

IMPACT-RESISTANT, CLIPPED, ALUMINUM TUBE MULLIONS

1) 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 IN THE HVHZ. MULLIONS ARE ONLY TO BE USED WITH THE MANUFACTURER'S FENESTRATION PRODUCTS.

2) INSTALLATION 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.

3) 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.

4) 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. DESIGN LOADS ARE BASED ON ALLOWABLE STRESS DESIGN, ASD.

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

6) USE THE COMBINED WIDTH OR HEIGHT OF ONLY TWO ADJACENT FENESTRATION PRODUCTS TO DETERMINE PRESSURES AND ANCHORAGE FOR THE COMMON MULLION. 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.

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) 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.

INSTRUCTIONS:

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

2) TO FIND THE DESIGN PRESSURE OF THE MULLION, USE TABLES 1A AND 2A. THE MULLION DESIGN PRESSURE OBTAINED SHALL MEET OR EXCEED THE DESIGN PRESSURE REQUIREMENT FOR THE OPENING OBTAINED IN STEP 1. NOTE THAT YOU MUST FIRST DETERMINE WHETHER YOU HAVE A SINGLE MULLION OR CROSSING MULLIONS.

3) AFTER OBTAINING THE MULLION'S DESIGN PRESSURE, FIND THE VALUE IN THE COLUMN TITLED "ANCHOR CAPACITY REQUIRED (LBS)". THIS VALUE REPRESENTS THE CLIP/ANCHOR CAPACITY THAT MUST BE MET TO ATTAIN THE MULLION DESIGN PRESSURE.

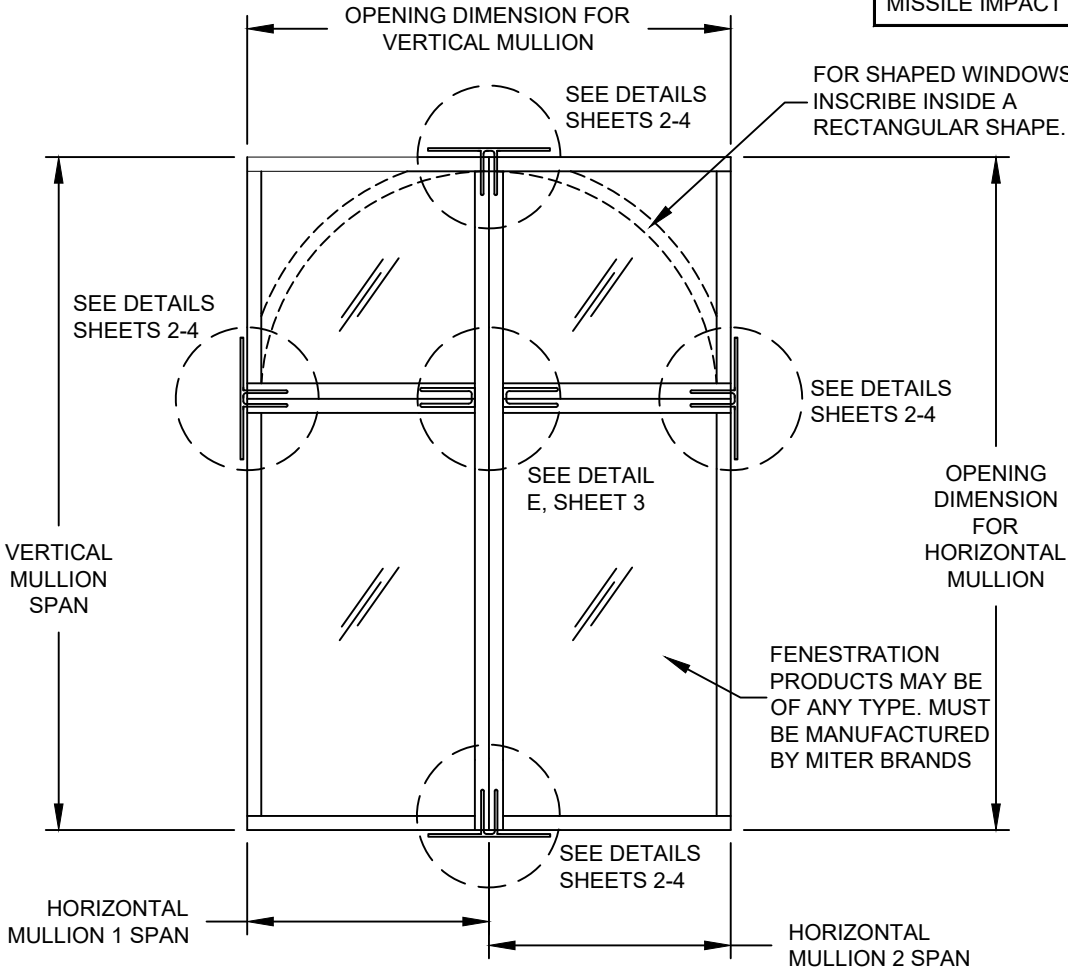
4) FROM THE ANCHOR/CLIP CAPACITY TABLE ON THE SAME SHEET, CHOOSE AN ANCHOR/CLIP/SUBSTRATE CONDITION THAT MEETS OR EXCEEDS THE VALUE OBTAINED FROM STEP 3.

5) VERIFY THE DESIGN PRESSURE OF THE FENESTRATION PRODUCT TO BE USED AND COMPARE WITH THE FINAL DESIGN PRESSURE FOR THIS MULLION SYSTEM. THE LOWER OF THE TWO SHALL APPLY FOR THE ENTIRE MULLED ASSEMBLY.

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

7) OPTIONALLY, IF THE MULLION DESIGN PRESSURE OBTAINED IN THE TABLE IS MUCH HIGHER THAN THE DESIGN PRESSURE REQUIREMENT FOR THE OPENING, YOU MAY USE THE **"ANCHOR CAPACITY ADJUSTMENT FORMULA"** TO OBTAIN A LOWER ANCHOR/CLIP CAPACITY.

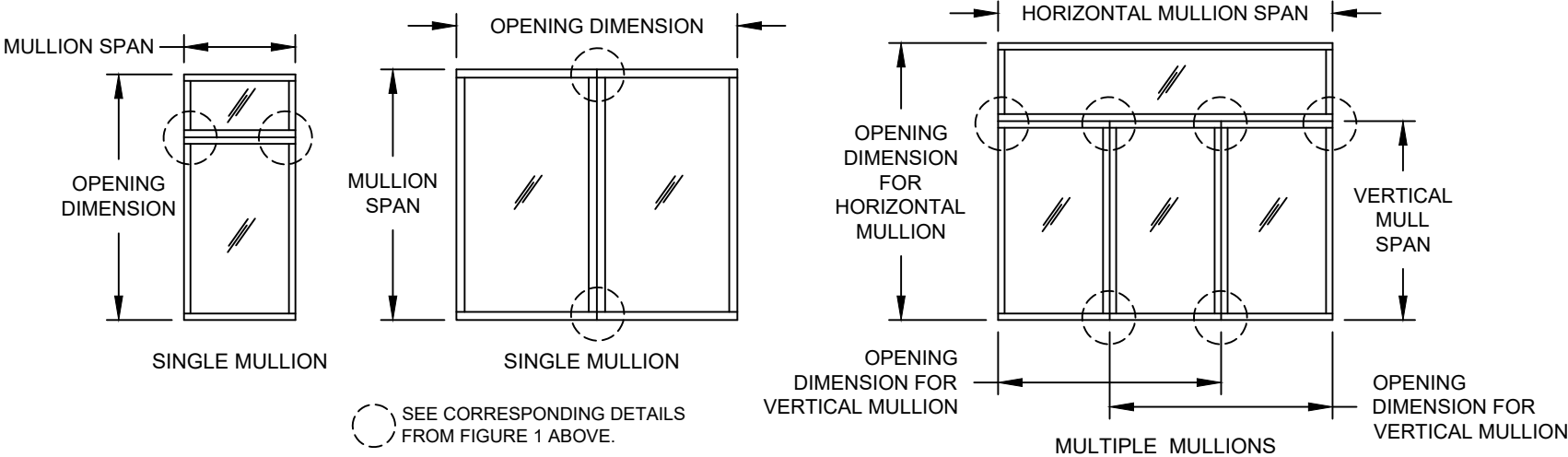
FIGURE 1: MULTIPLE MULLIONS



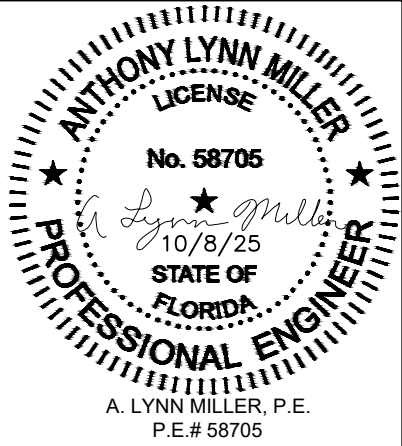
DESIGN PRESSURE RATING
SEE TABLES 1A - 2A
IMPACT RATING
RATED FOR LARGE & SMALL MISSILE IMPACT RESISTANCE

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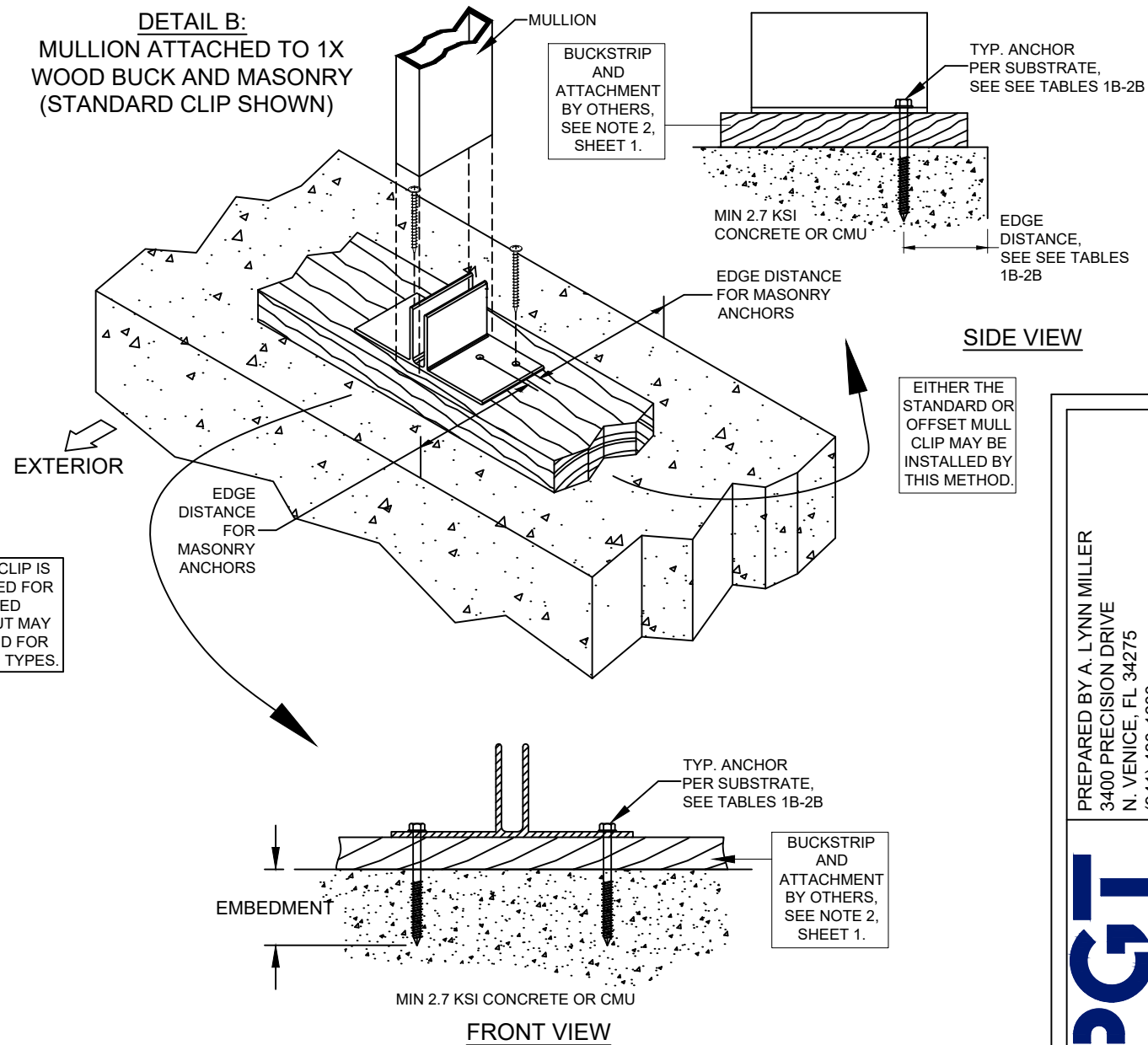
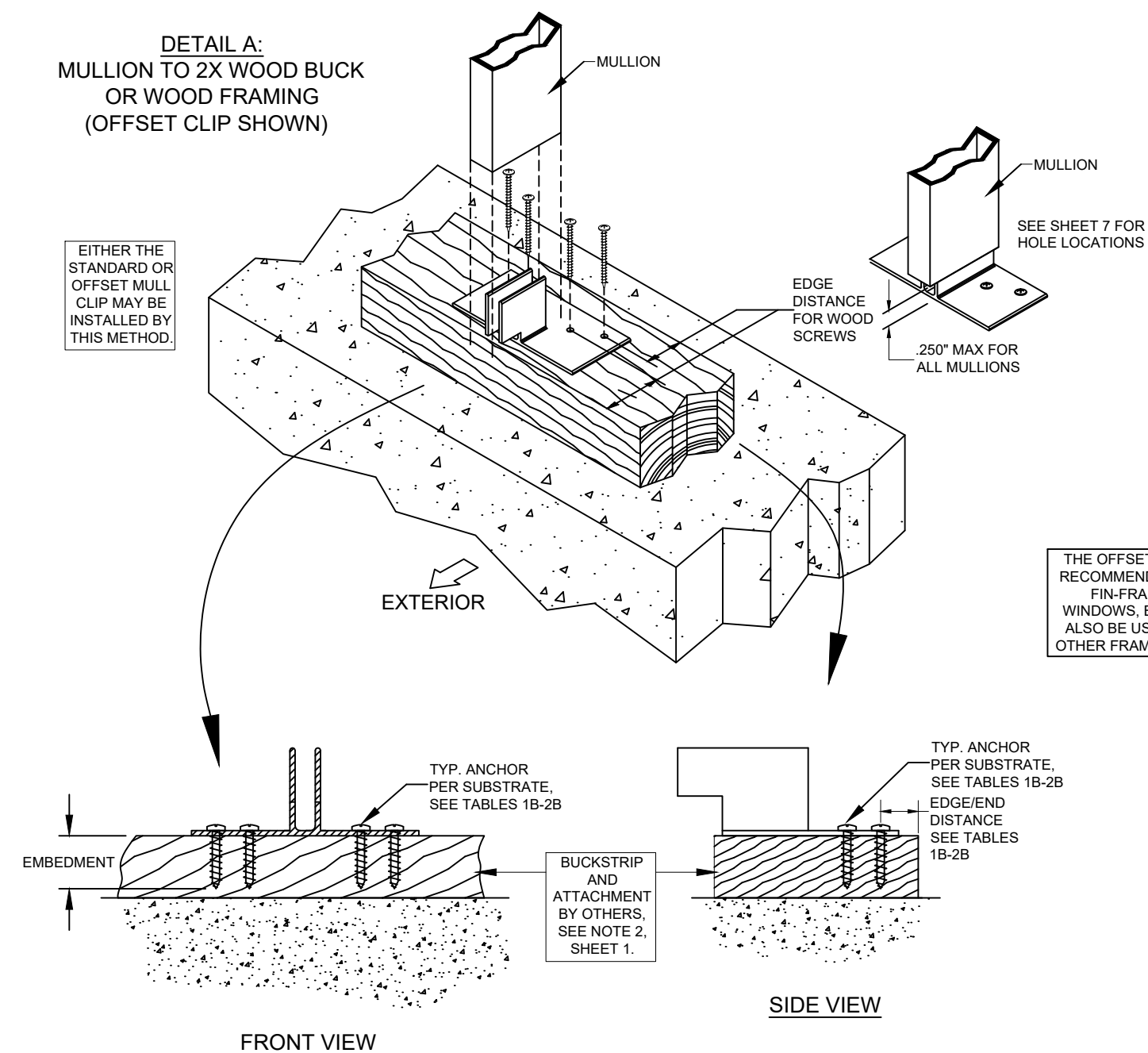
FIGURE 2: ADDITIONAL EXAMPLES OF MULLION CONFIGURATIONS:



PGT Custom Windows and Doors 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		PREPARED BY A. LYNN MILLER 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600			
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Title	1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)		Date	08/20/25	
GENERAL NOTES & ELEVATIONS			Drawn By	COLTON KEMP	
Series	MULL	1 OF 8	DWG No.	1X2MULLS-FPA	
Sheet					
Desc.					



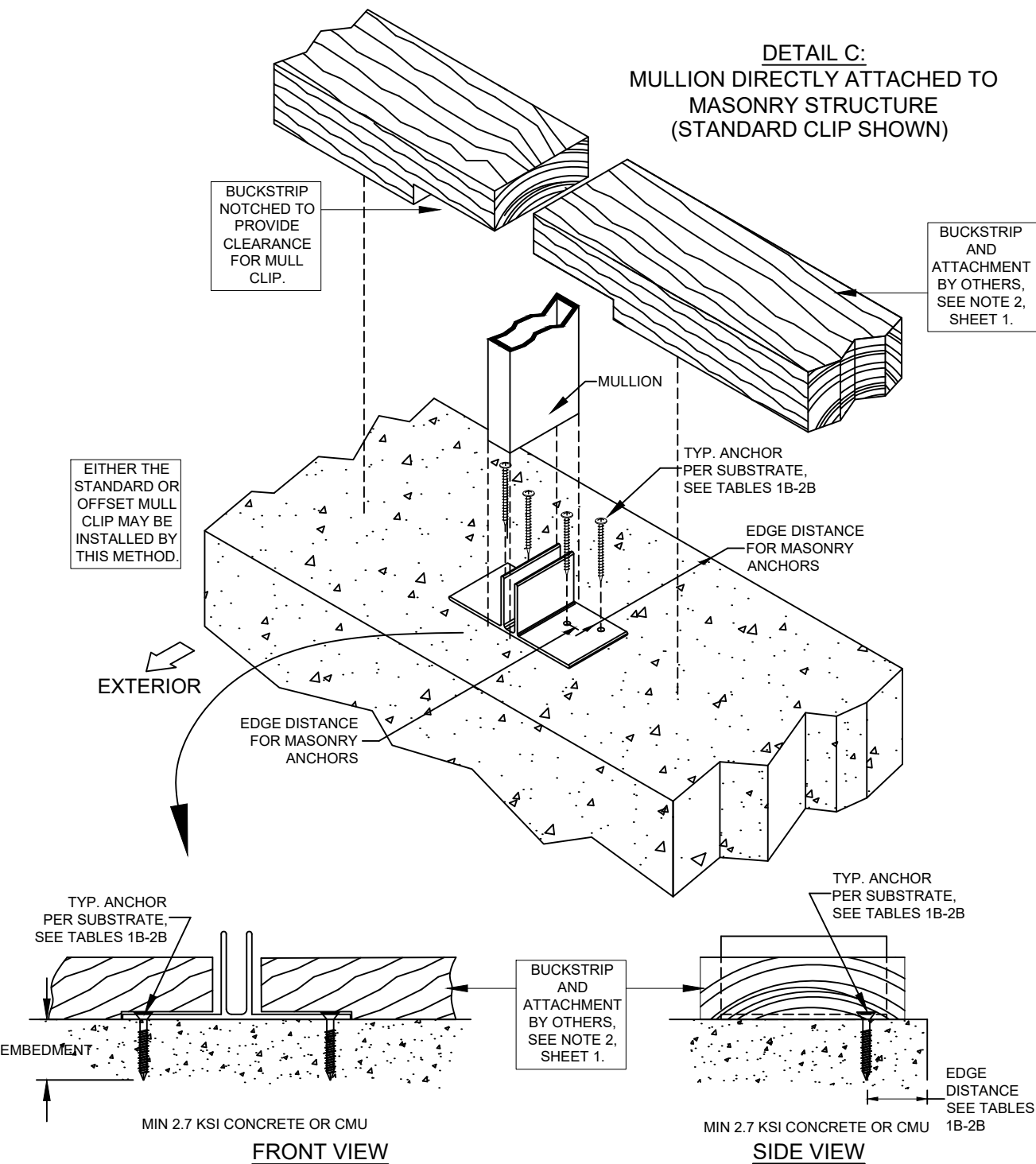
Rev.	10/8/25	REMOVED 1X3 MULL - CK	A
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INSTALLATION NOTES:

- 1) ANCHOR EMBEDMENT TO SUBSTRATE SHALL BE BEYOND WALL DRESSING OR STUCCO.
- 2) QUANTITY OF ANCHORS, MULLION TYPES AND MULLION CLIP TYPES AND STYLES 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-D, EITHER THE STANDARD OR OFFSET CLIP MAY BE USED.
- 3) ANCHOR HEAD TYPE MAY BE PANHEAD, HEXHEAD OR FLATHEAD.

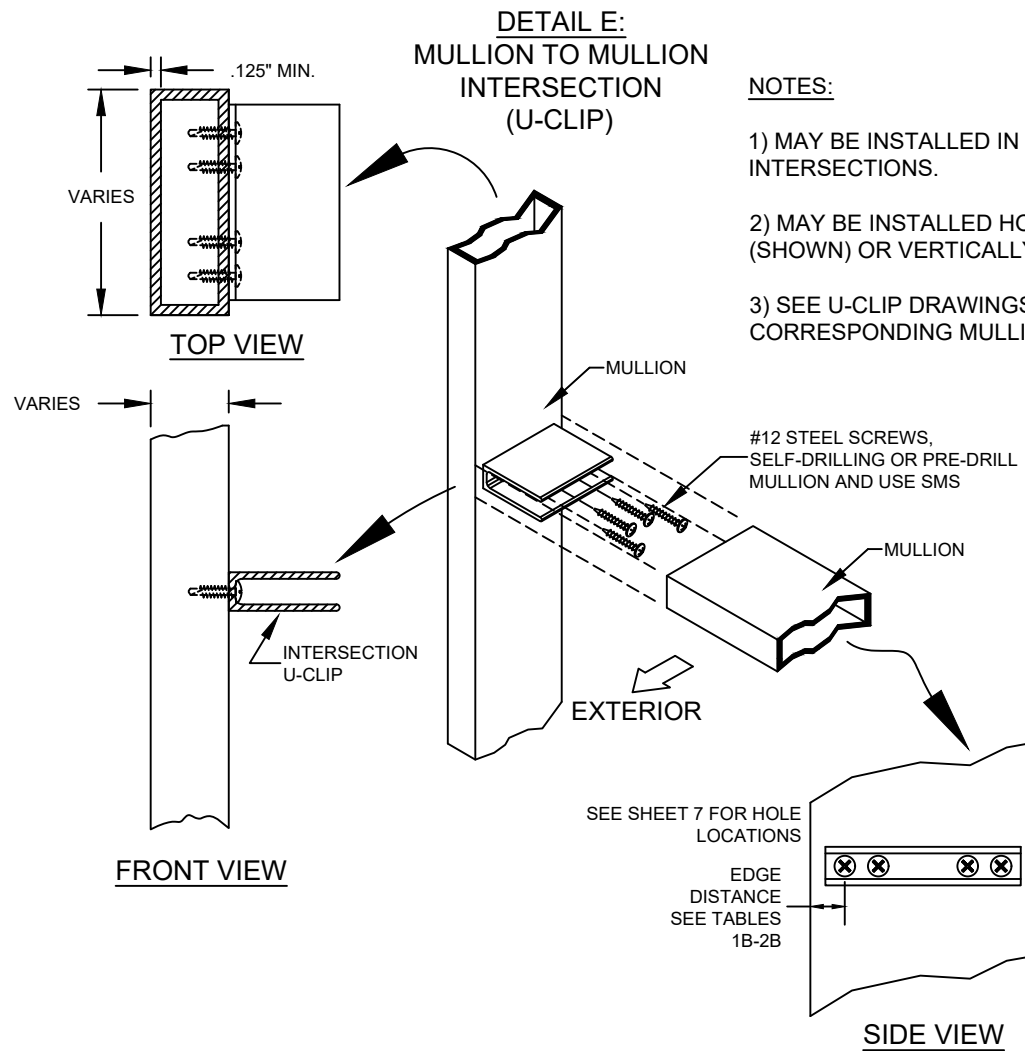
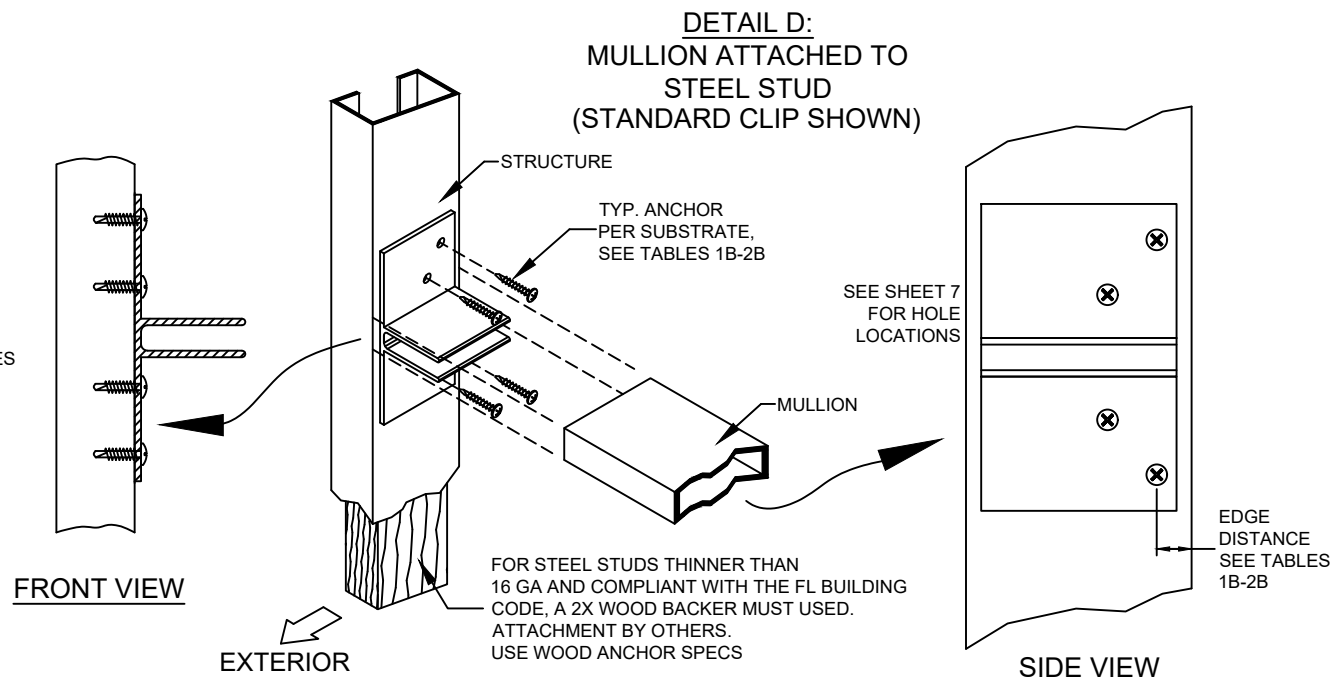
PGT Custom Windows and Doors 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		PREPARED BY A. LYNN MILLER 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		REGISTRATION #29296 COPYRIGHT © 2025 PGT, LLC, LIMITED LICENSE TO MAKE COPIES FOR PERMITTING.		1X2 ALUMINUM TUBE MULLION, CLIPPED (LM) 08/20/25	
1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)		INSTALLATION INSTRUCTIONS		By Drawn		COLTON KEMPFF	
Sheet		2 OF 8		DWG No.		1X2MULLS-FPA	
MULL		941		DATE		08/20/25	



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-D, 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 C, SHEET 3.

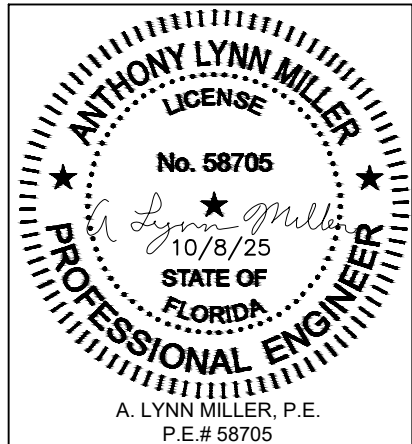
THE OFFSET CLIP IS RECOMMENDED FOR FIN-FRAMED WINDOWS, BUT MAY ALSO BE USED FOR OTHER FRAME TYPES.



NOTES:

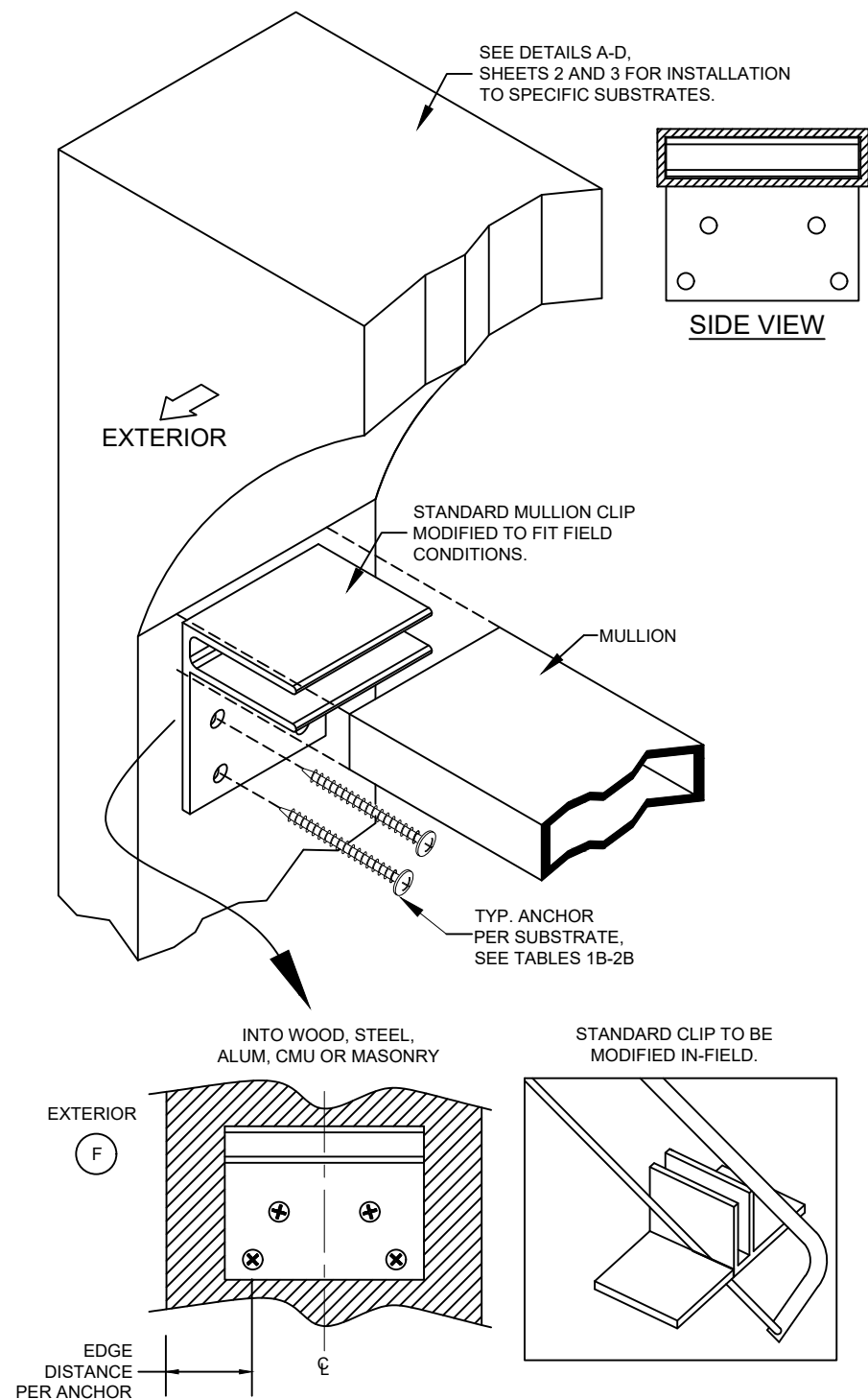
- 1) MAY BE INSTALLED IN "TEE" OR "CROSS" INTERSECTIONS.
- 2) MAY BE INSTALLED HORIZONTALLY (SHOWN) OR VERTICALLY.
- 3) SEE U-CLIP DRAWINGS, SHEET 7 FOR CORRESPONDING MULLION.

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1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)		COLTON KEMP		1X2MULLS-FPA	
INSTALLATION INSTRUCTIONS		MULL		3 OF 8	
PGT Custom Windows and Doors 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)		08/20/25	
Title		Desc.		Sheet	
Series		MULL		3 OF 8	
No.		DWG		1X2MULLS-FPA	
Date		08/20/25		1X2MULLS-FPA	



Rev.	10/8/25	A
Date	10/8/25	A
NO CHANGES THIS SHEET		

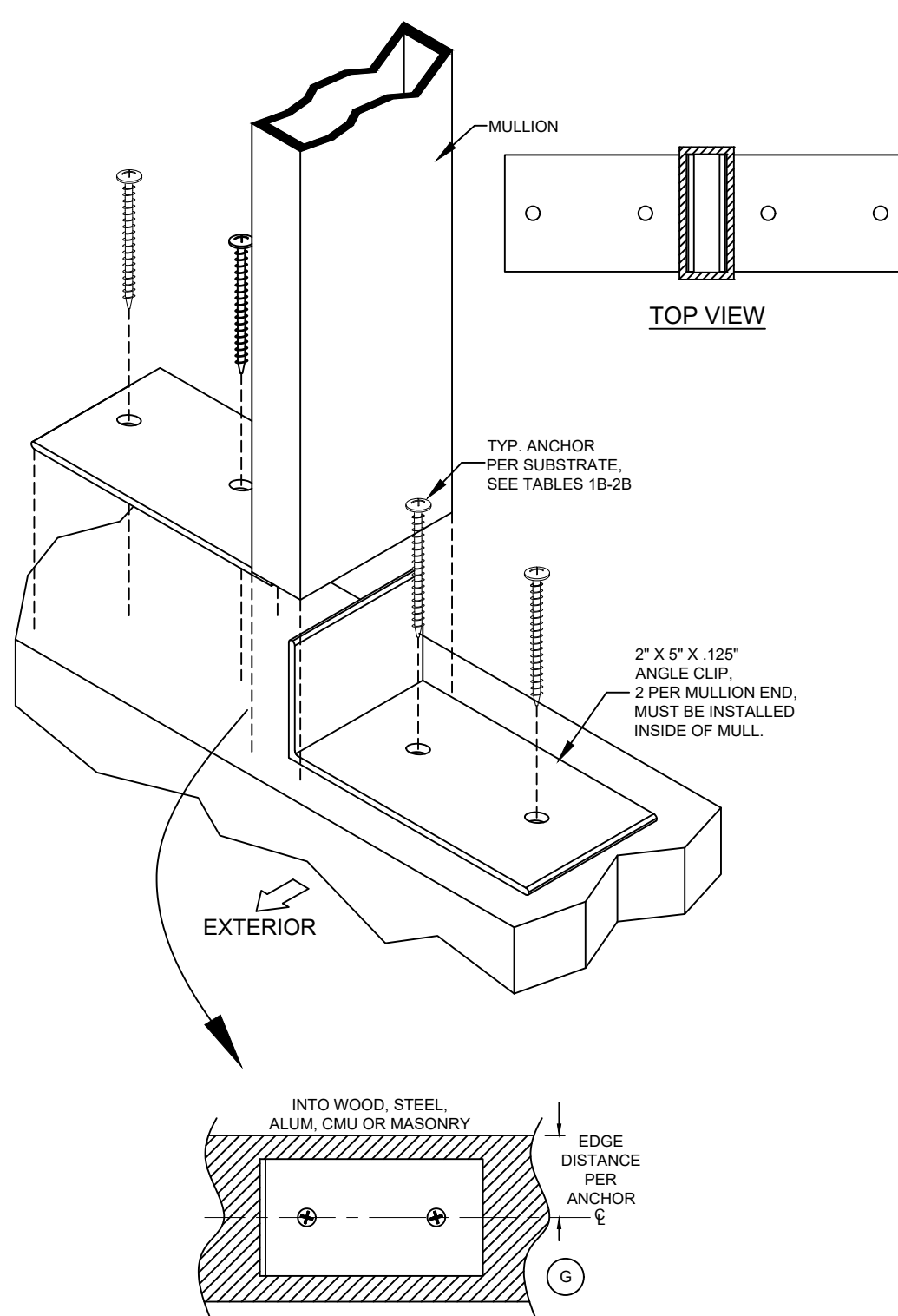
DETAIL F:
FIELD-MODIFIED MULLION CLIP
(F-CLIP)



NOTES FOR INSTALLATION OPTIONS F:

- 1) DETAIL IS NOT APPLICABLE FOR THE BAY MULLION.
- 2) SEE TABLES 1B-2B FOR ANCHOR QUANTITIES AND SHEET 7 FOR HOLE LOCATIONS.
- 3) THE 2X5 CLIP IS NOT SUITABLE FOR THIS APPLICATION.

DETAIL G:
ANGLE MULLION CLIP
(ANGLE CLIP)



NOTES FOR INSTALLATION OPTION G:

- 1) USE 2 ANGLE CLIPS PER MULLION END. CLIPS MUST BE INSERTED INSIDE OF MULLION.
- 2) DETAIL G: SEE TABLES 1B-2B FOR ANCHOR QUANTITIES AND SHEET 7 FOR HOLE LOCATIONS.

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PGT Custom Windows and Doors 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		INSTALLATION INSTRUCTIONS		COLTON KEMPF
1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)		DWG No.		1X2MULLS-FPA
MULL		4 OF 8		Sheet
Series Desc. Title		DWG No.		1X2MULLS-FPA

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TABLE 1A

1" x 2" x 1/8" Tube Mullion Design Pressure & Clip/Anchor Capacity Requirement		Opening Dimension																																			
		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 Span	42 in	111.8	408	129.4	331	93.2	408	115.5	325	79.8	408	107.7	321	69.9	408	104.3	319	62.1	408	104.0	318	55.9	408	104.0	318	46.6	408	104.0	318	39.9	408	104.0	318	34.9	408	104.0	318
	48 in	74.9	312	83.7	258	62.4	312	73.4	252	53.5	312	66.9	248	46.8	312	63.1	246	41.6	312	61.3	244	37.4	312	60.9	244	31.2	312	60.9	244	26.7	312	60.9	244	23.4	312	60.9	244
	50-5/8 in	63.8	281	70.6	234	53.2	281	61.5	228	45.6	281	55.7	224	39.9	281	52.1	222	35.5	281	50.1	220	31.9	281	49.3	219	26.6	281	49.3	219	22.8	281	49.3	219	19.9	281	49.3	219
	54 in	52.6	247	57.4	207	43.8	247	49.8	202	37.6	247	44.8	199	32.9	247	41.5	196	29.2	247	39.4	194	26.3	247	38.3	193	21.9	247	38.0	193	18.8	247	38.0	193	16.4	247	38.0	193
	60 in	38.3	200	41.2	170	32.0	200	35.4	166	27.4	200	31.5	163	24.0	200	28.9	160	21.3	200	27.0	158	19.2	200	25.9	157	16.0	200	25.0	156	13.7	200	25.0	156	12.0	200	25.0	156
	63 in	33.1	181	35.3	155	27.6	181	30.3	151	23.7	181	26.9	149	20.7	181	24.5	146	18.4	181	22.8	144	16.6	181	21.7	143	13.8	181	20.6	142	11.8	181	20.5	142	10.4	181	20.5	142
	66 in	28.8	165	30.5	142	24.0	165	26.1	139	20.6	165	23.1	136	18.0	165	21.0	134	16.0	165	19.4	132	14.4	165	18.4	131	12.0	165	17.2	129	10.3	165	17.1	129	9.0	165	17.1	129
	72 in	22.2	139	23.3	120	18.5	139	19.9	118	15.8	139	17.5	116																								
	76 in	18.9	124	19.7	109	15.7	124	16.8	106																												
78 in	17.5	118	18.2	103																																	

ANCHOR CAPACITY ADJUSTMENT FORMULA:

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

= 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.

TABLE 1B

Anchor Capacity (lbs)	Substrate:	2.7k Concrete				3k Concrete				3.5k Conc.	Hollow CMU								Filled CMU	Wood		Metal		
	Anchor Type:	3/16" Elco Ultracon		1/4" Elco Ultracon		3/16" DeWalt Ultracon+		1/4" DeWalt Ultracon+		5/16" Elco Ultracon	3/16" Elco Ultracon		1/4" 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"	1"	2-1/2"	1"	2-1/2"	3-1/8"	1"	2-1/2"	1"	2-1/2"	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"	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"	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):		390 lbs	390 lbs	450 lbs	890 lbs	310 lbs	630 lbs	220 lbs	870 lbs	1644 lbs	270 lbs	280 lbs	354 lbs	740 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):		480 lbs	700 lbs	N/A	N/A	320 lbs	1260 lbs	370 lbs	N/A	N/A	N/A	380 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):		780 lbs	780 lbs	680 lbs	1560 lbs	620 lbs	1260 lbs	440 lbs	1740 lbs	1896 lbs	540 lbs	560 lbs	N/A	760 lbs	460 lbs	740 lbs	640 lbs	1160 lbs	748 lbs	880 lbs	1892 lbs	682 lbs	885 lbs	1120 lbs
2 Anchors @ 0.45" Min. O.C. / U-Clip, into .125" 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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	715 lbs
1 Anchor / F-Clip (Fig. 5):		195 lbs	195 lbs	225 lbs	445 lbs	155 lbs	315 lbs	110 lbs	435 lbs	822 lbs	135 lbs	140 lbs	177 lbs	370 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):		240 lbs	350 lbs	N/A	N/A	160 lbs	630 lbs	185 lbs	N/A	N/A	N/A	190 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:



FIGURE 2:

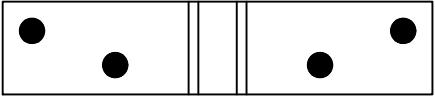
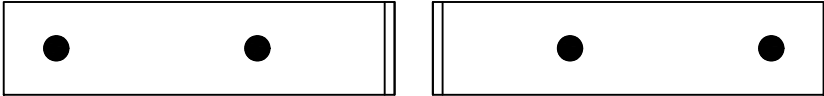


FIGURE 3:



ANGLE CLIP MUST BE USED IN PAIRS.

FIGURE 4:

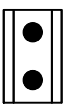


FIGURE 5:

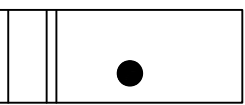


FIGURE 6:

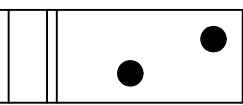
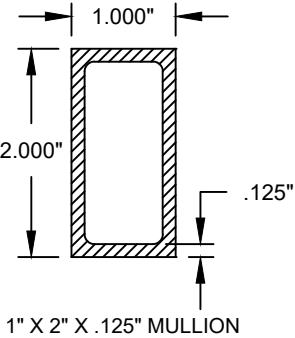


TABLE NOTES:

- 1) SEE SHEET 1 FOR INSTRUCTIONS ON USING THE TABLES AND SHEET 8 FOR INFORMATION ON LOADING. SEE SHEETS 2-4 FOR GENERAL INSTALLATION METHODS.
- 2) LINEAR INTERPOLATION BETWEEN MULL LENGTHS AND/OR OPENING WIDTHS IS ALLOWABLE.
- 3) MULLION AND MULLION CLIPS SHOWN ARE NOT TO SCALE. FOR EXACT DIMENSIONS, SEE SHEET 7. HOLES TO BE DRILLED IN THE FIELD FOLLOWING DIMENSIONAL RESTRICTIONS SHOWN ON SHEETS 7. FIGURES SHOW SUGGESTED, APPROXIMATE HOLE LOCATIONS.
- 4) SUBSTRATES: CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS. HOLLOW AND GROUT-FILLED CONCRETE BLOCK UNIT (CMU) SHALL CONFORM TO ASTM C-90. WOOD SHALL BE YELLOW SOUTHERN PINE WITH AN SG OF 0.55. ALUMINUM SHALL BE 6063-T5 AND BE A MINIMUM OF .125" THICK. STEEL STUDS TO BE A MINIMUM GRADE 33 AND .045" THICK (18 GAUGE). STRUCTURAL STEEL TO BE AT LEAST .125" THICK AND A36. ALL ANCHORS INTO METAL SHALL EXTEND AT LEAST 3 SCREW THREADS BEYOND THE MATERIAL. #10 & #12 ANCHORS INTO WOOD MAY BE STEEL, 18-8 S.S. OR 410 S.S.



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1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)

1 X 2 X 1/8 CAPACITIES

08/20/25

COLTON KEMPF

1X2MULLS-FPA

5 OF 8

MULL

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STATE OF FLORIDA
PROFESSIONAL ENGINEER
A. LYNN MILLER, P.E.
P.E.# 58705

TABLE 2A

1" x 2" x 3/8" Tube Mullion Design Pressure & Clip/Anchor Capacity Requirement		Opening Dimension																																			
		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 Span	42 in	170.0	620	170.0	435	151.3	662	170.0	478	129.7	662	170.0	506	113.5	662	169.5	518	100.9	662	168.9	517	90.8	662	168.9	517	75.7	662	168.9	517	64.9	662	168.9	517	56.7	662	168.9	517
	48 in	121.6	507	136.0	419	101.4	507	119.2	410	86.9	507	108.7	403	76.0	507	102.6	399	67.6	507	99.6	397	60.8	507	99.0	396	50.7	507	99.0	396	43.4	507	99.0	396	38.0	507	99.0	396
	50-5/8 in	103.7	456	114.6	379	86.4	456	99.9	371	74.1	456	90.5	364	64.8	456	84.6	360	57.6	456	81.3	357	51.8	456	80.0	356	43.2	456	80.0	356	37.0	456	80.0	356	32.4	456	80.0	356
	54 in	85.4	400	93.3	336	71.2	400	80.9	328	61.0	400	72.7	322	53.4	400	67.3	318	47.5	400	64.0	315	42.7	400	62.3	314	35.6	400	61.8	313	30.5	400	61.8	313	26.7	400	61.8	313
	60 in	62.3	324	66.9	276	51.9	324	57.5	270	44.5	324	51.2	264	38.9	324	46.9	260	34.6	324	43.9	257	31.1	324	42.0	255	26.0	324	40.5	253	22.2	324	40.5	253	19.5	324	40.5	253
	63 in	53.8	294	57.4	252	44.8	294	49.2	246	38.4	294	43.6	241	33.6	294	39.8	237	29.9	294	37.1	234	26.9	294	35.2	232	22.4	294	33.5	230	19.2	294	33.4	230	16.8	294	33.4	230
	66 in	46.8	268	49.6	230	39.0	268	42.4	225	33.4	268	37.5	221	29.2	268	34.1	218	26.0	268	31.6	215	23.4	268	29.8	212	19.5	268	28.0	210	16.7	268	27.7	209	14.6	268	27.7	209
	72 in	36.0	225	37.9	196	30.0	225	32.2	191	25.7	225	28.4	188	22.5	225	25.6	185	20.0	225	23.5	182	18.0	225	22.1	180	15.0	225	20.3	177	12.9	225	19.6	176	11.3	225	19.6	176
	76 in	30.6	202	32.0	177	25.5	202	27.2	173	21.9	202	23.9	170	19.2	202	21.5	167	17.0	202	19.7	165	15.3	202	18.4	163	12.8	202	16.7	160								
78 in	28.3	192	29.6	168	23.6	192	25.1	165	20.2	192	22.0	162	17.7	192	19.7	159	15.7	192	18.1	157																	
90 in	18.5	144	19.0	128	15.4	144	16.1	126																													

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 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.

TABLE 2B

Anchor Capacity (lbs)	Substrate:	2.7k Concrete				3k Concrete				3.5k Conc.	Hollow CMU								Filled CMU	Wood		Metal		
	Anchor Type:	3/16" Elco Ultracon		1/4" Elco Ultracon		3/16" DeWalt Ultracon+		1/4" DeWalt Ultracon+		5/16" Elco Ultracon	3/16" Elco Ultracon		1/4" 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"	1"	2-1/2"	1"	2-1/2"	3-1/8"	1"	2-1/2"	1"	2-1/2"	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"	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"	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):		390 lbs	390 lbs	450 lbs	890 lbs	310 lbs	630 lbs	220 lbs	870 lbs	1644 lbs	270 lbs	280 lbs	354 lbs	740 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):		480 lbs	700 lbs	N/A	N/A	320 lbs	1260 lbs	370 lbs	N/A	N/A	N/A	380 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):		780 lbs	780 lbs	680 lbs	1560 lbs	620 lbs	1260 lbs	440 lbs	1740 lbs	1896 lbs	540 lbs	560 lbs	N/A	760 lbs	460 lbs	740 lbs	640 lbs	1160 lbs	748 lbs	880 lbs	1892 lbs	682 lbs	885 lbs	1120 lbs
2 Anchors @ 0.45" Min. O.C. / U-Clip, into .125" 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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	715 lbs
1 Anchor / F-Clip (Fig. 5):		195 lbs	195 lbs	225 lbs	445 lbs	155 lbs	315 lbs	110 lbs	435 lbs	822 lbs	135 lbs	140 lbs	177 lbs	370 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):		240 lbs	350 lbs	N/A	N/A	160 lbs	630 lbs	185 lbs	N/A	N/A	N/A	190 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.

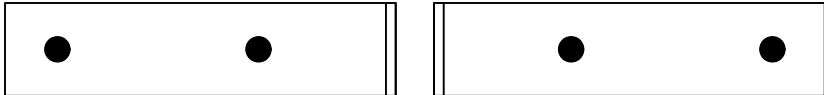
FIGURE 1:



FIGURE 2:



FIGURE 3:



ANGLE CLIP MUST BE USED IN PAIRS.

FIGURE 4:

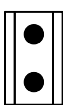


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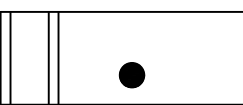


FIGURE 6:

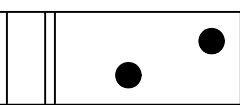
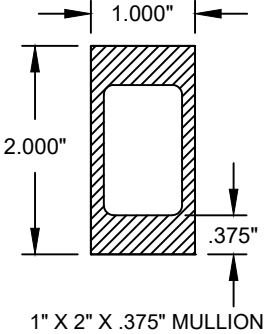


TABLE NOTES:

- 1) SEE SHEET 1 FOR INSTRUCTIONS ON USING THE TABLES AND SHEET 8 FOR INFORMATION ON LOADING. SEE SHEETS 2-4 FOR GENERAL INSTALLATION METHODS.
- 2) LINEAR INTERPOLATION BETWEEN MULL LENGTHS AND/OR OPENING WIDTHS IS ALLOWABLE.
- 3) MULLION AND MULLION CLIPS SHOWN ARE NOT TO SCALE. FOR EXACT DIMENSIONS, SEE SHEET 7. HOLES TO BE DRILLED IN THE FIELD FOLLOWING DIMENSIONAL RESTRICTIONS SHOWN ON SHEET 7. FIGURES SHOW SUGGESTED, APPROXIMATE HOLE LOCATIONS.
- 4) SUBSTRATES: CONCRETE SHALL CONFORM TO ACI 301 SPECIFICATIONS. HOLLOW AND GROUT-FILLED CONCRETE BLOCK UNIT (CMU) SHALL CONFORM TO ASTM C-90. WOOD SHALL BE YELLOW SOUTHERN PINE WITH AN SG OF 0.55. ALUMINUM SHALL BE 6063-T5 AND BE A MINIMUM OF .125" THICK. STEEL STUDS TO BE A MINIMUM GRADE 33 AND .045" THICK (18 GAUGE). STRUCTURAL STEEL TO BE AT LEAST .125" THICK AND A36. ALL ANCHORS INTO METAL SHALL EXTEND AT LEAST 3 SCREW THREADS BEYOND THE MATERIAL. #10 & #12 ANCHORS INTO WOOD MAY BE STEEL, 18-8 S.S. OR 410 S.S.



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PGT
Custom Windows and Doors
3400 PRECISION DRIVE
N. VENICE, FL 34275
(941) 480-1600

1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)

1 X 2 X 3/8 CAPACITIES

Date08/20/25

DrawnCOLTON KEMPFF

Series

No.6 OF 8

SheetMULL

1X2MULLS-FPA

Rev.#A

10/8/25

Date

REVISED TABLE 2A - CK

Rev.

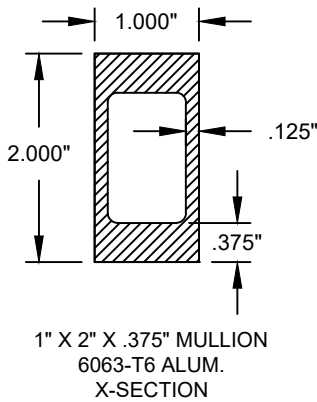
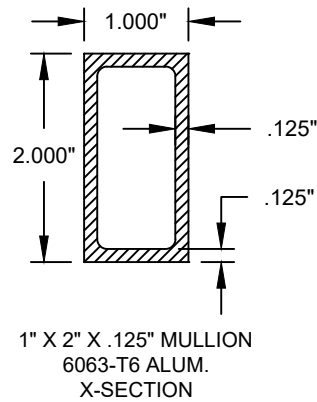


TABLE A

Dimension	Value (in)	For Mullion:
A	1.625	1" X 2" X .125" Aluminum Tube Mullion
B	2.654	
C	0.885	
D	0.740	
A	1.125	1" X 2" X .375" Aluminum Tube Mullion
B	2.404	
C	0.635	
D	0.490	

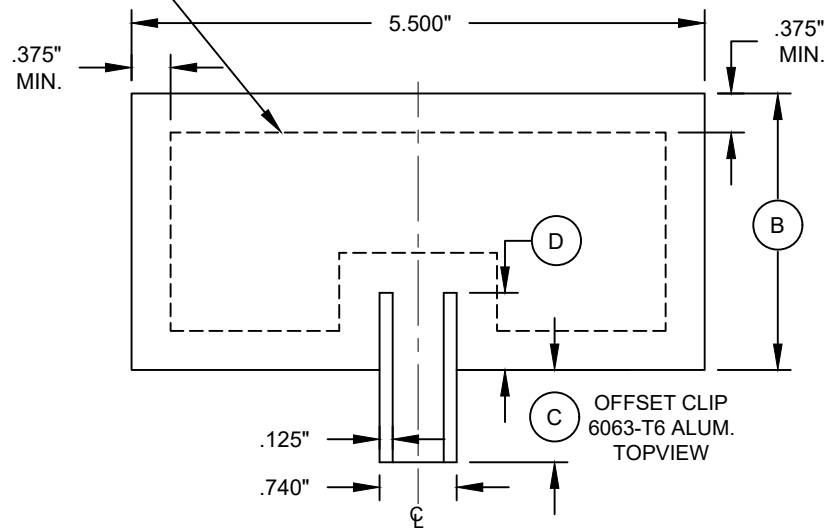
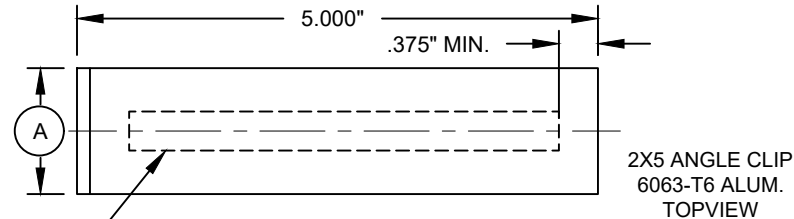
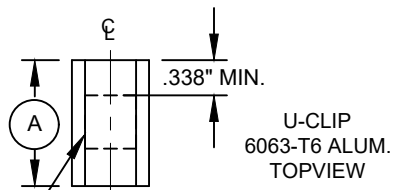
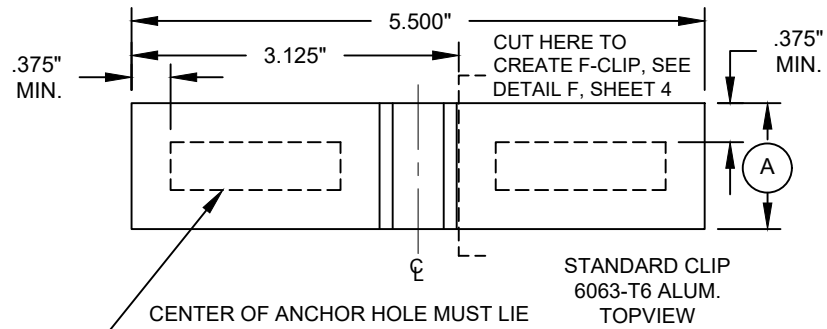
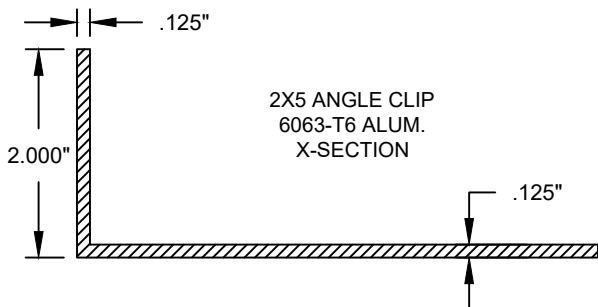
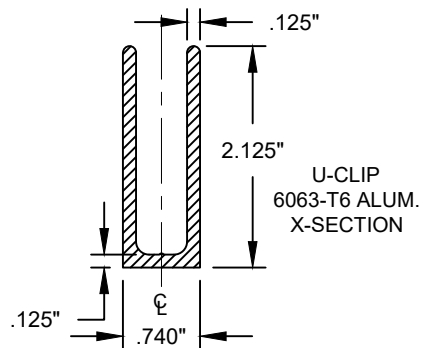
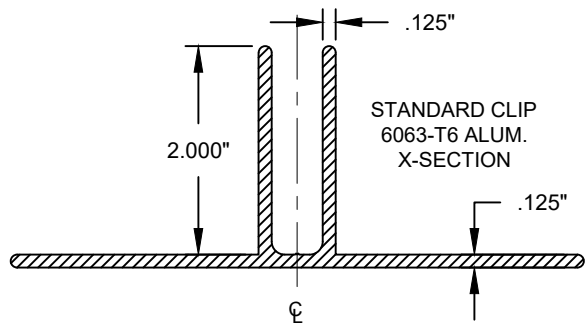


TABLE B

Mull Dimension (sheet #)	PGT Part #				
	Mullion	Std. Clip	Offset Clip	U-Clip	Angle Clip
1" X 2" X .125" (5)	66605	666113M	6661118M	666243M	666511M
1" X 2" X .375" (6)	666006	666114M	6661119M	666244M	666512M

NOTES:

- HOLES TO BE DRILLED IN THE FIELD FOLLOWING DIMENSIONAL RESTRICTIONS GIVEN ON THIS SHEET.
- SEE SHEETS 5-6 FOR SUGGESTED, APPROXIMATE HOLE LOCATIONS & ANCHOR O.C. DISTANCE.
- SEE SHEETS 2-4 FOR GENERAL INSTALLATION METHODS.

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Custom Windows and Doors

3400 PRECISION DRIVE
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1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)

CLIP DIMENSIONS

7 OF 8

MULL

1X2MULLS-FPA

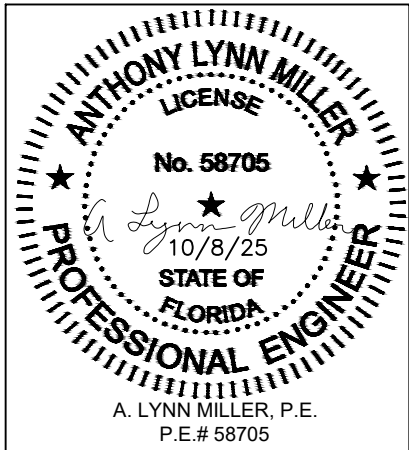
Rev. #

10/8/25

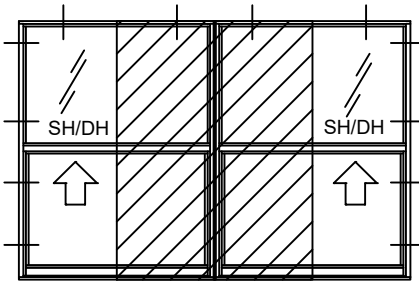
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Rev.

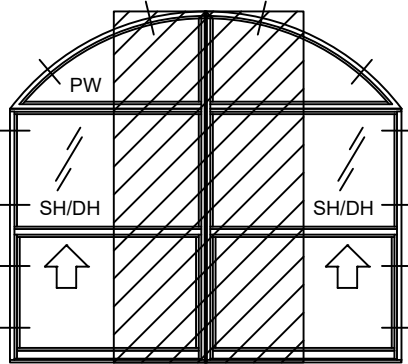
REMOVED 1X3 MULL, REVISED
TABLE A, ADDED TABLE B - CK



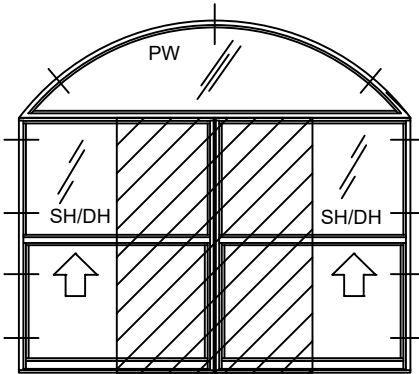
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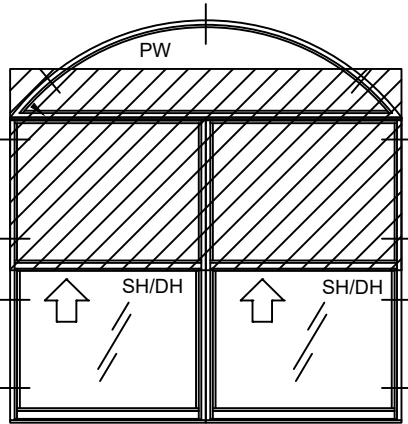
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SILL OF WINDOWS NOT ANCHORED



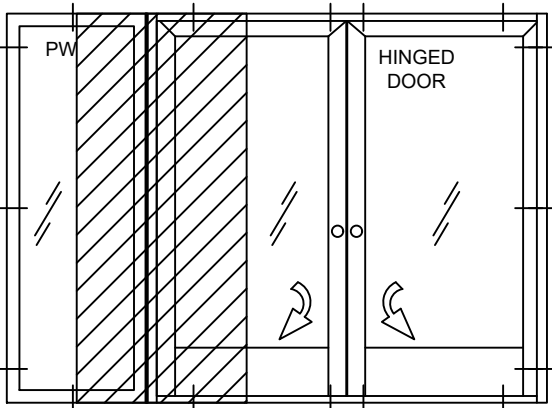
LOADING OF VERTICAL MULLION
WITH INTERSECTING HORIZONTAL MULLIONS



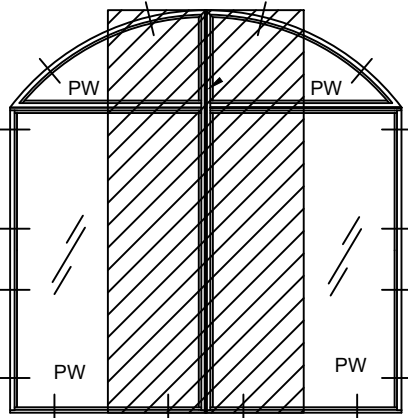
LOADING OF VERTICAL MULLION
SILL OF WINDOWS NOT ANCHORED



LOADING OF HORIZONTAL MULLION
WITH INTERSECTING VERTICAL MULLION

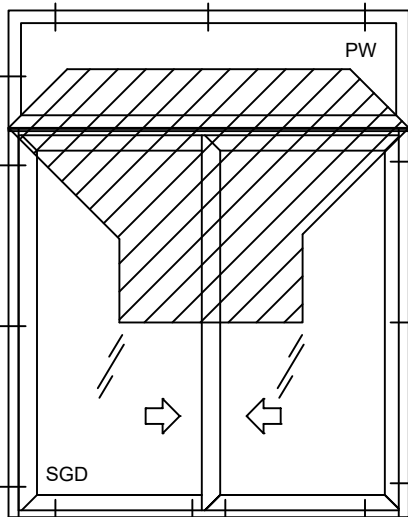


LOADING OF VERTICAL MULLION PANEL OF
HINGED DOOR IS NOT CAPTURED OR ANCHORED

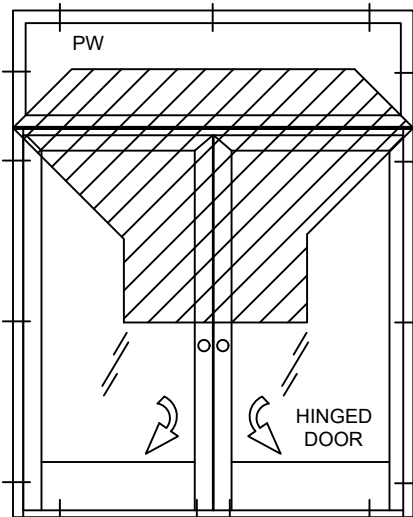


LOADING OF VERTICAL MULLION
WITH INTERSECTING HORIZONTAL MULLIONS

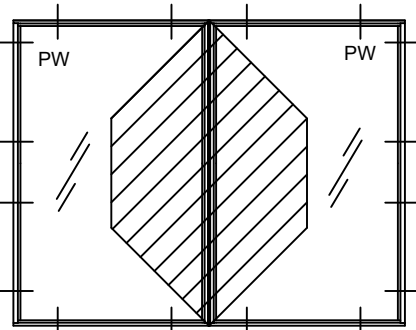
EXAMPLES OF TRAPEZOIDAL/TRIANGULAR LOADING:



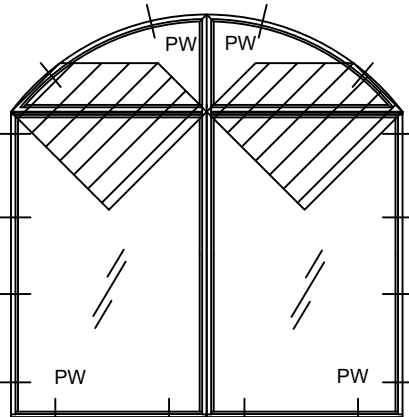
LOADING OF HORIZONTAL MULLION



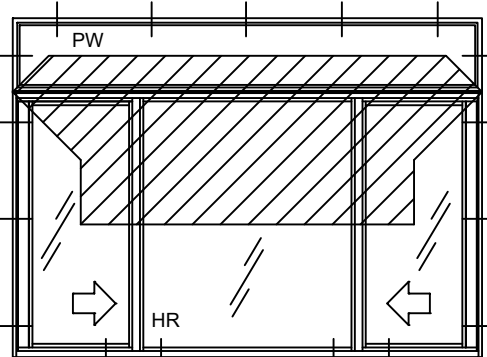
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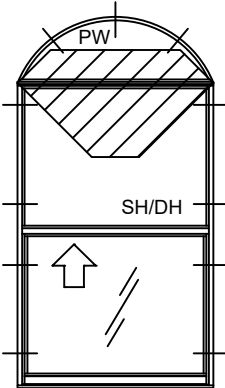
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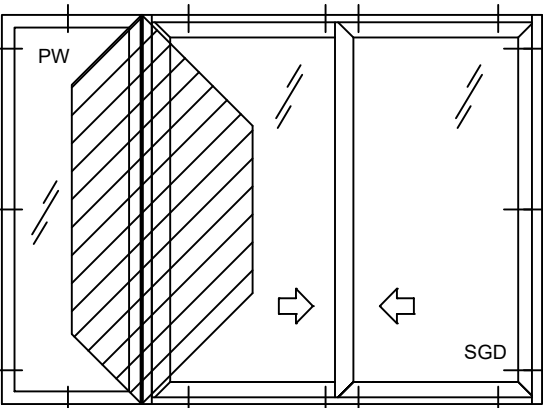
LOADING OF (2) HORIZONTAL MULLIONS



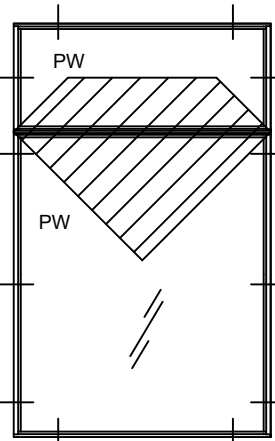
LOADING OF HORIZONTAL MULLION



LOADING OF
HORIZONTAL MULLION



LOADING OF VERTICAL MULLION



LOADING OF
HORIZONTAL MULLION

- NOTES:
- 1) DRAWINGS ARE RERESENTATIONS OF TYPICAL CONFIGURATIONS. CONFIGURATIONS NOT SHOWN MAY BE EXTRAPOLATED FROM THOSE SHOWN.
 - 2) IF THE LOADING TYPE CANNOT BE DETERMINED, USE RECTANGULAR LOADING.
 - 3) SEE PRODUCTS' APPROVAL FOR ACTUAL ANCHOR LOCATIONS.

PREPARED BY A. LYNN MILLER 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		REGISTRATION #29296 COPYRIGHT © 2025 PGT, LLC, LIMITED LICENSE TO MAKE COPIES FOR PERMITTING.		1X2 ALUMINUM TUBE MULLION, CLIPPED (LM)		08/20/25	
PGT Custom Windows and Doors 3400 PRECISION DRIVE N. VENICE, FL 34275 (941) 480-1600		LOADING AREA EXAMPLES		COLTON KEMPF		1X2MULLS-FPA	
MULL		8 OF 8		Sheet		NO CHANGES THIS SHEET	
Series		Desc.		Title		Rev.	
A		10/8/25		Date		Rev. #	

