

GENERAL NOTES, UNCLIPPED 5400/5500 MULLIONS:

1) DETAILS SHOWN ARE FOR THE MULLION ONLY. ANCHORS SHOWN ARE IN ADDITION TO ANY ANCHORS REQUIRED FOR THE FENESTRATION PRODUCT INSTALLATION. TYPICAL APPLICATIONS ARE SHOWN. EACH SITUATION IS UNIQUE AND SHOULD BE EVALUATED BY AN EXPERIENCED INSTALLER FOR THE BEST INSTALLATION METHOD. OPTIONAL 1X OR 2X WOOD BUCKS IF USED, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS AND ARE TO BE DESIGNED BY OTHERS.

2) THE TYPE AND NUMBER OF ANCHORS IS CRITICAL TO THE STRUCTURAL PERFORMANCE OF THE MULLED UNITS.

3) THE ANCHORAGE METHODS SHOWN HAVE BEEN DESIGNED TO RESIST THE WINDLOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. MULLIONS ARE CALCULATED TO DEFLECT NO MORE THAN L/180. THE 1/3 STRESS INCREASE WAS NOT USED IN THIS ANCHOR EVALUATION. THE 1.6 LOAD DURATION FACTOR WAS USED FOR THE EVALUATION OF WOOD SCREWS.

4) PROPER SEALING OF ENTIRE ASSEMBLY IS THE RESPONSIBILITY OF OTHERS AND IS BEYOND THE SCOPE OF THESE INSTRUCTIONS.

5) USE THE COMBINED WIDTH OR HEIGHT OF ONLY TWO ADJACENT FENESTRATION PRODUCTS TO DETERMINE PRESSURES AND ANCHORAGE FOR THE COMMON MULLION, SEE EXAMPLES ON THIS SHEET. FOR MULTIPLE UNITS, CONSIDER ONLY TWO ADJACENT UNITS AT A TIME WHEN USING THE DESIGN PRESSURE AND ANCHORAGE TABLES. THE LOWEST DESIGN PRESSURE OF MULTIPLE MULLIONS OR FENESTRATION PRODUCTS SHALL APPLY.

6) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO. WOOD BUCKS BY OTHERS, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE. ANCHORS SHALL BE COATED OR CORROSION RESISTANT AS APPROPRIATE FOR SUBSTRATE MATERIAL. DISSIMILAR MATERIALS SHALL BE PROTECTED AS REQUIRED TO PREVENT REACTIONS.

7) MULLIONS HAVE BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, AND ARE APPROVED FOR IMPACT AND NON-IMPACT APPLICATIONS. IMPACT APPLICATIONS ARE LIMITED TO WINDZONES 1, 2 & 3 AS DEFINED BY ASTM E1996. MULLIONS ARE ONLY TO BE USED WITH PGT-APPROVED FENESTRATION PRODUCTS HAVING CURRENT APPROVALS.

8) QUANTITY OF UNITS WITHIN A MULTIPLE MULLED ASSEMBLY IS UNLIMITED PROVIDED THAT THE SPAN AND OPENING WIDTH/HEIGHT OF EACH INDIVIDUAL MULLION COMPLIES WITH THE REQUIREMENTS OF THIS APPROVAL.

9) FOR ADDITIONAL MULLIONS, OPTIONS AND CONFIGURATIONS NOT SHOWN ON THIS APPROVAL, REFER TO FLORIDA PRODUCT APPROVAL #261.

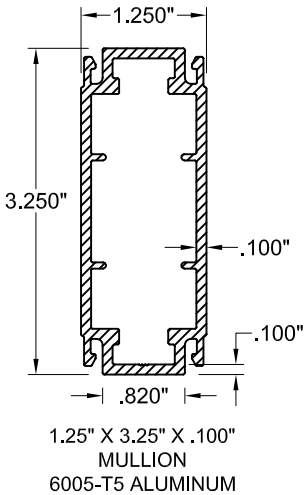


TABLE 1

Mullion Capacity Table (lbs/ft ²)		
1.25 x 3.25 x .100 Alum. Tube Mullion	Opening Width or Height up to 127-1/4"	
	All Loading Types	
	Mullion Capacity	Anchorage Requirement
Mullion Length up to 63"	+70.0 lbs/ft ² -70.0 lbs/ft ²	Install 4 additional window anchors through the window frames at 10" max. on each side of the mullion/frame assembly tube centerline. See figures on this sheet.

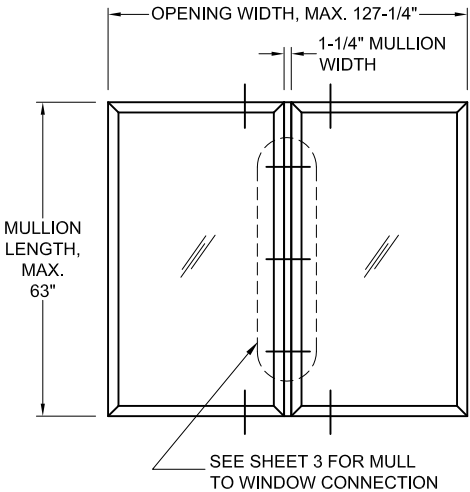
ALL MULLIONS ON THIS APPROVAL ARE RATED TO THE AAMA 450-10 STANDARD.

NOTES FOR UNCLIPPED MULLIONS/FRAME ASSEMBLY TUBE:

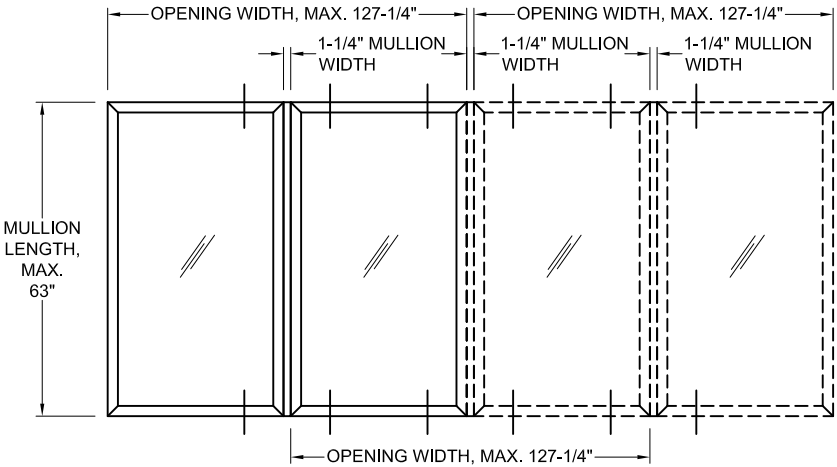
- 1) NOT TO BE USED WITH SINGLE OR DOUBLE HUNG WINDOWS.
- 2) NOT TO BE USED IN CROSS OR TEE CONFIGURATIONS, SEE NEXT SHEET.

FLORIDA PRODUCT APPROVAL #17519

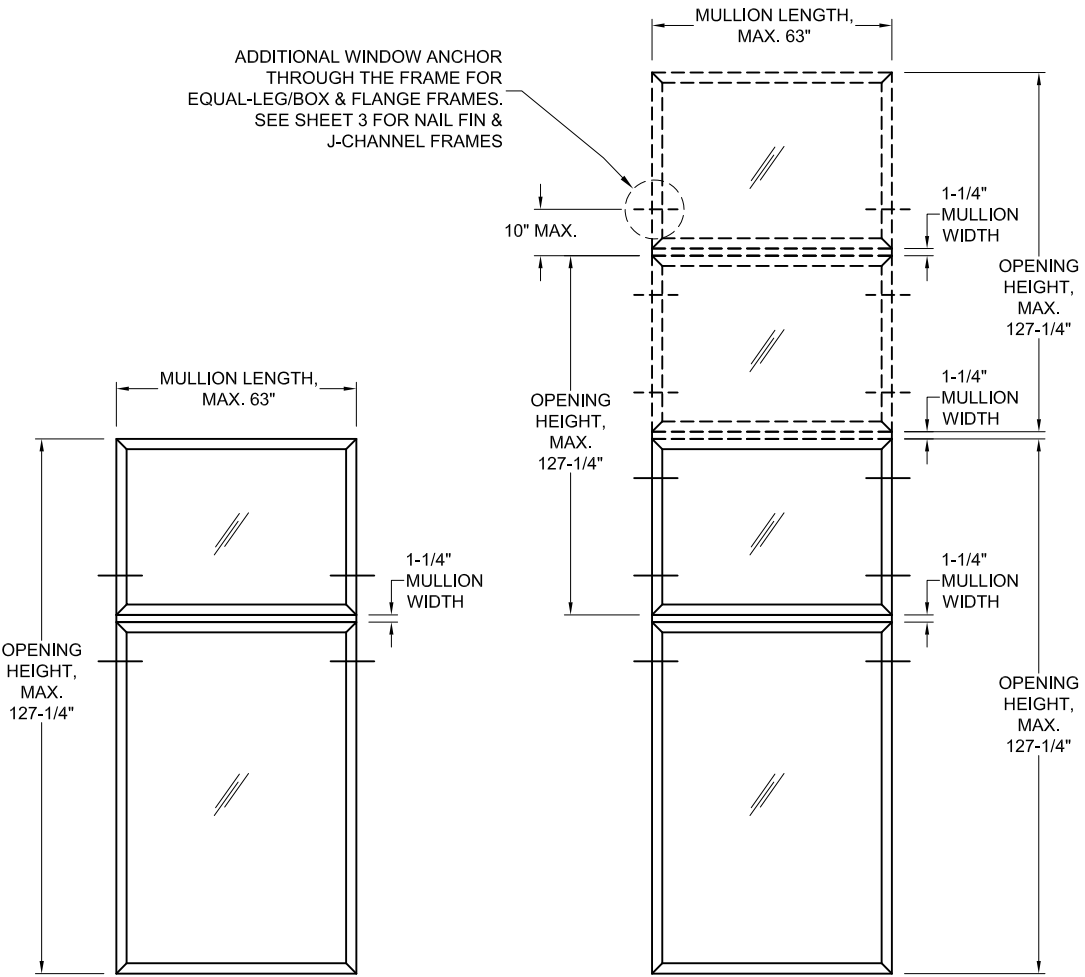
USE THIS SHEET FOR UNCLIPPED MULLIONS



SINGLE VERTICAL MULLION



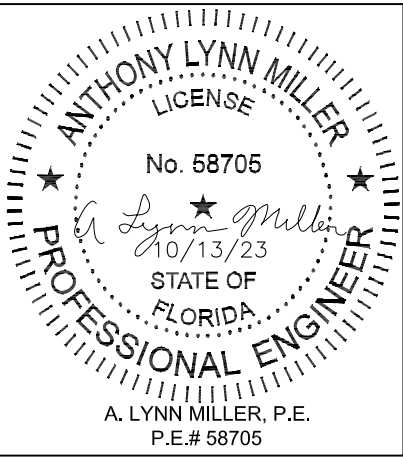
MULTIPLE VERTICAL MULLIONS



SINGLE HORIZONTAL MULLION

MULTIPLE HORIZONTAL MULLIONS

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		5400/5500 SERIES ALUMINUM TUBE MULLIONS		By	J ROSOWSKI
PGT Custom Windows and Doors 1070 TECHNOLOGY DRIVE N. VENICE, FL 34275 (941) 480-1600		UNCLIPPED MULLIONS		DWG No.	1 OF 9
				Sheet	5400/5500
Series		Desc.		5X MULLS-FPA	



Rev.	10/13/23
Date	10/13/23
Rev.	NO CHANGES, THIS SHEET . SB

GENERAL NOTES, CLIPPED 5400/5500 MULLIONS:

1) DETAILS SHOWN ARE FOR THE MULLION ONLY. ANCHORS SHOWN ARE IN ADDITION TO ANY ANCHORS REQUIRED FOR THE FENESTRATION PRODUCT INSTALLATION. TYPICAL APPLICATIONS ARE SHOWN. EACH SITUATION IS UNIQUE AND SHOULD BE EVALUATED BY AN EXPERIENCED INSTALLER FOR THE BEST INSTALLATION METHOD. OPTIONAL 1X OR 2X WOOD BUCKS IF USED, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS AND ARE TO BE DESIGNED BY OTHERS.

2) THE TYPE AND NUMBER OF ANCHORS IS CRITICAL TO THE STRUCTURAL PERFORMANCE OF THE MULLED UNITS. MULLIONS HAVE BEEN TESTED AS "FREE-FLOATING" AND DO NOT NEED TO BE DIRECTLY ATTACHED TO THE MULLION CLIPS, BUT SHALL NOT HAVE A GAP OF MORE THAN 1/4" FROM THE CLIP.

3) THE ANCHORAGE METHODS SHOWN HAVE BEEN DESIGNED TO RESIST THE WINDLOADS CORRESPONDING TO THE REQUIRED DESIGN PRESSURE. MULLIONS ARE CALCULATED TO DEFLECT NO MORE THAN L/180. THE 1/3 STRESS INCREASE WAS NOT USED IN THIS ANCHOR EVALUATION. THE 1.6 LOAD DURATION FACTOR WAS USED FOR THE EVALUATION OF WOOD SCREWS.

4) PROPER SEALING OF ENTIRE ASSEMBLY IS THE RESPONSIBILITY OF OTHERS AND IS BEYOND THE SCOPE OF THESE INSTRUCTIONS.

5) USE THE COMBINED WIDTH OR HEIGHT OF ONLY TWO ADJACENT FENESTRATION PRODUCTS TO DETERMINE PRESSURES AND ANCHORAGE FOR THE COMMON MULLION, SEE EXAMPLES ON THIS SHEET. FOR MULTIPLE UNITS, CONSIDER ONLY TWO ADJACENT UNITS AT A TIME WHEN USING THE DESIGN PRESSURE AND ANCHORAGE TABLES. THE LOWEST DESIGN PRESSURE OF MULTIPLE MULLIONS OR FENESTRATION PRODUCTS SHALL APPLY.

6) WHEN FINDING YOUR SIZE IN THE MULLION TABLES, ALWAYS ROUND UP TO THE NEXT SIZE SHOWN ON THE TABLE(S).

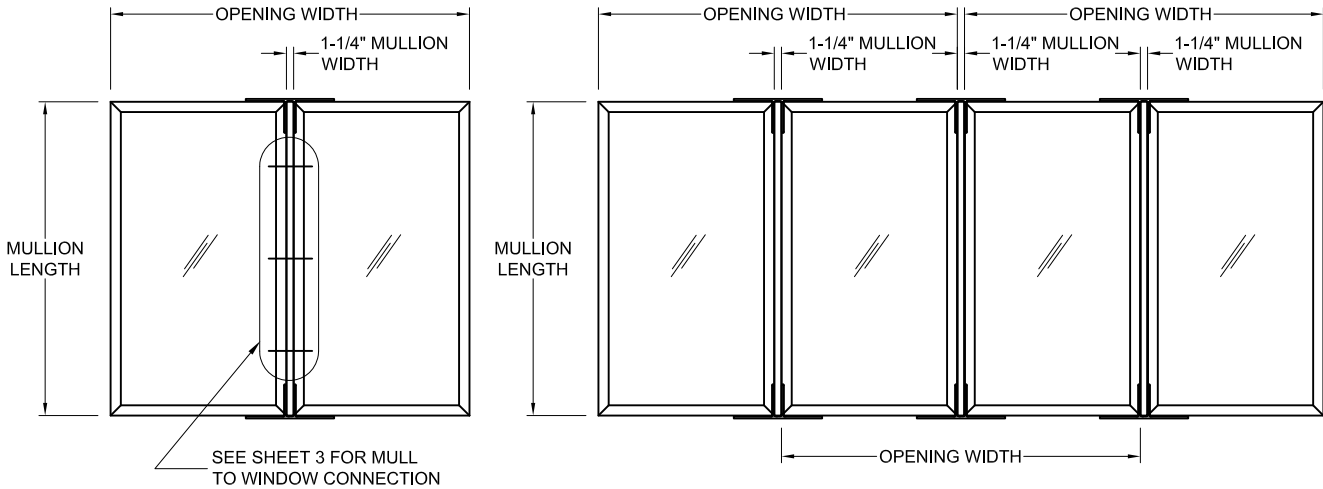
7) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO. WOOD BUCKS BY OTHERS, MUST BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE STRUCTURE. ANCHORS SHALL BE COATED OR CORROSION RESISTANT AS APPROPRIATE FOR SUBSTRATE MATERIAL. DISSIMILAR MATERIALS SHALL BE PROTECTED AS REQUIRED TO PREVENT REACTIONS.

8) MULLIONS AND CLIPS HAVE BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, AND ARE APPROVED FOR IMPACT AND NON-IMPACT APPLICATIONS. IMPACT APPLICATIONS ARE LIMITED TO WINDZONES 1, 2 & 3 AS DEFINED BY ASTM E1996. MULLIONS ARE ONLY TO BE USED WITH PGT-APPROVED FENESTRATION PRODUCTS HAVING CURRENT APPROVALS.

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10) FOR ADDITIONAL MULLIONS, OPTIONS AND CONFIGURATIONS NOT SHOWN ON THIS APPROVAL, REFER TO FLORIDA PRODUCT APPROVAL #261.

USE THIS SHEET FOR
CLIPPED MULLIONS

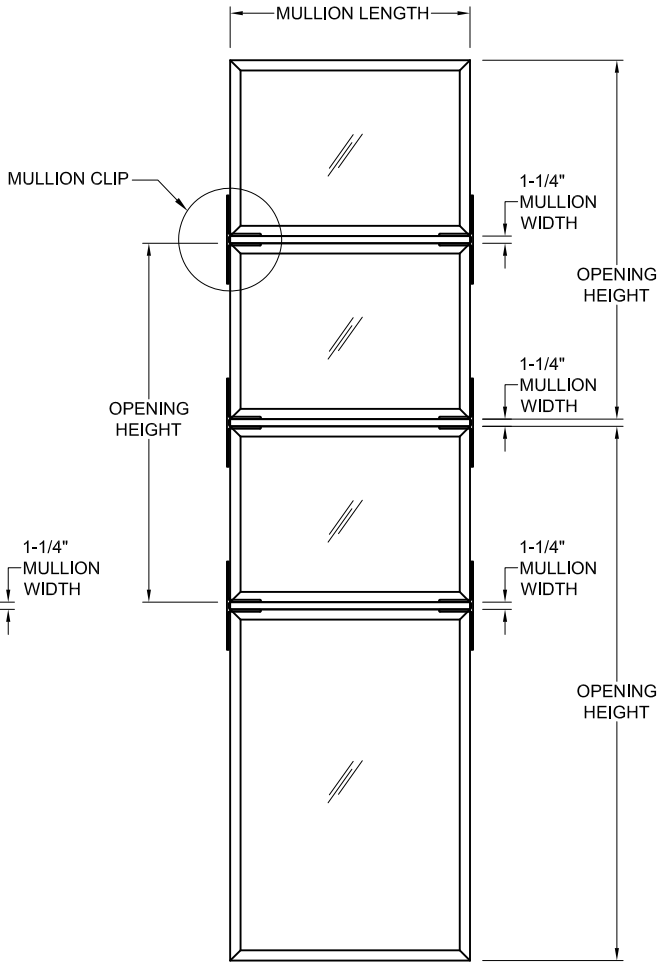


SINGLE VERTICAL MULLION

MULTIPLE VERTICAL MULLIONS

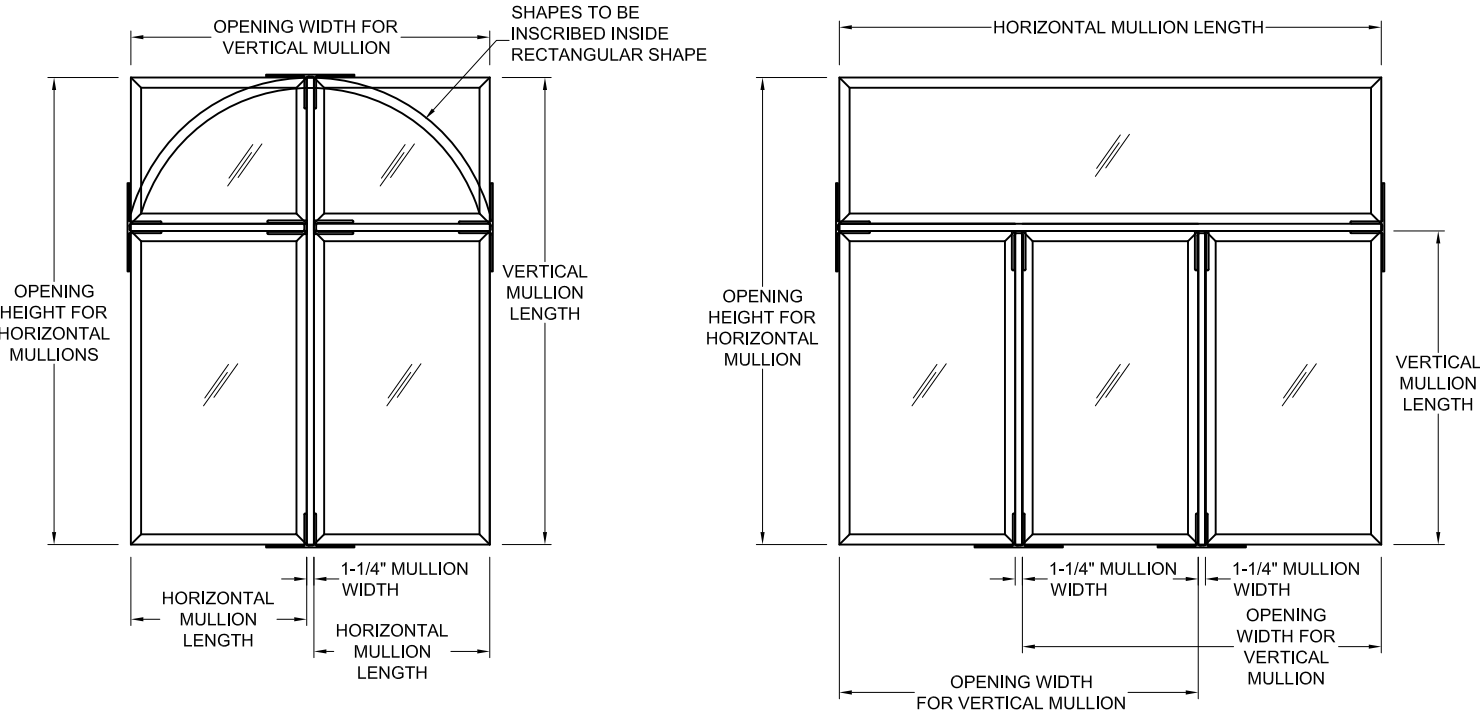
NOTES FOR CLIPPED MULLIONS:

- 1) FOR MAXIMUM SIZES, SEE TABLES 2A-4A.
- 2) SEE SHEET 9 FOR INSTRUCTIONS ON USING TABLES 2A-4A.
- 3) CLIPPED MULLIONS MAY BE USED FOR ALL WINDOW TYPES. FOR CLIP ANCHORAGE, USE THE SAME ANCHOR AS WINDOW ANCHOR.



SINGLE HORIZONTAL MULLION

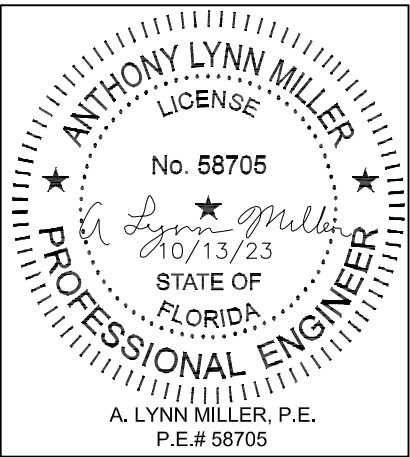
MULTIPLE HORIZONTAL MULLIONS



CROSS MULLION CONFIGURATION

TEE MULLION CONFIGURATION

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PGT		Custom Windows and Doors 1070 TECHNOLOGY DRIVE N. VENICE, FL 34275 (941) 480-1600		1.25 X 3.25 CLIPPED MULLIONS		2 OF 9		5400/5500	
Date		02/03/15		By		DWG		Sheet	
Title		1.25 X 3.25 CLIPPED MULLIONS		Desc.		Series		No.	



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Date	10/13/23
Rev.	NO CHANGES, THIS SHEET . SB

CROSS-SECTION MULLION EXAMPLES

USE THIS SHEET FOR
CLIPPED & UNCLIPPED
MULLIONS

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Date	10/13/23	
Rev.	NO CHANGES, THIS SHEET. SB	

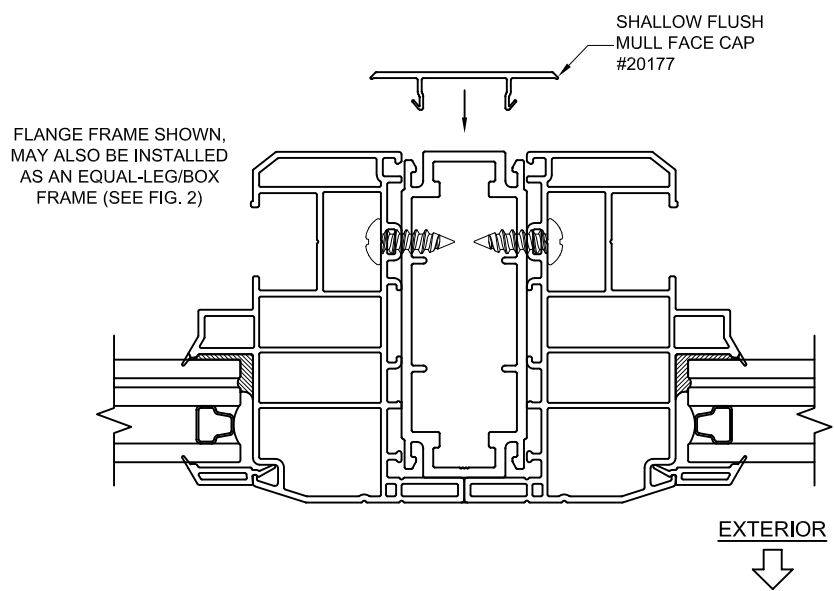


FIG. 1: 1.25" X 3.25" X .100" MULLION & FACE CAPS

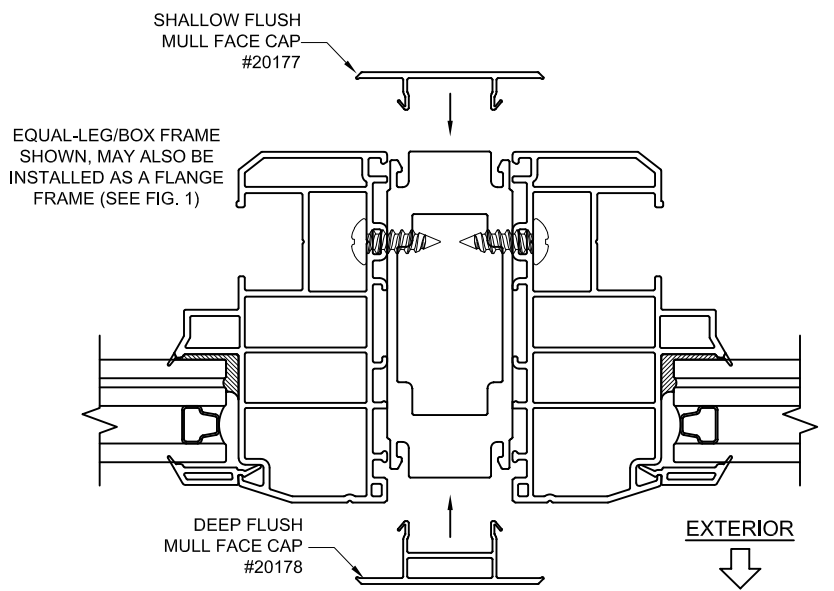


FIG. 2: 1.25" X 3.25" X .624" MULLION & FACE CAPS

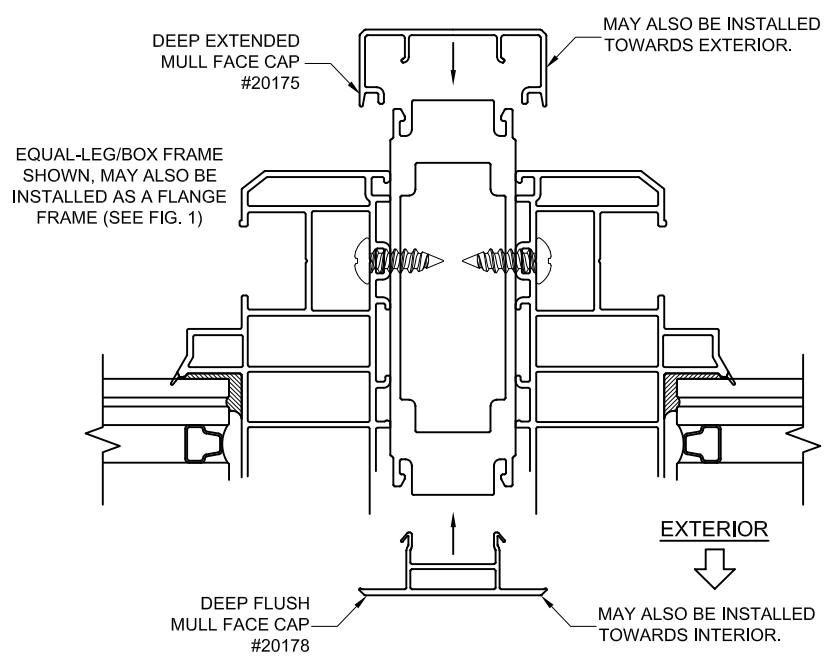
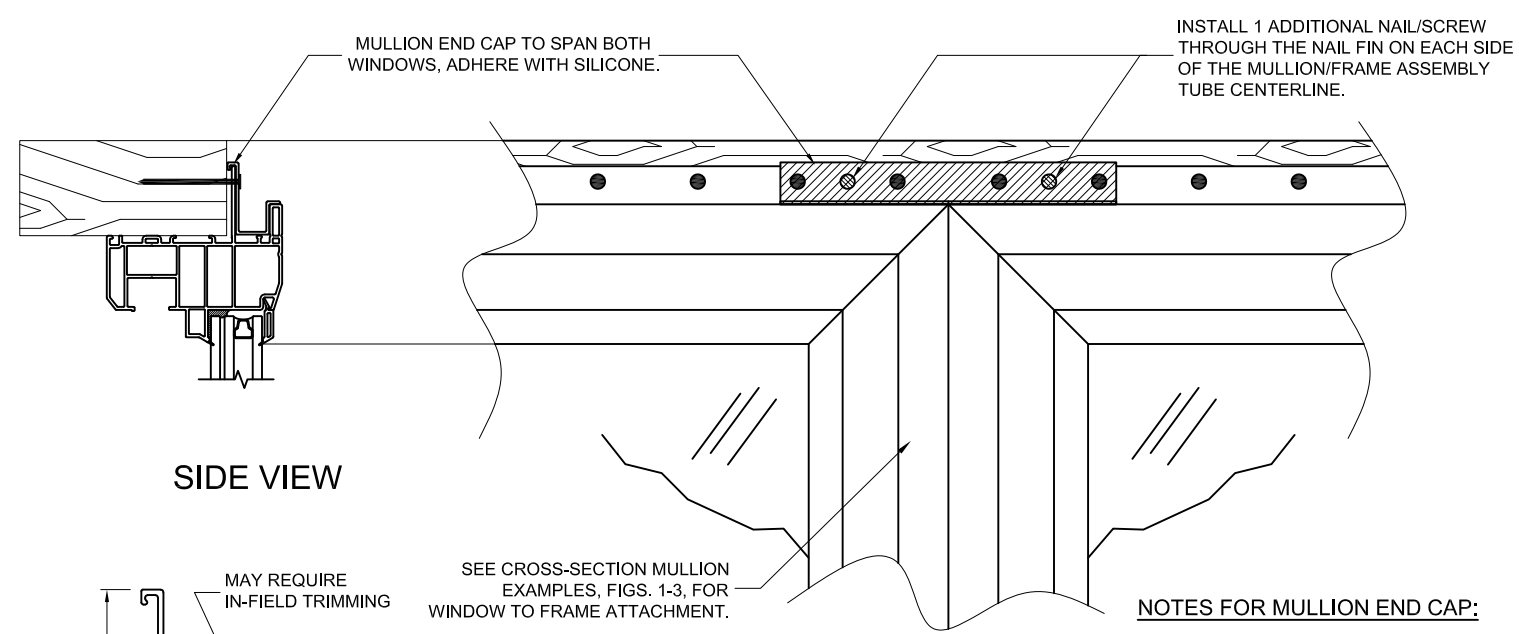


FIG. 3: 1.25" X 3.94" X .624" MULLION & FACE CAPS

NOTES FOR MULLION TO WINDOW ATTACHMENT:

- 1) RECOMMENDED ANCHOR LENGTH = MIN. 3/4"
- 2) USE ANCHOR TYPE AND SPACING AS PER THE WINDOW'S APPROVAL.
- 3) PICTURE WINDOW WITH VERTICAL MULLION SHOWN, ALL WINDOW TYPES AND MULLION ORIENTATIONS APPLICABLE.
- 4) IF APPLICABLE, NAIL FIN AND/OR FLANGE MAY BE REMOVED FROM THE WINDOW FRAME MEMBER BEING MULLED.

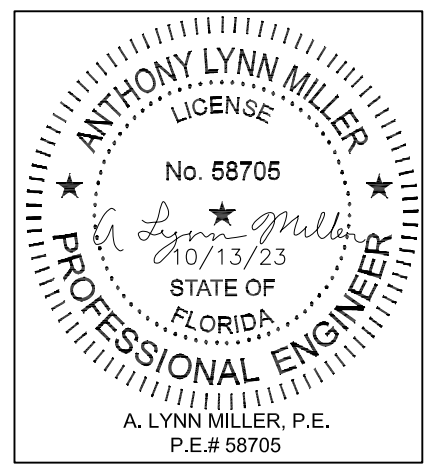
FIG. 4: MULLION END CAP EXAMPLE



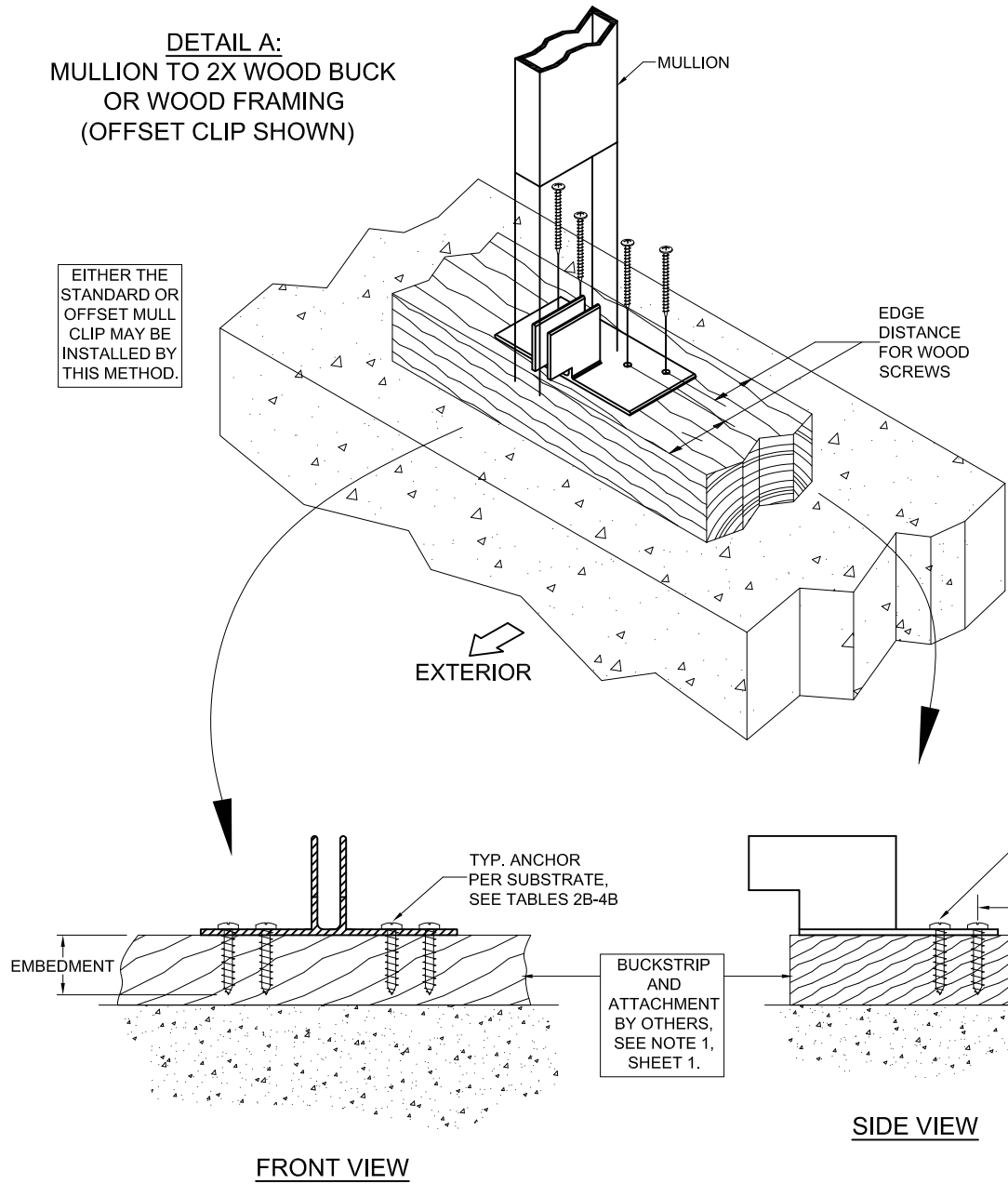
NOTES FOR MULLION END CAP:

- 1) APPLIES TO FIN OR J-CHANNEL FRAMES.
- 2) REQUIRED AT HEADER AND JAMBS.
- 3) PICTURE WINDOW WITH VERTICAL MULLION SHOWN, ALL WINDOW TYPES AND MULLION ORIENTATIONS APPLICABLE.

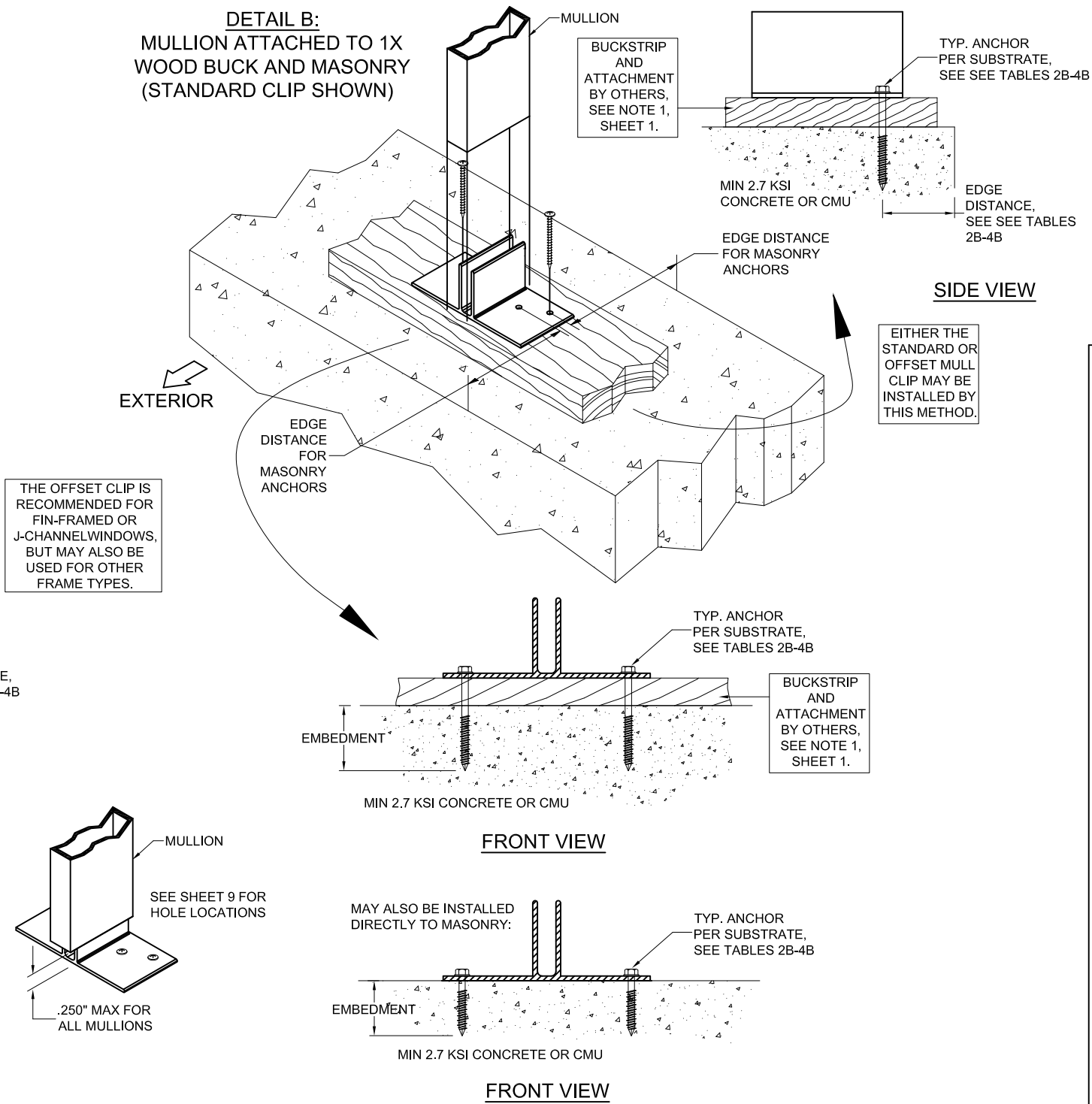
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J ROSOWSKI		By	DWG	No.
5XMULLS-FPA		3 OF 9	Sheet	5400/5500



DETAIL A:
MULLION TO 2X WOOD BUCK
OR WOOD FRAMING
(OFFSET CLIP SHOWN)



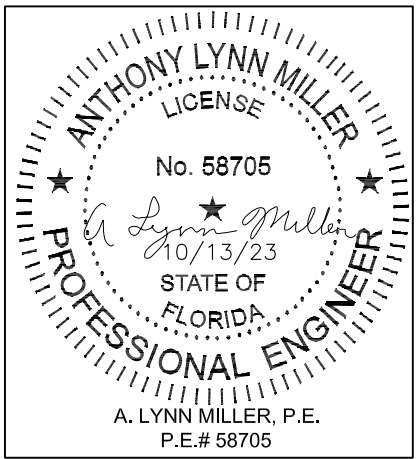
DETAIL B:
MULLION ATTACHED TO 1X
WOOD BUCK AND MASONRY
(STANDARD CLIP SHOWN)



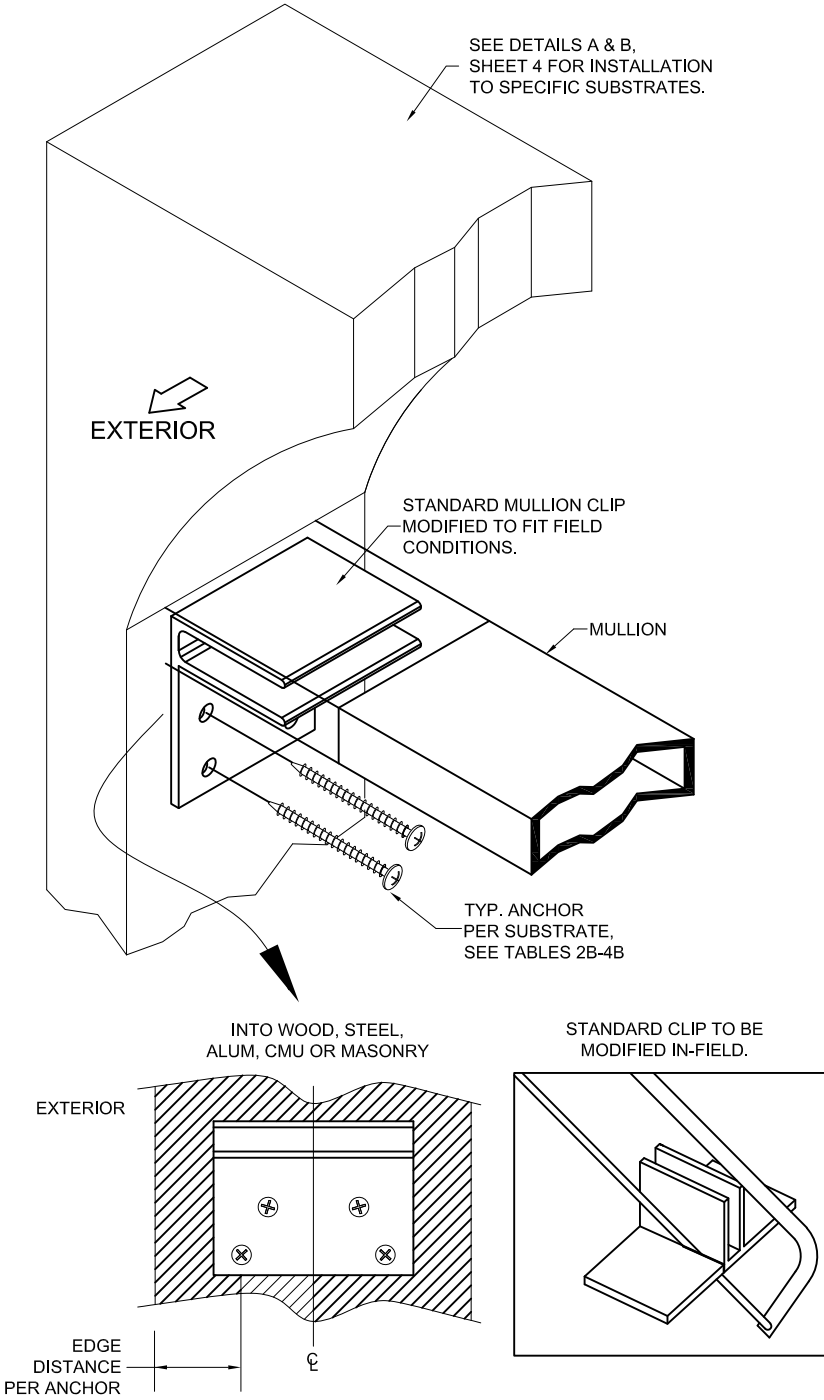
INSTALLATION NOTES:

- 1) ANCHOR EMBEDMENT TO BASE MATERIAL SHALL BE BEYOND WALL DRESSING OR STUCCO.
- 2) QUANTITY OF ANCHORS AND MULLION SIZE SHOWN ABOVE ARE FOR PICTORIAL REPRESENTATION ONLY. BECAUSE THE ANCHOR CAPACITY IS BASED PARTLY ON THE ANCHOR TO ANCHOR DISTANCE, THE CORRECT QUANTITY AND LOCATION OF ANCHORS MUST BE FOLLOWED, REFER TO THE TABLES ON THE FOLLOWING SHEETS. FOR DETAILS A-C, EITHER THE STANDARD OR OFFSET CLIP MAY BE USED.
- 3) ANCHOR HEAD TYPE MAY BE PANHEAD, HEXHEAD OR FLATHEAD.
- 4) WOOD BUCKS ARE OPTIONAL, SEE DETAIL B, THIS SHEET.

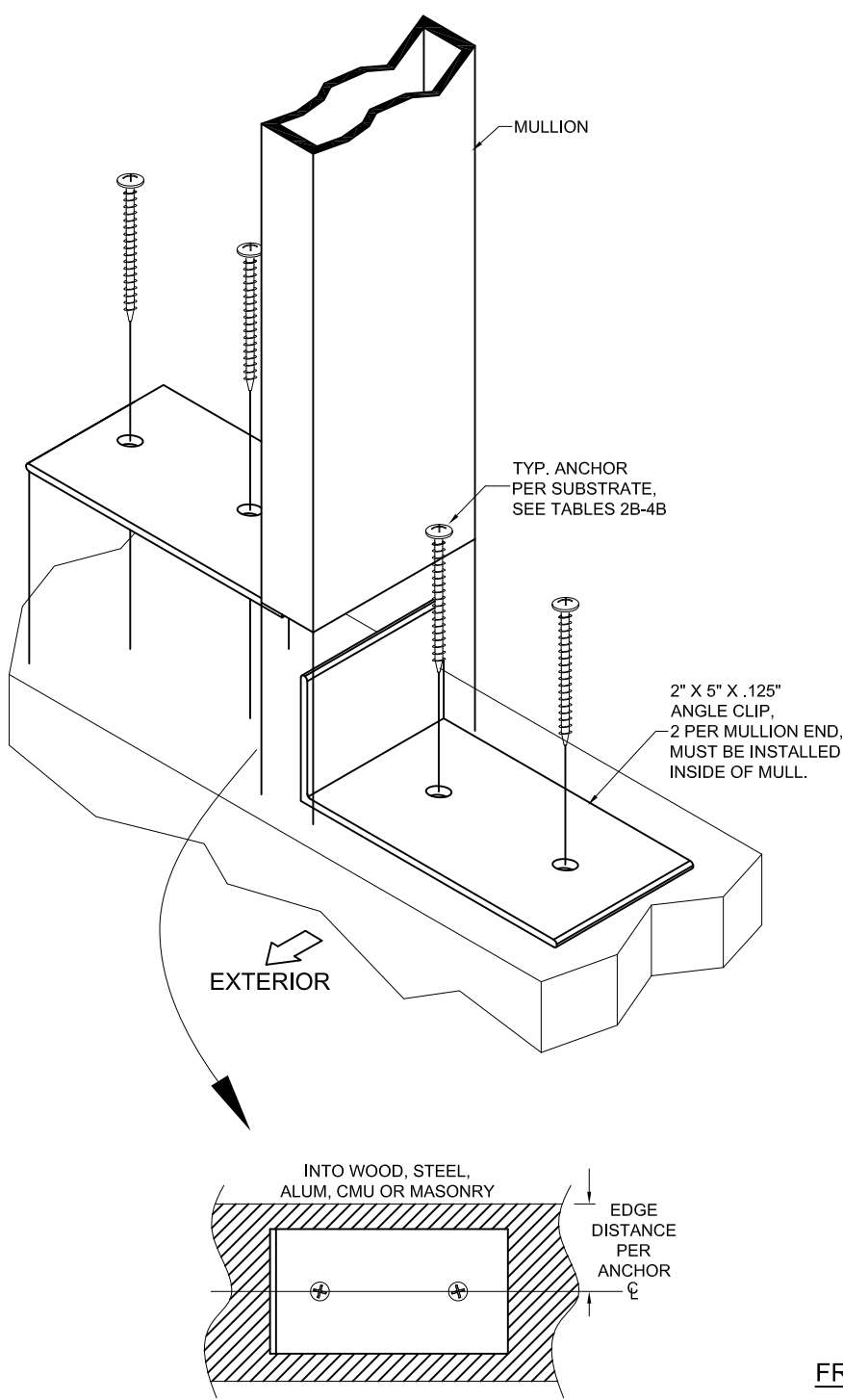
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INSTALLATION INSTRUCTIONS A		4 OF 9		5X MULLS-FPA	
5400/5500		Sheet		5400/5500	
Series		Desc.		Title	



DETAIL C:
FIELD-MODIFIED MULLION CLIP
(F-CLIP)



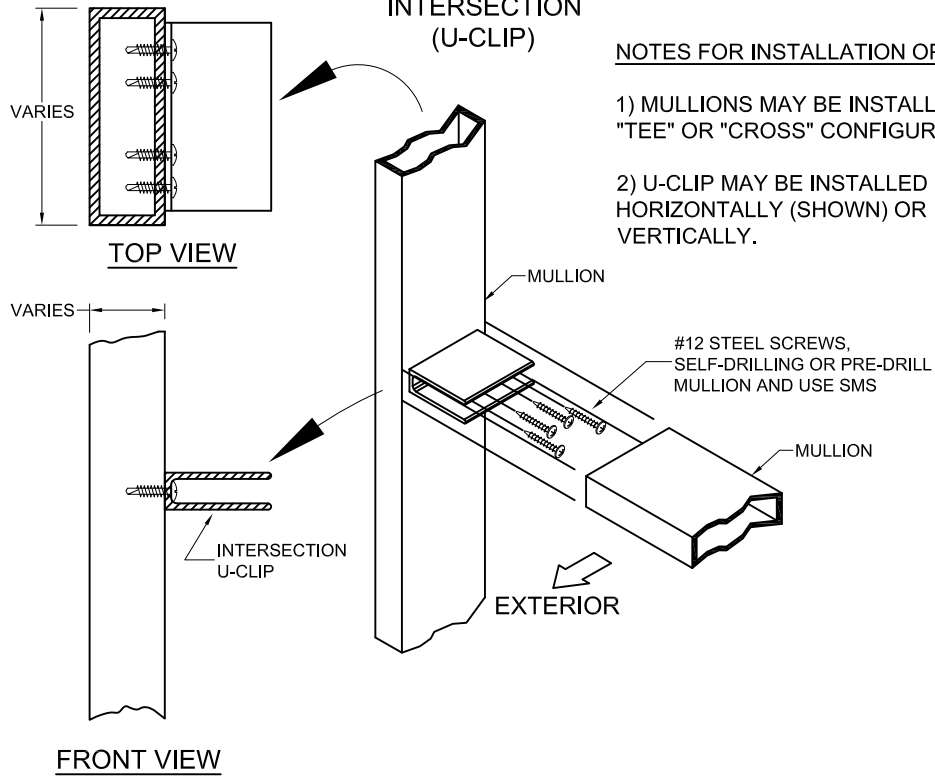
DETAIL D:
ANGLE MULLION CLIP
(ANGLE CLIP)



NOTES FOR INSTALLATION OPTION D:

- 1) USE 2 ANGLE CLIPS PER MULLION END. CLIPS MUST BE INSERTED INSIDE OF MULLION.

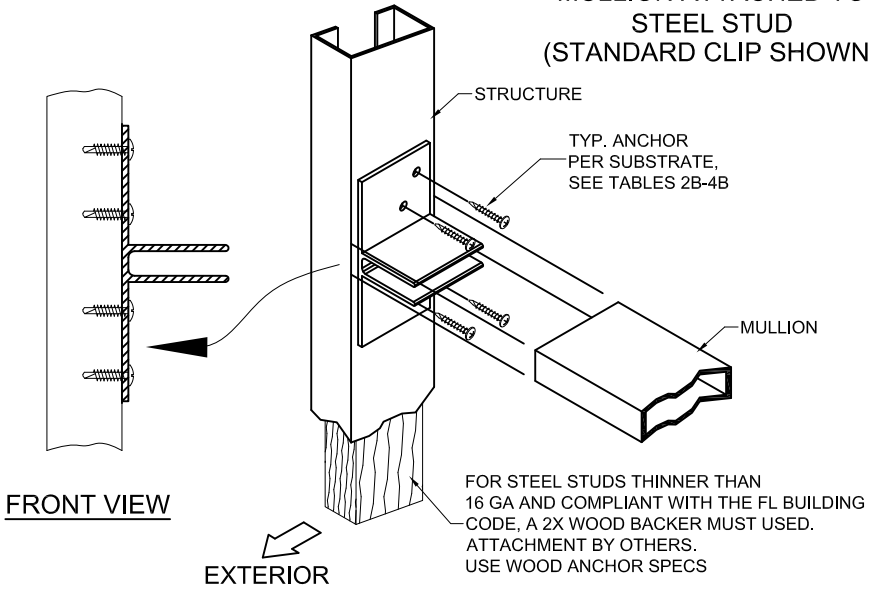
DETAIL E:
MULLION TO MULLION
INTERSECTION
(U-CLIP)



NOTES FOR INSTALLATION OPTION E:

- 1) MULLIONS MAY BE INSTALLED IN "TEE" OR "CROSS" CONFIGURATIONS.
- 2) U-CLIP MAY BE INSTALLED HORIZONTALLY (SHOWN) OR VERTICALLY.

DETAIL F:
MULLION ATTACHED TO
STEEL STUD
(STANDARD CLIP SHOWN)



NOTES FOR INSTALLATION OPTION F:

- 1) FOR 2X WOOD-BACKED STEEL STUDS, WOOD ANCHOR VALUES MAY BE USED.

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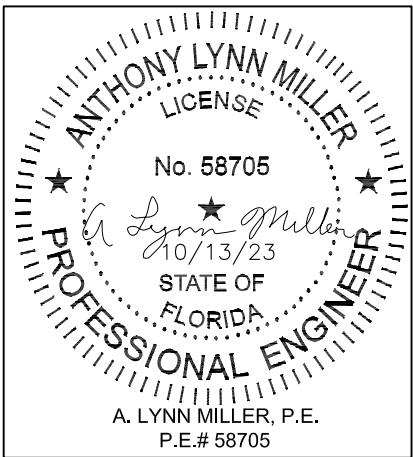


TABLE 3A

1.25 x 3.25 x .624 Alum. Tube Mullion		Opening Width (for vertically-spanning mullions) or Opening Height (for horizontally-spanning mullions)																																									
		50 in				60 in				70 in				80 in				90 in				100 in				120 in				140 in				160 in									
		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading							
		Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)								
Mullion Length	42 in	70.0	255	70.0	179	70.0	306	70.0	197	70.0	357	70.0	208	70.0	408	70.0	214	70.0	459	70.0	214	70.0	510	70.0	214	70.0	613	70.0	214	70.0	715	70.0	214	70.0	817	70.0	214	70.0	933	70.0	280		
	48 in	70.0	292	70.0	216	70.0	350	70.0	241	70.0	408	70.0	259	70.0	467	70.0	272	70.0	525	70.0	279	70.0	583	70.0	280	70.0	700	70.0	280	70.0	817	70.0	280	70.0	933	70.0	280	70.0	984	70.0	311		
	50.625 in	70.0	308	70.0	232	70.0	369	70.0	260	70.0	431	70.0	282	70.0	492	70.0	298	70.0	554	70.0	308	70.0	615	70.0	311	70.0	738	70.0	311	70.0	861	70.0	311	70.0	984	70.0	311	70.0	1050	70.0	354		
	54 in	70.0	328	70.0	252	70.0	394	70.0	284	70.0	459	70.0	311	70.0	525	70.0	331	70.0	591	70.0	345	70.0	656	70.0	352	70.0	788	70.0	354	70.0	919	70.0	354	70.0	1050	70.0	354	70.0	1167	70.0	438		
	60 in	70.0	365	70.0	289	70.0	438	70.0	328	70.0	510	70.0	362	70.0	583	70.0	389	70.0	656	70.0	410	70.0	729	70.0	425	70.0	875	70.0	438	70.0	1021	70.0	438	70.0	1167	70.0	438	70.0	1225	70.0	482		
	63 in	70.0	383	70.0	307	70.0	459	70.0	350	70.0	536	70.0	387	70.0	613	70.0	418	70.0	689	70.0	443	70.0	766	70.0	462	70.0	919	70.0	481	70.0	1072	70.0	482	70.0	1225	70.0	482	70.0	1248	70.0	529		
	66 in	70.0	401	70.0	325	70.0	481	70.0	372	70.0	561	70.0	413	70.0	642	70.0	447	70.0	722	70.0	476	70.0	802	70.0	498	70.0	963	70.0	525	70.0	1123	70.0	529	68.1	1248	70.0	529	70.0	1248	70.0	529		
	72 in	70.0	438	70.0	362	70.0	525	70.0	416	70.0	613	70.0	464	70.0	700	70.0	506	70.0	788	70.0	541	70.0	875	70.0	571	69.9	1049	70.0	613	59.9	1049	70.0	630	52.4	1049	70.0	630	70.0	1049	70.0	630		
	76 in	70.0	462	70.0	386	70.0	554	70.0	445	70.0	647	70.0	498	70.0	739	70.0	544	70.0	831	70.0	585	70.0	924	70.0	620	59.5	941	70.0	671	51.0	941	70.0	698	44.6	941	70.0	698	70.0	1049	70.0	630		
	78 in	70.0	474	70.0	398	70.0	569	70.0	459	70.0	664	70.0	515	70.0	758	70.0	564	70.0	853	70.0	607	66.0	894	70.0	644	55.0	894	70.0	700	47.1	894	67.0	701	41.3	894	66.1	698	70.0	1049	70.0	630		
	90 in	70.0	547	70.0	471	70.0	656	70.0	547	61.4	671	65.3	575	53.7	671	58.2	566	47.7	671	52.9	558	43.0	671	48.8	551	35.8	671	43.1	539	30.7	671	39.7	531	26.9	671	37.9	526	70.0	1049	70.0	630		
	96 in	70.0	583	70.0	507	59.0	590	61.4	518	50.6	590	53.4	509	44.3	590	47.5	502	39.3	590	43.0	494	35.4	590	39.6	488	29.5	590	34.7	477	25.3	590	31.6	469										
	108 in	49.7	466	50.8	421	41.4	466	42.8	414	35.5	466	37.1	408	31.1	466	32.9	402																										
	111 in	45.8	441	46.7	400	38.2	441	39.3	393	32.7	441	34.1	387	28.6	441	30.2	382																										
	120 in	36.3	378	36.9	344	30.2	378	31.0	339																																		

ALL MULLIONS ON THIS APPROVAL ARE RATED TO THE AAMA 450-10 STANDARD.

TABLE 3B

Anchor Capacity (lbs)	Substrate:	3k Concrete				3.5k Conc.							Filled CMU	PT Wood		Metal
	Anchor Type:	3/16" DeWalt Ultracon+		1/4" DeWalt Ultracon+		5/16" Elco Ultracon	3/16" DeWalt Ultracon+		1/4" DeWalt Ultracon+		1/4" SS Elco AggreGator	5/16" Elco Ultracon	1/4" SS Elco AggreGator	#10 Steel Screw (G5)	#12 Steel Screw (G5)	#12 Steel Screw (G5)
	Edge Distance (in):	1"	2-1/2"	1"	2-1/2"	3-1/8"	1"	2-1/2"	1"	2-1/2"	2"	3-1/8"	2"	0.48"	0.54"	0.324"
	Embedment (in):	1-3/4"	1-3/4"	1-3/4"	1-3/4"	2"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	2"	1-3/8"	1-3/8"	varies
2 Anchors @ 4.75" Min. O.C. / Standard or Offset Clip (Fig. 1):		310 lbs	630 lbs	220 lbs	870 lbs	1644 lbs	230 lbs	370 lbs	320 lbs	580 lbs	374 lbs	664 lbs	946 lbs	341 lbs	442 lbs	560 lbs
4 Anchors @ 1.15" Min. O.C. / Standard (or Offset) Clip (Fig. 2):		320 lbs	1260 lbs	370 lbs	N/A	N/A	N/A	740 lbs	N/A	N/A	N/A	N/A	N/A	682 lbs	885 lbs	1120 lbs
4 Anchors @ 3" Min. O.C. / (2) 2x5 Angle Clips / (Fig. 3):		620 lbs	1260 lbs	440 lbs	1740 lbs	1896 lbs	460 lbs	740 lbs	640 lbs	1160 lbs	748 lbs	880 lbs	1892 lbs	682 lbs	885 lbs	1120 lbs
3 Anchors @ 0.54" Min. O.C. / U-Clip, into .100" Alum. (Fig. 4):		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	950 lbs
1 Anchor / F-Clip (Fig. 5):		155 lbs	315 lbs	110 lbs	435 lbs	822 lbs	115 lbs	185 lbs	160 lbs	290 lbs	187 lbs	332 lbs	473 lbs	170 lbs	221 lbs	280 lbs
2 Anchors @ 1.15" Min. O.C. / F-Clip (Fig. 6):		160 lbs	630 lbs	185 lbs	N/A	N/A	N/A	370 lbs	N/A	N/A	N/A	N/A	N/A	341 lbs	442 lbs	560 lbs

NOTE: FOR THE OFFSET CLIP, USE THE SAME ANCHOR PATTERN AND ANCHOR VALUES AS THE STANDARD CLIP.

FIGURE 1, (STANDARD CLIP SHOWN):

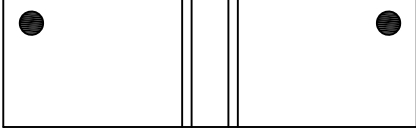


FIGURE 2, (STANDARD CLIP SHOWN):

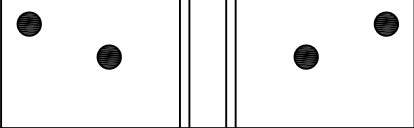


FIGURE 3:



ANGLE
CLIP MUST
BE USED
IN PAIRS.

FIGURE 4:

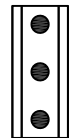


FIGURE 5:

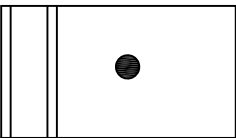


FIGURE 6:

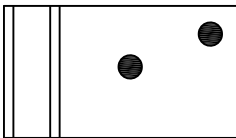


TABLE NOTES:

1) SEE SHEET 9 FOR INSTRUCTIONS ON USING THE TABLES. SEE SHEETS 3-5 FOR GENERAL INSTALLATION METHODS.

2) LINEAR INTERPOLATION BETWEEN MULL LENGTHS AND/OR OPENING WIDTHS IS ALLOWABLE.

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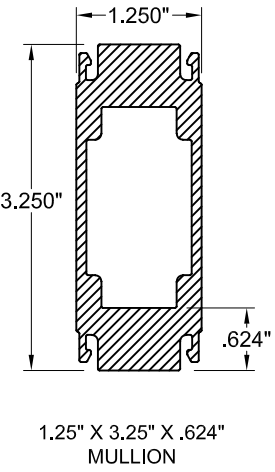
USE RECTANGULAR LOADING
FOR ALL TEE OR CROSS
CONFIGURATIONS, AND ALL
ASSEMBLIES CONTAINING A
SINGLE/DOUBLE HUNG WINDOW.

USE TRAPEZOIDAL /TRIANGULAR
LOADING FOR ALL OTHERS.

ANCHOR CAPACITY
ADJUSTMENT FORMULA:

$$(DP_{REQ}) \times \left(\frac{\text{ANCHOR CAP.}_{FROM TABLE}}{\text{MULLION CAP.}_{FROM TABLE}} \right) = \text{ANCHOR CAP.}_{REQ.}$$

USE THIS FORMULA TO OBTAIN
THE "ANCHOR CAPACITY
REQUIRED" CORRESPONDING
TO AN ACTUAL PRESSURE
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5400/5500 SERIES ALUMINUM TUBE MULLIONS

02/03/15

By

J ROSOWSKI

5400/5500

No.

7 OF 9

5400/5500

Sheet

5400/5500

Series

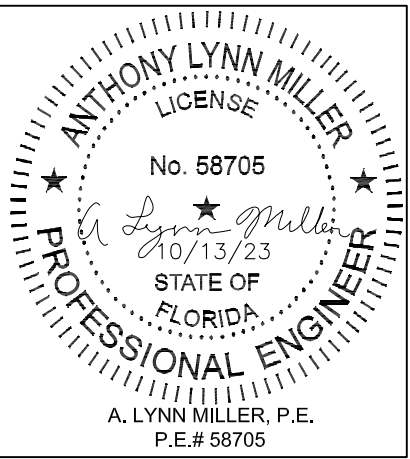


TABLE 4A

1.25 x 3.94 x .624 Alum. Tube Mullion		Mullion Capacity Table (lbs/ft ²)																																				
		Opening Width (for vertically-spanning mullions) or Opening Height (for horizontally-spanning mullions)																																				
		50 in				60 in				70 in				80 in				90 in				100 in				120 in				140 in				160 in				
		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading		Rectangular Loading		Trap/Triang. Loading						
Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)	Mullion Capacity (lbs/ft ²)	Anchor Capacity Required (lbs)					
Mullion Length	42 in	70.0	255	70.0	179	70.0	306	70.0	197	70.0	357	70.0	208	70.0	408	70.0	214	70.0	459	70.0	214	70.0	510	70.0	214	70.0	613	70.0	214	70.0	715	70.0	214	70.0	817	70.0	214	70.0
	48 in	70.0	292	70.0	216	70.0	350	70.0	241	70.0	408	70.0	259	70.0	467	70.0	272	70.0	525	70.0	279	70.0	583	70.0	280	70.0	700	70.0	280	70.0	817	70.0	280	70.0	933	70.0	280	70.0
	50.625 in	70.0	308	70.0	232	70.0	369	70.0	260	70.0	431	70.0	282	70.0	492	70.0	298	70.0	554	70.0	308	70.0	615	70.0	311	70.0	738	70.0	311	70.0	861	70.0	311	70.0	984	70.0	311	70.0
	54 in	70.0	328	70.0	252	70.0	394	70.0	284	70.0	459	70.0	311	70.0	525	70.0	331	70.0	591	70.0	345	70.0	656	70.0	352	70.0	788	70.0	354	70.0	919	70.0	354	70.0	1050	70.0	354	70.0
	60 in	70.0	365	70.0	289	70.0	438	70.0	328	70.0	510	70.0	362	70.0	583	70.0	389	70.0	656	70.0	410	70.0	729	70.0	425	70.0	875	70.0	438	70.0	1021	70.0	438	70.0	1167	70.0	438	70.0
	63 in	70.0	383	70.0	307	70.0	459	70.0	350	70.0	536	70.0	387	70.0	613	70.0	418	70.0	689	70.0	443	70.0	766	70.0	462	70.0	919	70.0	481	70.0	1072	70.0	482	70.0	1225	70.0	482	70.0
	66 in	70.0	401	70.0	325	70.0	481	70.0	372	70.0	561	70.0	413	70.0	642	70.0	447	70.0	722	70.0	476	70.0	802	70.0	498	70.0	963	70.0	525	70.0	1123	70.0	529	70.0	1283	70.0	529	70.0
	72 in	70.0	438	70.0	362	70.0	525	70.0	416	70.0	613	70.0	464	70.0	700	70.0	506	70.0	788	70.0	541	70.0	875	70.0	571	70.0	1050	70.0	613	70.0	1225	70.0	630	70.0	1400	70.0	630	70.0
	76 in	70.0	462	70.0	386	70.0	554	70.0	445	70.0	647	70.0	498	70.0	739	70.0	544	70.0	831	70.0	585	70.0	924	70.0	620	70.0	1108	70.0	671	70.0	1293	70.0	698	70.0	1478	70.0	702	70.0
	78 in	70.0	474	70.0	398	70.0	569	70.0	459	70.0	664	70.0	515	70.0	758	70.0	564	70.0	853	70.0	607	70.0	948	70.0	644	70.0	1138	70.0	700	70.0	1327	70.0	732	68.2	1477	70.0	739	70.0
	90 in	70.0	547	70.0	471	70.0	656	70.0	547	70.0	766	70.0	617	70.0	875	70.0	681	70.0	984	70.0	738	70.0	1094	70.0	790	59.2	1110	70.0	875	50.7	1110	65.6	878	44.4	1110	62.7	870	70.0
	96 in	70.0	583	70.0	507	70.0	700	70.0	591	70.0	817	70.0	668	70.0	933	70.0	739	65.0	975	70.0	804	58.5	975	65.4	807	48.8	975	57.4	789	41.8	975	52.3	776					
	108 in	70.0	656	70.0	580	68.5	771	70.0	678	58.7	771	61.3	674	51.4	771	54.3	664																					
	111 in	70.0	674	70.0	599	63.1	730	65.0	650	54.1	730	56.3	640	47.3	730	49.9	631																					
	120 in	59.9	624	61.0	569	49.9	624	51.2	560																													
144 in	34.7	433	35.1	400	28.9	433	29.4	395																														

USE RECTANGULAR LOADING FOR ALL TEE OR CROSS CONFIGURATIONS, AND ALL ASSEMBLIES CONTAINING A SINGLE/DOUBLE HUNG WINDOW.

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$$(DP_{REQ}) \times \left(\frac{ANCHOR CAP. FROM TABLE}{MULLION CAP. FROM TABLE} \right) = ANCHOR CAP. REQ.$$

USE THIS FORMULA TO OBTAIN THE "ANCHOR CAPACITY REQUIRED" CORRESPONDING TO AN ACTUAL PRESSURE REQUIREMENT FOR THE OPENING, WHEN IT IS LOWER THAN THE MULLION CAPACITY (FROM THE TABLE) OF THE SELECTED MULLION. IT WILL YIELD A MINIMUM ANCHOR CAPACITY WHICH MAY BE USED TO QUALIFY ADDITIONAL ANCHOR OPTIONS FROM THE ANCHOR CAPACITY TABLE.

ALL MULLIONS ON THIS APPROVAL ARE RATED TO THE AAMA 450-10 STANDARD.

TABLE 4B

Anchor Capacity (lbs)	Substrate:	3k Concrete				3.5k Conc.							Filled CMU	PT Wood		Metal
	Anchor Type:	3/16" DeWalt Ultracon+		1/4" DeWalt Ultracon+		5/16" Elco Ultracon	3/16" DeWalt Ultracon+		1/4" DeWalt Ultracon+		1/4" SS Elco AggreGator	5/16" Elco Ultracon	1/4" SS Elco AggreGator	#10 Steel Screw (G5)	#12 Steel Screw (G5)	#12 Steel Screw (G5)
	Edge Distance (in):	1"	2-1/2"	1"	2-1/2"	3-1/8"	1"	2-1/2"	1"	2-1/2"	2"	3-1/8"	2"	0.48"	0.54"	0.324"
	Embedment (in):	1-3/4"	1-3/4"	1-3/4"	1-3/4"	2"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	1-1/4"	2"	1-3/8"	1-3/8"	varies
2 Anchors @ 4.75" Min. O.C. / Standard or Offset Clip (Fig. 1):		310 lbs	630 lbs	220 lbs	870 lbs	1644 lbs	230 lbs	370 lbs	320 lbs	580 lbs	374 lbs	664 lbs	946 lbs	341 lbs	442 lbs	560 lbs
4 Anchors @ 1.15" Min. O.C. / Standard (or Offset) Clip (Fig. 2):		320 lbs	1260 lbs	370 lbs	N/A	N/A	N/A	740 lbs	N/A	N/A	N/A	N/A	N/A	682 lbs	885 lbs	1120 lbs
4 Anchors @ 3" Min. O.C. / (2) 2x5 Angle Clips / (Fig. 3):		620 lbs	1260 lbs	440 lbs	1740 lbs	1896 lbs	460 lbs	740 lbs	640 lbs	1160 lbs	748 lbs	880 lbs	1892 lbs	682 lbs	885 lbs	1120 lbs
3 Anchors @ 0.54" Min. O.C. / U-Clip, into .100" Alum. (Fig. 4):		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	950 lbs
1 Anchor / F-Clip (Fig. 5):		155 lbs	315 lbs	110 lbs	435 lbs	822 lbs	115 lbs	185 lbs	160 lbs	290 lbs	187 lbs	332 lbs	473 lbs	170 lbs	221 lbs	280 lbs
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NOTE: FOR THE OFFSET CLIP, USE THE SAME ANCHOR PATTERN AND ANCHOR VALUES AS THE STANDARD CLIP.

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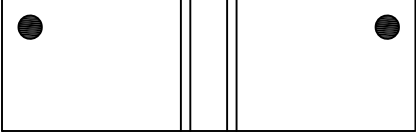


FIGURE 2, (STANDARD CLIP SHOWN):

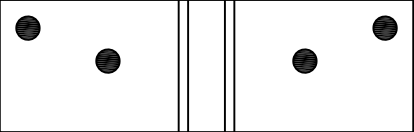


FIGURE 3:



ANGLE CLIP MUST BE USED IN PAIRS.

FIGURE 4:

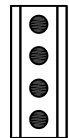


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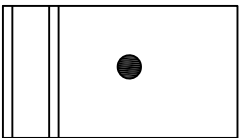


FIGURE 6:

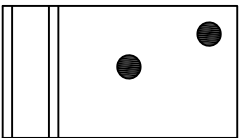


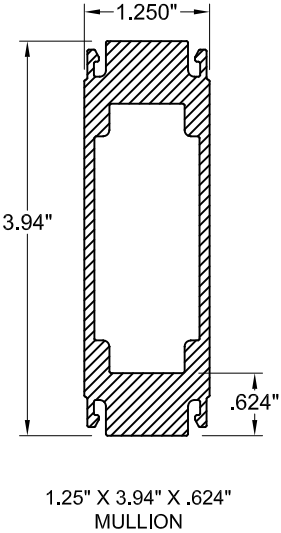
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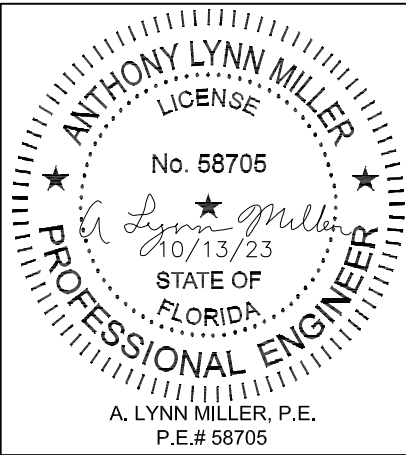


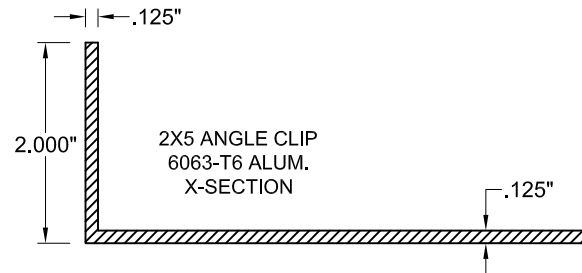
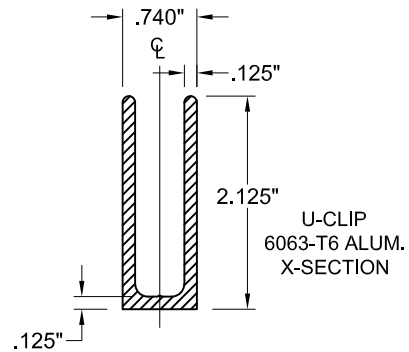
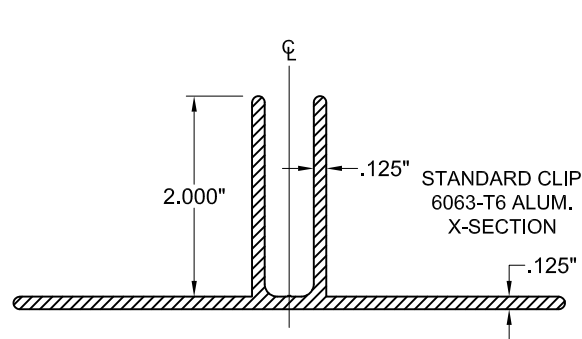
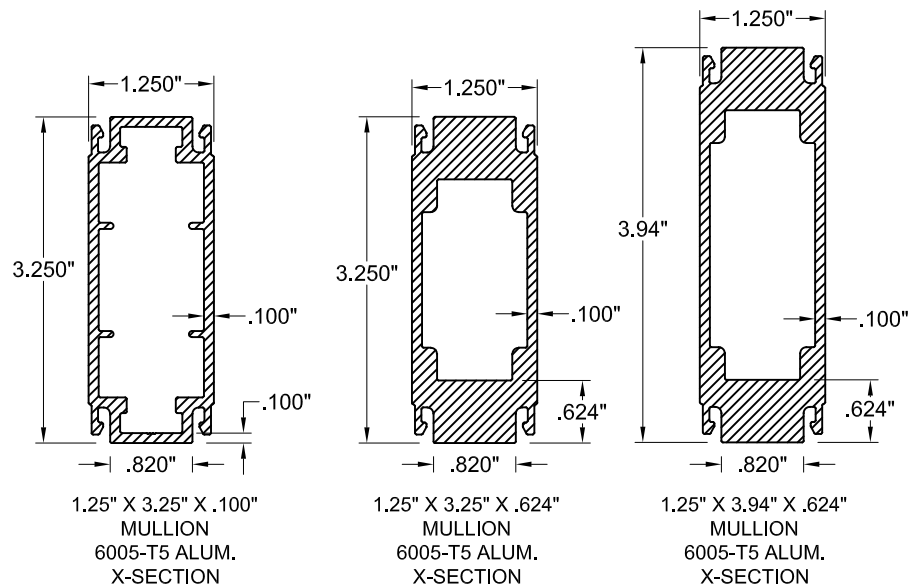
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5400/5500 SERIES ALUMINUM TUBE MULLIONS
1.25 X 3.94 X .624 MULL SPECS
5400/5500

02/03/15
J ROSOWSKI
8 OF 9
5XMULLS-FPA





USE THIS SHEET FOR
CLIPPED MULLIONS

INSTRUCTIONS:

1) DETERMINE THE DESIGN PRESSURE REQUIREMENT (LBS/FT²) FOR THE OPENING USING THE **ASCE-7 STANDARD**.

2) CHOOSE A MULLION TYPE THAT WILL FIT THE DEPTH OF THE FENESTRATION PRODUCT'S FRAME DEPTH.

3) REFER TO SHEETS 6-8 TO DETERMINE IF THE WIND LOADING IS "RECTANGULAR" OR "TRIANGULAR/TRAPEZOIDAL".

4) FIND THE CHOSEN MULLION'S **MULLION CAPACITY (LBS/FT²)** FROM TABLES 2A THROUGH 4A, ON SHEETS 6 THROUGH 8 RESPECTIVELY, USING THE MULLION TYPE, LENGTH AND OPENING WIDTH OR HEIGHT (DEPENDING IF THE MULLION IS SPANNING VERTICALLY OR HORIZONTALLY). THE MULLION CAPACITY (LBS/FT²) OBTAINED SHALL MEET OR EXCEED THE **DESIGN PRESSURE REQUIREMENT (LBS/FT²)** FOR THE OPENING OBTAINED IN STEP 1).

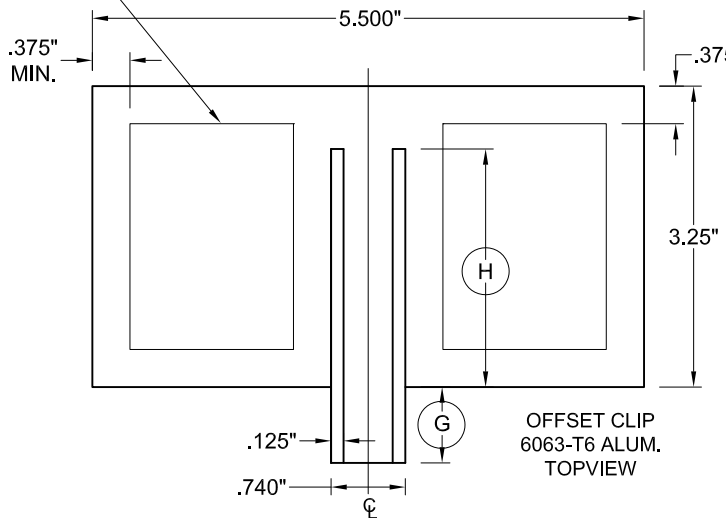
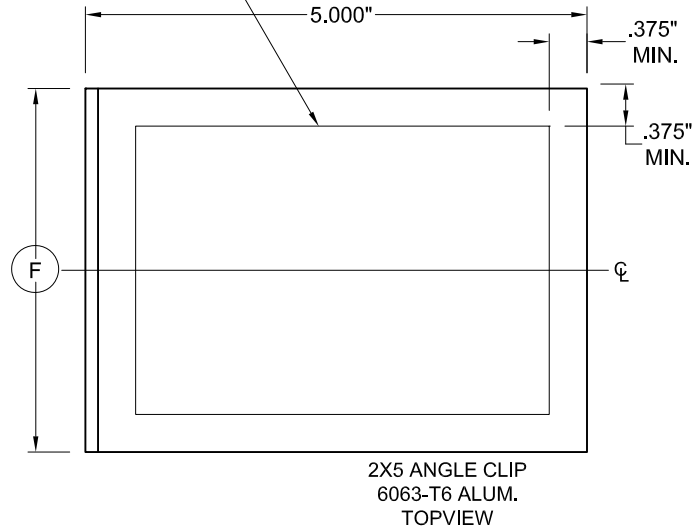
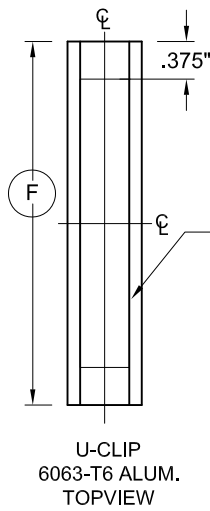
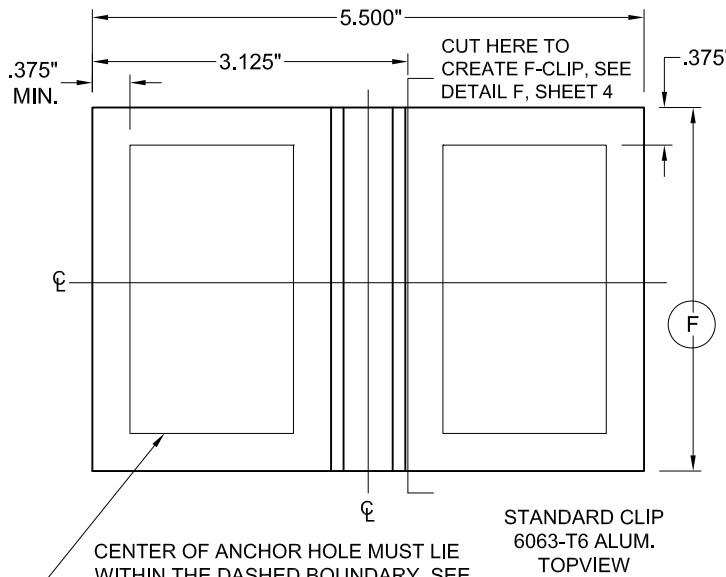
5) FROM THE SAME TABLE USED IN STEP 4) ABOVE, FIND THE VALUE IN THE NEXT COLUMN **ANCHOR CAPACITY REQUIRED (LBS)**. THIS VALUE REPRESENTS THE WINDLOAD TRANSFERRED TO THE SUBSTRATE BY THE ANCHORS AND MUST BE MET TO ATTAIN THE FULL MULLION CAPACITY.

6) FROM THE **ANCHOR CAPACITY (LBS) TABLE** ON THE SAME SHEET AND USING YOUR ACTUAL SUBSTRATE CONDITION (MULTIPLE ANCHOR/SUBSTRATE/ANCHOR-CLIP PATTERN MAY APPLY) SELECT AN ANCHOR CLIP PATTERN AND VERIFY THAT THE REQUIRED ANCHOR CAPACITY IS MET.

7) IF THE **MULLION CAPACITY (LBS/FT²)** OBTAINED IN THE TABLE IS HIGHER THAN THE **DESIGN PRESSURE REQUIREMENT (LBS/FT²)** FOR THE OPENING, YOU MAY USE THE **"ANCHOR CAPACITY ADJUSTMENT FORMULA"** TO OBTAIN THE LOWER ANCHOR CAPACITY REQUIRED. WITH THIS VALUE A LOWER ANCHOR CAPACITY OPTION MAY BE SELECTED FOR THE SAME SUBSTRATE

8) VERIFY THE DESIGN PRESSURE RATING (LBS/FT²) FOR THE FENESTRATION PRODUCT TO BE USED AND COMPARE WITH THE FINAL **MULLION CAPACITY (LBS/FT²)** OBTAINED FOR THE MULLION SYSTEM. THE LOWER OF THE TWO SHALL APPLY FOR THE ENTIRE MULLED FENESTRATION PRODUCT ASSEMBLY.

9) HIGHLIGHT OPTION USED AND TABLE VALUES USED IN A SPECIFIC APPLICATION WHEN USING THIS APPROVAL TO APPLY FOR A PERMIT.



CENTER OF ANCHOR HOLE MUST LIE WITHIN THE DASHED BOUNDARY. SEE TABLES 2B-4B FOR THE ANCHOR O.C. DISTANCE. MAXIMUM ANCHOR HOLE DIAMETER = ANCHOR DIAMETER + 1/16".

CENTER OF ANCHOR HOLE MUST LIE WITHIN THE DASHED BOUNDARY. SEE TABLES 2B-4B FOR THE ANCHOR O.C. DISTANCE. MAXIMUM ANCHOR HOLE DIAMETER = ANCHOR DIAMETER + 1/16".

TABLE C

Dimension	Value (in)	For Mullion:
F	2.250	1.25" X 3.25" X .100" Aluminum Tube Mullion
G	0.750	
H	1.500	
F	1.938	1.25" X 3.25" X .624" Aluminum Tube Mullion
G	0.500	
H	1.438	
F	2.625	1.25" X 3.94" X .624" Aluminum Tube Mullion
G	1.125	
H	1.500	

TABLE D

Mull Dimension (sheet #)	PGT Part #				
	Mullion	Std. Clip	Offset Clip	U-Clip	Angle Clip
1.25" X 3.25" X .100" (5)	20160	6661127M	6661124M	6662410M	6665115M
1.25" X 3.25" X .624" (6)	20161	6661128M	6661125M	6662411M	6665116M
1.25" X 3.94" X .624" (7)	20162	6661117M	6661126M	666241M	666517M

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	MULLION AND CLIP DIMENSIONS B		J ROSOWSKI		5X MULLS-FPA	
	5400/5500		9 OF 9		Sheet	

