

RENAISSANCE WINDOWS AND DOORS

CLIPPED ALUMINUM TUBE MULLION

IMPACT RESISTANT

MULLION SPAN VS. LOAD WIDTH TABLES - INSTALLATION ANCHORAGE DETAILS

GENERAL NOTES:

1. THE SYSTEM DESCRIBED HEREIN IS DESIGNED TO COMPLY WITH THE 9TH EDITION (2026) FLORIDA BUILDING CODE AND THE9TH EDITION (2026) FLORIDA RESIDENTIAL CODE AT THE DESIGN PRESSURES STATED HEREIN.
2. POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB SPECIFIC BASIS IN ACCORDANCE WITH CHAPTER 16 OF THE 9TH EDITION (2026) FLORIDA BUILDING CODE AND CHAPTER 3 OF THE 9TH EDITION (2026) FLORIDA RESIDENTIAL CODE.
3. 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 IF REQUIRED.
4. 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.
5. ALL EXTRUSIONS SHALL BE 6063-T6 ALUMINUM ALLOY, UNLESS NOTED OTHERWISE.
6. ALL FENESTRATION PRODUCTS TO BE USED WITH THESE MULLIONS SHALL MEET ALL APPLICABLE CODE REQUIREMENTS, e.g. WIND LOAD RESISTANCE, AIR & WATER INFILTRATION, FORCED ENTRY, SAFEGUARDS, ETC.
7. TOP & BOTTOM DETAILS SHOWN MAY BE INTERCHANGED AS FIELD CONDITIONS DICTATE. MULLIONS MAY BE MOUNTED VERTICALLY OR HORIZONTALLY AS APPLICABLE.
8. IMPACT RESISTANCE - OPENING PROTECTION

8.1. MULLIONS SHOWN HEREIN ARE IMPACT RESISTANT FOR MISSILE LEVEL D, WIND ZONE 3 AS DEFINED IN ASTM E1996

8.2. MULLIONS SHOWN HEREIN CANNOT BE USED IN WIND ZONE 4 (ASTM E1996) OR THE HIGH VELOCITY HURRICANE ZONE (HVHZ).

8.3. VERIFY IMPACT RESISTANCE OF FENESTRATION PRODUCTS TO BE USED WITH THESE MULLIONS IN WIND BORNE DEBRIS REGIONS. IF FENESTRATION PRODUCTS ARE NOT IMPACT RESISTANT, AN APPROVED OPENING PROTECTION SYSTEM SUCH AS SHUTTERS MUST BE USED.

8.4. MULLIONS SHOWN HEREIN MAY BE USED IN LARGE MISSILE IMPACT, SMALL MISSILE IMPACT, AND NON-IMPACT APPLICATIONS.
9. THESE DRAWINGS CERTIFY THE FENESTRATION ANCHORAGE INSTALLATION ONLY. WATER-RESISTIVE BARRIER DETAILING OF THE WINDOW IS NOT PART OF THIS INSTALLATION CERTIFICATION. DETAILS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. WATER-RESISTIVE BARRIER DETAILING SHALL BE THE RESPONSIBILITY OF THE INSTALLER. REFER TO THE REQUIREMENTS OF THE FLORIDA BUILDING CODE SECTION 1405.4 AND FLORIDA RESIDENTIAL CODE SECTION R703.4 FOR RECOMMENDATIONS. PER FBC SECTION 1405.4.1.4 AND FRC SECTION R703.4, FMA/AAMA 100-12 AND FMA/AAMA 200-12 CAN BE USED FOR GUIDANCE. ADDITIONALLY, ASTM E2112 CAN BE USED FOR GUIDANCE.

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INSTALLATION NOTES:

1. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS.
2. ENSURE MINIMUM EDGE DISTANCE FOR ALL ANCHORS AS 3" TO CONCRETE AND 3" TO HOLLOW BLOCK.
3. WHERE ANCHORS FASTEN TO NARROW FACE OF STUD FRAMING, ANCHOR SHALL BE LOCATED IN CENTER OF NOMINAL 2x (MIN) WOOD STUD (i.e. 3/4" EDGE DISTANCE IS ACCEPTABLE FOR ANCHORS TO WOOD FRAMING).
4. ANCHORS TO STEEL OR ALUMINUM SHALL HAVE A MINIMUM EDGE DISTANCE OF 1/2".
5. WOOD HOST STRUCTURE SHALL HAVE SPECIFIC GRAVITY (SG) = 0.55 OR GREATER.
6. ANCHOR REQUIREMENTS AS SHOWN HEREIN, INCLUDING MINIMUM EMBEDMENT AND EDGE DISTANCE, EXCLUDES STUCCO, FOAM, BRICK, AND OTHER WALL FINISHES.
7. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS WHERE APPLICABLE.
8. WHERE EXISTING STRUCTURE IS WOOD FRAMING, EXISTING CONDITIONS MAY VARY. FIELD VERIFY THAT FASTENERS ARE INTO STRUCTURAL WOOD FRAMING MEMBERS, NOT SHEATHING.
9. PRESSURE TREATED WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.

ANCHOR SCHEDULE - MULLION TO SUPPORTING SUBSTRATE:

1. TO CONCRETE BLOCK

1.1. 3/16" DIA. ITW ADVANCED THREADFORM TAPCONS WITH 1" MINIMUM EMBEDMENT AND 3" MINIMUM EDGE DISTANCE.

1.2. ATTACHMENT MAY BE MADE THROUGH 1X OR 2X WOOD BUCKS OR DIRECTLY INTO MASONRY.
2. TO 2500 PSI MINIMUM CONCRETE

2.1. 3/16" DIA. ITW ADVANCED THREADFORM TAPCONS WITH 1-1/2" MINIMUM EMBEDMENT AND 3" MINIMUM EDGE DISTANCE.

2.2. ATTACHMENT MAY BE MADE THROUGH 1X OR 2X WOOD BUCKS OR DIRECTLY INTO CONCRETE.
3. TO 2X WOOD BUCK OR 2X WOOD FRAME HOST SUBSTRATE

3.1. #10 WOOD SCREWS OF #10 TAPPING SCREWS (SMS OR SDS) WITH 1-1/2" MINIMUM EMBEDMENT AND 3/4" MINIMUM EDGE DISTANCE.
4. TO 1/8" THICK MINIMUM 6063-T5 ALUMINIUM OR STEEL SUBSTRATE (Ftu = Fty = 22 KSI MINIMUM)

4.1. #10 SHEET METAL SCREW (SMS) OR SELF DRILLING SCREW (SDS) WITH FULL THREAD PENETRATION THROUGH HOST SUBSTRATE AND 1/2" MINIMUM EDGE DISTANCE.
5. WOOD SCREWS, TAPPING SCREWS, SHEET METAL SCREW (SMS) OR SELF DRILLING SCREW (SDS) SHALL BE CORRISION RESISTANT MATERIAL OR COATING.

ANCHOR SCHEDULE - FENESTRATION PRODUCT TO MULLION:

1. TO 1/8" THICK MINIMUM 6063-T6 ALUMINIUM MULLION

1.1. #10 SHEET METAL SCREW (SMS) OR SELF DRILLING SCREW (SDS) WITH FULL THREAD PENETRATION THROUGH HOST SUBSTRATE AND 1/2" MINIMUM EDGE DISTANCE.
2. SHEET METAL SCREW (SMS) OR SELF DRILLING SCREW (SDS) SHALL BE CORRISION RESISTANT MATERIAL OR COATING.

ANCHOR SCHEDULE - ADDITIONAL REQUIREMENTS

1. ALL FASTENERS AND CONNECTORS TO BE CORROSION RESISTANT, AND/OR HAVE A CORROSION RESISTANT COATING, OR WHEN EXPOSED TO SALTWATER ENVIRONMENTS WITHIN 3,000 FEET OF A SALTWATER COASTLINE MEET THE REQUIREMENTS OF SECTION 1711, 9TH EDITION (2026) FBC AND SECTION R332, 9TH EDITION (2026) FRC WHEN APPLICABLE.

PROJECT # ACE-2025-127		
A	UPDATE TO THE 9TH EDITION (2026) FBC	8/4/26
REV	DESCRIPTION	DATE
		BY

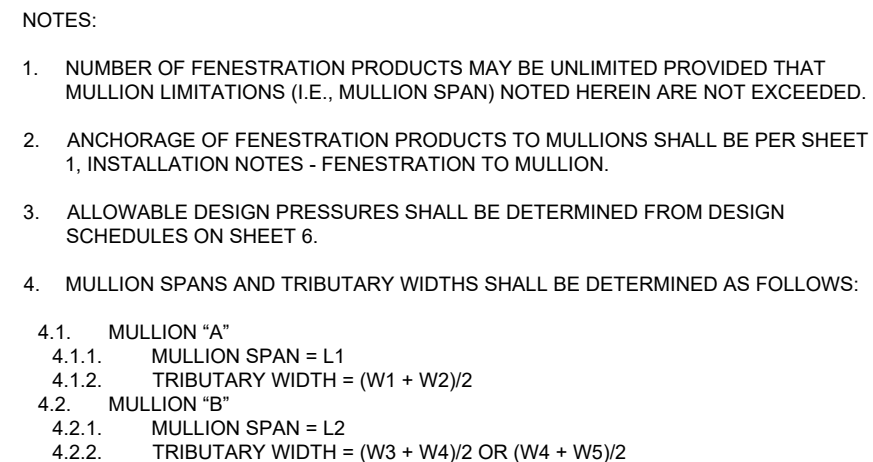
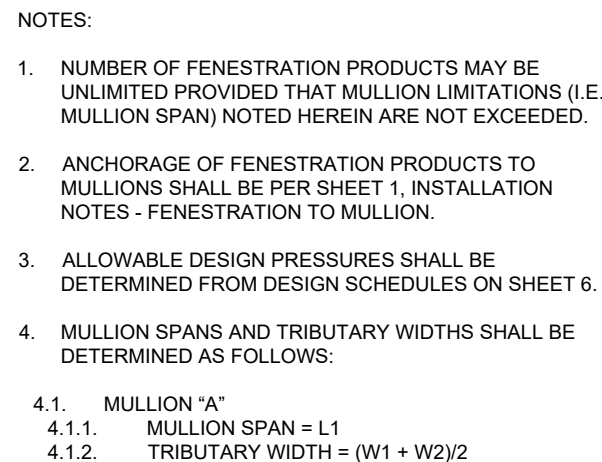
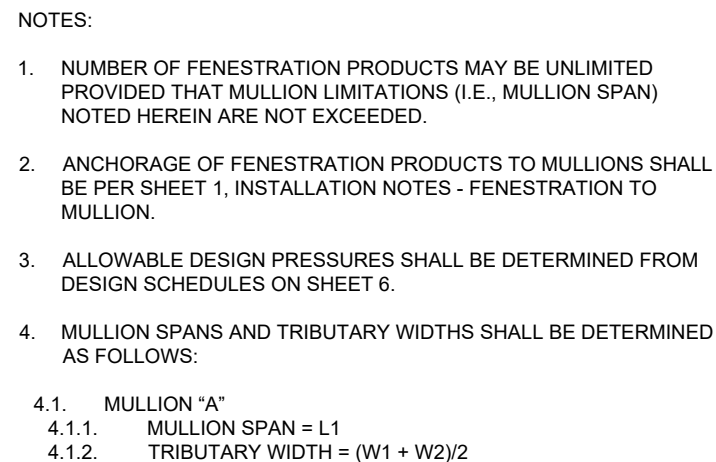
RENAISSANCE WINDOWS AND DOORS 13340 INTERNATIONAL PARKWAY JACKSONVILLE, FL 32218		
TITLE: CLIPPED ALUMINUM TUBE MULLION - IMPACT RESISTANT GENERAL NOTES, INST. NOTES & ANCHOR SCHEDULE		
PREPARED BY: AMORUSO CONSULTING ENG., LLC FBPE REGISTRATION NO. 38327 226 N NOVA RD, NO. 142 ORMOND BEACH, FL 32174 RJAENGPE@GMAIL.COM	DRAWN BY: RJA	DATE: 12/10/19
SCALE: NONE	DRAWING NO: RWD0005	
REV: A	SHEET: 1 OF 6	

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Florida P.E. No. 49752



SIGNED/SEALED: 8/4/26

1. MULLION DESIGNATIONS (MULLION "A" AND MULLION "B") PROVIDED IN DETAILS 1/2, 2/2 AND 3/2 ARE PROVIDED ONLY TO ILLUSTRATE THE DETERMINATION OF MULLION SPANS AND TRIBUTARY WIDTHS. MULLIONS SHOWN IN THE REFERENCED DETAILS MAY BE ANY MULLION APPROVED HEREIN.
2. ALL MULLED FENESTRATION PRODUCTS SHALL BE APPROVED UNDER SEPARATE PRODUCT APPROVALS.



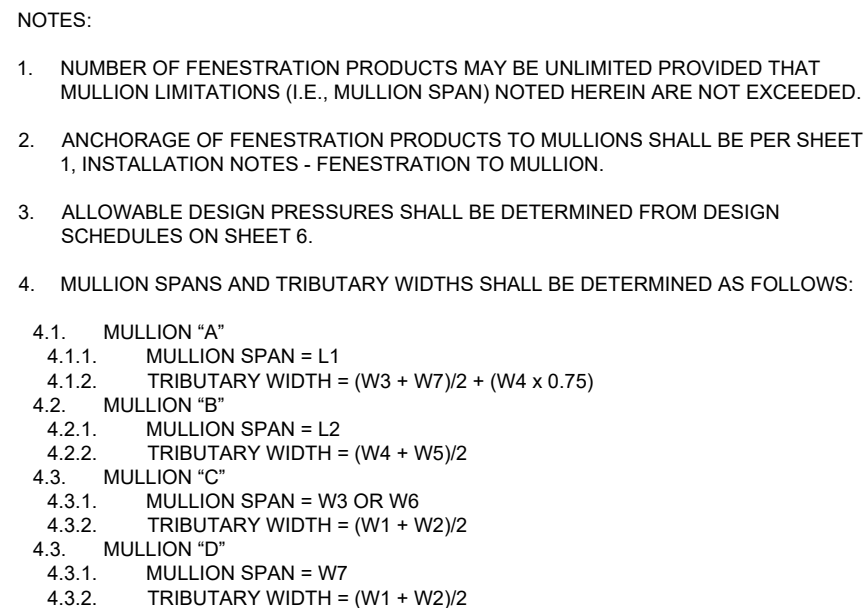
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2

MULTIPLE MULLED FENESTRATION PRODUCTS WITH VERTICAL MULLIONS "B" AND "C" FRAMING INTO HORIZONTAL MULLION "A"

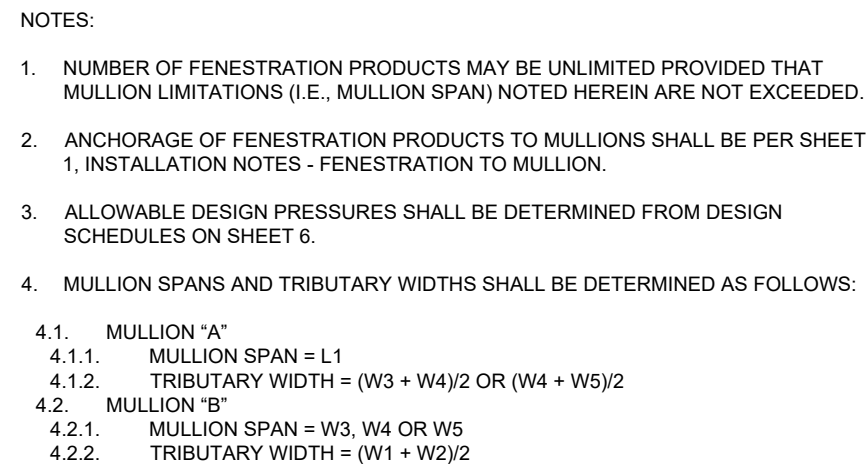
EXTERIOR ELEVATION SHOWN

SIGNED/SEALED: 8/4/26



MULTIPLE MULLED FENESTRATION PRODUCTS WITH
HORIZONTAL MULLIONS "C" AND "D" FRAMING INTO
VERTICAL MULLION "A" AND VERTICAL MULLION "B"
FRAMING INTO HORIZONTAL MULLION "D"

EXTERIOR ELEVATION SHOWN



MULTIPLE MULLED FENESTRATION PRODUCTS WITH
HORIZONTAL MULLION "B" FRAMING INTO VERTICAL
MULLION "A"

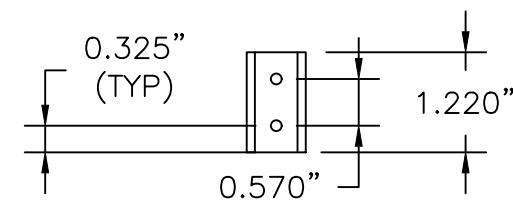
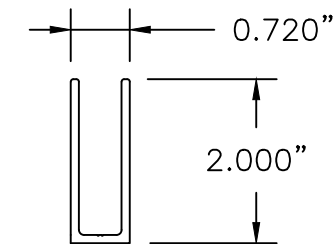
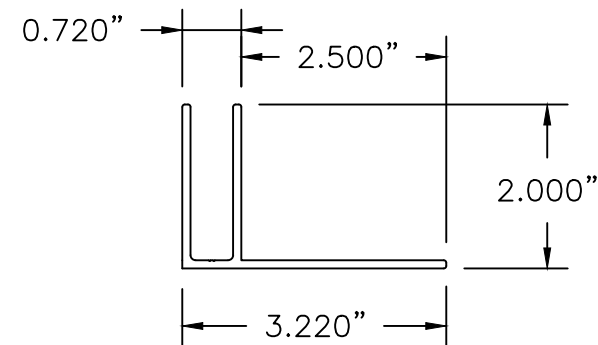
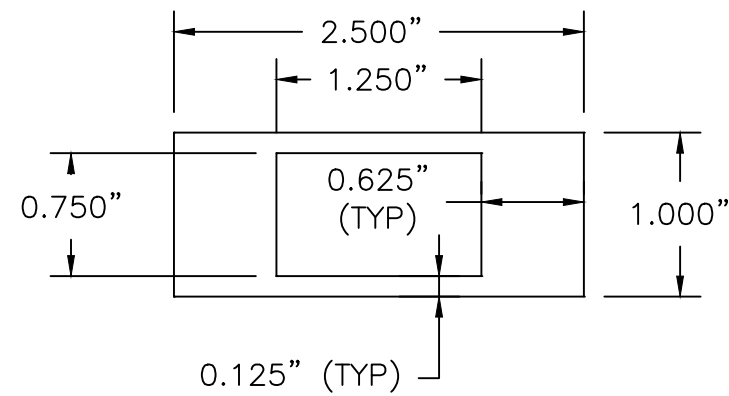
EXTERIOR ELEVATION SHOWN

1. MULLION DESIGNATIONS (MULLION "A", MULLION "B", MULLION "C" AND MULLION "D") PROVIDED IN DETAILS 4/3 AND 5/3 ARE PROVIDED ONLY TO ILLUSTRATE THE DETERMINATION OF MULLION SPANS AND TRIBUTARY WIDTHS. MULLIONS SHOWN IN THE REFERENCED DETAILS MAY BE ANY MULLION DETAILS APPROVED HEREIN.
2. ALL MULLED FENESTRATION PRODUCTS SHALL BE APPROVED UNDER SEPARATE PRODUCT APPROVALS

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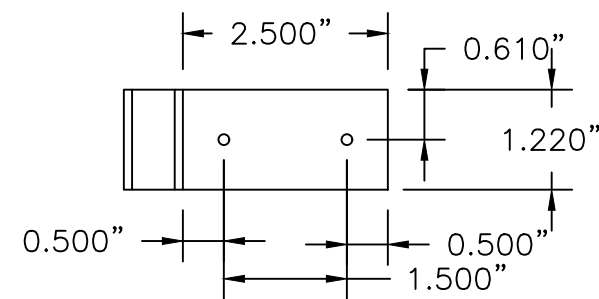


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1 1 x 2-1/2 Mullion With 5/8" Thick Flange
and 1/8" Thick Web, Aluminum 6063-T6

1 x 2-1/2 Mullion With 5/8" Thick Flange
and 1/8" Thick Web, Aluminum 6063-T6



2 F-Clip for
1 x 2-1/2 Mullion
6063-T6 0.125" THICK

F-Clip for
1 x 2-1/2 Mullion
6063-T6 0.125" THICK

3 C-Clip for
1 x 2-1/2 Mullion
6063-T6 0.125" THICK

C-Clip for
1 x 2-1/2 Mullion
6063-T6 0.125" THICK

RENAISSANCE WINDOWS AND DOORS 13340 INTERNATIONAL PARKWAY JACKSONVILLE, FL 32218		PROJECT # ACE-2025-127	
TITLE: CLIPPED ALUMINUM TUBE MULLION - IMPACT RESISTANT COMPONENTS			
PREPARED BY: AMORUSO CONSULTING ENG., LLC FBPE REGISTRATION NO. 38327 226 N NOVA RD, NO. 142 ORMOND BEACH, FL 32174 RIAENGPE@GMAIL.COM	DRAWN BY: RJA	DATE: 12/10/19	
	SCALE: NONE	DRAWING NO: RWD0005	
	REV: A	SHEET: 4 OF 6	
		A	UPDATE TO THE 9TH EDITION (2026) FBC
		REV	DESCRIPTION
			DATE
			BY

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SIGNED/SEALED: 8/4/26

DESIGN SCHEDULE - 1" X 2.5" MULLION SPAN/LOAD WIDTH TABLES

1" x 2.5" MULLION AND F-CLIP WITH 2 ANCHORS													
Span vs. LW		Tributary Load Width (in)											
		22	26	30	34	38	42	46	50	54	58	62	66
Mullion Span (in)	120	19.9	16.9	14.8	13.1	11.8	10.8	10.0	9.3	8.7	8.2	7.8	7.4
	114	23.2	19.8	17.3	15.3	13.9	12.7	11.7	10.9	10.2	9.7	9.2	8.8
	108	27.3	23.3	20.4	18.1	16.4	15.0	13.9	12.9	12.1	11.5	10.9	10.5
	102	29.1	25.1	22.3	20.1	18.4	17.1	16.0	15.1	14.4	13.7	13.2	12.7
	96	31.1	27.0	23.9	21.7	19.9	18.5	17.3	16.4	15.6	15.0	14.4	14.0
	92	32.6	28.3	25.2	22.8	21.0	19.5	18.3	17.4	16.6	15.9	15.4	14.9
	88	34.3	29.8	26.6	24.1	22.2	20.7	19.5	18.5	17.7	17.0	16.5	16.0
	84	36.2	31.5	28.1	25.5	23.6	22.0	20.7	19.7	18.9	18.2	17.7	17.3
	80	38.3	33.4	29.8	27.2	25.1	23.5	22.2	21.2	20.3	19.7	19.1	18.8
	76	40.7	35.5	31.8	29.0	26.9	25.2	23.9	22.8	22.0	21.3	20.9	20.5
	72	43.4	37.9	34.0	31.1	28.9	27.2	25.8	24.8	23.9	23.3	22.9	22.6
	68	46.4	40.7	36.6	33.6	31.2	29.5	28.1	27.1	26.3	25.7	25.4	25.2
	64	49.9	43.9	39.6	36.4	34.0	32.2	30.8	29.8	29.1	28.7	28.4	26.7
	60	54.0	47.6	43.1	39.8	37.3	35.5	34.2	33.2	32.6	32.4	30.3	26.9
	56	58.8	52.0	47.3	43.9	41.4	39.6	38.3	37.5	37.1	34.6	30.6	27.3
	52	64.5	57.4	52.4	48.9	46.4	44.7	43.6	43.1	40.0	35.0	31.1	28.0
	48	71.5	63.9	58.8	55.2	52.8	51.3	50.6	46.6	40.4	35.6	31.9	28.9
	44	75.0	72.2	66.9	63.4	61.2	60.2	55.1	47.2	41.3	36.7	33.1	30.0
	40	75.0	75.0	75.0	74.4	72.9	66.1	55.9	48.5	42.8	38.3	34.6	31.6
	36	75.0	75.0	75.0	75.0	75.0	67.3	57.7	50.5	44.9	40.4	36.7	33.7
	32	75.0	75.0	75.0	75.0	75.0	69.9	60.6	53.5	47.8	43.3	39.5	36.4
	28	75.0	75.0	75.0	75.0	75.0	74.2	64.9	57.7	51.9	47.2	43.3	40.0
	24	75.0	75.0	75.0	75.0	75.0	75.0	71.3	63.8	57.7	52.7	48.5	44.9
	20	75.0	75.0	75.0	75.0	75.0	75.0	75.0	72.7	66.1	60.6	55.9	51.9

1" x 2.5" MULLION AND C-CLIP WITH 2 ANCHORS													
Span vs. LW		Tributary Load Width (in)											
		22	26	30	34	38	42	46	50	54	58	62	66
Mullion Span (in)	120	19.9	16.9	14.8	13.1	11.8	10.8	10.0	9.3	8.7	8.2	7.8	7.4
	114	23.2	19.8	17.3	15.3	13.9	12.7	11.7	10.9	10.2	9.7	9.2	8.8
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	92	44.5	38.0	33.3	29.8	27.0	24.8	23.1	21.6	20.5	19.5	18.7	18.0
	88	51.0	43.6	38.2	34.2	31.1	28.6	26.6	25.0	23.7	22.6	21.8	21.0
	84	58.8	50.3	44.2	39.6	36.0	33.2	31.0	29.1	27.7	26.5	25.6	24.8
	80	68.3	58.5	51.4	46.1	42.0	38.8	36.3	34.3	32.7	31.4	30.3	29.6
	76	75.0	68.5	60.3	54.2	49.5	45.9	43.0	40.7	38.9	37.5	36.5	35.7
	72	75.0	75.0	71.5	64.4	59.0	54.8	51.5	48.9	47.0	45.5	44.4	43.7
	68	75.0	75.0	75.0	75.0	71.0	66.2	62.5	59.6	57.5	56.0	55.0	54.6
	64	75.0	75.0	75.0	75.0	75.0	75.0	75.0	73.8	71.6	70.2	69.5	65.4
	60	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	71.5
	56	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	72.5
	52	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	74.2
	48	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	44	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	40	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	36	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	32	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	28	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	24	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0
	20	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0	75.0

DESIGN SCHEDULE NOTES:

1. DESIGN SCHEDULES PROVIDE MAXIMUM ALLOWABLE POSITIVE (+) AND NEGATIVE(-) DESIGN PRESSURES FOR USE WITH MULLION SYSTEM IN POUNDS PER SQUARE FOOT (PSF).
2. FOR DETERMINATION OF MULLION SPANS AND TRIBUTARY WIDTHS, SEE ELEVATIONS ON SHEET 2 AND 3.
3. FOR INSTALLATIONS UTILIZING MORE THAN ONE TYPE OF CLIP PER MULLION, USE THE LESSER ALLOWABLE DESIGN PRESSURE.

PROJECT # ACE-2025-127				
			8/4/26	RJA
			UPDATE TO THE 9TH EDITION (2026) FBC	DESCRIPTION
			A	REV

RENAISSANCE WINDOWS AND DOORS 13340 INTERNATIONAL PARKWAY JACKSONVILLE, FL 32218	CLIPPED ALUMINUM TUBE MULLION - IMPACT RESISTANT 1 X 2.5 MULLION SPAN VS. LOAD WIDTH TABLES	DATE: 12/10/19	DRAWING NO: RWD0005	SHEET: 6 OF 6
TITLE:	AMORUSO CONSULTING ENG., LLC FBPE REGISTRATION NO. 38327 226 N NOVA RD, NO. 142 ORMOND BEACH, FL 32174 RJAENGPE@GMAIL.COM	DRAWN BY: RJA	SCALE: NONE	REV: A

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