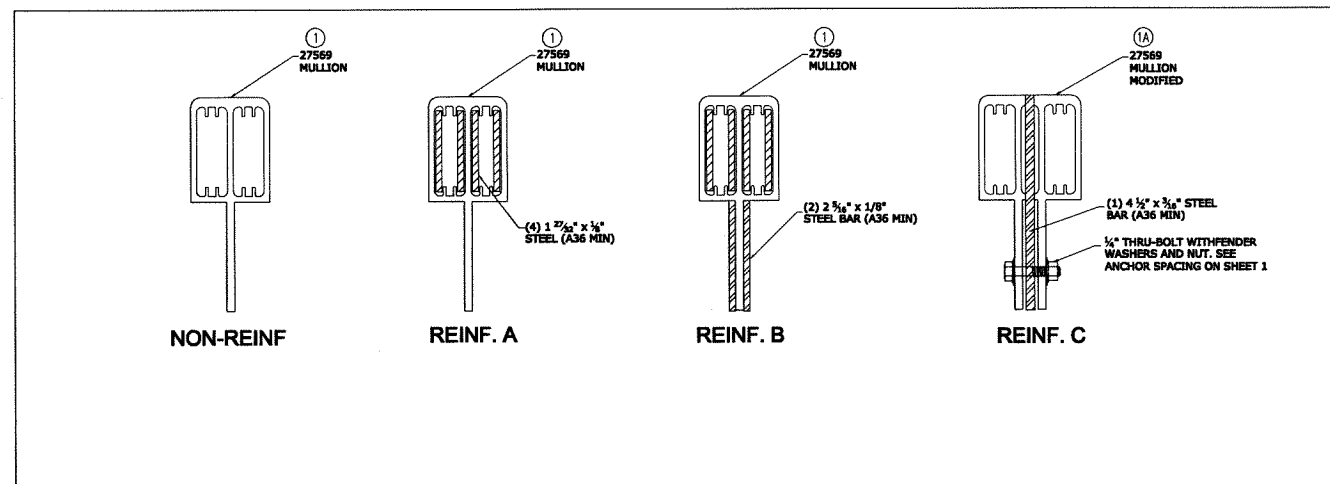
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SMALL MULLION

WINDOW DESIGN CAPACITY (PSF) - SMALL MULLION									
NOMINAL DIMS		NON-REINF (+/-) P.S.F.	WITH-REINF			# OF ANCHORS AT EACH SIDE			
WIDTH	HEIGHT		Reinf. A (+/-) P.S.F.	Reinf. B (+/-) P.S.F.	Reinf. C (+/-) P.S.F.	WOOD (+/-) P.S.F.	CONC. (+/-) P.S.F.	(+/-) P.S.F.	
36"	108"	41	50	56	58	3	1	1	
42"		35	43	48	50	3	1	1	
48"		31	37	42	43	3	1	1	
54"		27	33	37	39	3	1	1	
60"		25	30	34	35	3	1	1	
66"		22	27	31	31	3	1	1	
72"		20	25	28	29	3	1	1	
78"		-	23	26	27	3	1	1	
84"		-	21	24	25	3	1	1	
90"		-	20	22	23	3	1	1	
96"		-	-	21	21	3	1	1	
102"		-	-	20	20	3	1	1	
36"	114"	35	43	48	52	3	1	1	
42"		30	36	41	45	3	1	1	
48"		26	32	36	39	3	1	1	
54"		23	28	32	35	3	1	1	
60"		21	25	29	31	3	1	1	
66"		-	23	26	28	3	1	1	
72"		-	21	24	26	3	1	1	
78"		-	-	22	24	3	1	1	
84"		-	-	20	22	3	1	1	
90"		-	-	-	21	3	1	1	
36"		120"	30	36	41	47	3	1	1
42"			26	31	35	40	3	1	1
48"	22		27	31	35	3	1	1	
54"	20		24	27	31	3	1	1	
60"	-		22	24	28	3	1	1	
66"	-		20	22	25	3	1	1	
72"	-		-	20	23	3	1	1	
78"	-		-	-	21	3	1	1	
84"	-		-	-	20	3	1	1	

WINDOW DESIGN CAPACITY (PSF) - SMALL MULLION								
NOMINAL DIMS		NON-REINF (+/-) P.S.F.	WITH-REINF			# OF ANCHORS AT EACH SIDE		
WIDTH	HEIGHT		Reinf. A (+/-) P.S.F.	Reinf. B (+/-) P.S.F.	Reinf. C (+/-) P.S.F.	WOOD (+/-) P.S.F.	CONC. (+/-) P.S.F.	(+/-) P.S.F.
36"	126"	26	31	35	43	2	1	1
42"		22	27	30	36	2	1	1
48"		-	23	26	32	2	1	1
54"		-	21	23	28	2	1	1
60"		-	-	21	25	2	1	1
66"		-	-	-	23	2	1	1
72"		-	-	-	21	2	1	1
36"	132"	22	27	31	39	2	1	1
42"		-	23	26	33	2	1	1
48"		-	20	23	29	2	1	1
54"		-	-	20	26	2	1	1
60"		-	-	-	23	2	1	1
66"	-	-	-	21	2	1	1	
36"	138"	20	24	27	35	2	1	1
42"		-	20	23	30	2	1	1
48"		-	-	20	26	2	1	1
54"		-	-	-	23	2	1	1
60"	-	-	-	21	2	1	1	
36"	144"	-	21	23	32	2	1	1
42"		-	-	20	28	2	1	1
48"		-	-	-	24	2	1	1
54"		-	-	-	21	2	1	1



FRANK L. BENNARDO, P.E.
#PE0046549
12/18/2017
STATE OF FLORIDA
PROFESSIONAL ENGINEER
LICENSE
No PE0046549

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
PH: (954) 354-0660 FAX: (954) 354-0443
WWW.ENGGEXP.COM
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A FRANK L. BENNARDO, P.E., INC. INNOVATION

LA FINESTRA, LC
2790 NW 104TH COURT
DORAL, FL
(305) 599-8093
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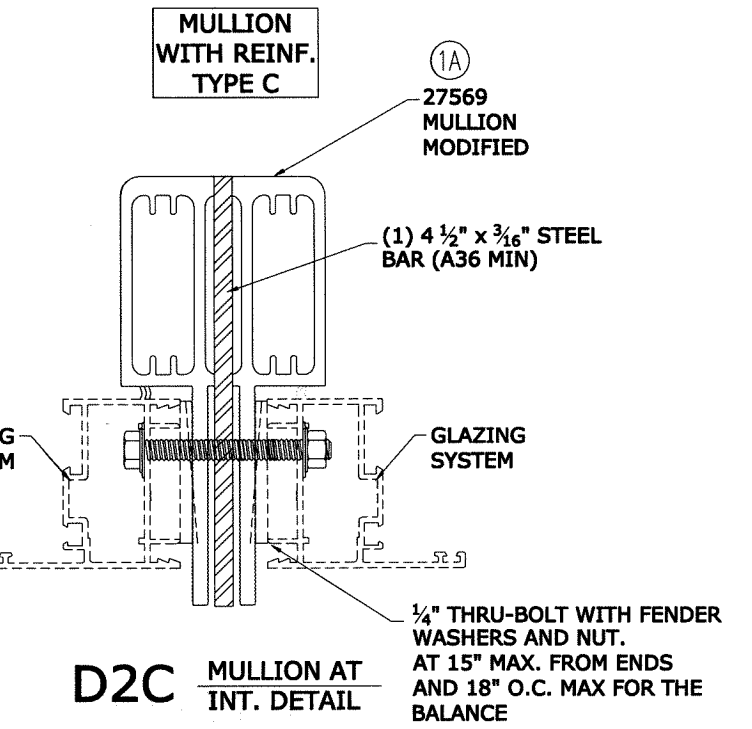
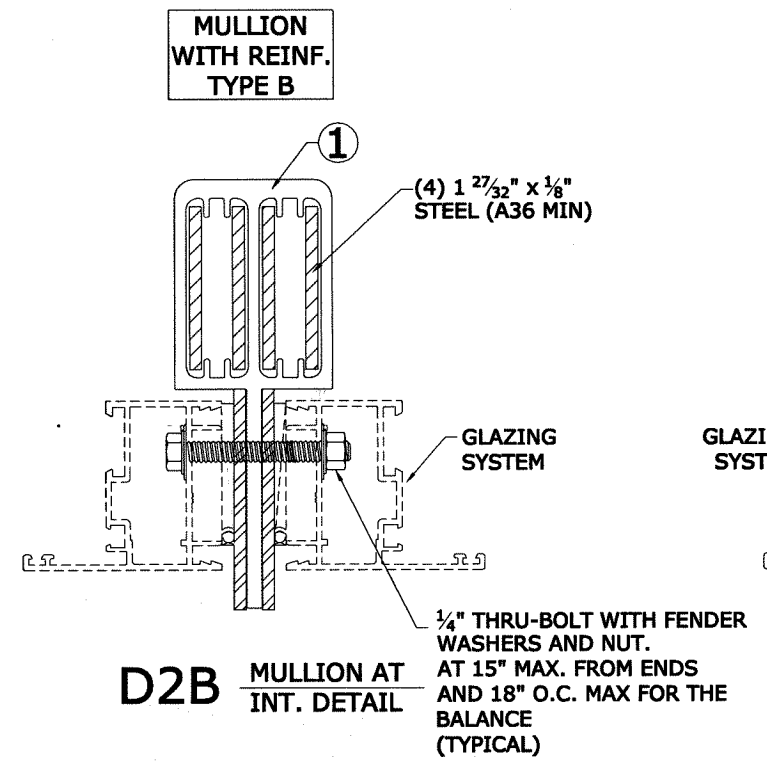
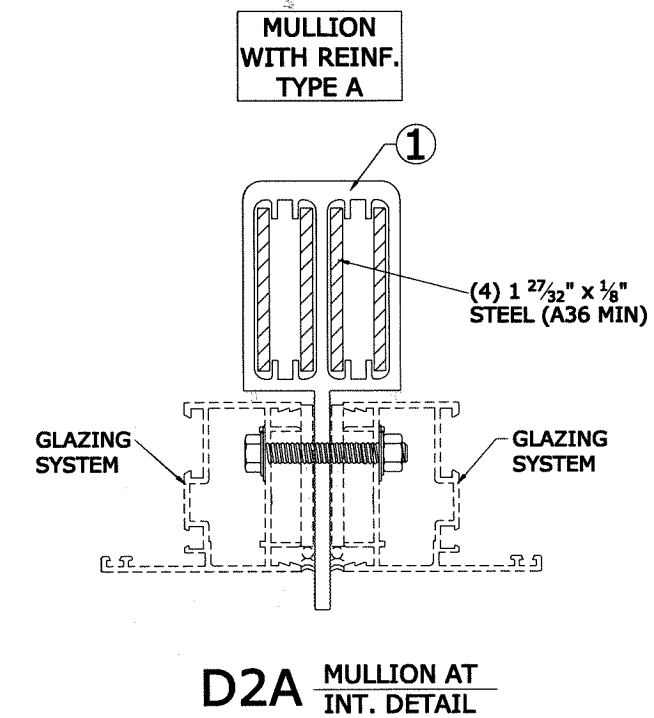
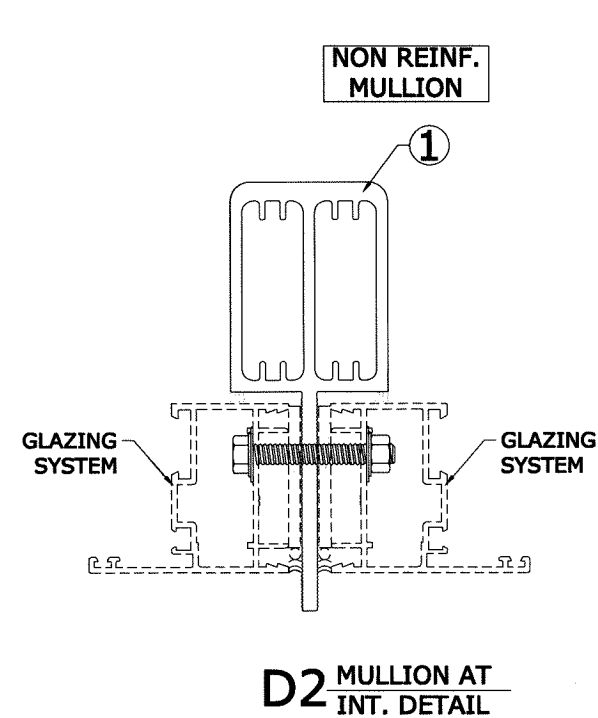
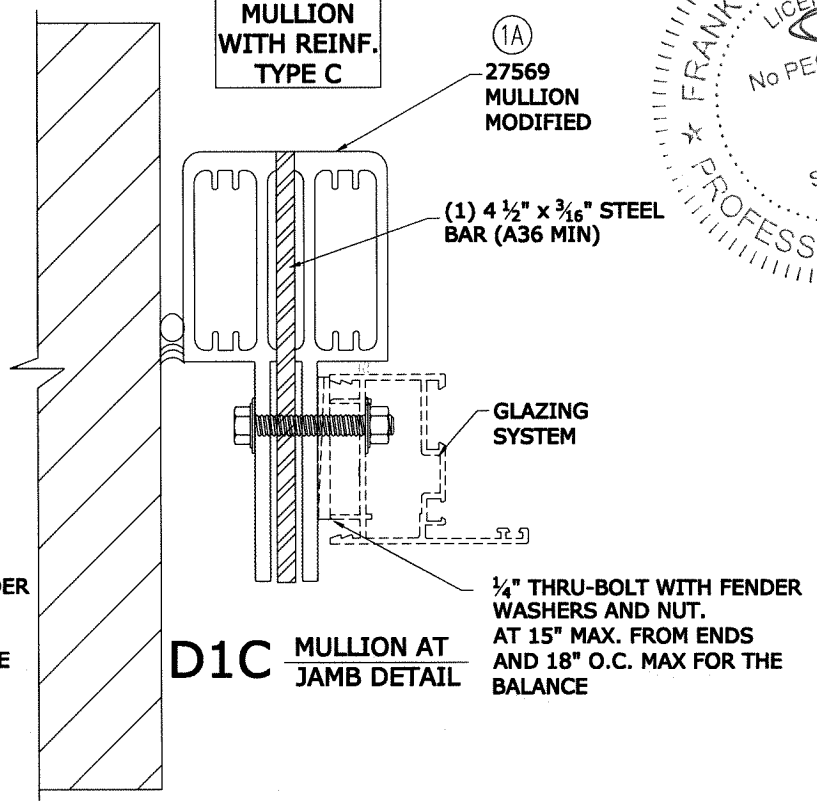
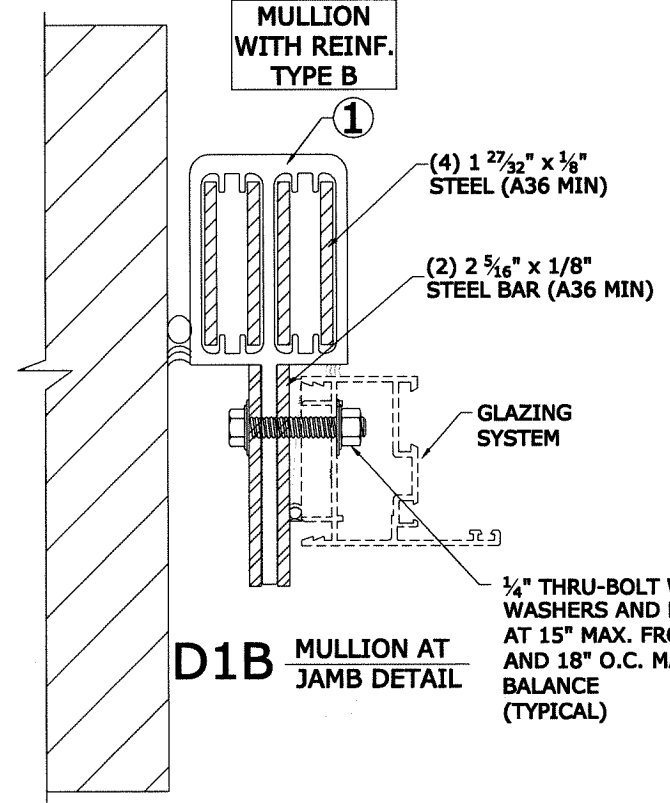
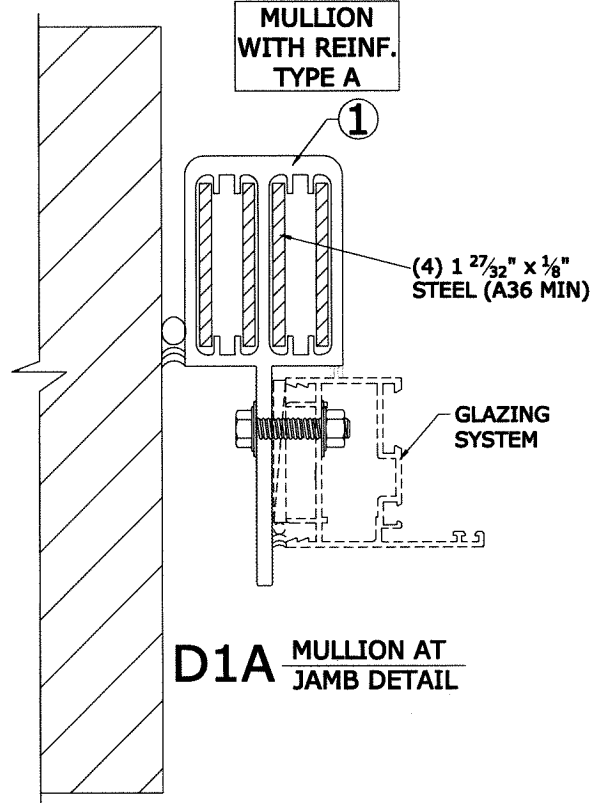
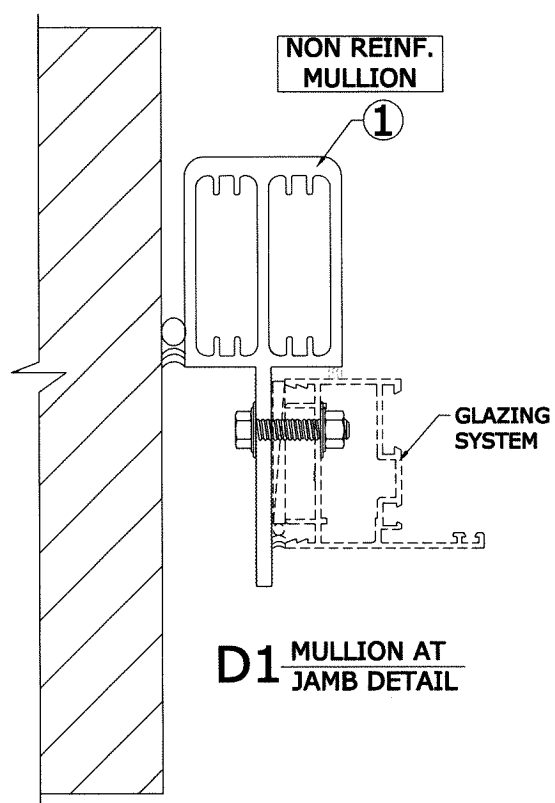
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#PE0046549
12/18/2017
No PE/AS/SEALER/ENGINEER

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 Fax: (954) 354-0443
WWW.ENGEXP.COM
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LA FINESTRA, LC
2790 NW 104TH COURT
DORAL, FL
(305) 599-8093
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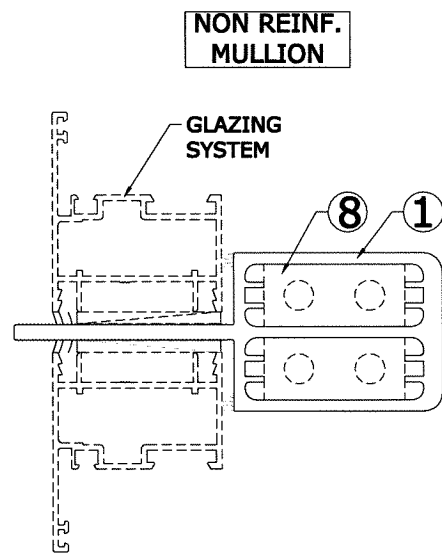
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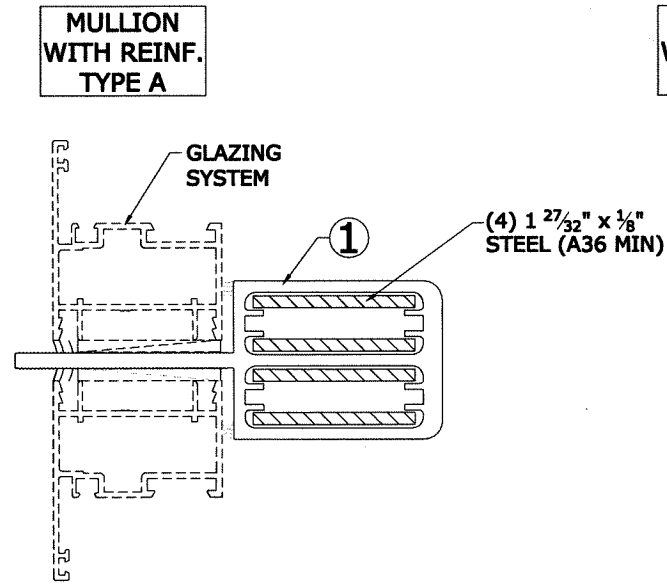
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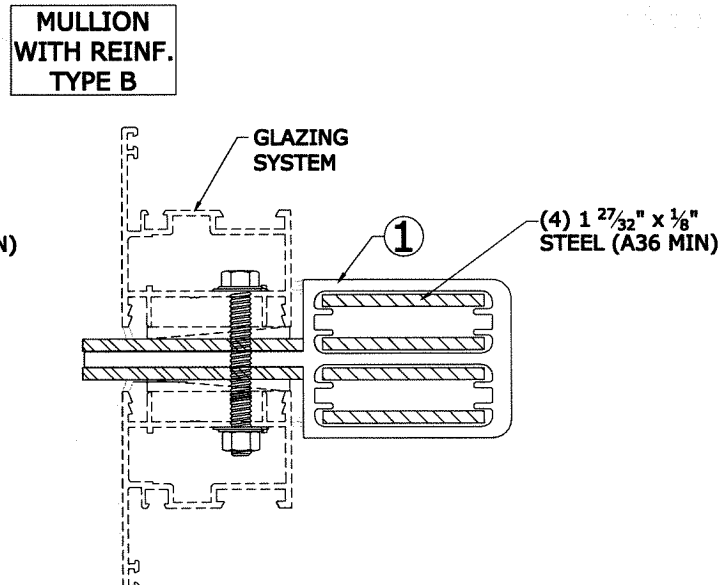
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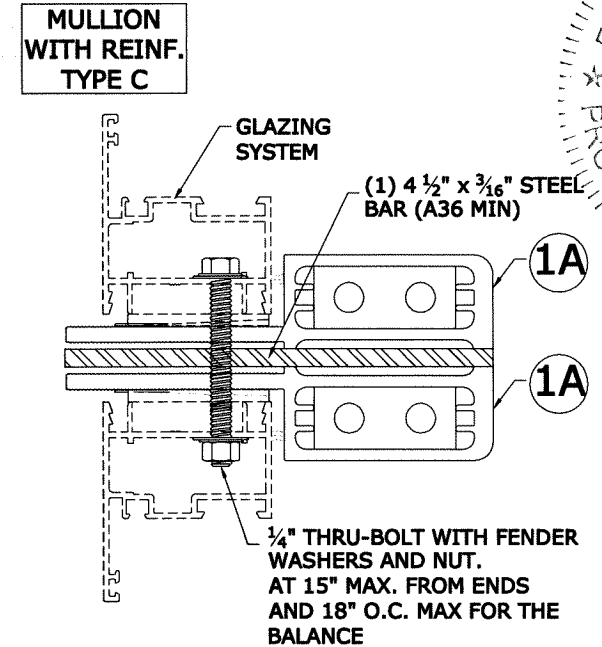
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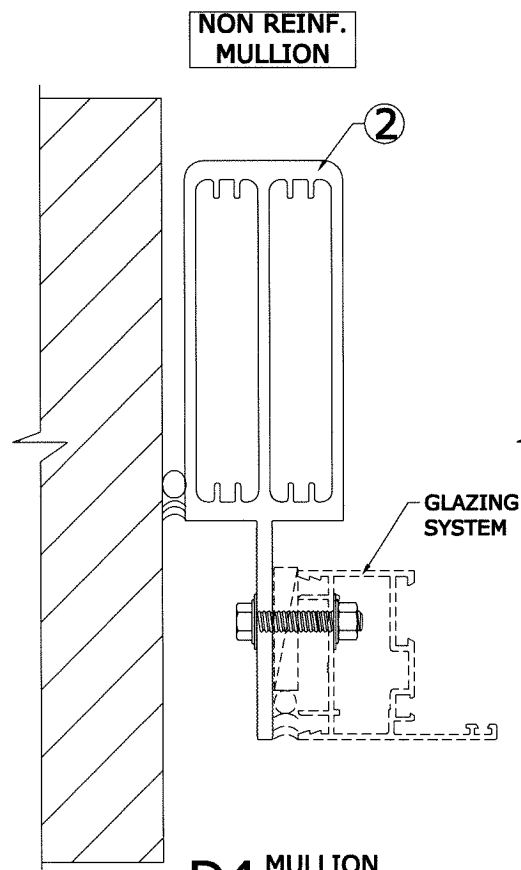
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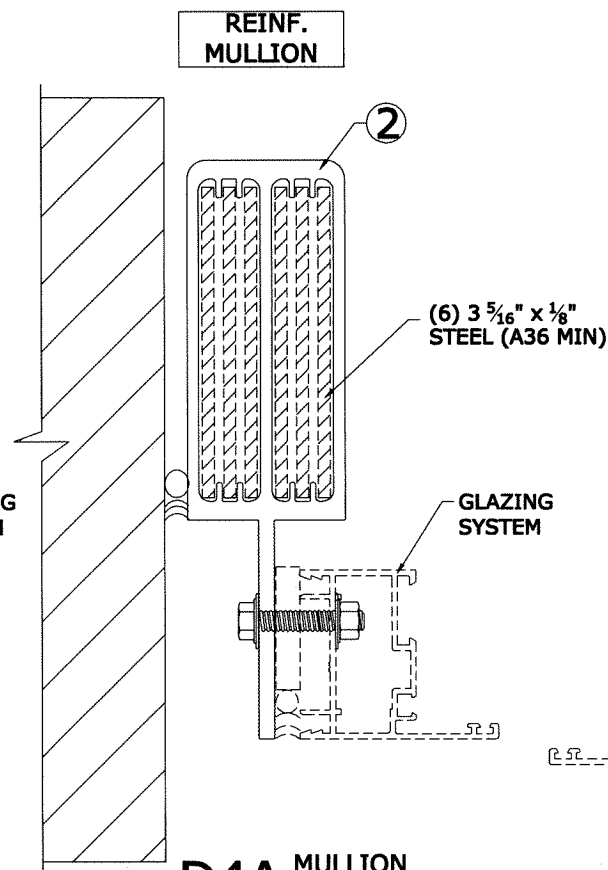
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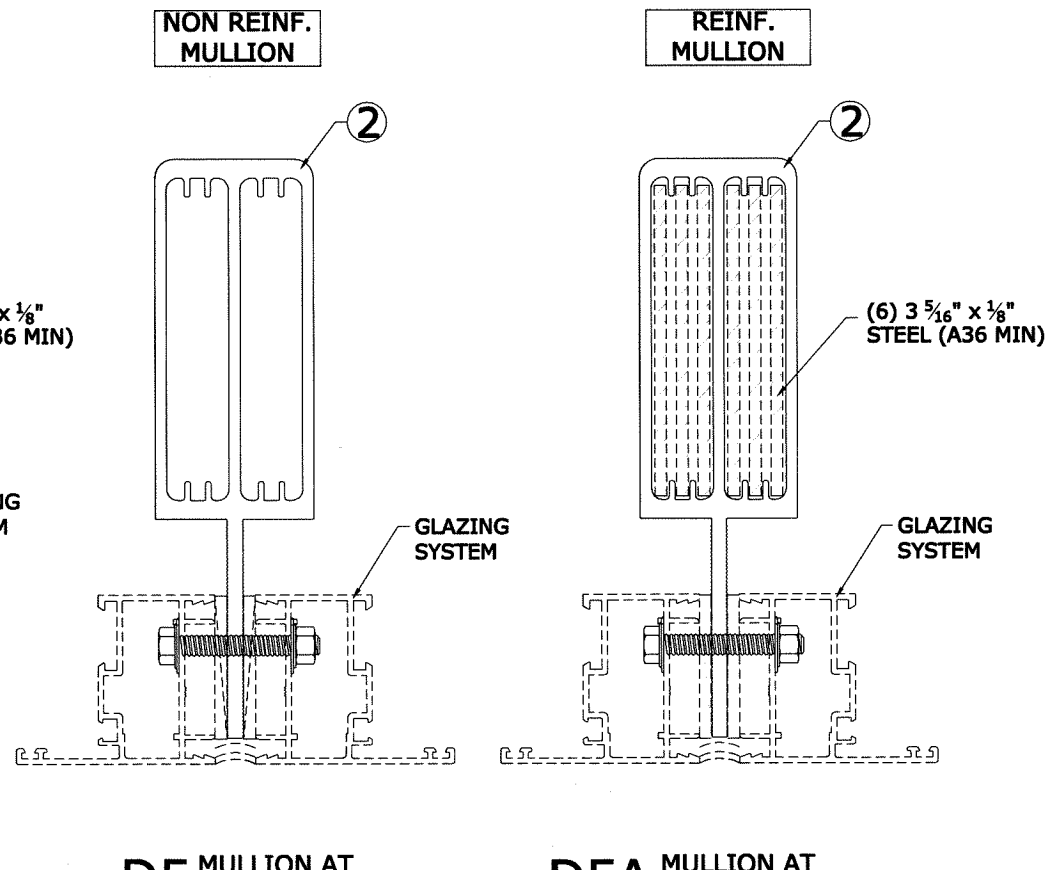
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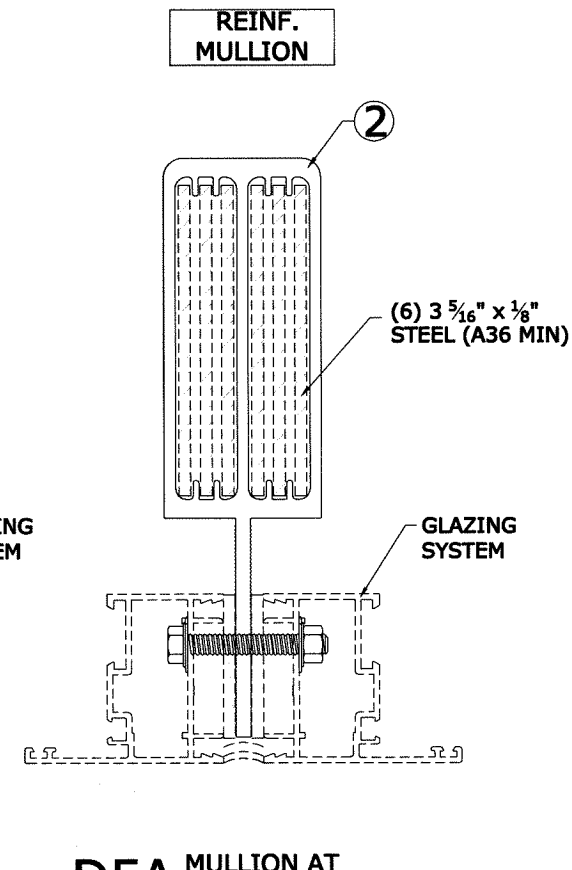
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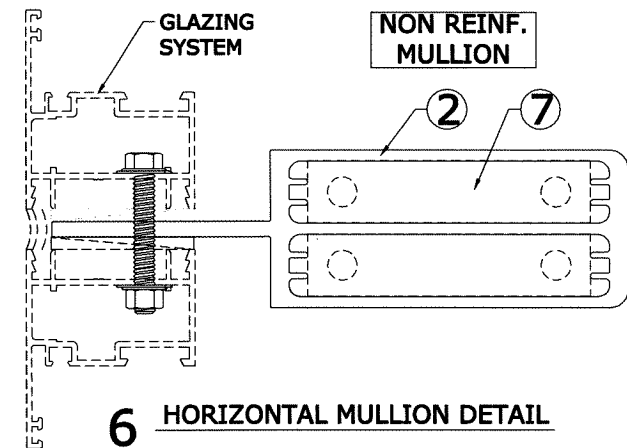
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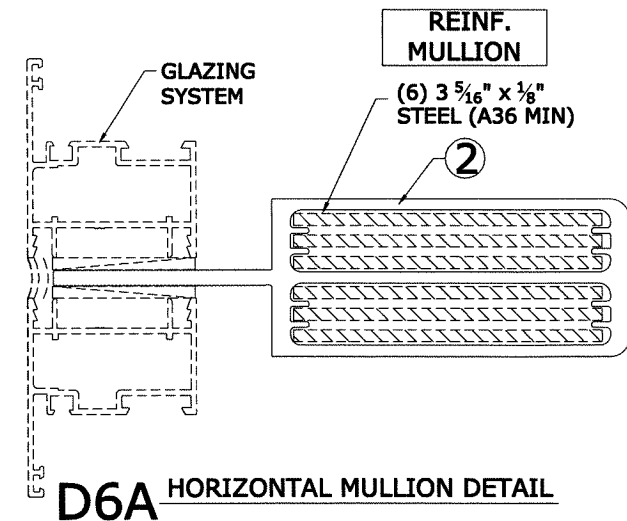
D5 MULLION AT INT. DETAIL



D5A MULLION AT INT. DETAIL



6 HORIZONTAL MULLION DETAIL



D6A HORIZONTAL MULLION DETAIL

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 #PE0046543
 12/18/2017
 PROFESSIONAL ENGINEER
 STATE OF FLORIDA
ENGINEERING EXPRESS
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 DEERFIELD BEACH, FL 33442
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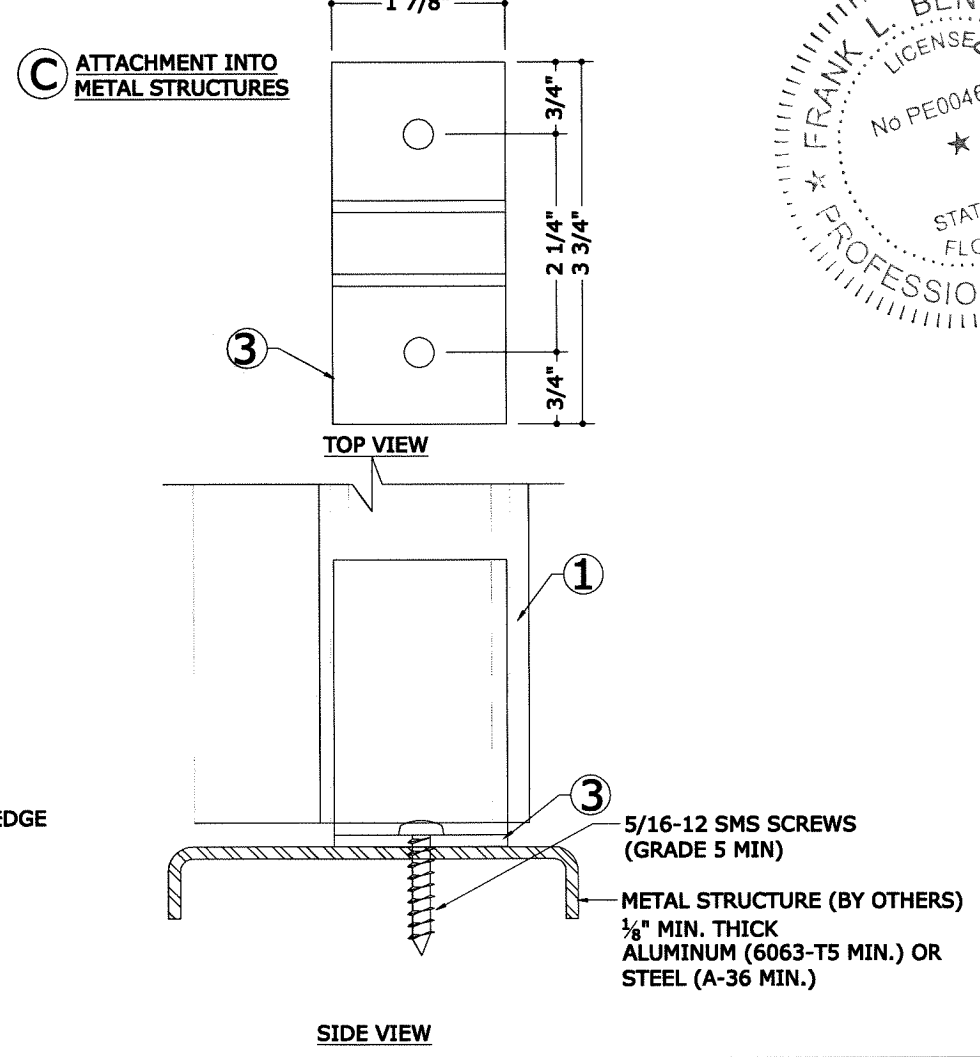
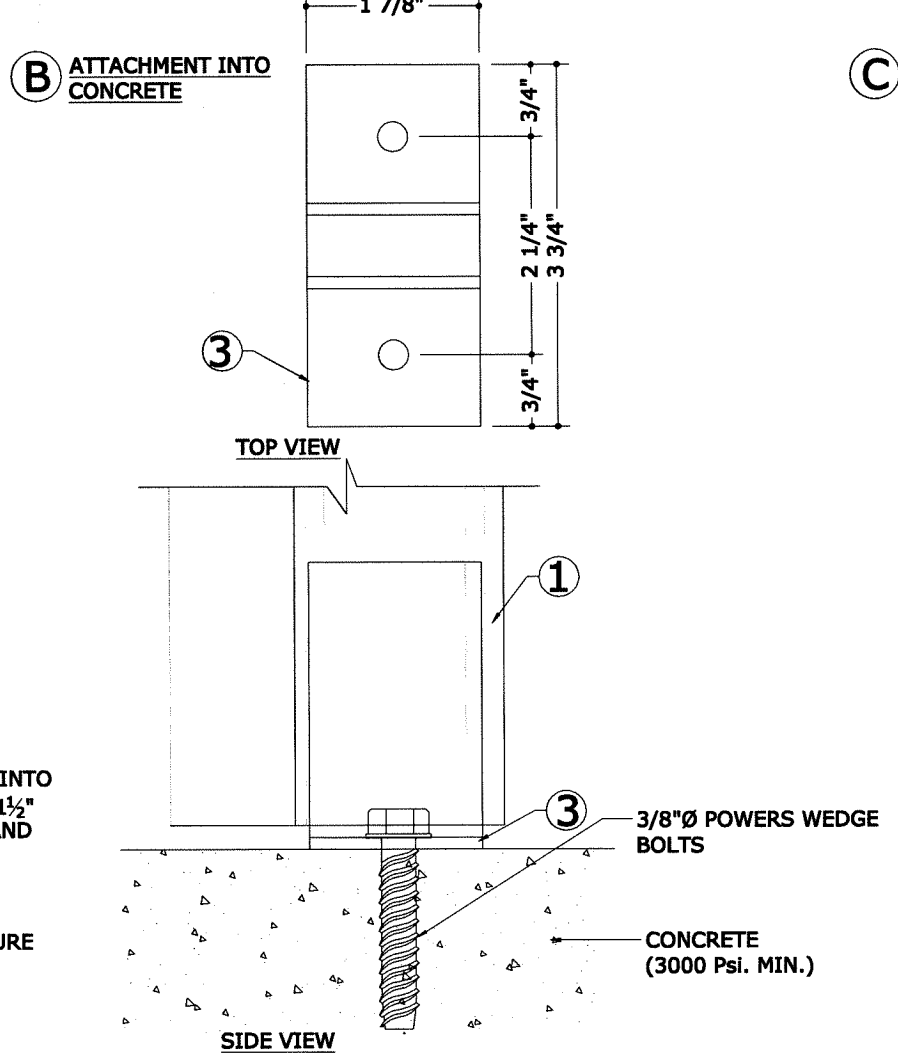
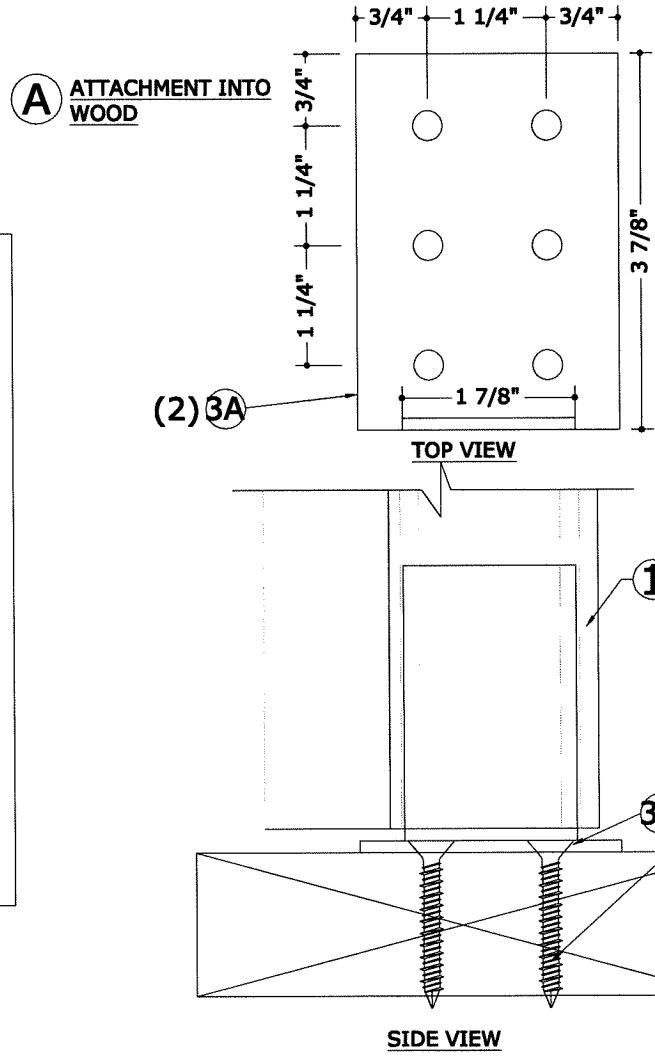
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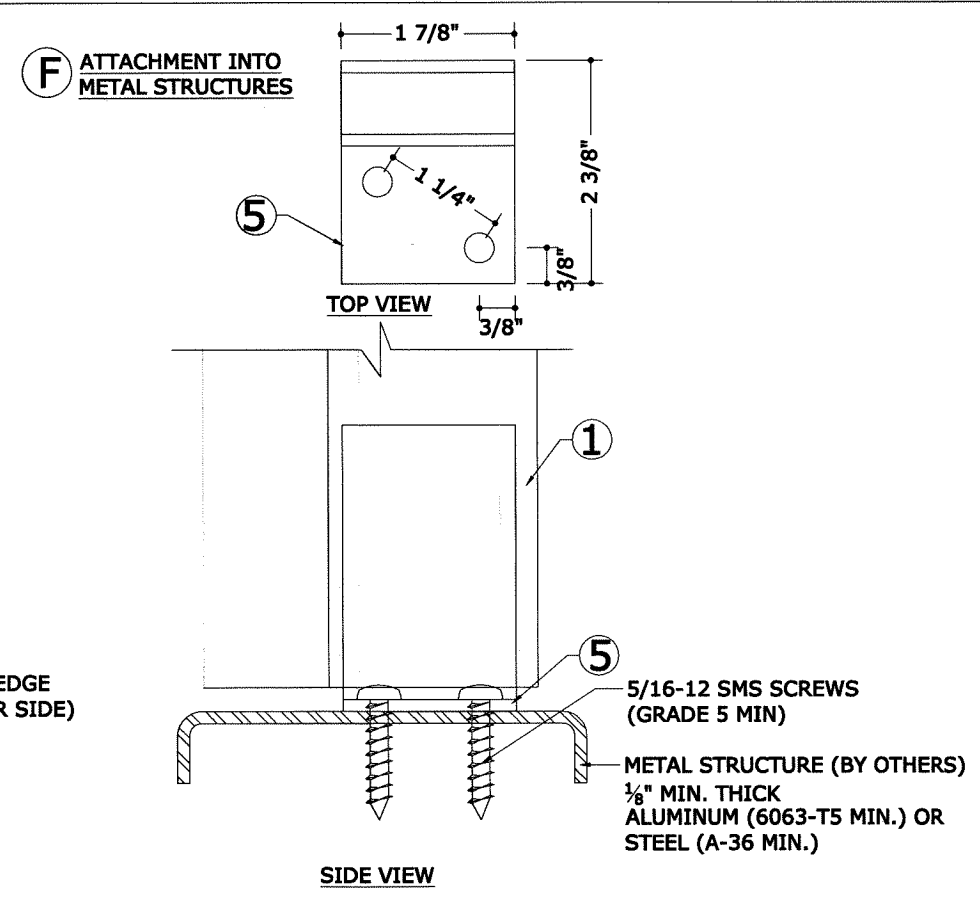
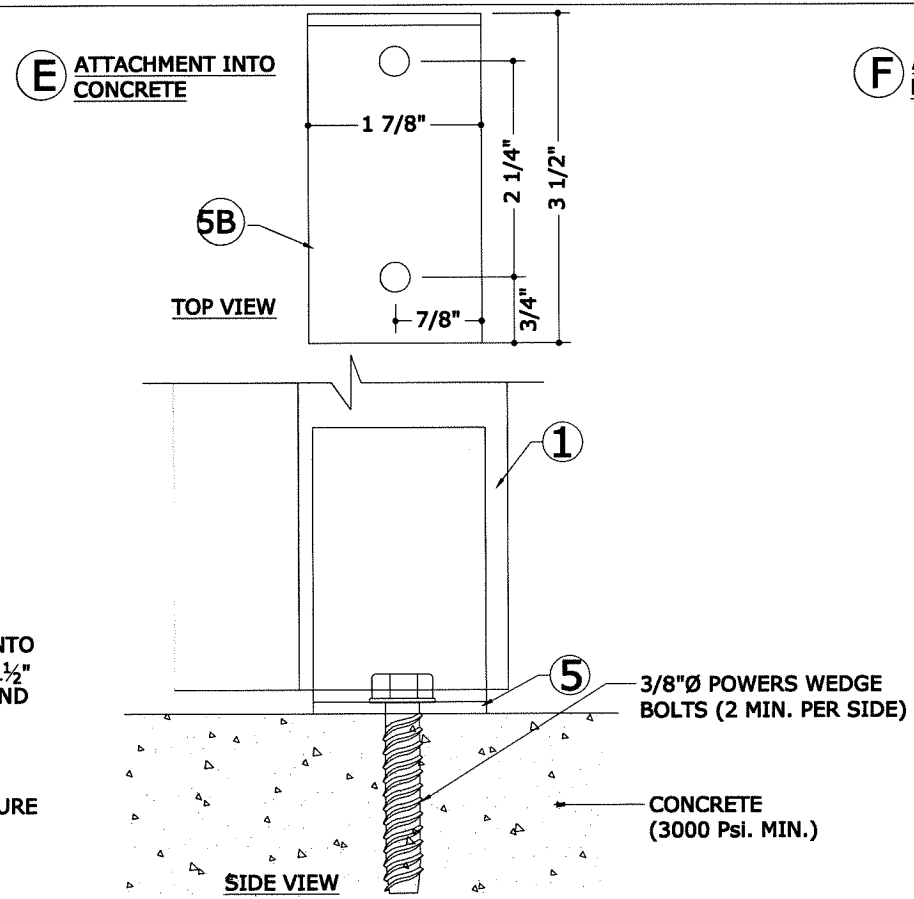
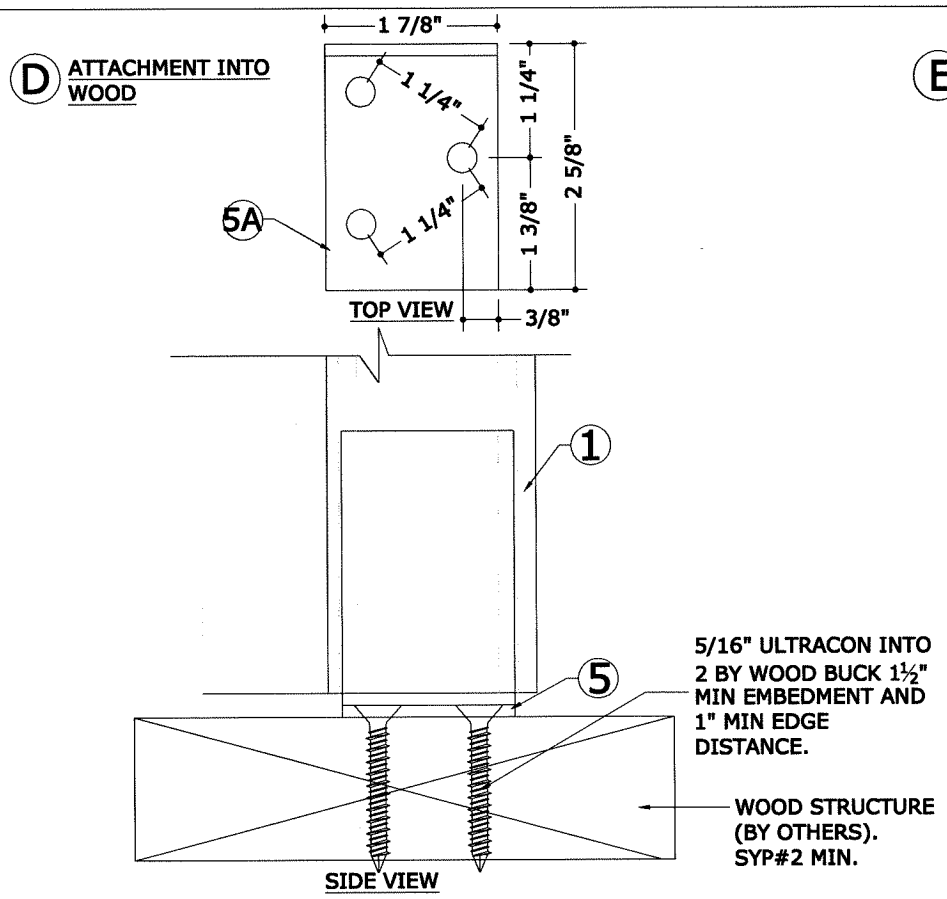
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SMALL MULLION ATTACHMENT AT INTERMEDIATE



SMALL MULLION ATTACHMENT AT JAMB



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 No PE0046549
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

ENGINEERING EXPRESS
 160 SW 12th AVENUE, #106
 DEERFIELD BEACH, FL 33442
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LA FINESTRA, LC
 2790 NW 104TH COURT
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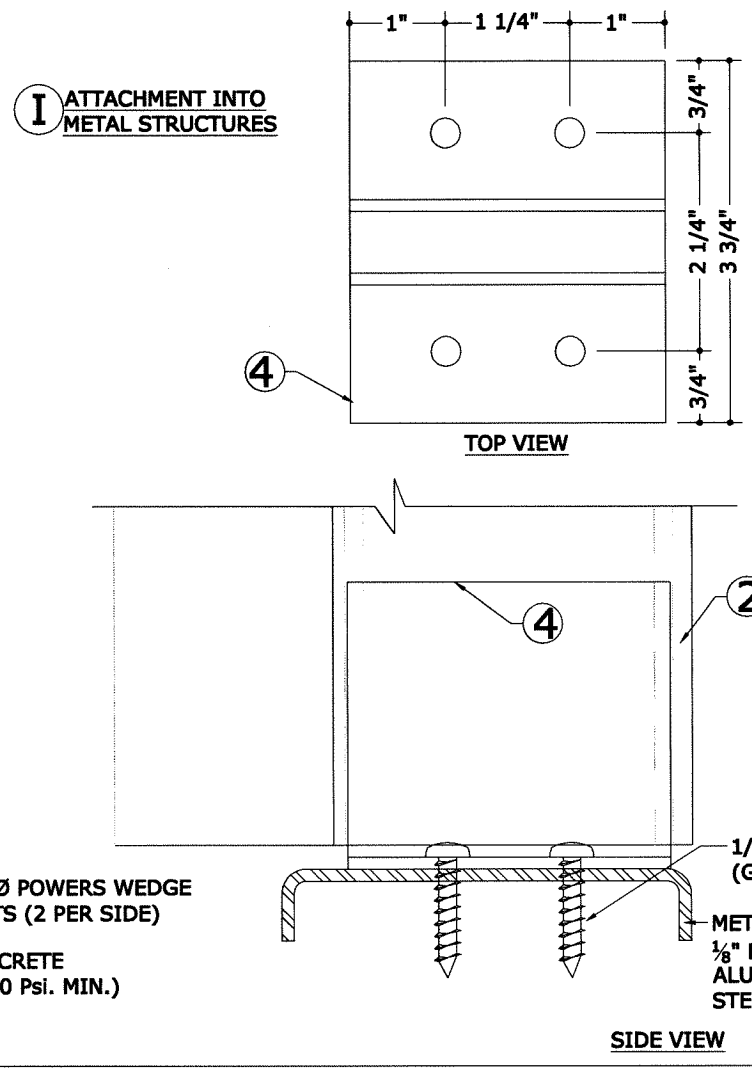
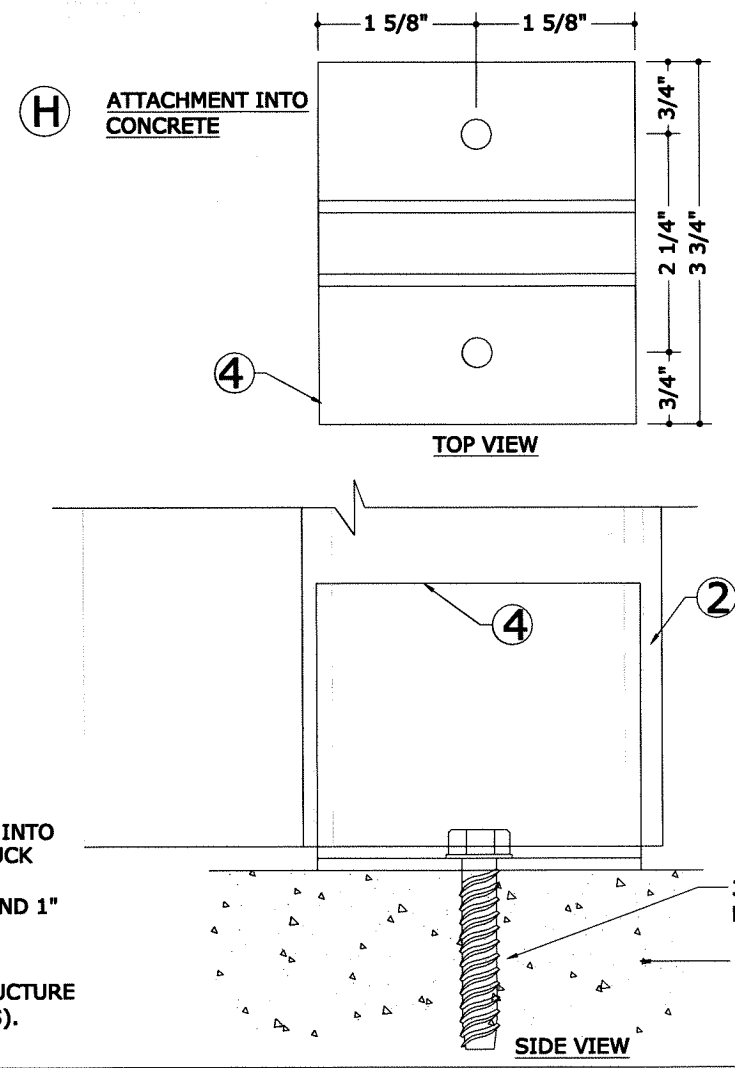
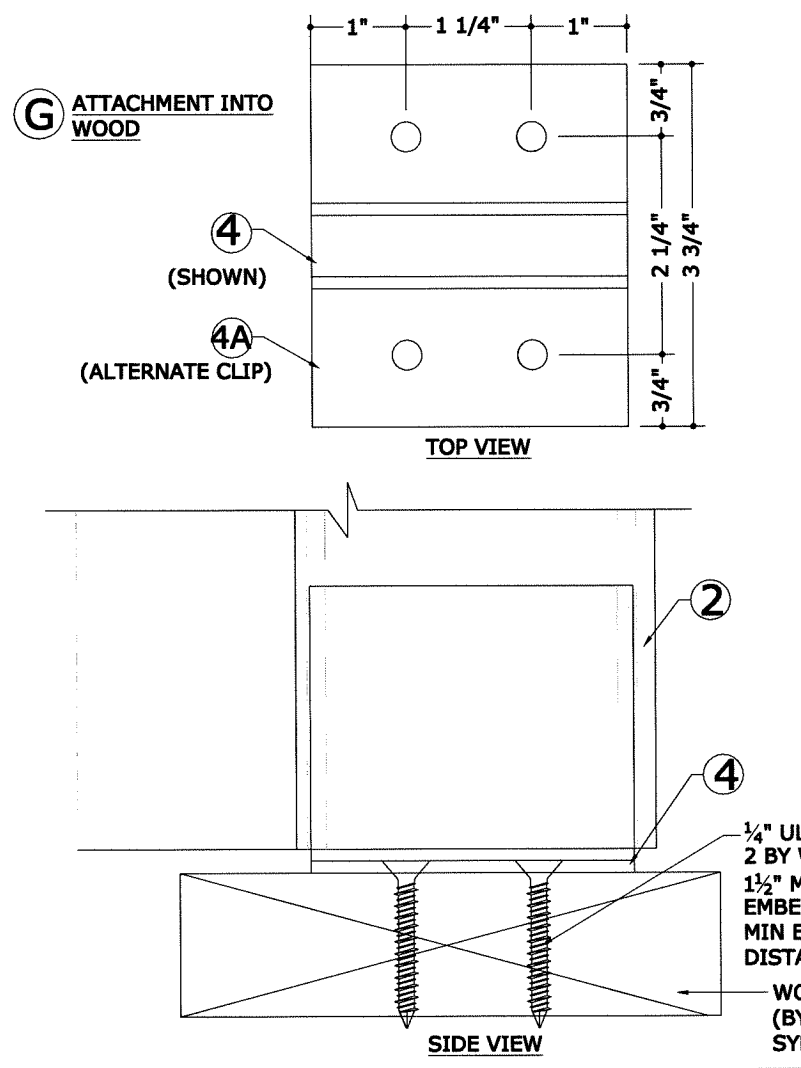
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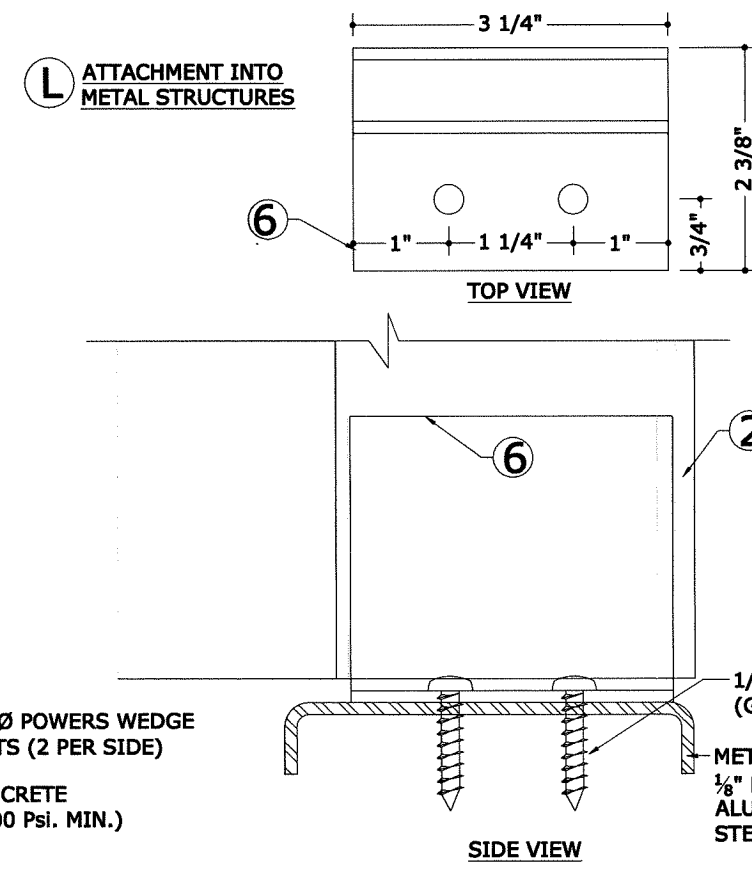
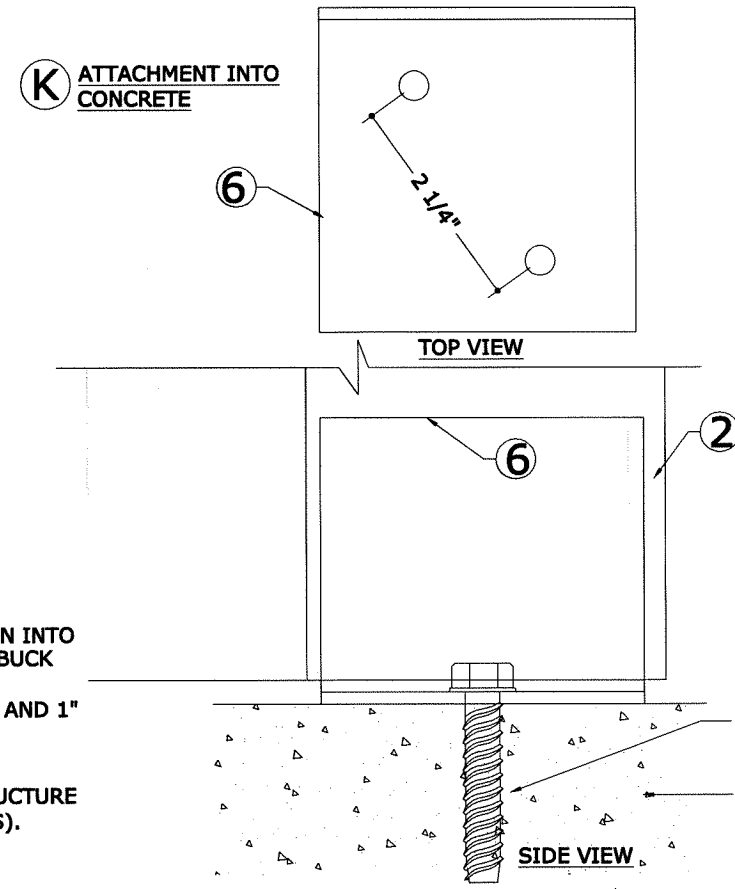
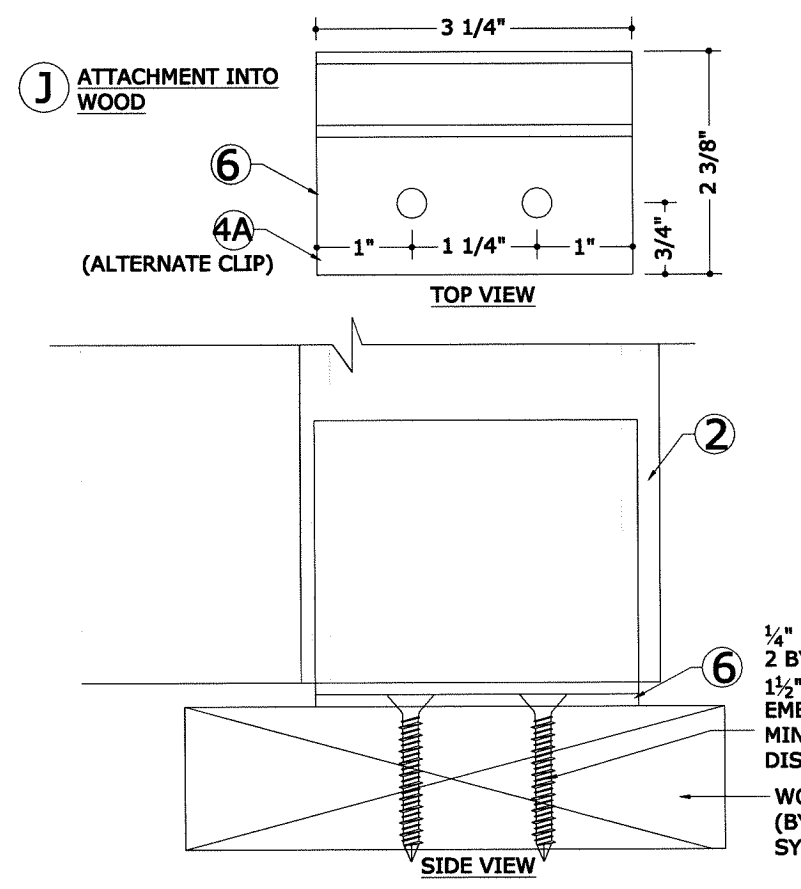
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LARGE MULLION ATTACHMENT AT JAMB



FRANK L. BENNARDO, P.E.
#PE0046549
12/18/2017
No PE0046549
STATE OF FLORIDA
PROFESSIONAL ENGINEER

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
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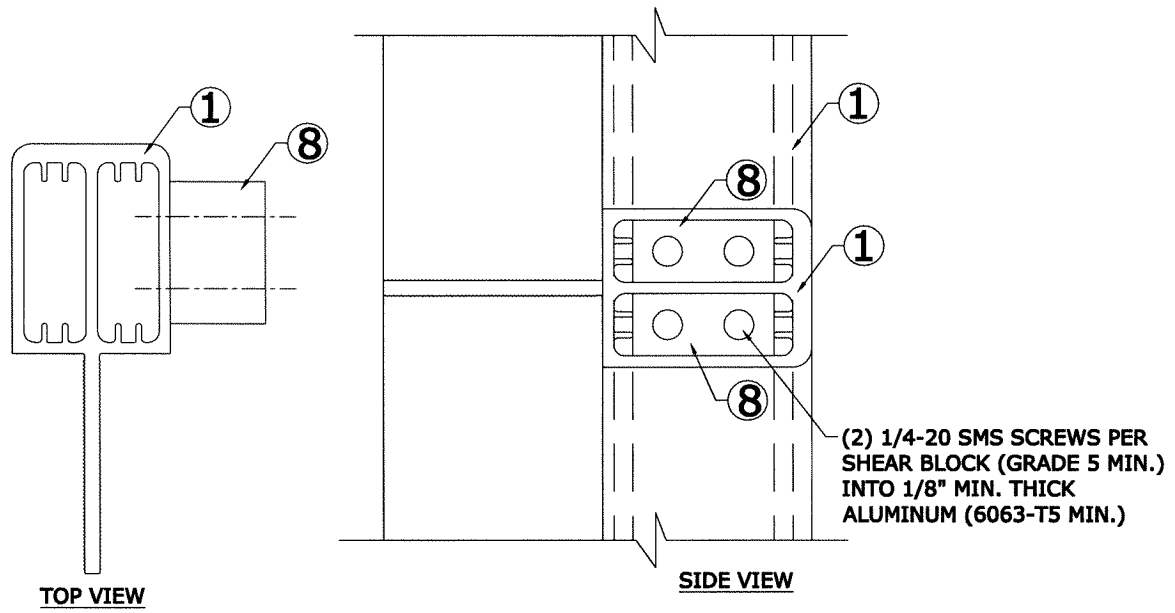
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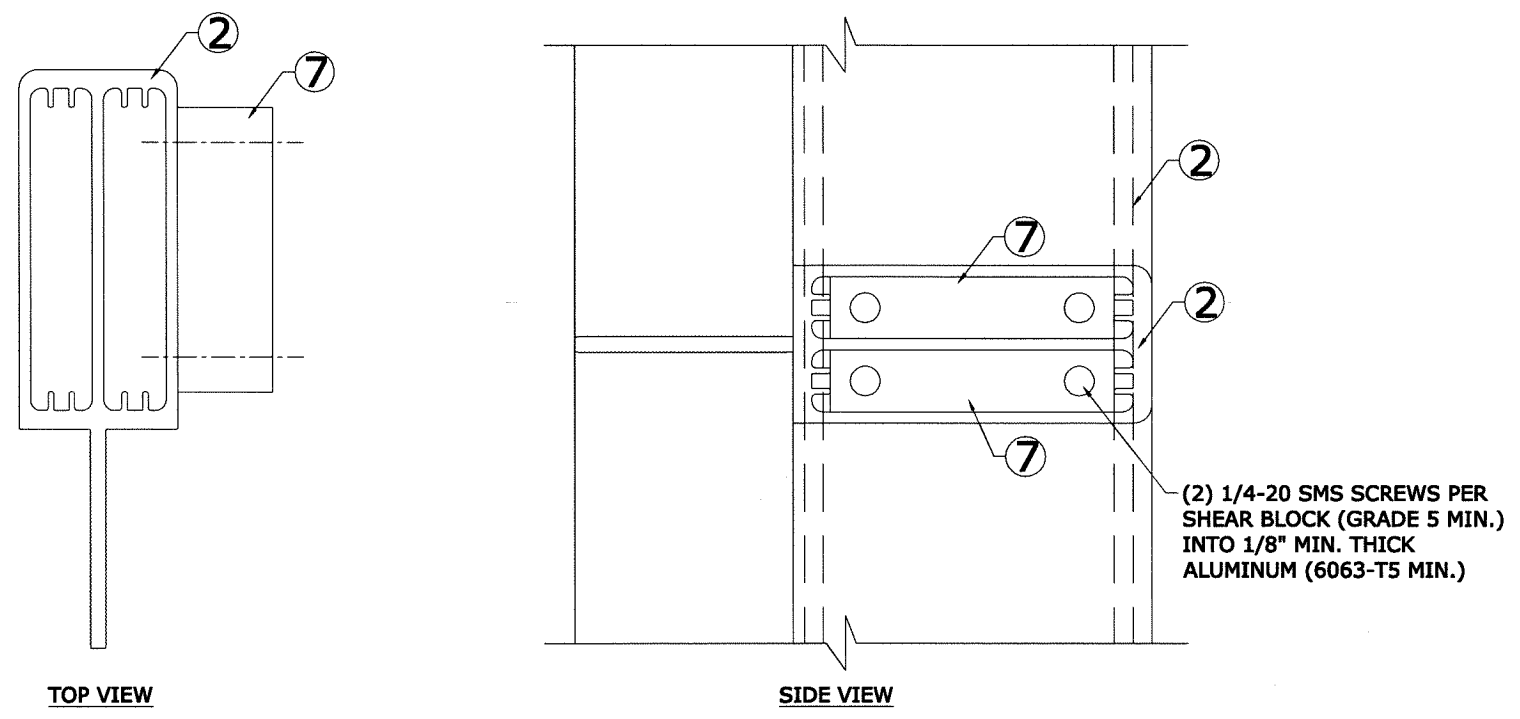
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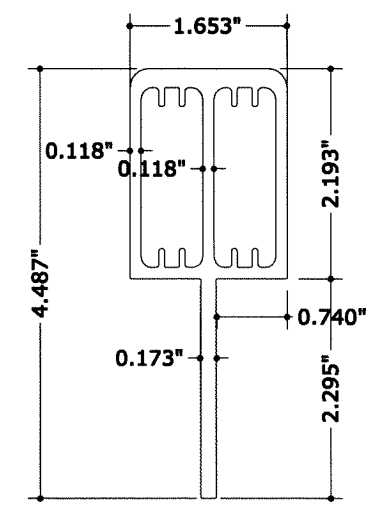
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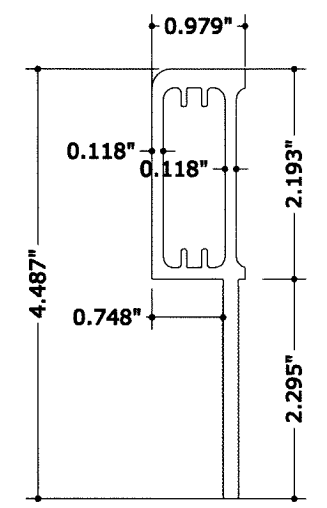
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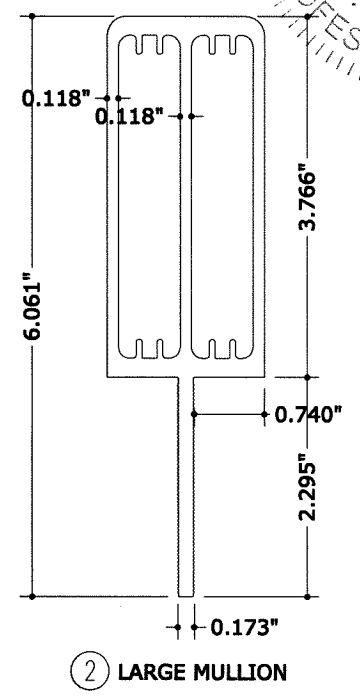
N ATTACHMENT INTO ALUMINUM MULLIONS



① SMALL MULLION



①A SMALL MULLION MODIFIED



② LARGE MULLION

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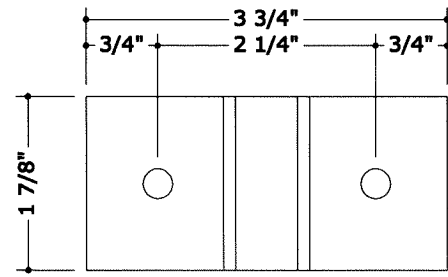
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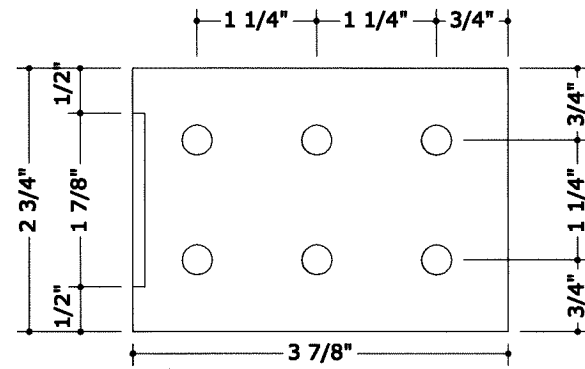
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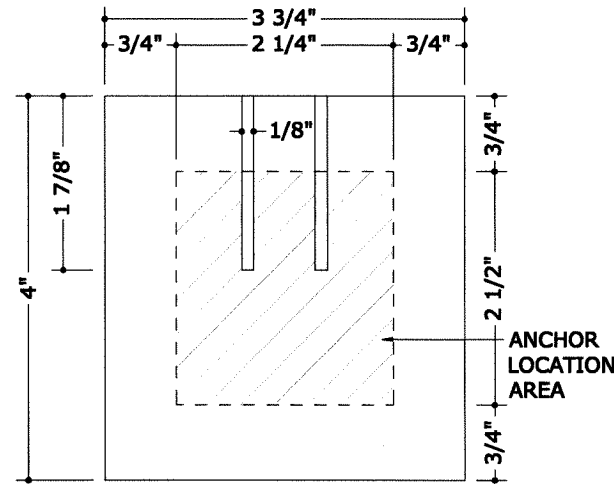
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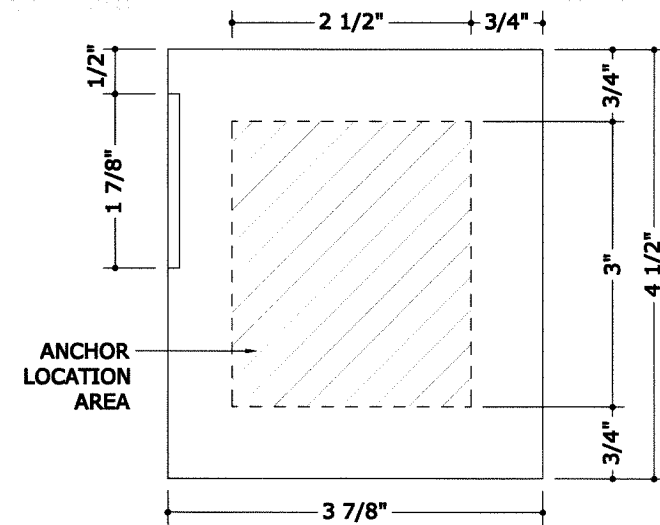
③ "T" CLIP (TOP VIEW)



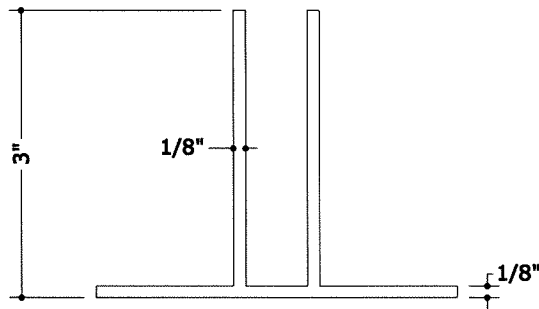
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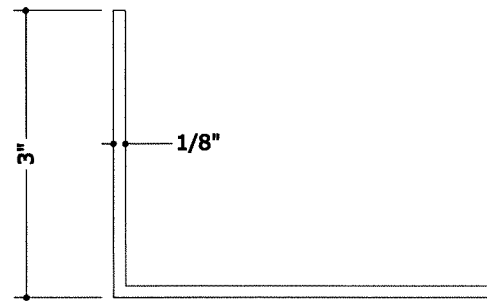
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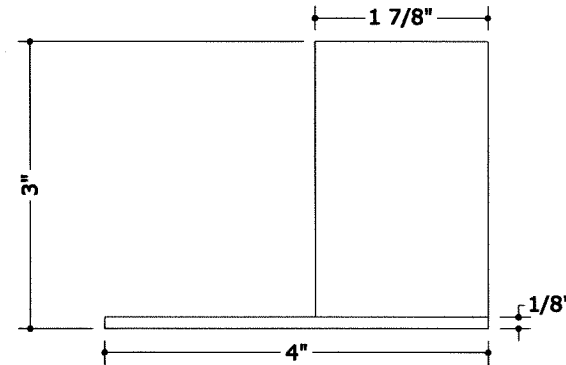
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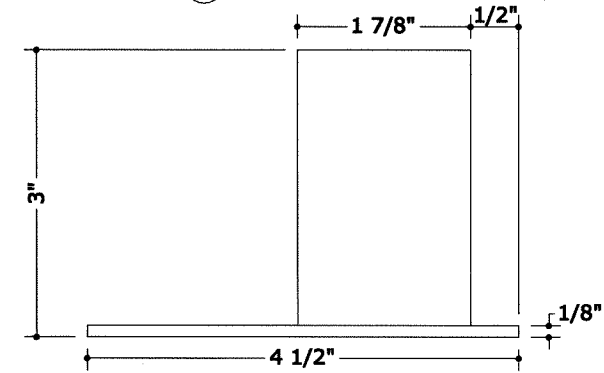
③ "T" CLIP (FRONT VIEW)



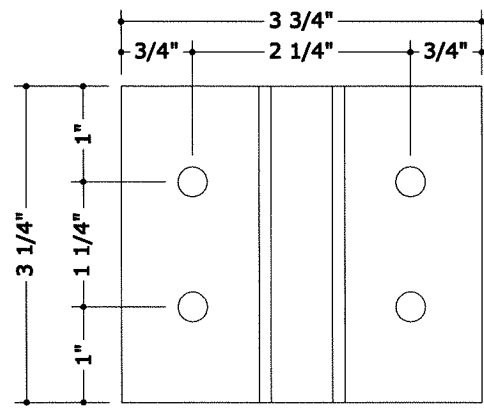
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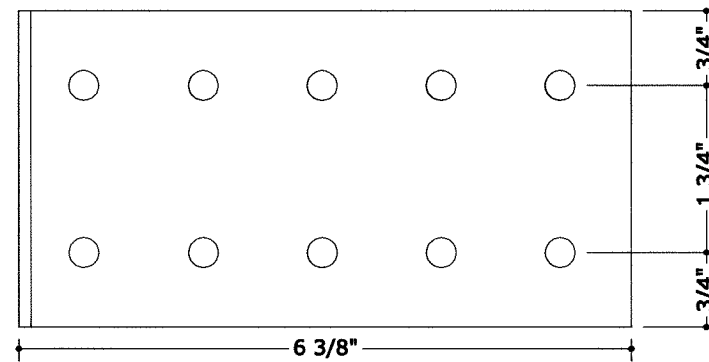
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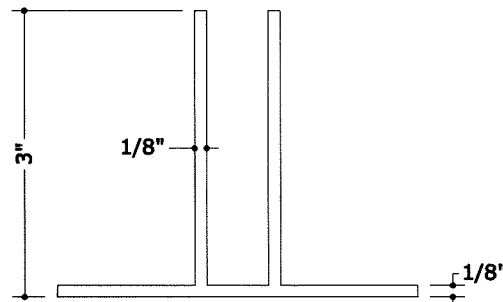
③A "ANGLE" CLIP (SIDE VIEW)



④ "T" CLIP (TOP VIEW)



④A "ANGLE" CLIP (TOP VIEW)



④ "T" CLIP (FRONT VIEW)



④A "ANGLE" CLIP (FRONT VIEW)

FRANK L. BENNARDO, P.E.
#PE0046549

12/18/2017

PE0046549

PROFESSIONAL ENGINEER

ENGINEERING EXPRESS

160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 Fax: (954) 354-0443
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LA FINESTRA, LC
2790 NW 104TH COURT
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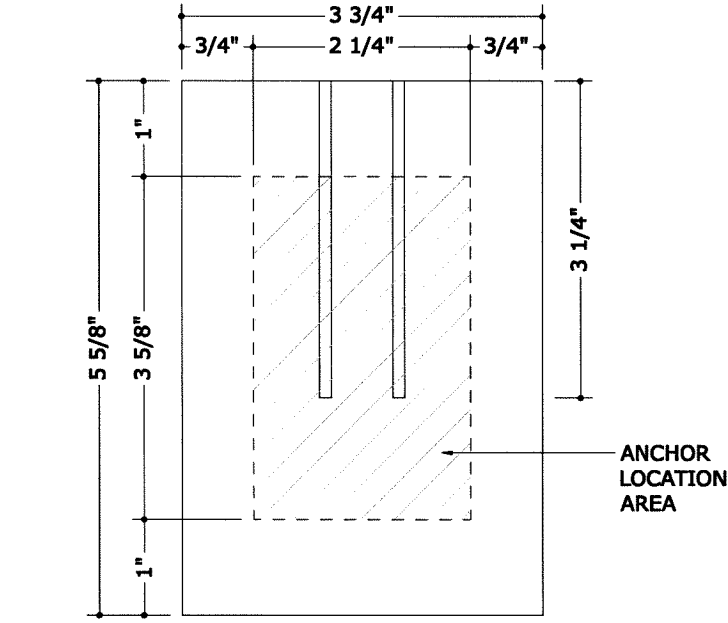
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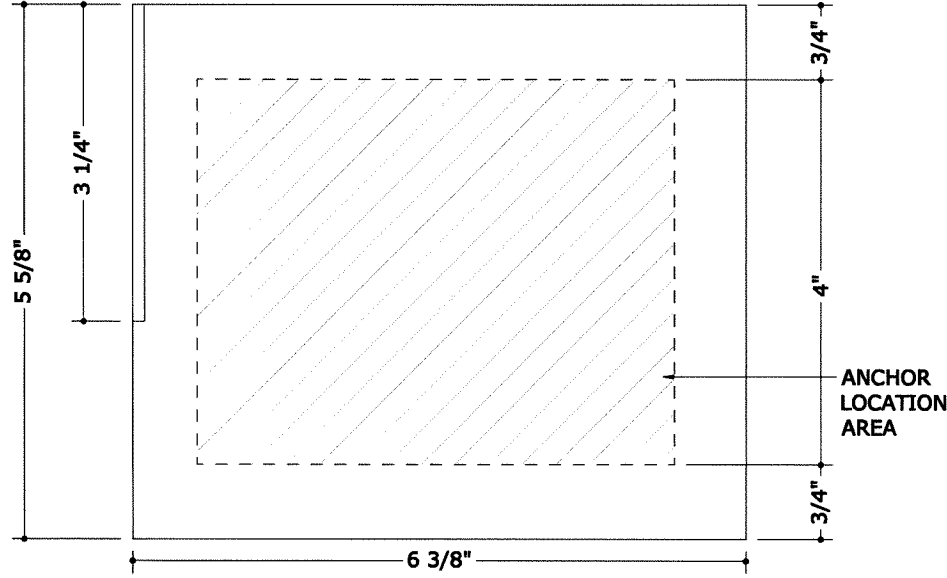
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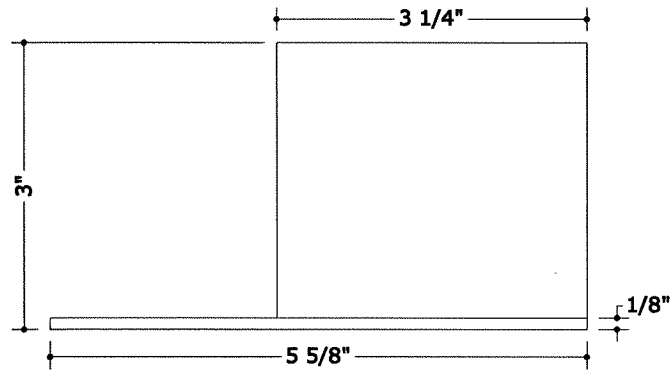
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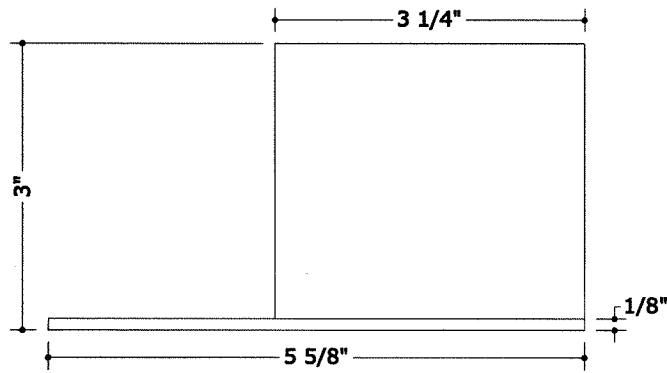
4B "T" CLIP (TOP VIEW)



4C "ANGLE" CLIP (TOP VIEW)



4B "T" CLIP (SIDE VIEW)



4C "ANGLE" CLIP (SIDE VIEW)

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 LICENSE #PE0046549
 12/18/2017
 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

ENGINEERING EXPRESS
 160 SW 12th AVENUE, #106/WE
 DEERFIELD BEACH, FL 33442
 Ph: (954) 354-0660 Fax: (954) 354-0443
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LA FINESTRA, LC
 2790 NW 104TH COURT
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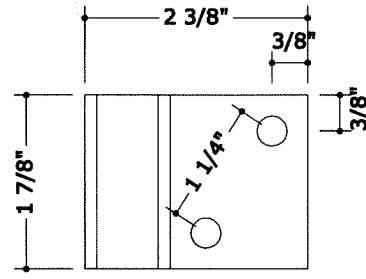
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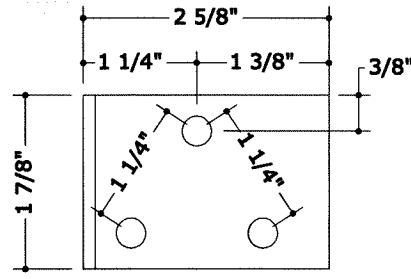
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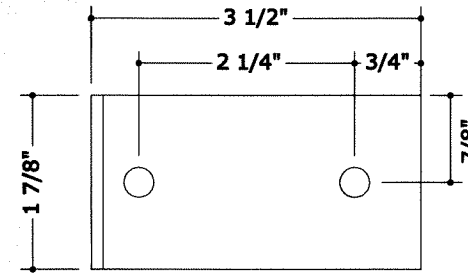
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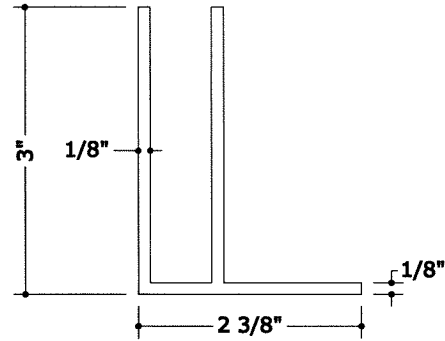
5 "F" CLIP (TOP VIEW)



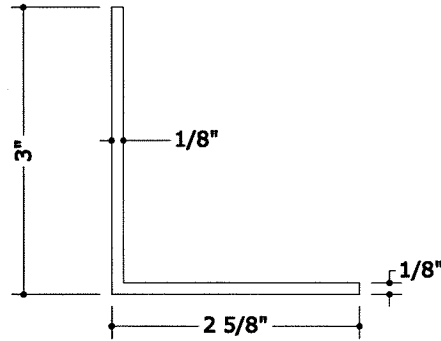
5A "ANGLE" CLIP (TOP VIEW)



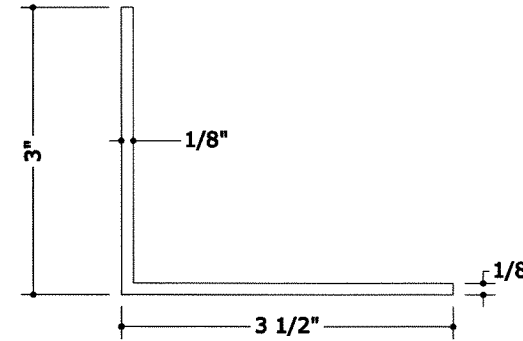
5B "ANGLE" CLIP (TOP VIEW)



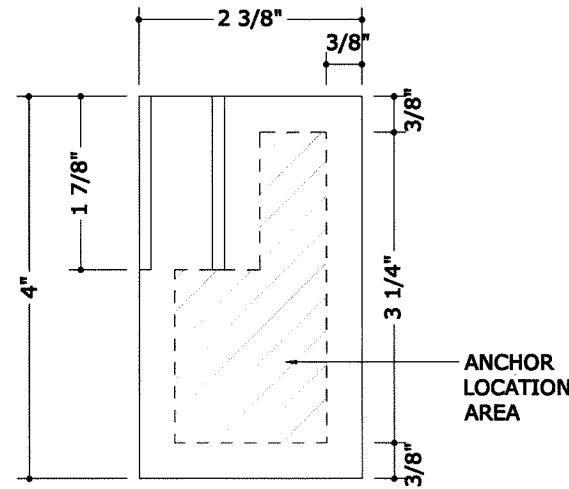
5 "F" CLIP (FRONT VIEW)



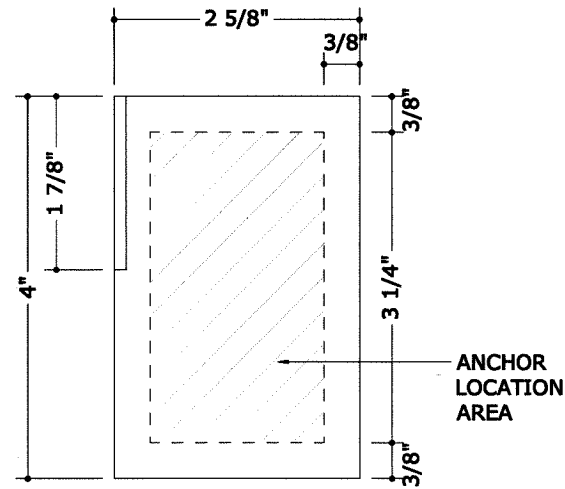
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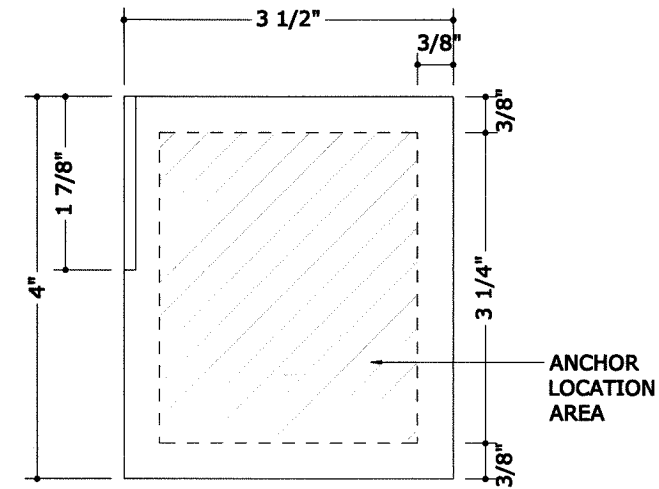
5B "ANGLE" CLIP (FRONT VIEW)



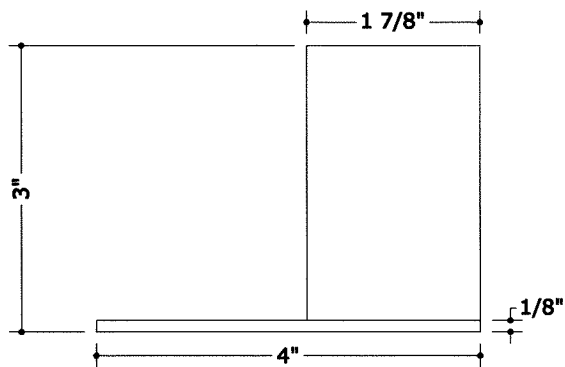
5C "F" CLIP (TOP VIEW)



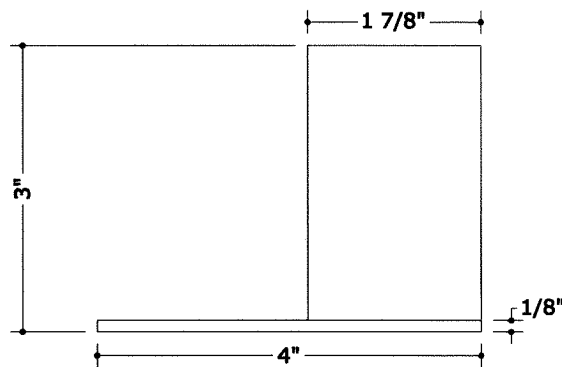
5D "ANGLE" CLIP (TOP VIEW)



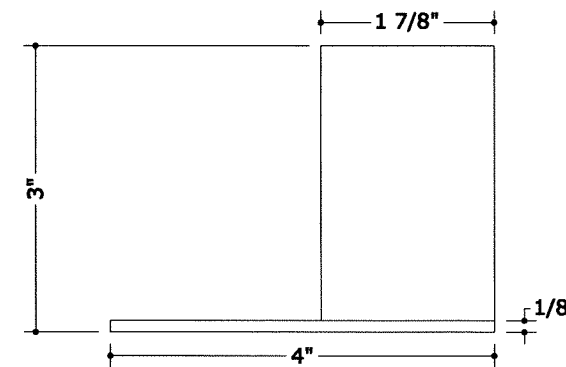
5E "ANGLE" CLIP (TOP VIEW)



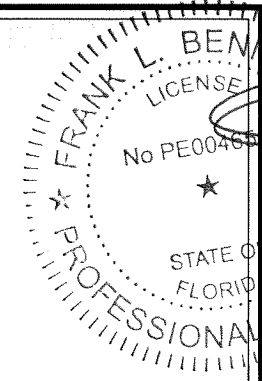
5C "F" CLIP (SIDE VIEW)



5D "ANGLE" CLIP (SIDE VIEW)



5E "ANGLE" CLIP (SIDE VIEW)



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#PE0046549
12/18/2017

ENGINEERING EXPRESS
160 SW 12th AVENUE, #106
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 FAX: (954) 354-0443
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FLORIDA PRODUCT APPROVAL SERIES ALUMINUM MULLIONS
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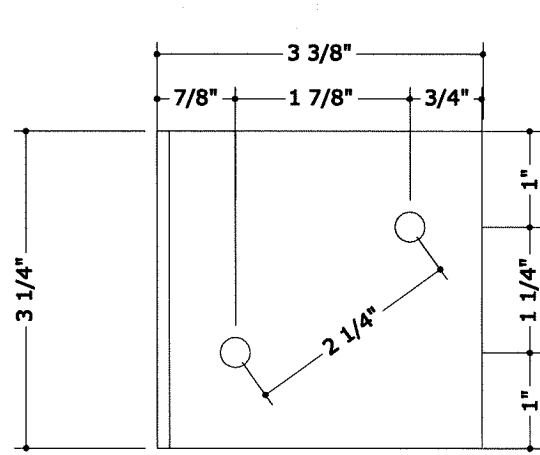
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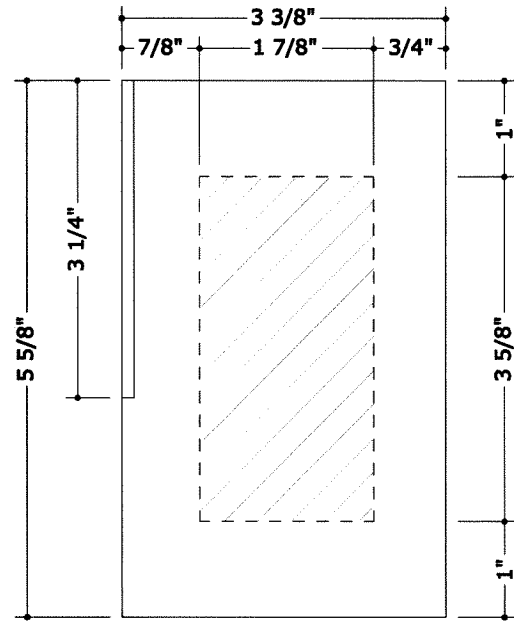
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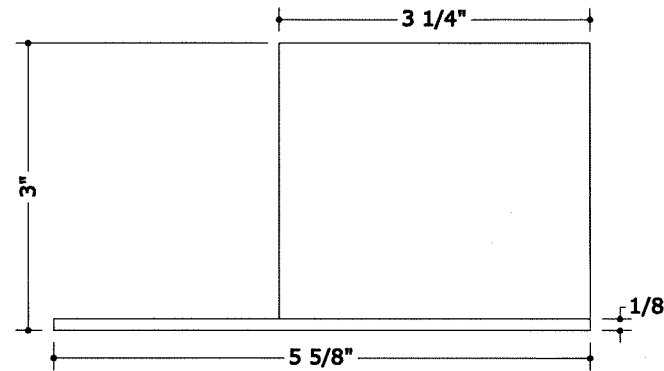
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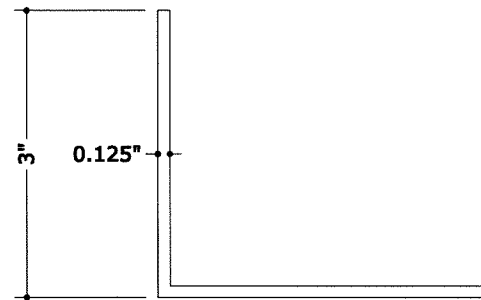
⑥ "ANGLE" CLIP (TOP VIEW)



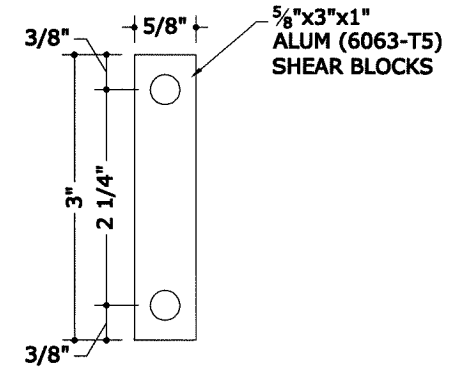
⑥A "ANGLE" CLIP (TOP VIEW)



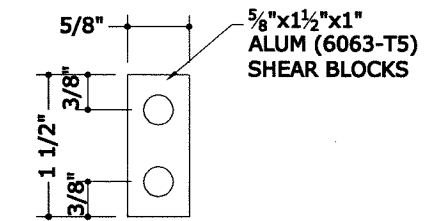
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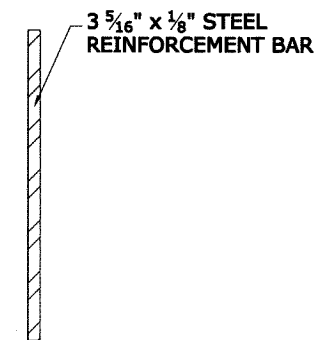
⑥ "ANGLE" CLIP (FRONT VIEW)



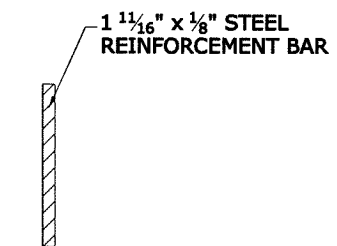
⑦ LARGE SHEARBLOCK



⑧ SMALL SHEARBLOCK



⑨ STEEL REINFORCEMENT



⑩ STEEL REINFORCEMENT

BILL OF MATERIALS

ITEM	PART No.	QUANTITY	DESCRIPTION	MATERIAL	REMARKS
①	27569	1	SMALL ALUMINUM MULLION	ALUM. AL. 6063-T6	
①A	27569 MODIFIED	1	SMALL ALUMINUM MULLION	ALUM. AL. 6063-T6	
②	27570	1	LARGE ALUMINUM MULLION	ALUM. AL. 6063-T6	
③	N/A	1	ALUMINUM "T" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
③A	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
③B	N/A	1	ALUMINUM "T" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
③C	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
④	N/A	1	ALUMINUM "T" CLIP	ALUM. AL. 6063-T6	USED WITH LARGE ALUMINUM MULLION
④A	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH LARGE ALUMINUM MULLION
④B	N/A	1	ALUMINUM "T" CLIP	ALUM. AL. 6063-T6	USED WITH LARGE ALUMINUM MULLION
④C	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH LARGE ALUMINUM MULLION
⑤	N/A	1	ALUMINUM "F" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
⑤A	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
⑤B	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
⑤C	N/A	1	ALUMINUM "F" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
⑤D	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
⑤E	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH SMALL ALUMINUM MULLION
⑥	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH LARGE ALUMINUM MULLION
⑥A	N/A	1	ALUMINUM "ANGLE" CLIP	ALUM. AL. 6063-T6	USED WITH LARGE ALUMINUM MULLION
⑦	N/A	1	LARGE ALUMINUM SHEAR BLOCK	ALUM. AL. 6063-T5	USED WITH LARGE ALUMINUM MULLION
⑧	N/A	1	SMALL ALUMINUM SHEAR BLOCK	ALUM. AL. 6063-T5	USED WITH SMALL ALUMINUM MULLION
⑨	N/A	1	3 5/16" x 1/8" STEEL REINFORCEMENT BAR	A-36 STEEL MIN.	USED WITH LARGE ALUMINUM MULLION
⑩	N/A	1	1 11/16" x 1/8" STEEL REINFORCEMENT BAR	A-36 STEEL MIN.	USED WITH SMALL ALUMINUM MULLION

FRANK L. BENNARDO, P.E.
#PE0046549
12/18/2017
No PE0046549

ENGINEERING EXPRESS

160 SW 12th AVENUE, #306
DEERFIELD BEACH, FL 33442
Ph: (954) 354-0660 Fax: (954) 354-0443
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LA FINESTRA, LC
2790 NW 104TH COURT
DORAL, FL
(305) 599-8093

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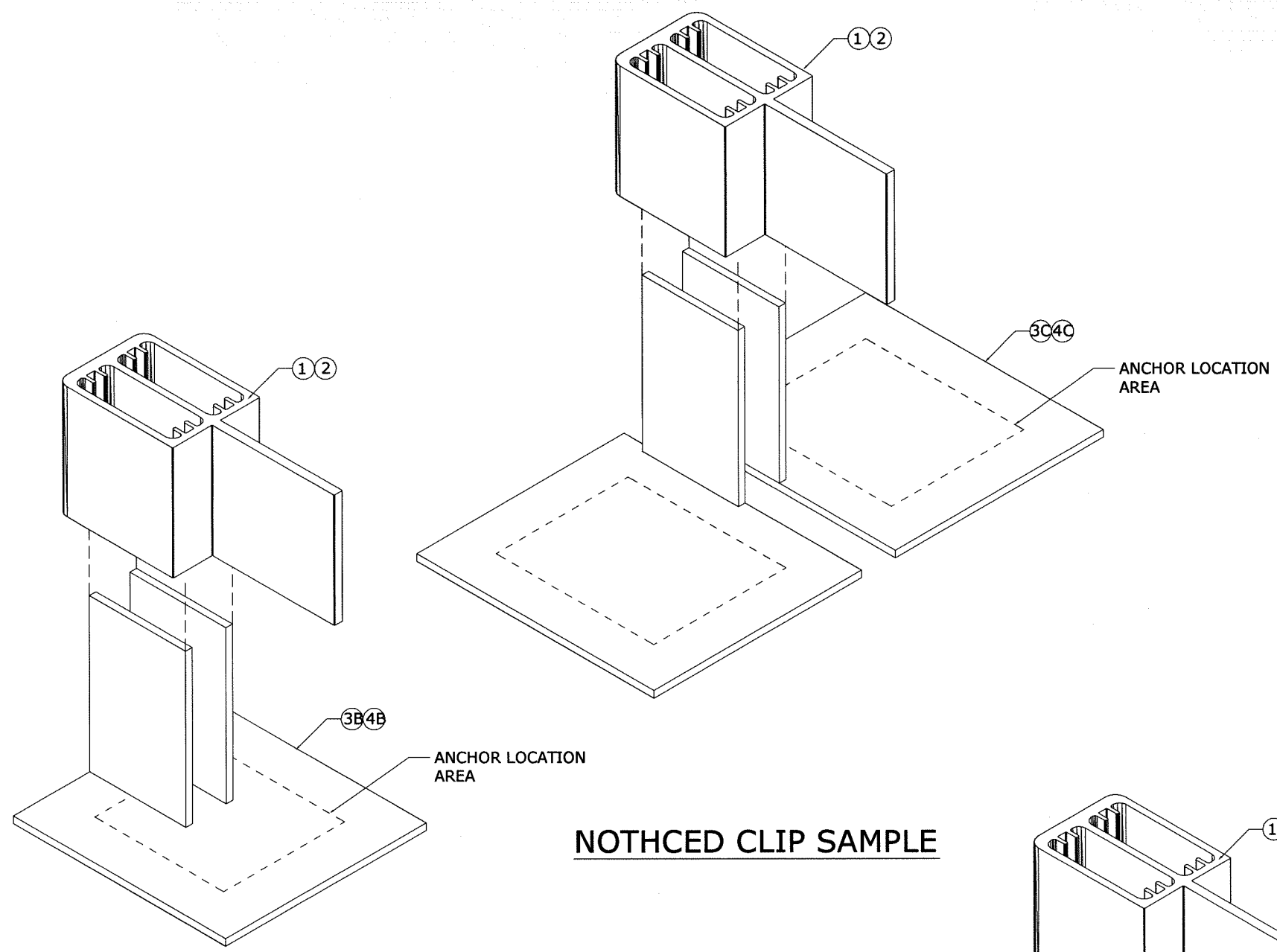
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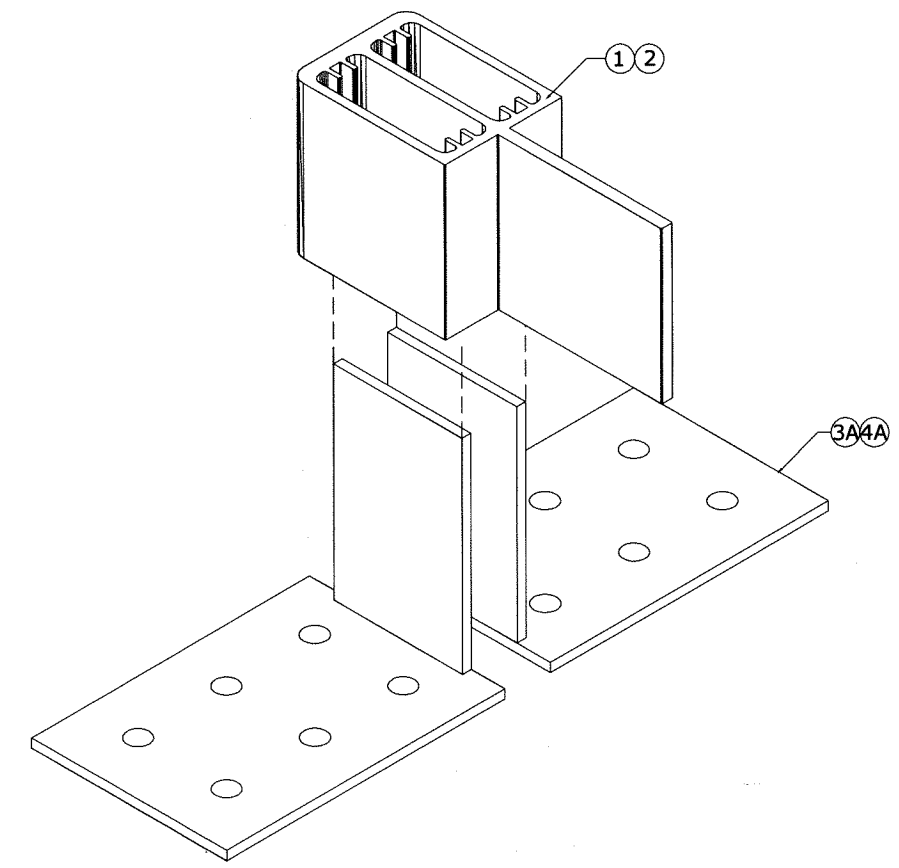
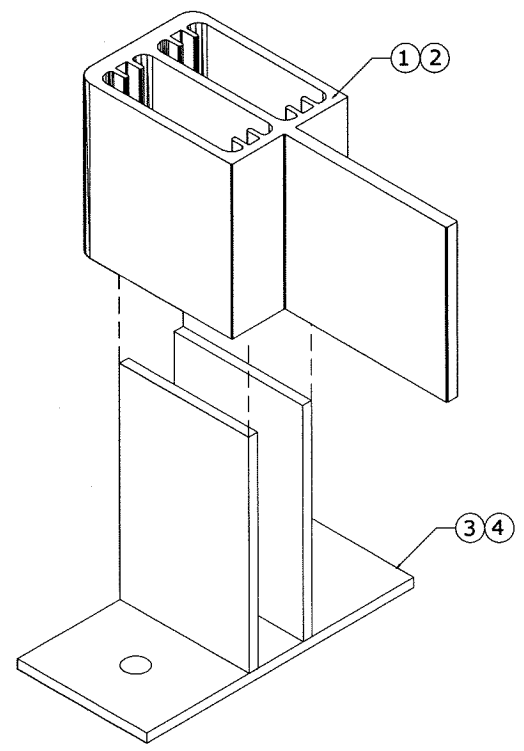
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 #PE0046549
 LICENSE # 12/18/2017
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 STATE OF FLORIDA
 PROFESSIONAL ENGINEER

ENGINEERING EXPRESS
 160 SW 12th AVENUE, #306
 DEERFIELD BEACH, FL 33442
 Ph: (954) 354-0660 Fax: (954) 354-0443
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LA FINESTRA, LC
 2790 NW 104TH COURT
 DORAL, FL
 (305) 599-8093
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