

GENERAL NOTES AND SPECIFICATIONS:

1. CLIPPED (INTERIOR OR END) MULLIONS, LARGE MISSILE IMPACT RESISTANT, SHOWN ON THIS PRODUCT EVALUATION DOCUMENT (P.E.D.) HAVE BEEN VERIFIED FOR COMPLIANCE IN ACCORDANCE WITH THE 2023 (8th EDITION) OF THE FLORIDA BUILDING CODE. CLIPPED (INTERIOR OR END) MULLIONS MAY BE INSTALLED AT HIGH VELOCITY HURRICANE ZONES (H.V.H.Z.) OR OUT OF IT (N.H.V.H.Z.). DESIGN WIND LOADS SHALL BE DETERMINED AS PER SECTIONS 1620 & 1609 OF THE ABOVE MENTIONED CODE, USING ASCE 7-22, AND SHALL NOT EXCEED THE MAXIMUM (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 7 THRU 60. IN ORDER TO VERIFY THE ABOVE CONDITION, ULTIMATE DESIGN WIND LOADS DETERMINED PER ASCE 7-22 SHALL BE FIRST REDUCED TO A.S.D. DESIGN WIND LOADS BY MULTIPLYING THEM BY 0.6 IN ORDER TO COMPARE THESE W/ MAX. (A.S.D.) DESIGN PRESSURE RATINGS INDICATED ON SHEETS 7 THRU 60.

IN ORDER TO VERIFY THAT ANCHORS ON THIS P.E.D., AS TESTED, WERE NOT OVERSTRESSED, A 33% INCREASE IN ALLOWABLE STRESS FOR WIND LOADS WAS NOT USED IN THEIR ANALYSIS. A 1.6 WIND DURATION FACTOR WAS USED FOR WOOD CONNECTIONS PER N.D.S. 2018. CLIPPED MULLIONS ADEQUACY FOR IMPACT AND CYCLIC RESISTANCE HAS BEEN VERIFIED IN ACCORDANCE WITH SECTION 1626 OF THE ABOVE MENTIONED CODE AS PER PROTOCOLS TAS-201, TAS-202, TAS-203, PER FENESTRATION TESTING LABORATORY, LAB REPORT # 7553, AND AS PER SUBMITTED STRUCTURAL CALCULATIONS, PERFORMED AS PER SECTIONS 1616 & 1604 OF THE FLORIDA BUILDING CODE.

2. THIS PRODUCT APPROVAL DOCUMENT (P.A.D.) APPLIES TO TWO OR MORE FENESTRATIONS MULLED TOGETHER IN ANY COMBINATION WHERE INTERIOR OR END MULLION IS CLIPPED TO EXISTING STRUCTURE. MULLION'S STRUCTURAL ADEQUACY HAS BEEN VERIFIED WITHOUT THE CONTRIBUTION OF FENESTRATION FRAMES ATTACHED TO IT.

3. INSTRUCTIONS TO DETERMINE REQUIRED INTERIOR CLIPPED MULLION:

USE MULLION/ANCHOR LOAD CHARTS ON SHEETS 7 THRU 29 & SHEETS 41 THRU 60 AS FOLLOWS:

STEP 1. DETERMINE A.S.D DESIGN LOAD REQUIRED FOR PARTICULAR OPENING PER SECTION 1620 OF FLORIDA BUILDING CODE.

STEP 2. USE APPROVED GLAZING PRODUCTS MEETING ABOVE A.S.D. DESIGN LOAD REQUIREMENTS.

STEP 3. USE GLAZING PRODUCTS CONNECTION TO MULLION AS PER APPLICABLE PRODUCT APPROVAL.

STEP 4. USING CHARTS ON SHEETS 7 THRU 29 & SHEETS 41 THRU 60, SELECT MULLION WITH CAPACITY EXCEEDING THE A.S.D. DESIGN LOAD SPECIFIED IN STEP 1 ABOVE. SEE CLIP DETAILS ON SHEETS 4 THRU 6.

STEP 5. USING CHARTS ON SHEETS 7 THRU 29 & SHEETS 41 THRU 60, SELECT ANCHOR CLIP, AND CONNECTION TYPE WITH A.S.D. DESIGN PRESSURE RATING LARGER THAN THE A.S.D. DESIGN LOADS DETERMINED IN STEP 1 ABOVE.

4. INSTRUCTIONS TO DETERMINE REQUIRED END CLIPPED MULLION:

USE MULLION/ANCHOR LOAD CHARTS ON SHEETS 30 THRU 40 & SHEETS 41 THRU 60 AS FOLLOWS:

STEP 1. DETERMINE A.S.D DESIGN LOAD REQUIRED FOR PARTICULAR OPENING PER SECTIONS 1620 & 1609 OF THE FLORIDA BUILDING CODE.

STEP 2. USE APPROVED GLAZING PRODUCTS MEETING ABOVE A.S.D. DESIGN LOAD REQUIREMENTS.

STEP 3. USE GLAZING PRODUCTS CONNECTION TO MULLION AS PER APPLICABLE PRODUCT APPROVAL.

STEP 4. USING CHARTS ON SHEETS 30 THRU 40 & SHEETS 41 THRU 60, SELECT MULLION WITH CAPACITY EXCEEDING THE A.S.D. DESIGN LOAD SPECIFIED IN STEP 1 ABOVE. SEE CLIP DETAILS ON SHEETS 4 THRU 6.

STEP 5. USING CHARTS ON SHEETS 30 THRU 40 & SHEETS 41 THRU 60, SELECT ANCHOR CLIP, AND CONNECTION TYPE WITH A.S.D. DESIGN PRESSURE RATING LARGER THAN THE A.S.D. DESIGN LOADS DETERMINED IN STEP 1 ABOVE.

5. ALL GLAZING PRODUCTS USED WITH THESE MULLIONS MUST MEET THE APPLICABLE 2023 FLORIDA BUILDING CODE APPROVED REQUIREMENTS I.E. WIND LOAD, AIR AND WATER INFILTRATION, FORCED ENTRY RESISTANT, SAFEGUARDS, ETC.

THE USE OF THIS APPROVAL IS RESTRICTED TO A WRITTEN AUTHORIZATION FROM GENERAL IMPACT GLASS AND WINDOWS

6. ALL ALUMINUM EXTRUSIONS IN CONTACT WITH DISSIMILAR MATERIALS SHALL COMPLY WITH SECTION III-6 OF THE 2020 ALUMINUM DESIGN MANUAL.

7. ALL SCREWS USED FOR MOUNTING CONNECTIONS (METAL TO METAL) TO BE STAINLESS STEEL 304 OR 316 AISI SERIES OR CORROSION RESISTANT COATED CARBON STEEL AS PER DIN 50018 WITH 50 ksi YIELD STRENGTH ND 90 ksi TENSILE STRENGTH AND SHALL COMPLY WITH FLORIDA BUILDING CODE, SECTION 2411.3.3.4.

8. NO SHIM SPACE IS ALLOWED FOR ANCHORING OF MULLIONS TO ALL SUBSTRATES.

9. ANCHORS USED FOR CONNECTION OF INTERIOR OR END CLIPPED MULLIONS TO EXISTING STRUCTURE SHALL BE AS FOLLOWS:

(9A) TO EXISTING POURED CONCRETE: (Min. f'c=2846 psi)
- 1/4" Ø ULTRACONS WITH 1 3/4" MIN. EMBEDMENT, AS MANUFACTURED BY DEWALT INC.
W/ 2 1/2" MIN. EDGE DISTANCE (E.D) AND 1 1/2" MIN. SPACING.

(9B) TO EXISTING CONCRETE BLOCK: (ASTM C-90)
- 1/4" Ø ULTRACONS WITH 1 1/4" MIN EMBEDMENT, AS MANUFACTURED BY DEWALT INC.
W/ 2 1/2" MIN. EDGE DISTANCE (E.D.) AND 1 1/2" MIN. SPACING.

(9C) TO EXISTING 2" P.T. WOOD BUCK: (SOUTHERN PINE WITH G=0.55)
- 1/4" Ø ULTRACONS WITH 1 1/2" MIN. EMBEDMENT, AS MANUFACTURED BY DEWALT INC.
W/ 1" MIN. EDGE DISTANCE (E.D) AND 1" MIN. SPACING.

(9D) TO EXISTING STEEL (MIN. Fy=33 ksi, MIN. THICKNESS= 0.062") AND TO EXISTING ALUMINUM (MIN. Fy=25 ksi, MIN. THICKNESS= 0.125")
- 1/4" TEK SCREWS W/ 1/2" MIN. EMBEDMENT, AS MANUFACTURED BY ITW/BUILDEX W/ 1/2" MIN. EDGE DISTANCE (E.D.) AND 1 1/8" MIN. SPACING.

(9E) ANCHOR EMBEDMENT AND EDGE DISTANCE TO BASE MATERIAL SHALL BE BEYOND WALL COVERING (STUCCO, TILE, PLYWOOD, ETC.)

10. (a) THIS P.E.D. PREPARED BY THIS ENGINEER IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SITE SPECIFIC PROJECT; i.e. WHERE THE SITE CONDITIONS DEVIATE FROM THE P.E.D.

(b) CONTRACTOR TO BE RESPONSIBLE FOR THE SELECTION, PURCHASE AND INSTALLATION INCLUDING LIFE SAFETY OF THIS PRODUCT, BASED ON THIS P.E.D., PROVIDED HE/SHE DOES NOT DEVIATE FROM THE CONDITIONS DETAILED ON THIS DOCUMENT. CONSTRUCTION SAFETY AT SITE IS THE CONTRACTOR'S RESPONSIBILITY.

(c) THIS P.E.D. WILL BE CONSIDERED INVALID IF ALTERED BY ANY MEANS.

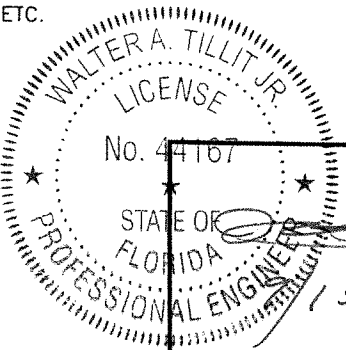
(d) SITE SPECIFIC PROJECTS SHALL BE PREPARED BY A FLORIDA REGISTERED ENGINEER OR ARCHITECT WHICH WILL BECOME THE ENGINEER OF RECORD (E.O.R.) FOR THE PROJECT AND WHO WILL RESPONSIBLE FOR THE PROPER USE OF THE P.E.D.

(e) ORIGINAL P.E.D. SHALL BEAR THE DATE AND ORIGINAL SEAL AND SIGNATURE OF THE PROFESSIONAL ENGINEER OF RECORD THAT PREPARED IT.

11. MULLION'S MANUFACTURER LABEL SHALL BE PLACED ON THE EXPOSED SURFACE OF PROFILES WITH ACCORDANCE WITH SECTION 1709.5 OF THE FLORIDA BUILDING CODE. ONE LABEL SHALL BE PLACED FOR EVERY OPENING.

SHEET #	INDEX
	DESCRIPTION
1	GENERAL NOTES AND INDEX
2	INSTALLATION ELEVATIONS
3	CLIPPED INTERIOR & END MULLIONS
4	CLIP TYPES C1 THRU C4
5	TYPICAL ANCHOR/CLIP DETAILS FOR INTERIOR & END MULLIONS
6	ANCHOR SCHEDULE FOR CLIPS
6A	MULLIONS CHARTS SCHEDULES
6B	MULLIONS CHARTS SCHEDULES
6C	MULLIONS CHARTS SCHEDULES
7 THRU 29	CLIPPED INTERIOR MULLIONS CHARTS, CLIPS C1/C2
30 THRU 40	CLIPPED END MULLIONS CHARTS, CLIP C3
41 THRU 60	CLIPPED INTERIOR & END MULLIONS CHARTS, CLIP C4

THIS DRAWING SHALL ONLY BE USED TO OBTAIN PERMITS IN THE STATE OF FLORIDA



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FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS

290 WEST 78 ROAD
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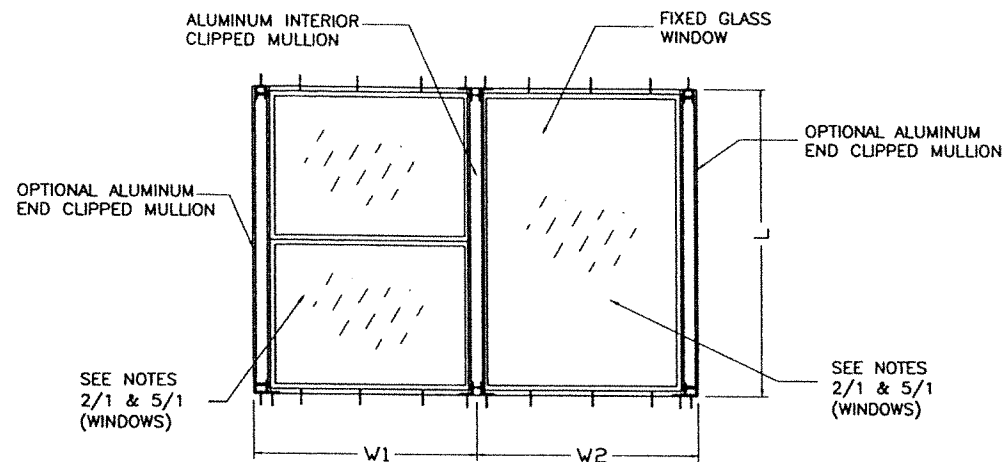
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2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

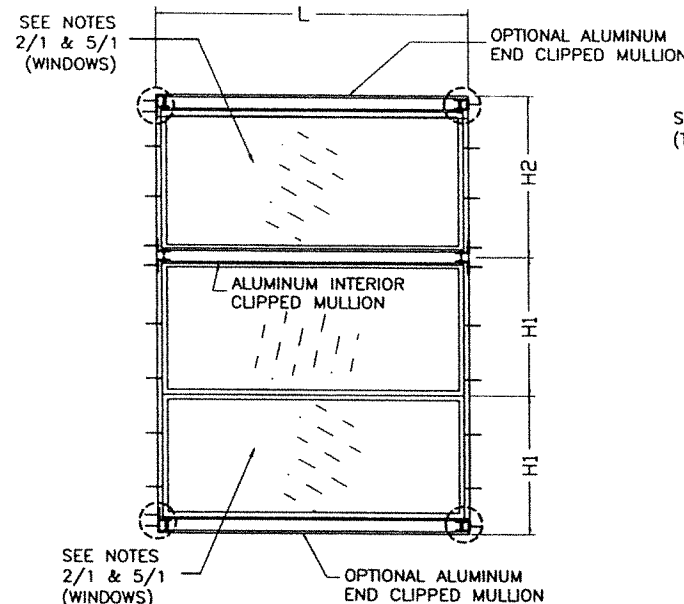
23-212
DRAWING No

SHEET 1 OF 60



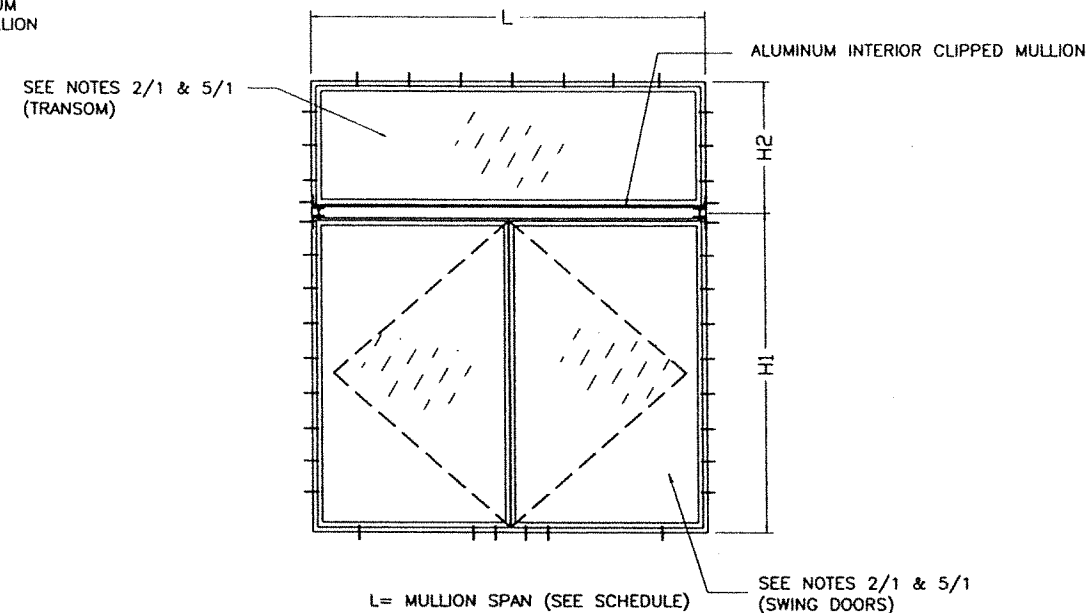
L = MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{W1 + W2}{2}$
 FOR INTERIOR MULLIONS
 TRIBUTARY WIDTH (b) = $\frac{W1}{2}$ OR $\frac{W2}{2}$, RESPECTIVELY
 FOR END MULLIONS

**INSTALLATION ELEVATION W/ VERTICAL
 INTERIOR AND OPTIONAL END
 CLIPPED MULLIONS**

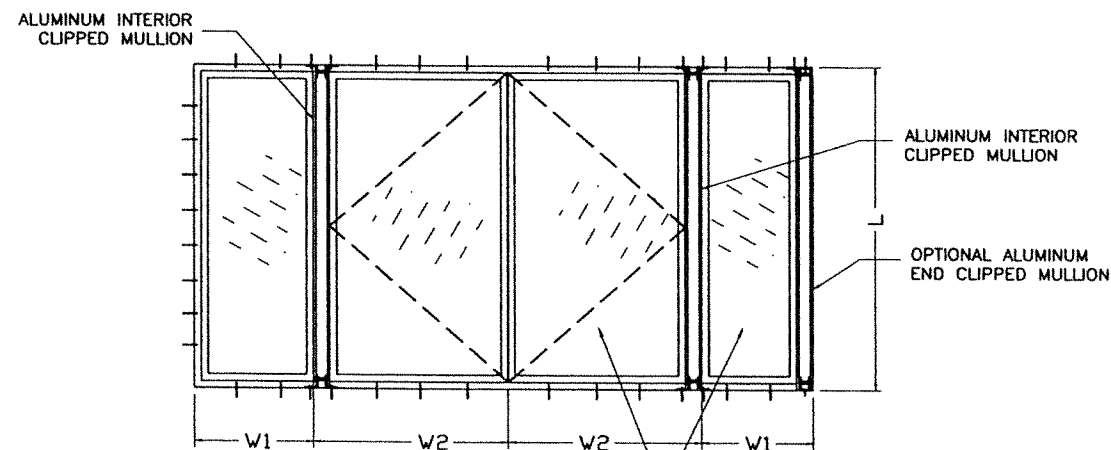


L = MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{H1 + H2}{2}$
 FOR INTERIOR MULLIONS
 TRIBUTARY WIDTH (b) = $\frac{H1}{2}$ OR $\frac{H2}{2}$, RESPECTIVELY
 FOR END MULLIONS

**INSTALLATION ELEVATION W/
 HORIZONTAL INTERIOR
 AND OPTIONAL END CLIPPED MULLIONS**



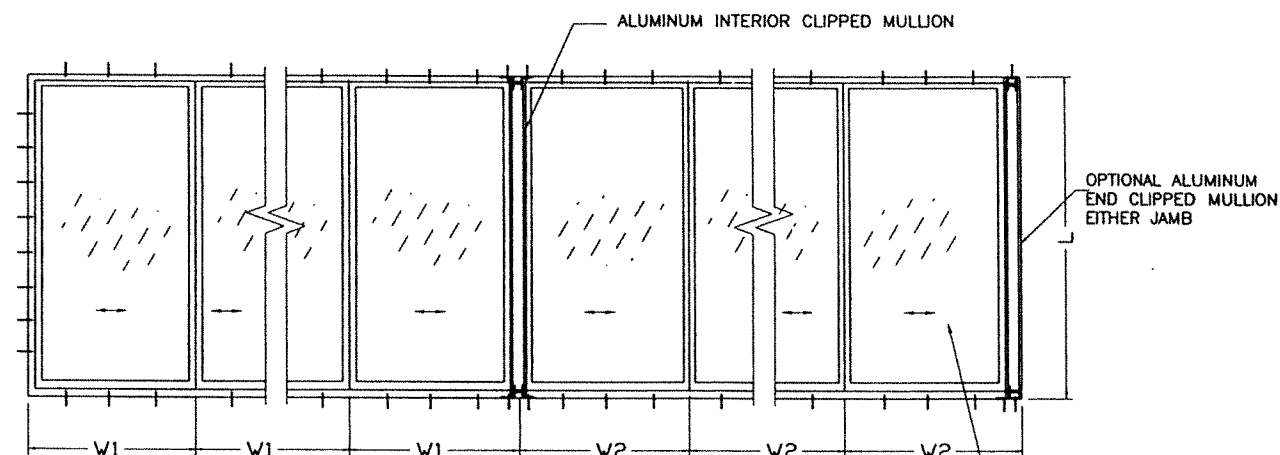
**INSTALLATION ELEVATION W/
 HORIZONTAL INTERIOR CLIPPED MULLION**



L = MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{W1 + W2}{2}$
 FOR INTERIOR MULLIONS

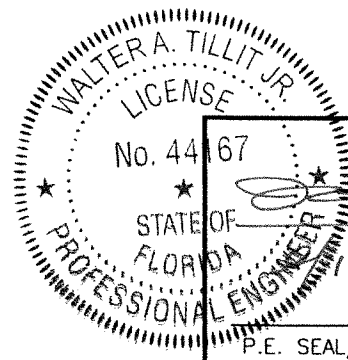
**INSTALLATION ELEVATION W/ VERTICAL
 INTERIOR AND OPTIONAL END CLIPPED
 MULLIONS**

W1, W2, H1, H2:
 HEIGHT OR WIDTH (AS
 APPLICABLE) OF A
 SINGLE (OPERABLE OR
 FIXED) GLASS PANEL AT
 PRODUCT.



L = MULLION SPAN (SEE SCHEDULE)
 TRIBUTARY WIDTH (b) = $\frac{W1 + W2}{2}$
 FOR INTERIOR MULLIONS
 TRIBUTARY WIDTH (b) = $\frac{W1}{2}$ OR $\frac{W2}{2}$
 FOR END MULLIONS

**INSTALLATION ELEVATION W/
 VERTICAL INTERIOR AND OPTIONAL END CLIPPED MULLIONS**



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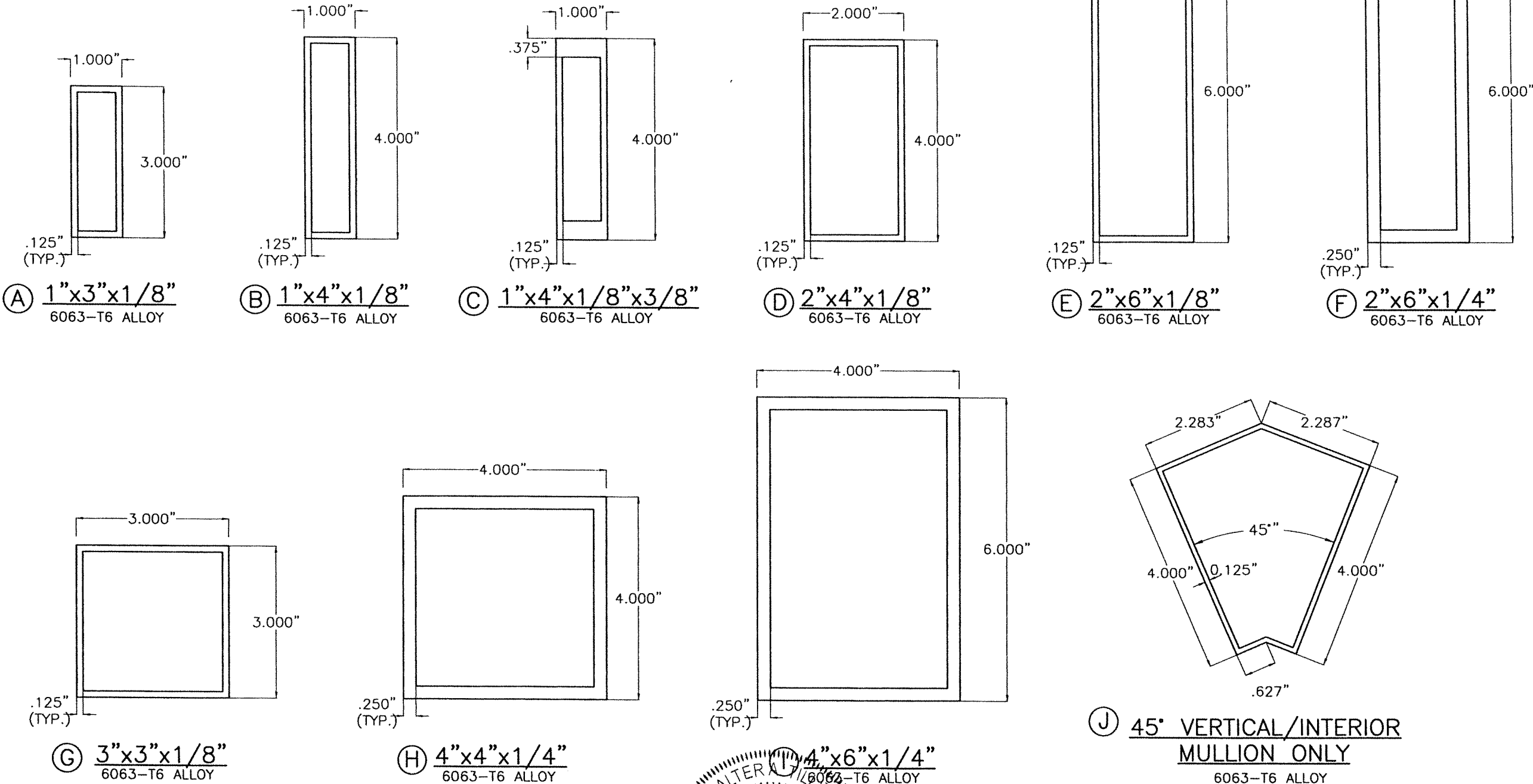
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23-212
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SHEET 2 OF 60

CLIPPED INTERIOR AND END MULLIONS
(EXCEPT AS NOTED)

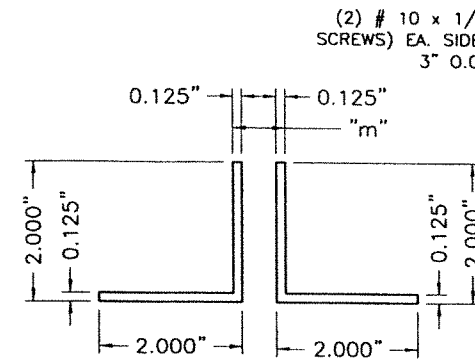


WALTER A. TILLIT JR.
LICENSE
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PROFESSIONAL ENGINEER
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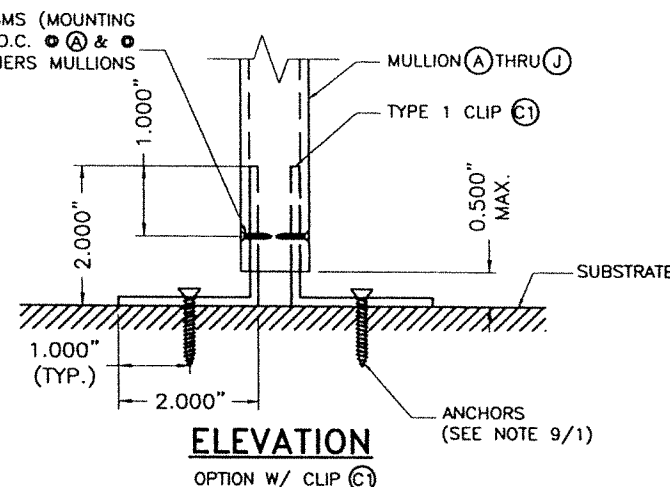
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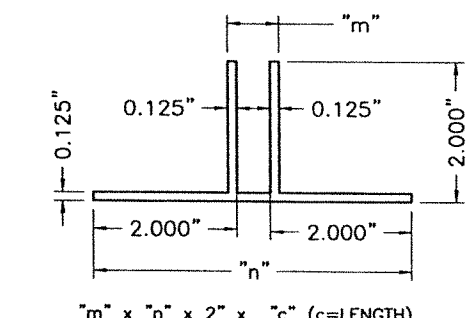
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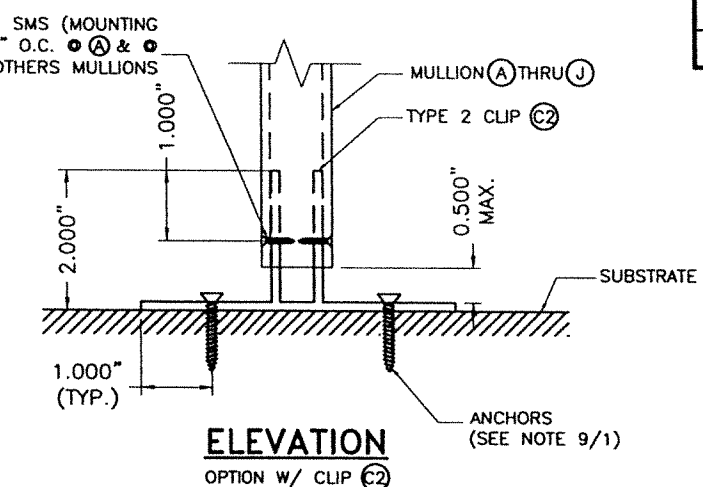
(C1) TYPE 1 CLIP
6063-T6 ALLOY



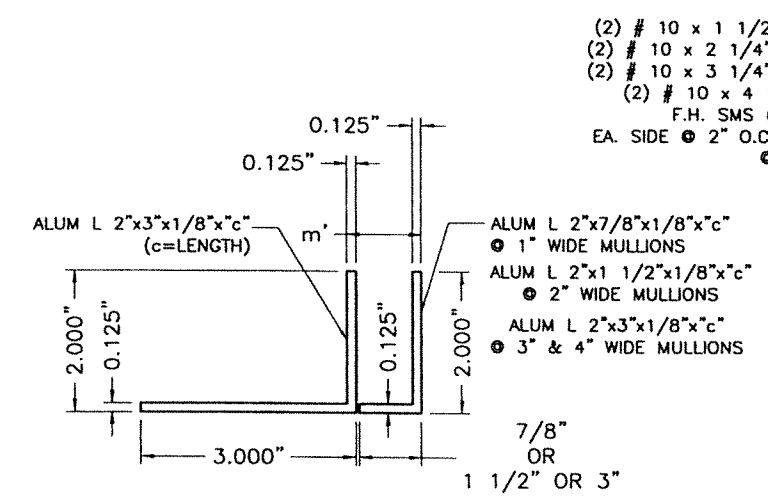
ELEVATION
OPTION W/ CLIP (C1)



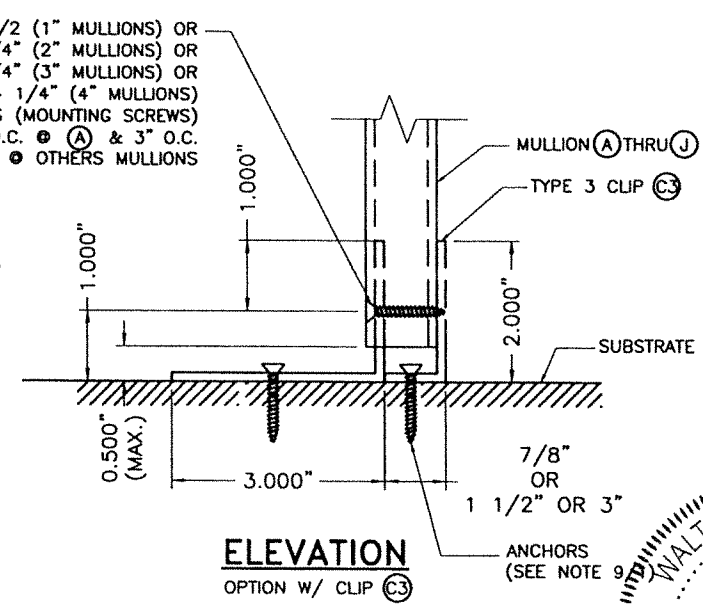
(C2) TYPE 2 CLIP
6063-T6 ALLOY



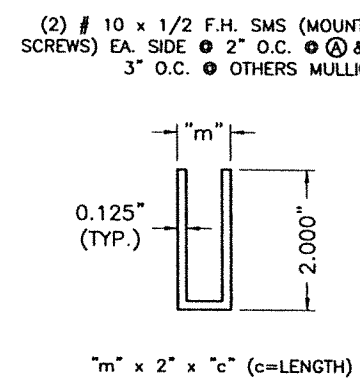
ELEVATION
OPTION W/ CLIP (C2)



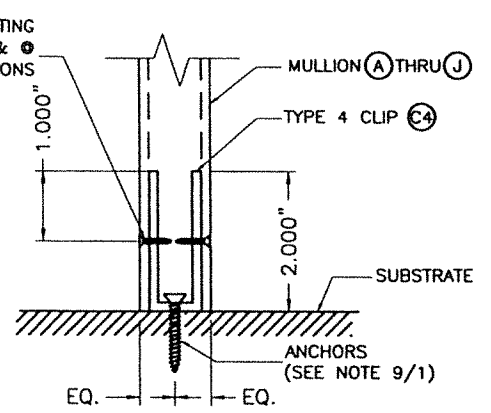
(C3) TYPE 3 CLIP
6063-T6 ALLOY



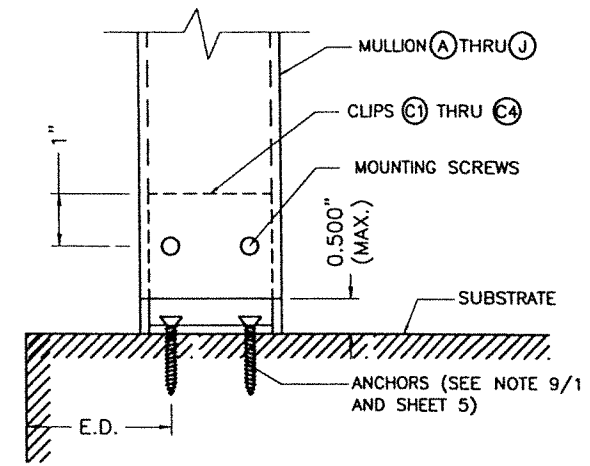
ELEVATION
OPTION W/ CLIP (C3)



(C4) TYPE 4 CLIP
6063-T6 ALLOY



ELEVATION
OPTION W/ CLIP (C4)

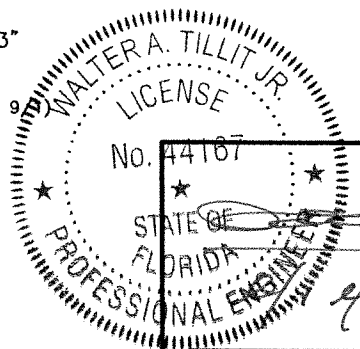


TYPICAL SIDE VIEW & OF CLIPS

CLIP/SCHEDULE FOR C1, C2, C3 & C4 CLIPS								
MULLION TYPE	m	m'	n	c	REQUIREMENTS FOR CLIP USE			
					C1	C2	C3	C4
(A)	23/32"	1"	4 15/32"	2 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(B)	23/32"	1"	4 15/32"	3 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(C)	23/32"	1"	4 15/32"	3 7/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(D)	1 23/32"	2"	5 15/32"	3 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(E)	1 23/32"	2"	5 15/32"	5 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(F)	1 15/32"	1 7/8"	5 15/32"	5 15/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(G)	2 23/32"	3"	6 15/32"	2 23/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(H)	3 15/32"	3 7/8"	7 7/32"	3 15/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(I)	3 15/32"	3 7/8"	7 7/32"	5 15/32"	NOTE 1	NOTE 1	NOTE 2	NOTE 3
(J)	VARIES	N/A	N/A	2 23/32"	NOTE 1	N/A	N/A	N/A

NOTE 1: USE ALWAYS AT INTERIOR MULLIONS (SEE CHARTS SHEETS 7 THRU 29)
NOTE 2: USE ONLY AT END MULLIONS (SEE CHARTS SHEETS 30 THRU 40)
NOTE 3: USE AT END OR INTERIOR MULLIONS (SEE CHARTS SHEETS 41 THRU 60)

CLIP TYPES FOR MULLION CONNECTIONS TO EXISTING STRUCTURE AND TYPICAL ELEVATIONS



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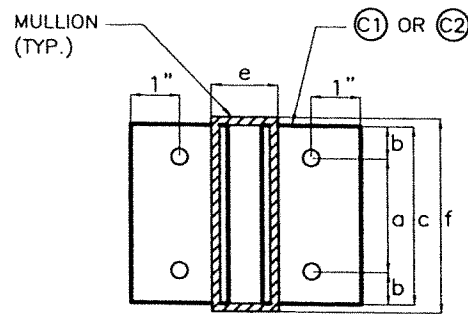
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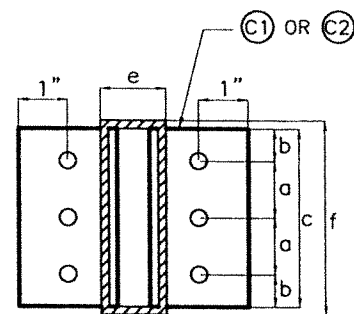
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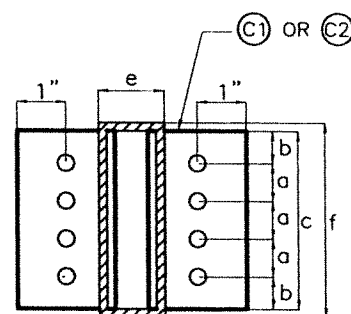
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23-212 DRAWING No					SHEET 4 OF 60	
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2			4			



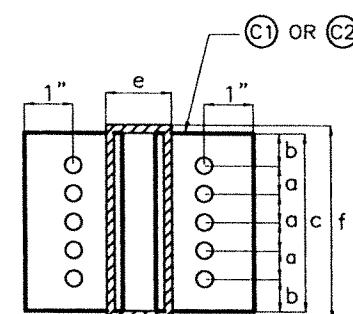
N=4 ANCHORS
@ INTERIOR MULLION



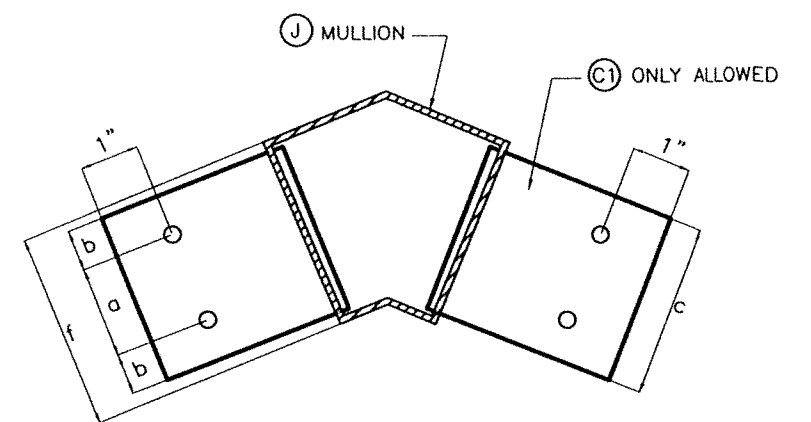
N=6 ANCHORS
@ INTERIOR MULLION



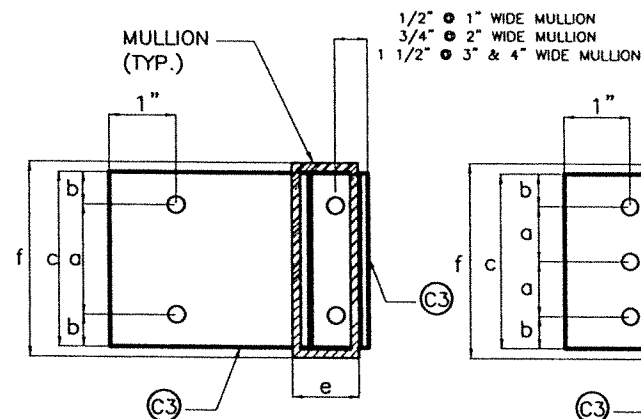
N=8 ANCHORS
@ INTERIOR MULLION



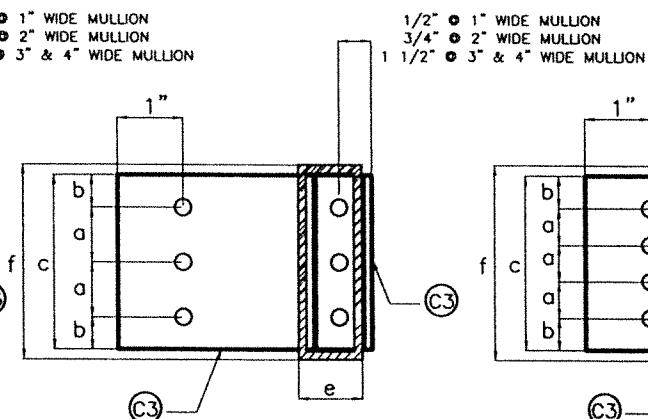
N=10 ANCHORS
@ INTERIOR MULLION



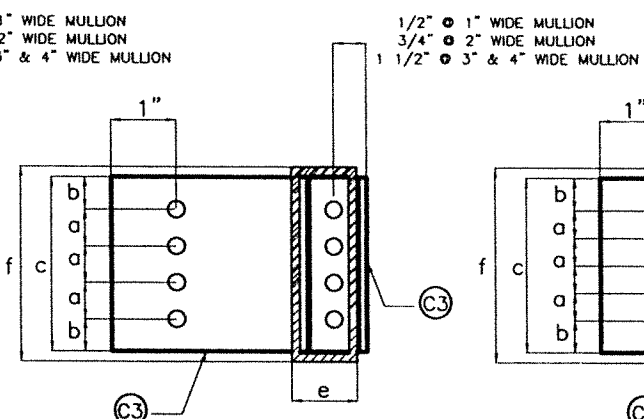
45° VERTICAL/INTERIOR J
MULLION W/ N=4 ANCHORS
& (C1) CLIP



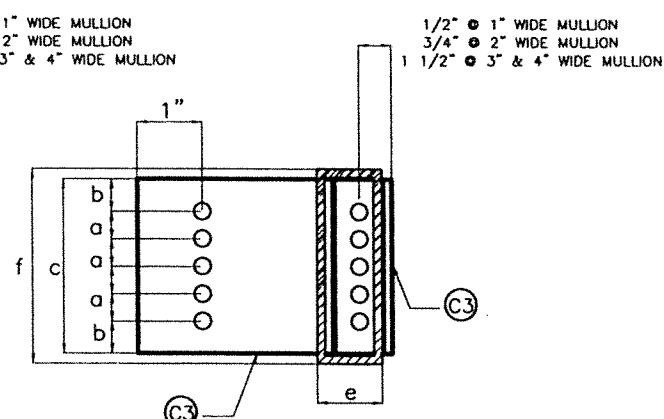
N=4 ANCHORS
ONLY END MULLION
(OPTION 1)



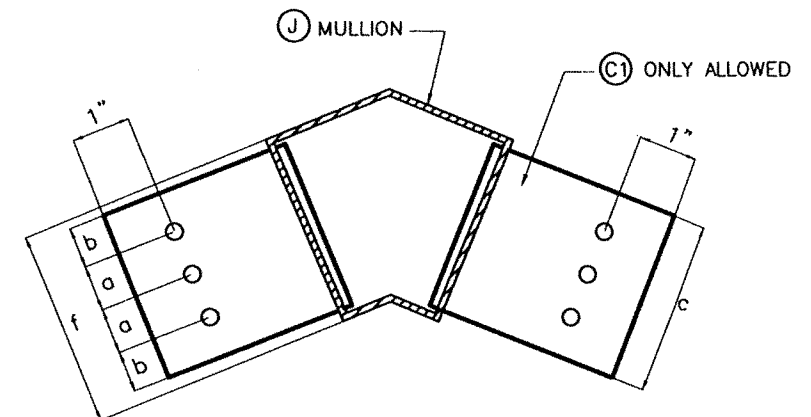
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ONLY END MULLION
(OPTION 1)



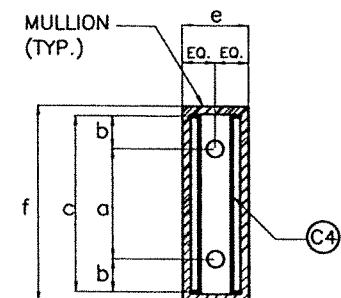
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ONLY END MULLION
(OPTION 1)



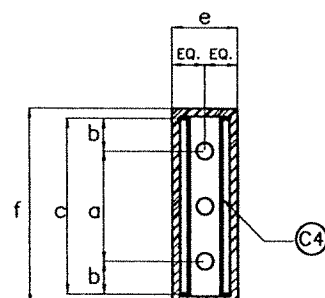
N=10 ANCHORS
ONLY END MULLION
(OPTION 1)



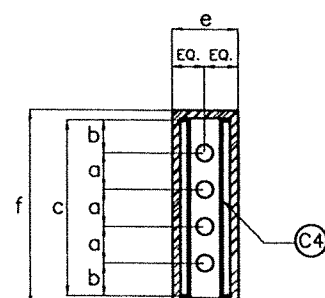
45° VERTICAL/INTERIOR J
MULLION W/ 6 ANCHORS &
(C1) CLIP



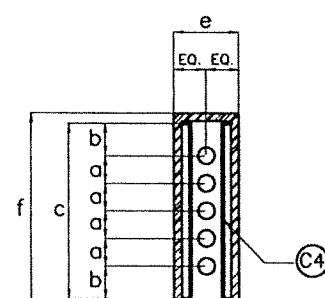
N=2 ANCHORS @
INTERIOR OR END
MULLION
(OPTION 2)



N=3 ANCHORS @
INTERIOR OR END
MULLION
(OPTION 2)



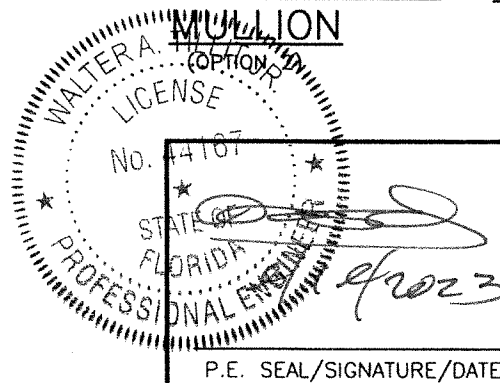
N=4 ANCHORS @
INTERIOR OR END
MULLION
(OPTION 2)



N=5 ANCHORS @
INTERIOR OR END
MULLION
(OPTION 2)

TYPICAL ANCHOR/CLIP DETAILS FOR INTERIOR & END MULLIONS

(SEE SHEET 6 FOR a, b, c, e & f DIMENSIONS)



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TILLIT TESTING & ENGINEERING COMPANY
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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

290 WEST 78 ROAD
HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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1	OLD 20-270	09/12/23	3		
2			4		

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W.H.

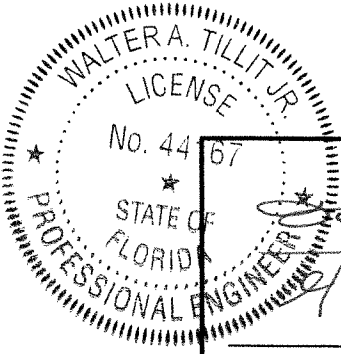
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23-212
DRAWING No

SHEET 5 OF 60

ANCHORS CLIP/SCHEDULE FOR CLIPS C1, C2, C3 & C4 * (SEE SHEETS 4 & 5)

INTERIOR & END CLIPPED MULLION TYPE	TUBE DIMENSIONS		CLIPS W/ "N" ANCHORS (TOTAL)											
			N=4 CLIPS TYPE C1, C2 & C3 N=2 CLIP TYPE C4			N=6 CLIPS TYPE C1, C2 & C3 N=3 CLIP TYPE C4			N=8 CLIPS TYPE C1, C2 & C3 N=4 CLIP TYPE C4			N=10 CLIPS TYPE C1, C2 & C3 N=5 CLIP TYPE C4		
	e	f	a	b	c	a	b	c	a	b	c	a	b	c
A	1"	3"	1 23/32"	1/2"	2 23/32"	—	—	—	—	—	—	—	—	—
B	1"	4"	3"	11/32"	3 23/32"	1 11/32"	1/2"	3 23/32"	—	—	—	—	—	—
C	1"	4"	2 7/32"	1/2"	3 7/32"	1 3/32"	1/2"	3 7/32"	—	—	—	—	—	—
D	2"	4"	3"	11/32"	3 23/32"	1 11/32"	1/2"	3 23/32"	—	—	—	—	—	—
E	2"	6"	4 23/32"	1/2"	5 23/32"	2 11/32"	1/2"	5 23/32"	1 9/16"	1/2"	5 23/32"	—	—	—
F	2"	6"	—	—	—	2 7/32"	1/2"	5 15/32"	1 15/32"	1/2"	5 15/32"	1 1/8"	1/2"	5 15/32"
G	3"	3"	1 23/32"	1/2"	2 23/32"	—	—	—	—	—	—	—	—	—
H	4"	4"	2 15/32"	1/2"	3 15/32"	1 7/32"	1/2"	3 15/32"	—	—	—	—	—	—
I	4"	6"	4 15/32"	1/2"	5 15/32"	2 7/32"	1/2"	5 15/32"	1 15/32"	1/2"	5 15/32"	1 1/8"	1/2"	5 15/32"
J	—	4"	3"	11/32"	3 23/32"	1 11/32"	1/2"	3 23/32"	—	—	—	—	—	—



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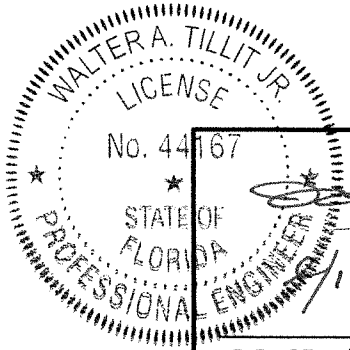
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1	OLD 20-270	09/12/23	3		
2			4		

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SHEET 6 OF 60

MULLION CHARTS SCHEDULE					
INTERIOR MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
7	A-C1/C2-N=4-WOOD	A	C1/C2	4	WOOD
	B-C1/C2-N=4-WOOD	B	C1/C2	4	WOOD
	C-C1/C2-N=4-WOOD	C	C1/C2	4	WOOD
8	D-C1/C2-N=4-WOOD	D	C1/C2	4	WOOD
	D-C1/C2-N=6-WOOD	D	C1/C2	6	WOOD
9	E-C1/C2-N=6-WOOD	E	C1/C2	6	WOOD
	E-C1/C2-N=8-WOOD	E	C1/C2	8	WOOD
10	F-C1/C2-N=8-WOOD	F	C1/C2	8	WOOD
	F-C1/C2-N=10-WOOD	F	C1/C2	10	WOOD
11	G-C1/C2-N=4-WOOD	G	C1/C2	4	WOOD
	I-C1/C2-N=10-WOOD	I	C1/C2	10	WOOD
12	J-C1-N=6-WOOD	J	C1	6	WOOD
13	A-C1/C2-N=4-BLOCK	A	C1/C2	4	BLOCK
	B-C1/C2-N=4-BLOCK	B	C1/C2	4	BLOCK
	C-C1/C2-N=4-BLOCK	C	C1/C2	4	BLOCK
14	D-C1/C2-N=4-BLOCK	D	C1/C2	4	BLOCK
	F-C1/C2-N=8-BLOCK	F	C1/C2	8	BLOCK
15	E-C1/C2-N=4-BLOCK	E	C1/C2	4	BLOCK
	E-C1/C2-N=8-BLOCK	E	C1/C2	8	BLOCK
16	G-C1/C2-N=4-BLOCK	G	C1/C2	4	BLOCK
	H-C1/C2-N=4-BLOCK	H	C1/C2	4	BLOCK
17	J-C1-N=4-BLOCK	J	C1	4	BLOCK

MULLION CHARTS SCHEDULE					
INTERIOR MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
18	A-C1/C2-N=4-CONC	A	C1/C2	4	CONC
	B-C1/C2-N=4-CONC	B	C1/C2	4	CONC
	C-C1/C2-N=4-CONC	C	C1/C2	4	CONC
19	D-C1/C2-N=4-CONC	D	C1/C2	4	CONC
	G-C1/C2-N=4-CONC	G	C1/C2	4	CONC
	H-C1/C2-N=4-CONC	H	C1/C2	4	CONC
20	E-C1/C2-N=4-CONC	E	C1/C2	4	CONC
	E-C1/C2-N=6-CONC	E	C1/C2	6	CONC
21	F-C1/C2-N=6-CONC	F	C1/C2	6	CONC
	F-C1/C2-N=8-CONC	F	C1/C2	8	CONC
22	I-C1/C2-N=8-CONC	I	C1/C2	8	CONC
	J-C1-N=4-CONC	J	C1	4	CONC
23	A-C1/C2-N=4-STL/AL	A	C1/C2	4	STL/AL
	B-C1/C2-N=4-STL/AL	B	C1/C2	4	STL/AL
24	C-C1/C2-N=4-STL/AL	C	C1/C2	4	STL/AL
	C-C1/C2-N=6-STL/AL	C	C1/C2	6	STL/AL
25	D-C1/C2-N=4-STL/AL	D	C1/C2	4	STL/AL
	D-C1/C2-N=6-STL/AL	D	C1/C2	6	STL/AL
26	E-C1/C2-N=6-STL/AL	E	C1/C2	6	STL/AL
	E-C1/C2-N=8-STL/AL	E	C1/C2	8	STL/AL
27	F-C1/C2-N=8-STL/AL	F	C1/C2	8	STL/AL
	F-C1/C2-N=10-STL/AL	F	C1/C2	10	STL/AL
28	G-C1/C2-N=4-STL/AL	G	C1/C2	4	STL/AL
	I-C1/C2-N=10-STL/AL	I	C1/C2	10	STL/AL
29	J-C1-N=6-STL/AL	J	C1	6	STL/AL



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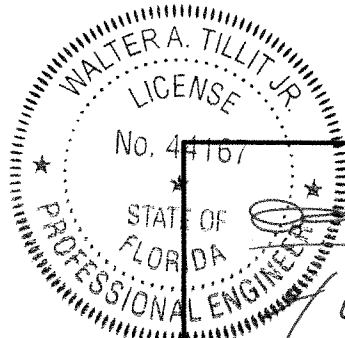
23-212
DRAWING No

SHEET 6A OF 60

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

MULLION CHARTS SCHEDULE					
END MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
30	A-C3-N=4-WOOD	A	C3	4	WOOD
	B-C3-N=4-WOOD	B	C3	4	WOOD
	C-C3-N=4-WOOD	C	C3	4	WOOD
	C-C3-N=6-WOOD	C	C3	6	WOOD
	D-C3-N=4-WOOD	D	C3	4	WOOD
	D-C3-N=6-WOOD	D	C3	6	WOOD
31	E-C3-N=6-WOOD	E	C3	6	WOOD
	E-C3-N=8-WOOD	E	C3	8	WOOD
	F-C3-N=8-WOOD	F	C3	8	WOOD
	F-C3-N=10-WOOD	F	C3	10	WOOD
32	G-C3-N=4-WOOD	G	C3	4	WOOD
	I-C3-N=10-WOOD	I	C3	10	WOOD
33	A-C3-N=4-BLOCK	A	C3	4	BLOCK
	B-C3-N=4-BLOCK	B	C3	4	BLOCK
	C-C3-N=4-BLOCK	C	C3	4	BLOCK
	D-C3-N=4-BLOCK	D	C3	4	BLOCK
	F-C3-N=8-BLOCK	F	C3	8	BLOCK
34	E-C3-N=4-BLOCK	E	C3	4	BLOCK
	E-C3-N=8-BLOCK	E	C3	8	BLOCK
	G-C3-N=4-BLOCK	G	C3	4	BLOCK
	H-C3-N=4-BLOCK	H	C3	4	BLOCK

MULLION CHARTS SCHEDULE					
END MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
35	A-C3-N=4-CONC	A	C3	4	CONC
	B-C3-N=4-CONC	B	C3	4	CONC
	C-C3-N=4-CONC	C	C3	4	CONC
	D-C3-N=4-CONC	D	C3	4	CONC
	G-C3-N=4-CONC	G	C3	4	CONC
36	E-C3-N=4-CONC	E	C3	4	CONC
	E-C3-N=6-CONC	E	C3	6	CONC
	F-C3-N=6-CONC	F	C3	6	CONC
	F-C3-N=8-CONC	F	C3	8	CONC
37	H-C3-N=4-CONC	H	C3	4	CONC
	I-C3-N=8-CONC	I	C3	8	CONC
38	A-C3-N=4-STL/AL	A	C3	4	STL/AL
	B-C3-N=4-STL/AL	B	C3	4	STL/AL
	C-C3-N=4-STL/AL	C	C3	4	STL/AL
	C-C3-N=6-STL/AL	C	C3	6	STL/AL
	G-C3-N=4-STL/AL	G	C3	4	STL/AL
	I-C3-N=10-STL/AL	I	C3	10	STL/AL
39	D-C3-N=4-STL/AL	D	C3	4	STL/AL
	D-C3-N=6-STL/AL	D	C3	6	STL/AL
	E-C3-N=6-STL/AL	E	C3	6	STL/AL
	E-C3-N=8-STL/AL	E	C3	8	STL/AL
	F-C3-N=8-STL/AL	F	C3	8	STL/AL
	F-C3-N=10-STL/AL	F	C3	10	STL/AL



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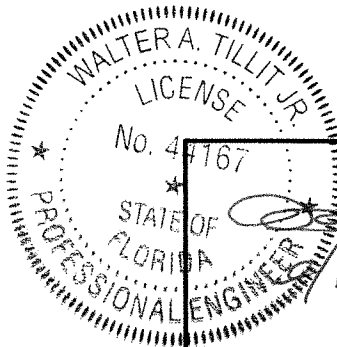
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23-212
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SHEET 68 OF 60

MULLION CHARTS SCHEDULE					
INTERIOR & END MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
41	A-C4-N=2-WOOD	A	C4	2	WOOD
	B-C4-N=2-WOOD	B	C4	2	WOOD
	C-C4-N=2-WOOD	C	C4	2	WOOD
42	C-C4-N=3-WOOD	C	C4	3	WOOD
	D-C4-N=2-WOOD	D	C4	2	WOOD
	D-C4-N=3-WOOD	D	C4	3	WOOD
43	E-C4-N=3-WOOD	E	C4	3	WOOD
	E-C4-N=4-WOOD	E	C4	4	WOOD
44	F-C4-N=4-WOOD	F	C4	4	WOOD
	F-C4-N=5-WOOD	F	C4	5	WOOD
45	G-C4-N=2-WOOD	G	C4	2	WOOD
	I-C4-N=5-WOOD	I	C4	5	WOOD
46	A-C4-N=2-BLOCK	A	C4	2	BLOCK
	B-C4-N=2-BLOCK	B	C4	2	BLOCK
	C-C4-N=2-BLOCK	C	C4	2	BLOCK
47	D-C4-N=2-BLOCK	D	C4	2	BLOCK
	F-C4-N=4-BLOCK	F	C4	4	BLOCK
	G-C4-N=2-BLOCK	G	C4	2	BLOCK
48	E-C4-N=2-BLOCK	E	C4	2	BLOCK
	E-C4-N=4-BLOCK	E	C4	4	BLOCK
49	H-C4-N=2-BLOCK	H	C4	2	BLOCK

MULLION CHARTS SCHEDULE					
INTERIOR & END MULLIONS CHARTS					
SHEET No.	CHARTS CODIFIED DESIGNATION	MULLIONS (SEE SHEET 3)	CLIPS (SEE SHEET 4)	No. OF ANCHORS N= (SEE SHEET 5)	SUBSTRATE
50	A-C4-N=2-CONC	A	C4	2	CONC
	B-C4-N=2-CONC	B	C4	2	CONC
	C-C4-N=2-CONC	C	C4	2	CONC
51	D-C4-N=2-CONC	D	C4	2	CONC
	G-C4-N=2-CONC	G	C4	2	CONC
52	E-C4-N=2-CONC	E	C4	2	CONC
	E-C4-N=3-CONC	E	C4	3	CONC
53	F-C4-N=3-CONC	F	C4	3	CONC
	F-C4-N=4-CONC	F	C4	4	CONC
54	H-C4-N=2-CONC	H	C4	2	CONC
	I-C4-N=4-CONC	I	C4	4	CONC
55	A-C4-N=2-STL/AL	A	C4	2	STL/AL
	B-C4-N=2-STL/AL	B	C4	2	STL/AL
	G-C4-N=2-STL/AL	G	C4	2	STL/AL
56	C-C4-N=2-STL/AL	C	C4	2	STL/AL
	C-C4-N=3-STL/AL	C	C4	3	STL/AL
57	D-C4-N=2-ST/AL	D	C4	2	STL/AL
	D-C4-N=3-STL/AL	D	C4	3	STL/AL
58	E-C4-N=3-STL/AL	E	C4	3	STL/AL
	E-C4-N=4-STL/AL	E	C4	4	STL/AL
59	F-C4-N=4-STL/AL	F	C4	4	STL/AL
	F-C4-N=5-STL/AL	F	C4	5	STL/AL
60	I-C4-N=5-STL/AL	I	C4	5	STL/AL



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23-212
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SHEET 6C OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

A-C1/C2-N=4-WOOD

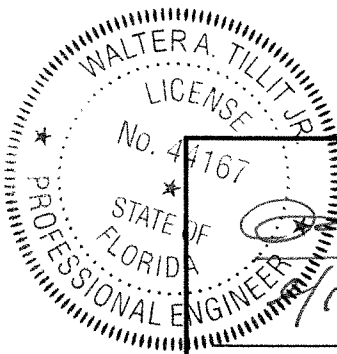
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	183.1	138.8	121.2	111.5
23	159.2	120.7	105.4	97.0
26	140.9	106.8	93.2	85.8
29	126.3	95.7	83.6	76.9
32	114.4	86.8	75.7	69.7
35	104.6	79.3	69.2	63.7
38	96.4	73.1	63.8	58.7
41	89.3	67.7	59.1	54.4
44	83.2	63.1	55.1	50.7
47	77.9	59.1	51.6	47.5
50	73.2	55.5	48.5	44.6
53	69.1	52.4	45.7	42.1
56	65.4	49.6	43.3	39.8
59	62.1	47.1	41.1	37.8
62	59.1	44.8	39.1	36.0
65	56.3	42.7	37.3	34.3
68	53.9	40.8	35.6	32.8
71	51.6	39.1	34.1	31.4
74	49.5	37.5	32.7	30.1
77	47.6	36.1	31.5	N/A
80	45.8	34.7	30.3	N/A
83	44.1	33.4	N/A	N/A
86	42.6	32.3	N/A	N/A
89	41.2	31.2	N/A	N/A
92	39.8	30.2	N/A	N/A
95	38.6	N/A	N/A	N/A
98	37.4	N/A	N/A	N/A
101	36.3	N/A	N/A	N/A
104	35.2	N/A	N/A	N/A

B-C1/C2-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	183.1	138.8	121.2	111.5	94.6	87.8
23	159.2	120.7	105.4	97.0	82.3	76.4
26	140.9	106.8	93.2	85.8	72.8	67.6
29	126.3	95.7	83.6	76.9	65.3	60.6
32	114.4	86.8	75.7	69.7	59.2	54.9
35	104.6	79.3	69.2	63.7	54.1	50.2
38	96.4	73.1	63.8	58.7	49.8	46.2
41	89.3	67.7	59.1	54.4	46.2	42.8
44	83.2	63.1	55.1	50.7	43.0	39.9
47	77.9	59.1	51.6	47.5	40.3	37.4
50	73.2	55.5	48.5	44.6	37.9	35.1
53	69.1	52.4	45.7	42.1	35.7	33.1
56	65.4	49.6	43.3	39.8	33.8	31.4
59	62.1	47.1	41.1	37.8	32.1	N/A
62	59.1	44.8	39.1	36.0	30.5	N/A
65	56.3	42.7	37.3	34.3	N/A	N/A
68	53.9	40.8	35.6	32.8	N/A	N/A
71	51.6	39.1	34.1	31.4	N/A	N/A
74	49.5	37.5	32.7	30.1	N/A	N/A
77	47.6	36.1	31.5	N/A	N/A	N/A
80	45.8	34.7	30.3	N/A	N/A	N/A
83	44.1	33.4	N/A	N/A	N/A	N/A
86	42.6	32.3	N/A	N/A	N/A	N/A
89	41.2	31.2	N/A	N/A	N/A	N/A
92	39.8	30.2	N/A	N/A	N/A	N/A
95	38.6	N/A	N/A	N/A	N/A	N/A
98	37.4	N/A	N/A	N/A	N/A	N/A
101	36.3	N/A	N/A	N/A	N/A	N/A
104	35.2	N/A	N/A	N/A	N/A	N/A

C-C1/C2-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	183.1	138.8	121.2	111.5	94.6	87.8
23	159.2	120.7	105.4	97.0	82.3	76.4
26	140.9	106.8	93.2	85.8	72.8	67.6
29	126.3	95.7	83.6	76.9	65.3	60.6
32	114.4	86.8	75.7	69.7	59.2	54.9
35	104.6	79.3	69.2	63.7	54.1	50.2
38	96.4	73.1	63.8	58.7	49.8	46.2
41	89.3	67.7	59.1	54.4	46.2	42.8
44	83.2	63.1	55.1	50.7	43.0	39.9
47	77.9	59.1	51.6	47.5	40.3	37.4
50	73.2	55.5	48.5	44.6	37.9	35.1
53	69.1	52.4	45.7	42.1	35.7	33.1
56	65.4	49.6	43.3	39.8	33.8	31.4
59	62.1	47.1	41.1	37.8	32.1	N/A
62	59.1	44.8	39.1	36.0	30.5	N/A
65	56.3	42.7	37.3	34.3	N/A	N/A
68	53.9	40.8	35.6	32.8	N/A	N/A
71	51.6	39.1	34.1	31.4	N/A	N/A
74	49.5	37.5	32.7	30.1	N/A	N/A
77	47.6	36.1	31.5	N/A	N/A	N/A
80	45.8	34.7	30.3	N/A	N/A	N/A
83	44.1	33.4	N/A	N/A	N/A	N/A
86	42.6	32.3	N/A	N/A	N/A	N/A
89	41.2	31.2	N/A	N/A	N/A	N/A
92	39.8	30.2	N/A	N/A	N/A	N/A
95	38.6	N/A	N/A	N/A	N/A	N/A
98	37.4	N/A	N/A	N/A	N/A	N/A
101	36.3	N/A	N/A	N/A	N/A	N/A
104	35.2	N/A	N/A	N/A	N/A	N/A



P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

© 2023 TILTECO INC.		SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		DRAWN BY: W.H.	
				290 WEST 78 ROAD HALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com	
TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th. St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tiltco@aol.com CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167		23-212 DRAWING No		09/12/2023 DATE	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		
				SHEET 7 OF 60	

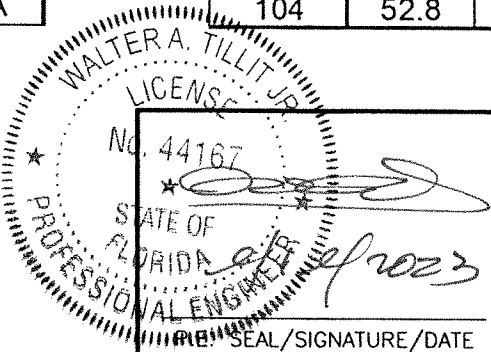
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

D-C1/C2-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	183.1	138.8	121.2	111.5	94.6	73.2
23	159.2	120.7	105.4	97.0	82.3	63.7
26	140.9	106.8	93.2	85.8	72.8	56.3
29	126.3	95.7	83.6	76.9	65.3	50.5
32	114.4	86.8	75.7	69.7	59.2	45.8
35	104.6	79.3	69.2	63.7	54.1	41.8
38	96.4	73.1	63.8	58.7	49.8	38.5
41	89.3	67.7	59.1	54.4	46.2	35.7
44	83.2	63.1	55.1	50.7	43.0	33.3
47	77.9	59.1	51.6	47.5	40.3	31.1
50	73.2	55.5	48.5	44.6	37.9	N/A
53	69.1	52.4	45.7	42.1	35.7	N/A
56	65.4	49.6	43.3	39.8	33.8	N/A
59	62.1	47.1	41.1	37.8	32.1	N/A
62	59.1	44.8	39.1	36.0	30.5	N/A
65	56.3	42.7	37.3	34.3	N/A	N/A
68	53.9	40.8	35.6	32.8	N/A	N/A
71	51.6	39.1	34.1	31.4	N/A	N/A
74	49.5	37.5	32.7	30.1	N/A	N/A
77	47.6	36.1	31.5	N/A	N/A	N/A
80	45.8	34.7	30.3	N/A	N/A	N/A
83	44.1	33.4	N/A	N/A	N/A	N/A
86	42.6	32.3	N/A	N/A	N/A	N/A
89	41.2	31.2	N/A	N/A	N/A	N/A
92	39.8	30.2	N/A	N/A	N/A	N/A
95	38.6	N/A	N/A	N/A	N/A	N/A
98	37.4	N/A	N/A	N/A	N/A	N/A
101	36.3	N/A	N/A	N/A	N/A	N/A
104	35.2	N/A	N/A	N/A	N/A	N/A

D-C1/C2-N=6-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	181.7	167.3	142.0	109.8
23	185.0	181.1	158.0	145.5	123.4	95.5
26	185.0	160.2	139.8	128.7	109.2	84.5
29	185.0	143.6	125.3	115.4	97.9	75.7
32	171.7	130.1	113.6	104.6	88.7	68.6
35	157.0	119.0	103.9	95.6	81.1	62.7
38	144.6	109.6	95.7	88.1	74.7	57.8
41	134.0	101.6	88.7	81.6	69.3	53.6
44	124.9	94.6	82.6	76.1	64.5	49.9
47	116.9	88.6	77.3	71.2	60.4	46.7
50	109.9	83.3	72.7	66.9	56.8	43.9
53	103.7	78.6	68.6	63.1	53.6	41.4
56	98.1	74.4	64.9	59.8	50.7	39.2
59	93.1	70.6	61.6	56.7	48.1	37.2
62	88.6	67.2	58.6	54.0	45.8	35.4
65	84.5	64.1	55.9	51.5	43.7	33.8
68	80.8	61.2	53.5	49.2	41.8	32.3
71	77.4	58.7	51.2	47.1	40.0	30.9
74	74.2	56.3	49.1	45.2	38.4	N/A
77	71.3	54.1	47.2	43.5	36.9	N/A
80	68.7	52.1	45.4	41.8	35.5	N/A
83	66.2	50.2	43.8	40.3	34.2	N/A
86	63.9	48.4	42.3	38.9	33.0	N/A
89	61.7	46.8	40.8	37.6	31.9	N/A
92	59.7	45.3	39.5	36.4	30.9	N/A
95	57.8	43.8	38.3	35.2	N/A	N/A
98	56.1	42.5	37.1	34.1	N/A	N/A
101	54.4	41.2	36.0	33.1	N/A	N/A
104	52.8	40.0	34.9	32.2	N/A	N/A



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WALTER A. TILLIT JR., P.E.
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23-212
DRAWING No

SHEET 8 OF 60

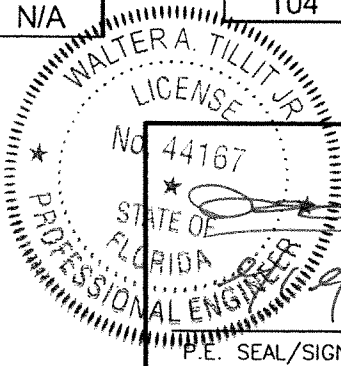
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

E-C1/C2-N=6-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	181.7	167.3	142.0	109.8	97.6	87.8	73.2
23	185.0	181.1	158.0	145.5	123.4	95.5	84.9	76.4	63.7
26	185.0	160.2	139.8	128.7	109.2	84.5	75.1	67.6	56.3
29	185.0	143.6	125.3	115.4	97.9	75.7	67.3	60.6	50.5
32	171.7	130.1	113.6	104.6	88.7	68.6	61.0	54.9	45.8
35	157.0	119.0	103.9	95.6	81.1	62.7	55.8	50.2	41.8
38	144.6	109.6	95.7	88.1	74.7	57.8	51.4	46.2	38.5
41	134.0	101.6	88.7	81.6	69.3	53.6	47.6	42.8	35.7
44	124.9	94.6	82.6	76.1	64.5	49.9	44.4	39.9	33.3
47	116.9	88.6	77.3	71.2	60.4	46.7	41.5	37.4	31.1
50	109.9	83.3	72.7	66.9	56.8	43.9	39.0	35.1	N/A
53	103.7	78.6	68.6	63.1	53.6	41.4	36.8	33.1	N/A
56	98.1	74.4	64.9	59.8	50.7	39.2	34.9	31.4	N/A
59	93.1	70.6	61.6	56.7	48.1	37.2	33.1	N/A	N/A
62	88.6	67.2	58.6	54.0	45.8	35.4	31.5	N/A	N/A
65	84.5	64.1	55.9	51.5	43.7	33.8	30.0	N/A	N/A
68	80.8	61.2	53.5	49.2	41.8	32.3	N/A	N/A	N/A
71	77.4	58.7	51.2	47.1	40.0	30.9	N/A	N/A	N/A
74	74.2	56.3	49.1	45.2	38.4	N/A	N/A	N/A	N/A
77	71.3	54.1	47.2	43.5	36.9	N/A	N/A	N/A	N/A
80	68.7	52.1	45.4	41.8	35.5	N/A	N/A	N/A	N/A
83	66.2	50.2	43.8	40.3	34.2	N/A	N/A	N/A	N/A
86	63.9	48.4	42.3	38.9	33.0	N/A	N/A	N/A	N/A
89	61.7	46.8	40.8	37.6	31.9	N/A	N/A	N/A	N/A
92	59.7	45.3	39.5	36.4	30.9	N/A	N/A	N/A	N/A
95	57.8	43.8	38.3	35.2	N/A	N/A	N/A	N/A	N/A
98	56.1	42.5	37.1	34.1	N/A	N/A	N/A	N/A	N/A
101	54.4	41.2	36.0	33.1	N/A	N/A	N/A	N/A	N/A
104	52.8	40.0	34.9	32.2	N/A	N/A	N/A	N/A	N/A

E-C1/C2-N=8-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	189.3	146.4	130.1	117.1	97.6
23	185.0	185.0	185.0	185.0	164.6	127.3	113.2	101.8	84.9
26	185.0	185.0	185.0	171.6	145.6	112.6	100.1	90.1	75.1
29	185.0	185.0	167.1	153.9	130.5	101.0	89.7	80.8	67.3
32	185.0	173.5	151.4	139.4	118.3	91.5	81.3	73.2	61.0
35	185.0	158.6	138.5	127.5	108.2	83.7	74.4	66.9	55.8
38	185.0	146.1	127.5	117.4	99.6	77.1	68.5	61.6	51.4
41	178.7	135.4	118.2	108.8	92.3	71.4	63.5	57.1	47.6
44	166.5	126.2	110.1	101.4	86.0	66.5	59.2	53.2	44.4
47	155.8	118.1	103.1	94.9	80.5	62.3	55.4	49.8	41.5
50	146.5	111.0	96.9	89.2	75.7	58.6	52.1	46.8	39.0
53	138.2	104.8	91.4	84.2	71.4	55.2	49.1	44.2	36.8
56	130.8	99.1	86.5	79.7	67.6	52.3	46.5	41.8	34.9
59	124.1	94.1	82.1	75.6	64.2	49.6	44.1	39.7	33.1
62	118.1	89.6	78.2	72.0	61.1	47.2	42.0	37.8	31.5
65	112.7	85.4	74.6	68.6	58.2	45.0	40.0	36.0	30.0
68	107.7	81.7	71.3	65.6	55.7	43.1	38.3	34.4	N/A
71	103.2	78.2	68.3	62.8	53.3	41.2	36.7	33.0	N/A
74	99.0	75.0	65.5	60.3	51.2	39.6	35.2	31.7	N/A
77	95.1	72.1	62.9	57.9	49.2	38.0	33.8	30.4	N/A
80	91.6	69.4	60.6	55.8	47.3	36.6	32.5	N/A	N/A
83	88.3	66.9	58.4	53.8	45.6	35.3	31.4	N/A	N/A
86	85.2	64.6	56.4	51.9	44.0	34.0	30.3	N/A	N/A
89	82.3	62.4	54.5	50.1	42.5	32.9	N/A	N/A	N/A
92	79.6	60.4	52.7	48.5	41.1	31.8	N/A	N/A	N/A
95	77.1	58.4	51.0	47.0	39.8	30.8	N/A	N/A	N/A
98	74.7	56.7	49.5	45.5	38.6	N/A	N/A	N/A	N/A
101	72.5	55.0	48.0	44.2	37.5	N/A	N/A	N/A	N/A
104	70.4	53.4	46.6	42.9	36.4	N/A	N/A	N/A	N/A



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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
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SHEET 9 OF 60

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

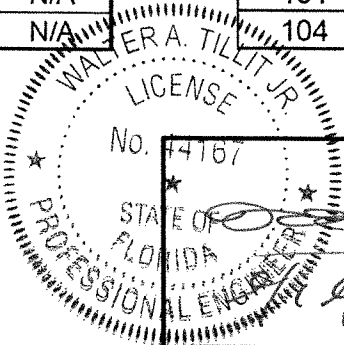
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

F-C1/C2-N=8-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	146.4	130.1	117.1	97.6
23	185.0	185.0	185.0	185.0	164.6	127.3	113.2	101.8	84.9
26	185.0	185.0	186.4	171.6	145.6	112.6	100.1	90.1	75.1
29	185.0	185.0	167.1	153.9	130.5	101.0	89.7	80.8	67.3
32	185.0	173.5	151.4	139.4	118.3	91.5	81.3	73.2	61.0
35	185.0	158.6	138.5	127.5	108.2	83.7	74.4	66.9	55.8
38	185.0	146.1	127.5	117.4	99.6	77.1	68.5	61.6	51.4
41	178.7	135.4	118.2	108.8	92.3	71.4	63.5	57.1	47.6
44	166.5	126.2	110.1	101.4	86.0	66.5	59.2	53.2	44.4
47	155.8	118.1	103.1	94.9	80.5	62.3	55.4	49.8	41.5
50	146.5	111.0	96.9	89.2	75.7	58.6	52.1	46.8	39.0
53	138.2	104.8	91.4	84.2	71.4	55.2	49.1	44.2	36.8
56	130.8	99.1	86.5	79.7	67.6	52.3	46.5	41.8	34.9
59	124.1	94.1	82.1	75.6	64.2	49.6	44.1	39.7	33.1
62	118.1	89.6	78.2	72.0	61.1	47.2	42.0	37.8	31.5
65	112.7	85.4	74.6	68.6	58.2	45.0	40.0	36.0	30.0
68	107.7	81.7	71.3	65.6	55.7	43.1	38.3	34.4	N/A
71	103.2	78.2	68.3	62.8	53.3	41.2	36.7	33.0	N/A
74	99.0	75.0	65.5	60.3	51.2	39.6	35.2	31.7	N/A
77	95.1	72.1	62.9	57.9	49.2	38.0	33.8	30.4	N/A
80	91.6	69.4	60.6	55.8	47.3	36.6	32.5	N/A	N/A
83	88.3	66.9	58.4	53.8	45.6	35.3	31.4	N/A	N/A
86	85.2	64.6	56.4	51.9	44.0	34.0	30.3	N/A	N/A
89	82.3	62.4	54.5	50.1	42.5	32.9	N/A	N/A	N/A
92	79.6	60.4	52.7	48.5	41.1	31.8	N/A	N/A	N/A
95	77.1	58.4	51.0	47.0	39.8	30.8	N/A	N/A	N/A
98	74.7	56.7	49.5	45.5	38.6	N/A	N/A	N/A	N/A
101	72.5	55.0	48.0	44.2	37.5	N/A	N/A	N/A	N/A
104	70.4	53.4	46.6	42.9	36.4	N/A	N/A	N/A	N/A

F-C1/C2-N=10-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	183.0	162.7	146.4	122.0
23	185.0	185.0	185.0	185.0	185.0	159.1	141.4	127.3	106.1
26	185.0	185.0	185.0	185.0	182.0	140.8	125.1	112.6	93.8
29	185.0	185.0	185.0	185.0	163.2	126.2	112.2	101.0	84.1
32	185.0	185.0	185.0	174.3	147.9	114.4	101.7	91.5	76.3
35	185.0	185.0	173.1	159.3	135.2	104.6	93.0	83.7	69.7
38	185.0	182.6	159.4	146.8	124.5	96.3	85.6	77.1	64.2
41	185.0	169.3	147.8	136.0	115.4	89.3	79.3	71.4	59.5
44	185.0	157.7	137.7	126.8	107.5	83.2	73.9	66.5	55.5
47	185.0	147.7	128.9	118.7	100.7	77.9	69.2	62.3	51.9
50	183.1	138.8	121.2	111.5	94.6	73.2	65.1	58.6	48.8
53	172.8	131.0	114.3	105.2	89.3	69.1	61.4	55.2	46.0
56	163.5	123.9	108.2	99.6	84.5	65.4	58.1	52.3	43.6
59	155.2	117.6	102.7	94.5	80.2	62.0	55.1	49.6	41.4
62	147.7	111.9	97.7	90.0	76.3	59.0	52.5	47.2	39.4
65	140.9	106.8	93.2	85.8	72.8	56.3	50.1	45.0	37.5
68	134.6	102.1	89.1	82.0	69.6	53.8	47.8	43.1	35.9
71	129.0	97.8	85.3	78.6	66.6	51.5	45.8	41.2	34.4
74	123.7	93.8	81.9	75.4	63.9	49.5	44.0	39.6	33.0
77	118.9	90.1	78.7	72.4	61.5	47.5	42.3	38.0	31.7
80	114.4	86.8	75.7	69.7	59.2	45.8	40.7	36.6	30.5
83	110.3	83.6	73.0	67.2	57.0	44.1	39.2	35.3	N/A
86	106.5	80.7	70.4	64.9	55.0	42.6	37.8	34.0	N/A
89	102.9	78.0	68.1	62.7	53.2	41.1	36.6	32.9	N/A
92	99.5	75.4	65.8	60.6	51.4	39.8	35.4	31.8	N/A
95	96.4	73.1	63.8	58.7	49.8	38.5	34.2	30.8	N/A
98	93.4	70.8	61.8	56.9	48.3	37.3	33.2	N/A	N/A
101	90.7	68.7	60.0	55.2	46.9	36.2	32.2	N/A	N/A
104	88.0	66.7	58.2	53.6	45.5	35.2	31.3	N/A	N/A



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FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 10 OF 60

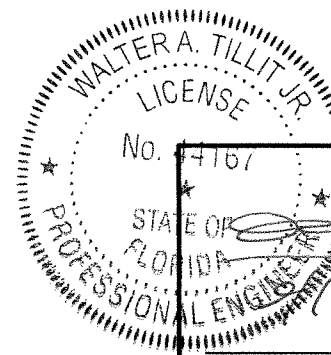
CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

G-C1/C2-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	183.1	138.8	121.2	111.5	94.6	73.2
23	159.2	120.7	105.4	97.0	82.3	63.7
26	140.9	106.8	93.2	85.8	72.8	56.3
29	126.3	95.7	83.6	76.9	65.3	50.5
32	114.4	86.8	75.7	69.7	59.2	45.8
35	104.6	79.3	69.2	63.7	54.1	41.8
38	96.4	73.1	63.8	58.7	49.8	38.5
41	89.3	67.7	59.1	54.4	46.2	35.7
44	83.2	63.1	55.1	50.7	43.0	33.3
47	77.9	59.1	51.6	47.5	40.3	31.1
50	73.2	55.5	48.5	44.6	37.9	N/A
53	69.1	52.4	45.7	42.1	35.7	N/A
56	65.4	49.6	43.3	39.8	33.8	N/A
59	62.1	47.1	41.1	37.8	32.1	N/A
62	59.1	44.8	39.1	36.0	30.5	N/A
65	56.3	42.7	37.3	34.3	N/A	N/A
68	53.9	40.8	35.6	32.8	N/A	N/A
71	51.6	39.1	34.1	31.4	N/A	N/A
74	49.5	37.5	32.7	30.1	N/A	N/A
77	47.6	36.1	31.5	N/A	N/A	N/A
80	45.8	34.7	30.3	N/A	N/A	N/A
83	44.1	33.4	N/A	N/A	N/A	N/A
86	42.6	32.3	N/A	N/A	N/A	N/A
89	41.2	31.2	N/A	N/A	N/A	N/A
92	39.8	30.2	N/A	N/A	N/A	N/A
95	38.6	N/A	N/A	N/A	N/A	N/A
98	37.4	N/A	N/A	N/A	N/A	N/A
101	36.3	N/A	N/A	N/A	N/A	N/A
104	35.2	N/A	N/A	N/A	N/A	N/A

I-C1/C2-N=10-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	183.0	162.7	146.4	122.0
23	185.0	185.0	185.0	185.0	185.0	159.1	141.4	127.3	106.1
26	185.0	185.0	185.0	185.0	182.0	140.8	125.1	112.6	93.8
29	185.0	185.0	185.0	185.0	163.2	126.2	112.2	101.0	84.1
32	185.0	185.0	185.0	174.3	147.9	114.4	101.7	91.5	76.3
35	185.0	185.0	173.1	159.3	135.2	104.6	93.0	83.7	69.7
38	185.0	182.6	159.4	146.8	124.5	96.3	85.6	77.1	64.2
41	185.0	169.3	147.8	136.0	115.4	89.3	79.3	71.4	59.5
44	185.0	157.7	137.7	126.8	107.5	83.2	73.9	66.5	55.5
47	185.0	147.7	128.9	118.7	100.7	77.9	69.2	62.3	51.9
50	183.1	138.8	121.2	111.5	94.6	73.2	65.1	58.6	48.8
53	172.8	131.0	114.3	105.2	89.3	69.1	61.4	55.2	46.0
56	163.5	123.9	108.2	99.6	84.5	65.4	58.1	52.3	43.6
59	155.2	117.6	102.7	94.5	80.2	62.0	55.1	49.6	41.4
62	147.7	111.9	97.7	90.0	76.3	59.0	52.5	47.2	39.4
65	140.9	106.8	93.2	85.8	72.8	56.3	50.1	45.0	37.5
68	134.6	102.1	89.1	82.0	69.6	53.8	47.8	43.1	35.9
71	129.0	97.8	85.3	78.6	66.6	51.5	45.8	41.2	34.4
74	123.7	93.8	81.9	75.4	63.9	49.5	44.0	39.6	33.0
77	118.9	90.1	78.7	72.4	61.5	47.5	42.3	38.0	31.7
80	114.4	86.8	75.7	69.7	59.2	45.8	40.7	36.6	30.5
83	110.3	83.6	73.0	67.2	57.0	44.1	39.2	35.3	N/A
86	106.5	80.7	70.4	64.9	55.0	42.6	37.8	34.0	N/A
89	102.9	78.0	68.1	62.7	53.2	41.1	36.6	32.9	N/A
92	99.5	75.4	65.8	60.6	51.4	39.8	35.4	31.8	N/A
95	96.4	73.1	63.8	58.7	49.8	38.5	34.2	30.8	N/A
98	93.4	70.8	61.8	56.9	48.3	37.3	33.2	N/A	N/A
101	90.7	68.7	60.0	55.2	46.9	36.2	32.2	N/A	N/A
104	88.0	66.7	58.2	53.6	45.5	35.2	31.3	N/A	N/A



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DATE

23-212
DRAWING No

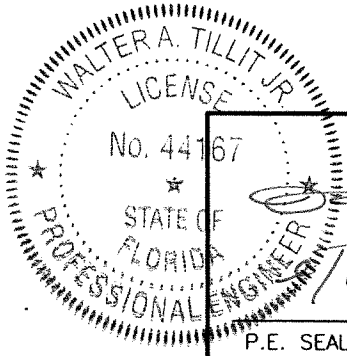
SHEET 11 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIP (C1)

J-C1-N=6-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 45° MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	181.7	167.3	142.0	109.8
23	185.0	181.1	158.0	145.5	123.4	95.5
26	185.0	160.2	139.8	128.7	109.2	84.5
29	185.0	143.6	125.3	115.4	97.9	75.7
32	171.7	130.1	113.6	104.6	88.7	68.6
35	157.0	119.0	103.9	95.6	81.1	62.7
38	144.6	109.6	95.7	88.1	74.7	57.8
41	134.0	101.6	88.7	81.6	69.3	53.6
44	124.9	94.6	82.6	76.1	64.5	49.9
47	116.9	88.6	77.3	71.2	60.4	46.7
50	109.9	83.3	72.7	66.9	56.8	43.9
53	103.7	78.6	68.6	63.1	53.6	41.4
56	98.1	74.4	64.9	59.8	50.7	39.2
59	93.1	70.6	61.6	56.7	48.1	37.2
62	88.6	67.2	58.6	54.0	45.8	35.4
65	84.5	64.1	55.9	51.5	43.7	33.8
68	80.8	61.2	53.5	49.2	41.8	32.3
71	77.4	58.7	51.2	47.1	40.0	30.9
74	74.2	56.3	49.1	45.2	38.4	N/A
77	71.3	54.1	47.2	43.5	36.9	N/A
80	68.7	52.1	45.4	41.8	35.5	N/A
83	66.2	50.2	43.8	40.3	34.2	N/A
86	63.9	48.4	42.3	38.9	33.0	N/A
89	61.7	46.8	40.8	37.6	31.9	N/A
92	59.7	45.3	39.5	36.4	30.9	N/A
95	57.8	43.8	38.3	35.2	N/A	N/A
98	56.1	42.5	37.1	34.1	N/A	N/A
101	54.4	41.2	36.0	33.1	N/A	N/A
104	52.8	40.0	34.9	32.2	N/A	N/A



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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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DATE

23-212
DRAWING No

SHEET 12 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

A-C1/C2-N=4-BLOCK

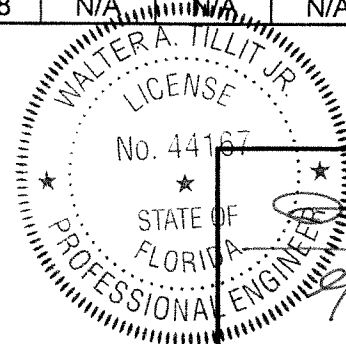
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION					
Tributary Width (b)	Mullion Length (L)				
	38.375	50.625	58	63	
20	150.1	113.8	99.3	91.4	
23	130.5	98.9	86.4	79.5	
26	115.5	87.5	76.4	70.3	
29	103.5	78.5	68.5	63.1	
32	93.8	71.1	62.1	57.1	
35	85.8	65.0	56.7	52.2	
38	79.0	59.9	52.3	48.1	
41	73.2	55.5	48.4	44.6	
44	68.2	51.7	45.1	41.6	
47	63.9	48.4	42.3	38.9	
50	60.0	45.5	39.7	36.6	
53	56.6	42.9	37.5	34.5	
56	53.6	40.6	35.5	32.7	
59	50.9	38.6	33.7	31.0	
62	48.4	36.7	32.0	N/A	
65	46.2	35.0	30.6	N/A	
68	44.1	33.5	N/A	N/A	
71	42.3	32.1	N/A	N/A	
74	40.6	30.8	N/A	N/A	
77	39.0	N/A	N/A	N/A	
80	37.5	N/A	N/A	N/A	
83	36.2	N/A	N/A	N/A	
86	34.9	N/A	N/A	N/A	
89	33.7	N/A	N/A	N/A	
92	32.6	N/A	N/A	N/A	
95	31.6	N/A	N/A	N/A	
98	30.6	N/A	N/A	N/A	
101	N/A	N/A	N/A	N/A	
104	N/A	N/A	N/A	N/A	

B-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	170.7	149.0	137.1	116.4	108.0
23	185.0	148.4	129.5	119.3	101.2	93.9
26	173.2	131.3	114.6	105.5	89.5	83.1
29	155.3	117.7	102.7	94.6	80.3	74.5
32	140.7	106.7	93.1	85.7	72.7	67.5
35	128.7	97.5	85.1	78.4	66.5	61.7
38	118.5	89.8	78.4	72.2	61.2	56.8
41	109.8	83.3	72.7	66.9	56.8	52.7
44	102.3	77.6	67.7	62.3	52.9	49.1
47	95.8	72.6	63.4	58.4	49.5	46.0
50	90.1	68.3	59.6	54.9	46.5	43.2
53	85.0	64.4	56.2	51.8	43.9	40.8
56	80.4	61.0	53.2	49.0	41.6	38.6
59	76.3	57.9	50.5	46.5	39.4	36.6
62	72.6	55.1	48.1	44.2	37.5	34.8
65	69.3	52.5	45.8	42.2	35.8	33.2
68	66.2	50.2	43.8	40.3	34.2	31.8
71	63.4	48.1	42.0	38.6	32.8	30.4
74	60.9	46.1	40.3	37.1	31.4	N/A
77	58.5	44.3	38.7	35.6	30.2	N/A
80	56.3	42.7	37.2	34.3	N/A	N/A
83	54.3	41.1	35.9	33.0	N/A	N/A
86	52.4	39.7	34.6	31.9	N/A	N/A
89	50.6	38.4	33.5	30.8	N/A	N/A
92	48.9	37.1	32.4	N/A	N/A	N/A
95	47.4	35.9	31.4	N/A	N/A	N/A
98	45.9	34.8	30.4	N/A	N/A	N/A
101	44.6	33.8	N/A	N/A	N/A	N/A
104	43.3	32.8	N/A	N/A	N/A	N/A

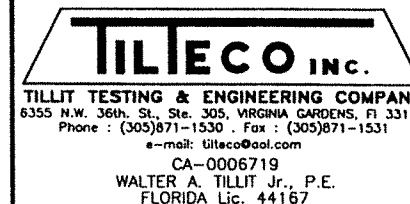
C-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	170.7	149.0	137.1	116.4	108.0
23	185.0	148.4	129.5	119.3	101.2	93.9
26	173.2	131.3	114.6	105.5	89.5	83.1
29	155.3	117.7	102.7	94.6	80.3	74.5
32	140.7	106.7	93.1	85.7	72.7	67.5
35	128.7	97.5	85.1	78.4	66.5	61.7
38	118.5	89.8	78.4	72.2	61.2	56.8
41	109.8	83.3	72.7	66.9	56.8	52.7
44	102.3	77.6	67.7	62.3	52.9	49.1
47	95.8	72.6	63.4	58.4	49.5	46.0
50	90.1	68.3	59.6	54.9	46.5	43.2
53	85.0	64.4	56.2	51.8	43.9	40.8
56	80.4	61.0	53.2	49.0	41.6	38.6
59	76.3	57.9	50.5	46.5	39.4	36.6
62	72.6	55.1	48.1	44.2	37.5	34.8
65	69.3	52.5	45.8	42.2	35.8	33.2
68	66.2	50.2	43.8	40.3	34.2	31.8
71	63.4	48.1	42.0	38.6	32.8	30.4
74	60.9	46.1	40.3	37.1	31.4	N/A
77	58.5	44.3	38.7	35.6	30.2	N/A
80	56.3	42.7	37.2	34.3	N/A	N/A
83	54.3	41.1	35.9	33.0	N/A	N/A
86	52.4	39.7	34.6	31.9	N/A	N/A
89	50.6	38.4	33.5	30.8	N/A	N/A
92	48.9	37.1	32.4	N/A	N/A	N/A
95	47.4	35.9	31.4	N/A	N/A	N/A
98	45.9	34.8	30.4	N/A	N/A	N/A
101	44.6	33.8	N/A	N/A	N/A	N/A
104	43.3	32.8	N/A	N/A	N/A	N/A



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

290 WEST 78 ROAD
HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
www.gigwindows.com

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 13 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

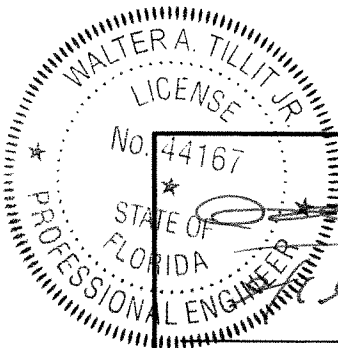
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

D-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	170.7	149.0	137.1	116.4	90.0
23	185.0	148.4	129.5	119.3	101.2	78.3
26	173.2	131.3	114.6	105.5	89.5	69.2
29	155.3	117.7	102.7	94.6	80.3	62.1
32	140.7	106.7	93.1	85.7	72.7	56.3
35	128.7	97.5	85.1	78.4	66.5	51.4
38	118.5	89.8	78.4	72.2	61.2	47.4
41	109.8	83.3	72.7	66.9	56.8	43.9
44	102.3	77.6	67.7	62.3	52.9	40.9
47	95.8	72.6	63.4	58.4	49.5	38.3
50	90.1	68.3	59.6	54.9	46.5	36.0
53	85.0	64.4	56.2	51.8	43.9	34.0
56	80.4	61.0	53.2	49.0	41.6	32.1
59	76.3	57.9	50.5	46.5	39.4	30.5
62	72.6	55.1	48.1	44.2	37.5	N/A
65	69.3	52.5	45.8	42.2	35.8	N/A
68	66.2	50.2	43.8	40.3	34.2	N/A
71	63.4	48.1	42.0	38.6	32.8	N/A
74	60.9	46.1	40.3	37.1	31.4	N/A
77	58.5	44.3	38.7	35.6	30.2	N/A
80	56.3	42.7	37.2	34.3	N/A	N/A
83	54.3	41.1	35.9	33.0	N/A	N/A
86	52.4	39.7	34.6	31.9	N/A	N/A
89	50.6	38.4	33.5	30.8	N/A	N/A
92	48.9	37.1	32.4	N/A	N/A	N/A
95	47.4	35.9	31.4	N/A	N/A	N/A
98	45.9	34.8	30.4	N/A	N/A	N/A
101	44.6	33.8	N/A	N/A	N/A	N/A
104	43.3	32.8	N/A	N/A	N/A	N/A

F-C1/C2-N=8-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION								
Tributary Width (b)	Mullion Length (L)							
	38.375	50.625	58	63	74.25	96	108	120
20	185.0	185.0	185.0	182.9	155.2	120.0	106.7	96.0
23	185.0	185.0	172.7	159.0	134.9	104.3	92.8	83.5
26	185.0	175.0	152.8	140.7	119.3	92.3	82.1	73.8
29	185.0	156.9	137.0	126.1	107.0	82.8	73.6	66.2
32	185.0	142.2	124.1	114.3	97.0	75.0	66.7	60.0
35	171.5	130.0	113.5	104.5	88.7	68.6	61.0	54.9
38	158.0	119.8	104.5	96.2	81.7	63.2	56.1	50.5
41	146.4	111.0	96.9	89.2	75.7	58.5	52.0	46.8
44	136.5	103.4	90.3	83.1	70.5	54.5	48.5	43.6
47	127.7	96.8	84.5	77.8	66.0	51.1	45.4	40.9
50	120.1	91.0	79.4	73.1	62.1	48.0	42.7	38.4
53	113.3	85.9	75.0	69.0	58.5	45.3	40.3	36.2
56	107.2	81.3	70.9	65.3	55.4	42.9	38.1	34.3
59	101.8	77.1	67.3	62.0	52.6	40.7	36.2	32.5
62	96.8	73.4	64.1	59.0	50.0	38.7	34.4	31.0
65	92.4	70.0	61.1	56.3	47.7	36.9	32.8	N/A
68	88.3	66.9	58.4	53.8	45.6	35.3	31.4	N/A
71	84.6	64.1	55.9	51.5	43.7	33.8	30.0	N/A
74	81.1	61.5	53.7	49.4	41.9	32.4	N/A	N/A
77	78.0	59.1	51.6	47.5	40.3	31.2	N/A	N/A
80	75.0	56.9	49.7	45.7	38.8	30.0	N/A	N/A
83	72.3	54.8	47.9	44.1	37.4	N/A	N/A	N/A
86	69.8	52.9	46.2	42.5	36.1	N/A	N/A	N/A
89	67.5	51.1	44.6	41.1	34.9	N/A	N/A	N/A
92	65.3	49.5	43.2	39.8	33.7	N/A	N/A	N/A
95	63.2	47.9	41.8	38.5	32.7	N/A	N/A	N/A
98	61.3	46.4	40.5	37.3	31.7	N/A	N/A	N/A
101	59.4	45.1	39.3	36.2	30.7	N/A	N/A	N/A
104	57.7	43.8	38.2	35.2	N/A	N/A	N/A	N/A



P.E. SEAL/SIGNATURE/DATE

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TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 14 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

E-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	170.7	149.0	137.1	116.4	90.0	80.0	72.0	60.0
23	185.0	148.4	129.5	119.3	101.2	78.3	69.6	62.6	52.2
26	173.2	131.3	114.6	105.5	89.5	69.2	61.5	55.4	46.2
29	155.3	117.7	102.7	94.6	80.3	62.1	55.2	49.7	41.4
32	140.7	106.7	93.1	85.7	72.7	56.3	50.0	45.0	37.5
35	128.7	97.5	85.1	78.4	66.5	51.4	45.7	41.1	34.3
38	118.5	89.8	78.4	72.2	61.2	47.4	42.1	37.9	31.6
41	109.8	83.3	72.7	66.9	56.8	43.9	39.0	35.1	N/A
44	102.3	77.6	67.7	62.3	52.9	40.9	36.4	32.7	N/A
47	95.8	72.6	63.4	58.4	49.5	38.3	34.0	30.6	N/A
50	90.1	68.3	59.6	54.9	46.5	36.0	32.0	N/A	N/A
53	85.0	64.4	56.2	51.8	43.9	34.0	30.2	N/A	N/A
56	80.4	61.0	53.2	49.0	41.6	32.1	N/A	N/A	N/A
59	76.3	57.9	50.5	46.5	39.4	30.5	N/A	N/A	N/A
62	72.6	55.1	48.1	44.2	37.5	N/A	N/A	N/A	N/A
65	69.3	52.5	45.8	42.2	35.8	N/A	N/A	N/A	N/A
68	66.2	50.2	43.8	40.3	34.2	N/A	N/A	N/A	N/A
71	63.4	48.1	42.0	38.6	32.8	N/A	N/A	N/A	N/A
74	60.9	46.1	40.3	37.1	31.4	N/A	N/A	N/A	N/A
77	58.5	44.3	38.7	35.6	30.2	N/A	N/A	N/A	N/A
80	56.3	42.7	37.2	34.3	N/A	N/A	N/A	N/A	N/A
83	54.3	41.1	35.9	33.0	N/A	N/A	N/A	N/A	N/A
86	52.4	39.7	34.6	31.9	N/A	N/A	N/A	N/A	N/A
89	50.6	38.4	33.5	30.8	N/A	N/A	N/A	N/A	N/A
92	48.9	37.1	32.4	N/A	N/A	N/A	N/A	N/A	N/A
95	47.4	35.9	31.4	N/A	N/A	N/A	N/A	N/A	N/A
98	45.9	34.8	30.4	N/A	N/A	N/A	N/A	N/A	N/A
101	44.6	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
104	43.3	32.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A

E-C1/C2-N=8-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	182.9	155.2	120.0	106.7	96.0	80.0
23	185.0	185.0	172.7	159.0	134.9	104.3	92.8	83.5	69.6
26	185.0	175.0	152.8	140.7	119.3	92.3	82.1	73.8	61.5
29	185.0	156.9	137.0	126.1	107.0	82.8	73.6	66.2	55.2
32	185.0	142.2	124.1	114.3	97.0	75.0	66.7	60.0	50.0
35	171.5	130.0	113.5	104.5	88.7	68.6	61.0	54.9	45.7
38	158.0	119.8	104.5	96.2	81.7	63.2	56.1	50.5	42.1
41	146.4	111.0	96.9	89.2	75.7	58.5	52.0	46.8	39.0
44	136.5	103.4	90.3	83.1	70.5	54.5	48.5	43.6	36.4
47	127.7	96.8	84.5	77.8	66.0	51.1	45.4	40.9	34.0
50	120.1	91.0	79.4	73.1	62.1	48.0	42.7	38.4	32.0
53	113.3	85.9	75.0	69.0	58.5	45.3	40.3	36.2	30.2
56	107.2	81.3	70.9	65.3	55.4	42.9	38.1	34.3	N/A
59	101.8	77.1	67.3	62.0	52.6	40.7	36.2	32.5	N/A
62	96.8	73.4	64.1	59.0	50.0	38.7	34.4	31.0	N/A
65	92.4	70.0	61.1	56.3	47.7	36.9	32.8	N/A	N/A
68	88.3	66.9	58.4	53.8	45.6	35.3	31.4	N/A	N/A
71	84.6	64.1	55.9	51.5	43.7	33.8	30.0	N/A	N/A
74	81.1	61.5	53.7	49.4	41.9	32.4	N/A	N/A	N/A
77	78.0	59.1	51.6	47.5	40.3	31.2	N/A	N/A	N/A
80	75.0	56.9	49.7	45.7	38.8	30.0	N/A	N/A	N/A
83	72.3	54.8	47.9	44.1	37.4	N/A	N/A	N/A	N/A
86	69.8	52.9	46.2	42.5	36.1	N/A	N/A	N/A	N/A
89	67.5	51.1	44.6	41.1	34.9	N/A	N/A	N/A	N/A
92	65.3	49.5	43.2	39.8	33.7	N/A	N/A	N/A	N/A
95	63.2	47.9	41.8	38.5	32.7	N/A	N/A	N/A	N/A
98	61.3	46.4	40.5	37.3	31.7	N/A	N/A	N/A	N/A
101	59.4	45.1	39.3	36.2	30.7	N/A	N/A	N/A	N/A
104	57.7	43.8	38.2	35.2	N/A	N/A	N/A	N/A	N/A

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
SEAL/SIGNATURE/DATE

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
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Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tilteco@aol.com
CA-0006719
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 15 OF 60

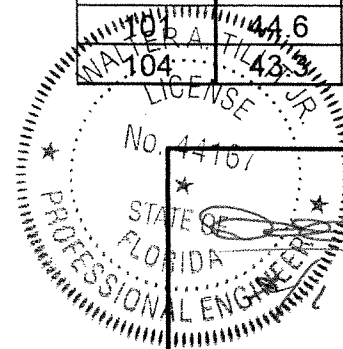
CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

G-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	150.1	113.8	99.3	91.4	77.6	60.0
23	130.5	98.9	86.4	79.5	67.5	52.2
26	115.5	87.5	76.4	70.3	59.7	46.2
29	103.5	78.5	68.5	63.1	53.5	41.4
32	93.8	71.1	62.1	57.1	48.5	37.5
35	85.8	65.0	56.7	52.2	44.3	34.3
38	79.0	59.9	52.3	48.1	40.8	31.6
41	73.2	55.5	48.4	44.6	37.8	N/A
44	68.2	51.7	45.1	41.6	35.3	N/A
47	63.9	48.4	42.3	38.9	33.0	N/A
50	60.0	45.5	39.7	36.6	31.0	N/A
53	56.6	42.9	37.5	34.5	N/A	N/A
56	53.6	40.6	35.5	32.7	N/A	N/A
59	50.9	38.6	33.7	31.0	N/A	N/A
62	48.4	36.7	32.0	29.5	N/A	N/A
65	46.2	35.0	30.6	N/A	N/A	N/A
68	44.1	33.5	N/A	N/A	N/A	N/A
71	42.3	32.1	N/A	N/A	N/A	N/A
74	40.6	30.8	N/A	N/A	N/A	N/A
77	39.0	N/A	N/A	N/A	N/A	N/A
80	37.5	N/A	N/A	N/A	N/A	N/A
83	36.2	N/A	N/A	N/A	N/A	N/A
86	34.9	N/A	N/A	N/A	N/A	N/A
89	33.7	N/A	N/A	N/A	N/A	N/A
92	32.6	N/A	N/A	N/A	N/A	N/A
95	31.6	N/A	N/A	N/A	N/A	N/A
98	30.6	N/A	N/A	N/A	N/A	N/A
101	N/A	N/A	N/A	N/A	N/A	N/A
104	N/A	N/A	N/A	N/A	N/A	N/A

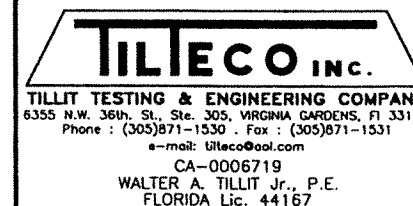
H-C1/C2-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	170.7	149.0	137.1	116.4	90.0	80.0	72.0	60.0
23	195.8	148.4	129.5	119.3	101.2	78.3	69.6	62.6	52.2
26	173.2	131.3	114.6	105.5	89.5	69.2	61.5	55.4	46.2
29	155.3	117.7	102.7	94.6	80.3	62.1	55.2	49.7	41.4
32	140.7	106.7	93.1	85.7	72.7	56.3	50.0	45.0	37.5
35	128.7	97.5	85.1	78.4	66.5	51.4	45.7	41.1	34.3
38	118.5	89.8	78.4	72.2	61.2	47.4	42.1	37.9	31.6
41	109.8	83.3	72.7	66.9	56.8	43.9	39.0	35.1	N/A
44	102.3	77.6	67.7	62.3	52.9	40.9	36.4	32.7	N/A
47	95.8	72.6	63.4	58.4	49.5	38.3	34.0	30.6	N/A
50	90.1	68.3	59.6	54.9	46.5	36.0	32.0	N/A	N/A
53	85.0	64.4	56.2	51.8	43.9	34.0	30.2	N/A	N/A
56	80.4	61.0	53.2	49.0	41.6	32.1	N/A	N/A	N/A
59	76.3	57.9	50.5	46.5	39.4	30.5	N/A	N/A	N/A
62	72.6	55.1	48.1	44.2	37.5	N/A	N/A	N/A	N/A
65	69.3	52.5	45.8	42.2	35.8	N/A	N/A	N/A	N/A
68	66.2	50.2	43.8	40.3	34.2	N/A	N/A	N/A	N/A
71	63.4	48.1	42.0	38.6	32.8	N/A	N/A	N/A	N/A
74	60.9	46.1	40.3	37.1	31.4	N/A	N/A	N/A	N/A
77	58.5	44.3	38.7	35.6	30.2	N/A	N/A	N/A	N/A
80	56.3	42.7	37.2	34.3	N/A	N/A	N/A	N/A	N/A
83	54.3	41.1	35.9	33.0	N/A	N/A	N/A	N/A	N/A
86	52.4	39.7	34.6	31.9	N/A	N/A	N/A	N/A	N/A
89	50.6	38.4	33.5	30.8	N/A	N/A	N/A	N/A	N/A
92	48.9	37.1	32.4	N/A	N/A	N/A	N/A	N/A	N/A
95	47.4	35.9	31.4	N/A	N/A	N/A	N/A	N/A	N/A
98	45.9	34.8	30.4	N/A	N/A	N/A	N/A	N/A	N/A
101	44.6	33.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
104	43.3	32.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

290 WEST 78 ROAD
HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
www.gigwindows.com

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 16 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIP (C1)

J-C1-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 45° MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	170.7	149.0	137.1	116.4	90.0
23	185.0	148.4	129.5	119.3	101.2	78.3
26	173.2	131.3	114.6	105.5	89.5	69.2
29	155.3	117.7	102.7	94.6	80.3	62.1
32	140.7	106.7	93.1	85.7	72.7	56.3
35	128.7	97.5	85.1	78.4	66.5	51.4
38	118.5	89.8	78.4	72.2	61.2	47.4
41	109.8	83.3	72.7	66.9	56.8	43.9
44	102.3	77.6	67.7	62.3	52.9	40.9
47	95.8	72.6	63.4	58.4	49.5	38.3
50	90.1	68.3	59.6	54.9	46.5	36.0
53	85.0	64.4	56.2	51.8	43.9	34.0
56	80.4	61.0	53.2	49.0	41.6	32.1
59	76.3	57.9	50.5	46.5	39.4	30.5
62	72.6	55.1	48.1	44.2	37.5	N/A
65	69.3	52.5	45.8	42.2	35.8	N/A
68	66.2	50.2	43.8	40.3	34.2	N/A
71	63.4	48.1	42.0	38.6	32.8	N/A
74	60.9	46.1	40.3	37.1	31.4	N/A
77	58.5	44.3	38.7	35.6	30.2	N/A
80	56.3	42.7	37.2	34.3	N/A	N/A
83	54.3	41.1	35.9	33.0	N/A	N/A
86	52.4	39.7	34.6	31.9	N/A	N/A
89	50.6	38.4	33.5	30.8	N/A	N/A
92	48.9	37.1	32.4	N/A	N/A	N/A
95	47.4	35.9	31.4	N/A	N/A	N/A
98	45.9	34.8	30.4	N/A	N/A	N/A
101	44.6	33.8	N/A	N/A	N/A	N/A
104	43.3	32.8	N/A	N/A	N/A	N/A

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
09/12/2023
P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



290 WEST 78 ROAD
HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 17 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

A-C1/C2-N=4-CONC

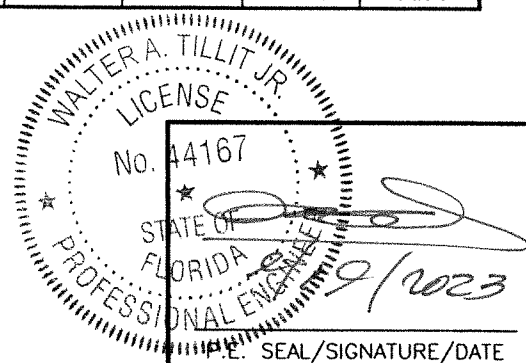
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	185.0	185.0	154.2	130.7
23	185.0	176.1	134.1	113.7
26	185.0	155.7	118.7	100.6
29	185.0	139.6	106.4	90.2
32	185.0	126.5	96.4	81.7
35	185.0	115.7	88.1	74.7
38	185.4	106.6	81.2	68.8
41	171.9	98.8	75.2	63.8
44	160.2	92.0	70.1	59.4
47	149.9	86.2	65.6	55.6
50	140.9	81.0	61.7	52.3
53	133.0	76.4	58.2	49.3
56	125.8	72.3	55.1	46.7
59	119.4	68.6	52.3	44.3
62	113.7	65.3	49.8	42.2
65	108.4	62.3	47.5	40.2
68	103.6	59.5	45.4	38.5
71	99.3	57.0	43.4	36.8
74	95.2	54.7	41.7	35.3
77	91.5	52.6	40.1	34.0
80	88.1	50.6	38.6	32.7
83	84.9	48.8	37.2	31.5
86	81.9	47.1	35.9	30.4
89	79.2	45.5	34.7	N/A
92	76.6	44.0	33.5	N/A
95	74.2	42.6	32.5	N/A
98	71.9	41.3	31.5	N/A
101	69.8	40.1	30.5	N/A
104	67.8	38.9	N/A	N/A

B-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	185.0	185.0	185.0	145.5	125.4
23	185.0	185.0	185.0	175.8	126.6	109.0
26	185.0	185.0	183.5	155.5	112.0	96.4
29	185.0	185.0	164.5	139.4	100.4	86.5
32	185.0	185.0	149.1	126.4	91.0	78.4
35	185.0	178.9	136.3	115.5	83.2	71.6
38	185.0	164.8	125.5	106.4	76.6	66.0
41	185.0	152.7	116.4	98.6	71.0	61.2
44	185.0	142.3	108.4	91.9	66.2	57.0
47	185.0	133.2	101.5	86.0	61.9	53.4
50	185.0	125.2	95.4	80.9	58.2	50.2
53	185.0	118.1	90.0	76.3	54.9	47.3
56	185.0	111.8	85.2	72.2	52.0	44.8
59	184.7	106.1	80.9	68.5	49.3	42.5
62	175.8	101.0	76.9	65.2	47.0	40.4
65	167.7	96.3	73.4	62.2	44.8	38.6
68	160.3	92.1	70.2	59.5	42.8	36.9
71	153.5	88.2	67.2	56.9	41.0	35.3
74	147.3	84.6	64.5	54.6	39.3	33.9
77	141.5	81.3	62.0	52.5	37.8	32.6
80	136.2	78.3	59.6	50.5	36.4	31.3
83	131.3	75.4	57.5	48.7	35.1	30.2
86	126.7	72.8	55.5	47.0	33.8	N/A
89	122.4	70.4	53.6	45.4	32.7	N/A
92	118.5	68.1	51.9	43.9	31.6	N/A
95	114.7	65.9	50.2	42.6	30.6	N/A
98	111.2	63.9	48.7	41.3	N/A	N/A
101	107.9	62.0	47.2	40.0	N/A	N/A
104	104.8	60.2	45.9	38.9	N/A	N/A

C-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	185.0	185.0	185.0	185.0	182.2
23	185.0	185.0	185.0	185.0	183.9	158.4
26	185.0	185.0	185.0	185.0	162.7	140.2
29	185.0	185.0	185.0	185.0	145.9	125.7
32	185.0	185.0	185.0	183.6	132.2	113.9
35	185.0	185.0	185.0	167.9	120.9	104.1
38	185.0	185.0	182.4	154.6	111.3	95.9
41	185.0	185.0	169.1	143.3	103.2	88.9
44	185.0	185.0	157.6	133.5	96.1	82.8
47	185.0	185.0	147.5	125.0	90.0	77.5
50	185.0	177.5	138.7	117.5	84.6	72.9
53	185.0	167.4	130.8	110.9	79.8	68.8
56	185.0	158.5	123.8	104.9	75.5	65.1
59	185.0	150.4	117.5	99.6	71.7	61.8
62	185.0	143.1	111.8	94.8	68.2	58.8
65	180.1	136.5	106.7	90.4	65.1	56.1
68	172.2	130.5	101.9	86.4	62.2	53.6
71	164.9	125.0	97.6	82.8	59.6	51.3
74	158.2	119.9	93.7	79.4	57.2	49.2
77	152.0	115.3	90.0	76.3	54.9	47.3
80	146.3	110.9	86.7	73.4	52.9	45.5
83	141.1	106.9	83.5	70.8	51.0	43.9
86	136.1	103.2	80.6	68.3	49.2	42.4
89	131.5	99.7	77.9	66.0	47.5	40.9
92	127.3	96.5	75.4	63.9	46.0	39.6
95	123.2	93.4	73.0	61.9	44.5	38.4
98	119.5	90.6	70.7	60.0	43.2	37.2
101	115.9	87.9	68.6	58.2	41.9	36.1
104	112.6	85.3	66.7	56.5	40.7	35.0



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DRAWN BY: W.H.		DATE 09/12/2023			
DRAWING No 23-212		SHEET 18 OF 60			
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE

CONNECTED W/ CLIPS (C1) & (C2)

D-C1/C2-N=4-CONC

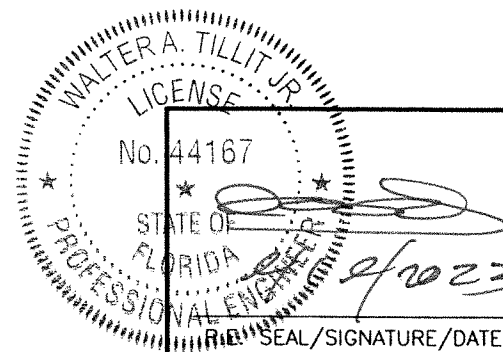
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	137.4
23	185.0	185.0	185.0	185.0	185.0	119.5
26	185.0	185.0	185.0	185.0	176.7	105.7
29	185.0	185.0	185.0	185.0	158.4	94.8
32	185.0	185.0	185.0	185.0	143.6	85.9
35	185.0	185.0	185.0	182.3	131.2	78.5
38	185.0	185.0	185.0	167.9	120.9	72.3
41	185.0	185.0	183.6	155.6	112.0	67.0
44	185.0	185.0	171.1	145.0	104.4	62.5
47	185.0	185.0	160.2	135.8	97.7	58.5
50	185.0	177.5	150.6	127.6	91.9	55.0
53	185.0	167.4	142.0	120.4	86.7	51.8
56	185.0	158.5	134.4	113.9	82.0	49.1
59	185.0	150.4	127.6	108.1	77.9	46.6
62	185.0	143.1	121.4	102.9	74.1	44.3
65	180.1	136.5	115.8	98.2	70.7	42.3
68	172.2	130.5	110.7	93.8	67.6	40.4
71	164.9	125.0	106.0	89.9	64.7	38.7
74	158.2	119.9	101.7	86.2	62.1	37.1
77	152.0	115.3	97.8	82.9	59.7	35.7
80	146.3	110.9	94.1	79.8	57.4	34.3
83	141.1	106.9	90.7	76.9	55.3	33.1
86	136.1	103.2	87.5	74.2	53.4	32.0
89	131.5	99.7	84.6	71.7	51.6	30.9
92	127.3	96.5	81.8	69.4	49.9	N/A
95	123.2	93.4	79.2	67.2	48.4	N/A
98	119.5	90.6	76.8	65.1	46.9	N/A
101	115.9	87.9	74.5	63.2	45.5	N/A
104	112.6	85.3	72.4	61.4	44.2	N/A

G-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	99.4
23	185.0	185.0	185.0	185.0	180.3	86.4
26	185.0	185.0	185.0	185.0	159.5	76.4
29	185.0	185.0	185.0	185.0	143.0	68.5
32	185.0	185.0	185.0	180.0	129.6	62.1
35	185.0	185.0	178.8	164.5	118.5	56.8
38	185.0	185.0	164.6	151.5	109.1	52.3
41	185.0	174.8	152.6	140.5	101.1	48.5
44	185.0	162.9	142.2	130.9	94.2	45.2
47	185.0	152.5	133.1	122.5	88.2	42.3
50	185.0	143.4	125.1	115.2	82.9	39.7
53	178.4	135.2	118.0	108.7	78.2	37.5
56	168.9	128.0	111.7	102.8	74.0	35.5
59	160.3	121.5	106.0	97.6	70.3	33.7
62	152.5	115.6	100.9	92.9	66.9	32.1
65	145.5	110.3	96.3	88.6	63.8	30.6
68	139.1	105.4	92.0	84.7	61.0	N/A
71	133.2	101.0	88.1	81.1	58.4	N/A
74	127.8	96.9	84.5	77.8	56.0	N/A
77	122.8	93.1	81.3	74.8	53.8	N/A
80	118.2	89.6	78.2	72.0	51.8	N/A
83	113.9	86.4	75.4	69.4	49.9	N/A
86	110.0	83.3	72.8	67.0	48.2	N/A
89	106.2	80.5	70.3	64.7	46.6	N/A
92	102.8	77.9	68.0	62.6	45.1	N/A
95	99.5	75.5	65.9	60.6	43.6	N/A
98	96.5	73.1	63.8	58.8	42.3	N/A
101	93.6	71.0	61.9	57.0	41.0	N/A
104	90.9	68.9	60.2	55.4	39.9	N/A

H-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	189.0	168.0	151.2	126.0
23	200.0	200.0	200.0	200.0	200.0	164.3	146.1	131.5	109.6
26	200.0	200.0	200.0	200.0	188.0	145.4	129.2	116.3	96.9
29	200.0	200.0	200.0	198.6	168.5	130.3	115.9	104.3	86.9
32	200.0	200.0	195.5	180.0	152.7	118.1	105.0	94.5	78.8
35	200.0	200.0	178.8	164.6	139.6	108.0	96.0	86.4	72.0
38	200.0	188.6	164.6	151.6	128.6	99.5	88.4	79.6	66.3
41	200.0	174.8	152.6	140.5	119.2	92.2	82.0	73.8	61.5
44	200.0	162.9	142.2	130.9	111.1	85.9	76.4	68.7	57.3
47	200.0	152.5	133.1	122.6	104.0	80.4	71.5	64.3	53.6
50	189.1	143.4	125.1	115.2	97.7	75.6	67.2	60.5	50.4
53	178.4	135.2	118.0	108.7	92.2	71.3	63.4	57.1	47.5
56	168.9	128.0	111.7	102.9	87.3	67.5	60.0	54.0	45.0
59	160.3	121.5	106.0	97.6	82.8	64.1	56.9	51.3	42.7
62	152.5	115.6	100.9	92.9	78.8	61.0	54.2	48.8	40.6
65	145.5	110.3	96.3	88.6	75.2	58.2	51.7	46.5	38.8
68	139.1	105.4	92.0	84.7	71.9	55.6	49.4	44.5	37.1
71	133.2	101.0	88.1	81.1	68.8	53.2	47.3	42.6	35.5
74	127.8	96.9	84.5	77.8	66.0	51.1	45.4	40.9	34.1
77	122.8	93.1	81.3	74.8	63.5	49.1	43.6	39.3	32.7
80	118.2	89.6	78.2	72.0	61.1	47.3	42.0	37.8	31.5
83	113.9	86.4	75.4	69.4	58.9	45.5	40.5	36.4	30.4
86	110.0	83.3	72.8	67.0	56.8	44.0	39.1	35.2	29.3
89	106.2	80.5	70.3	64.7	54.9	42.5	37.8	34.0	28.3
92	102.8	77.9	68.0	62.6	53.1	41.1	36.5	32.9	27.4
95	99.5	75.5	65.9	60.6	51.4	39.8	35.4	31.8	26.5
98	96.5	73.1	63.8	58.8	49.9	38.6	34.3	30.9	25.7
101	93.6	71.0	61.9	57.0	48.4	37.4	33.3	29.9	25.0
104	90.9	68.9	60.2	55.4	47.0	36.3	32.3	29.1	24.2



FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone: (305)871-1530 • Fax: (305)871-1531 e-mail: Tiltco@aol.com CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167		 290 WEST 78 ROAD HALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com		09/12/2023 DATE	
REV. NO. DESCRIPTION DATE REV. No. DESCRIPTION DATE		23-212 DRAWING No		SHEET 19 OF 60	
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

E-C1/C2-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	156.0	108.3
23	185.0	185.0	185.0	185.0	185.0	185.0	167.4	135.6	94.2
26	185.0	185.0	185.0	185.0	185.0	180.0	148.1	120.0	83.3
29	185.0	185.0	185.0	185.0	185.0	161.4	132.8	107.6	74.7
32	185.0	185.0	185.0	185.0	185.0	146.3	120.3	97.5	67.7
35	185.0	185.0	185.0	185.0	172.9	133.7	110.0	89.1	61.9
38	185.0	185.0	185.0	185.0	159.2	123.2	101.3	82.1	57.0
41	185.0	185.0	185.0	173.9	147.6	114.1	93.9	76.1	52.8
44	185.0	185.0	176.1	162.1	137.5	106.4	87.5	70.9	49.2
47	185.0	185.0	164.8	151.7	128.7	99.6	81.9	66.4	46.1
50	185.0	177.5	154.9	142.6	121.0	93.6	77.0	62.4	43.3
53	185.0	167.4	146.2	134.6	114.2	88.3	72.7	58.9	40.9
56	185.0	158.5	138.3	127.3	108.1	83.6	68.8	55.7	38.7
59	185.0	150.4	131.3	120.9	102.6	79.3	65.3	52.9	36.7
62	185.0	143.1	124.9	115.0	97.6	75.5	62.1	50.3	34.9
65	180.1	136.5	119.2	109.7	93.1	72.0	59.2	48.0	33.3
68	172.2	130.5	113.9	104.9	89.0	68.8	56.6	45.9	31.9
71	164.9	125.0	109.1	100.4	85.2	65.9	54.2	43.9	30.5
74	158.2	119.9	104.7	96.4	81.8	63.2	52.0	42.2	N/A
77	152.0	115.3	100.6	92.6	78.6	60.8	50.0	40.5	N/A
80	146.3	110.9	96.8	89.1	75.6	58.5	48.1	39.0	N/A
83	141.1	106.9	93.3	85.9	72.9	56.4	46.4	37.6	N/A
86	136.1	103.2	90.1	82.9	70.4	54.4	44.8	36.3	N/A
89	131.5	99.7	87.0	80.1	68.0	52.6	43.3	35.0	N/A
92	127.3	96.5	84.2	77.5	65.8	50.9	41.9	33.9	N/A
95	123.2	93.4	81.5	75.1	63.7	49.3	40.5	32.8	N/A
98	119.5	90.6	79.0	72.8	61.7	47.8	39.3	31.8	N/A
101	115.9	87.9	76.7	70.6	59.9	46.3	38.1	30.9	N/A
104	112.6	85.3	74.5	68.6	58.2	45.0	37.0	30.0	N/A

E-C1/C2-N=6-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	156.0	108.3
23	185.0	185.0	185.0	185.0	185.0	185.0	167.4	135.6	94.2
26	185.0	185.0	185.0	185.0	185.0	185.0	148.1	120.0	83.3
29	185.0	185.0	185.0	185.0	185.0	168.1	132.8	107.6	74.7
32	185.0	185.0	185.0	185.0	185.0	152.3	120.3	97.5	67.7
35	185.0	185.0	185.0	185.0	185.0	139.3	110.0	89.1	61.9
38	185.0	185.0	185.0	185.0	185.0	128.3	101.3	82.1	57.0
41	185.0	185.0	185.0	185.0	178.8	118.9	93.9	76.1	52.8
44	185.0	185.0	185.0	185.0	166.6	110.8	87.5	70.9	49.2
47	185.0	185.0	185.0	183.8	156.0	103.7	81.9	66.4	46.1
50	185.0	185.0	185.0	172.8	146.6	97.5	77.0	62.4	43.3
53	185.0	185.0	177.1	163.0	138.3	92.0	72.7	58.9	40.9
56	185.0	185.0	167.6	154.3	130.9	87.0	68.8	55.7	38.7
59	185.0	182.2	159.1	146.4	124.3	82.6	65.3	52.9	36.7
62	185.0	173.4	151.4	139.4	118.2	78.6	62.1	50.3	34.9
65	185.0	165.4	144.4	132.9	112.8	75.0	59.2	48.0	33.3
68	185.0	158.1	138.0	127.1	107.8	71.7	56.6	45.9	31.9
71	185.0	151.4	132.2	121.7	103.3	68.6	54.2	43.9	30.5
74	185.0	145.3	126.8	116.8	99.1	65.9	52.0	42.2	N/A
77	184.2	139.6	121.9	112.2	95.2	63.3	50.0	40.5	N/A
80	177.3	134.4	117.3	108.0	91.6	60.9	48.1	39.0	N/A
83	170.9	129.5	113.1	104.1	88.3	58.7	46.4	37.6	N/A
86	164.9	125.0	109.1	100.5	85.2	56.7	44.8	36.3	N/A
89	159.4	120.8	105.4	97.1	82.4	54.8	43.3	35.0	N/A
92	154.2	116.9	102.0	93.9	79.7	53.0	41.9	33.9	N/A
95	149.3	113.2	98.8	90.9	77.2	51.3	40.5	32.8	N/A
98	144.7	109.7	95.8	88.2	74.8	49.7	39.3	31.8	N/A
101	140.4	106.5	92.9	85.5	72.6	48.3	38.1	30.9	N/A
104	136.4	103.4	90.2	83.1	70.5	46.9	37.0	30.0	N/A

WALTER A. TILLIT, P.E.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
12/9/2023
P.E. SEAL/SIGNATURE/DATE

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FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)
SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS
DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 20 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO CONCRETE SUBSTRATE

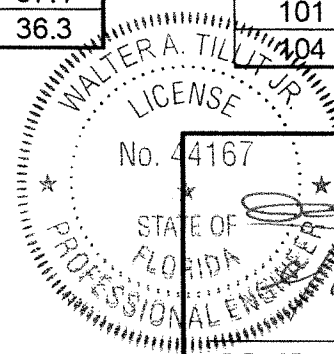
CONNECTED W/ CLIPS (C1) & (C2)

F-C1/C2-N=6-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (6) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	164.3
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	174.5	145.4
29	185.0	185.0	185.0	185.0	185.0	185.0	173.8	156.4	130.3
32	185.0	185.0	185.0	185.0	185.0	177.2	157.5	141.8	118.1
35	185.0	185.0	185.0	185.0	185.0	162.0	144.0	129.6	108.0
38	185.0	185.0	185.0	185.0	185.0	149.2	132.6	119.4	99.5
41	185.0	185.0	185.0	185.0	178.8	138.3	122.9	110.6	92.2
44	185.0	185.0	185.0	185.0	166.6	128.9	114.5	103.1	85.9
47	185.0	185.0	185.0	183.8	156.0	120.6	107.2	96.5	80.4
50	185.0	185.0	185.0	172.8	146.6	113.4	100.8	90.7	75.6
53	185.0	185.0	177.1	163.0	138.3	107.0	95.1	85.6	71.3
56	185.0	185.0	167.6	154.3	130.9	101.3	90.0	81.0	67.5
59	185.0	182.2	159.1	146.4	124.3	96.1	85.4	76.9	64.1
62	185.0	173.4	151.4	139.4	118.2	91.5	81.3	73.2	61.0
65	185.0	165.4	144.4	132.9	112.8	87.2	77.5	69.8	58.2
68	185.0	158.1	138.0	127.1	107.8	83.4	74.1	66.7	55.6
71	185.0	151.4	132.2	121.7	103.3	79.9	71.0	63.9	53.2
74	185.0	145.3	126.8	116.8	99.1	76.6	68.1	61.3	51.1
77	184.2	139.6	121.9	112.2	95.2	73.6	65.5	58.9	49.1
80	177.3	134.4	117.3	108.0	91.6	70.9	63.0	56.7	47.3
83	170.9	129.5	113.1	104.1	88.3	68.3	60.7	54.7	45.5
86	164.9	125.0	109.1	100.5	85.2	65.9	58.6	52.7	44.0
89	159.4	120.8	105.4	97.1	82.4	63.7	56.6	51.0	42.5
92	154.2	116.9	102.0	93.9	79.7	61.6	54.8	49.3	41.1
95	149.3	113.2	98.8	90.9	77.2	59.7	53.1	47.7	39.8
98	144.7	109.7	95.8	88.2	74.8	57.9	51.4	46.3	38.6
101	140.4	106.5	92.9	85.5	72.6	56.1	49.9	44.9	37.4
104	136.4	103.4	90.2	83.1	70.5	54.5	48.5	43.6	36.3

F-C1/C2-N=8-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	172.0
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	152.1
29	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	136.4
32	185.0	185.0	185.0	185.0	185.0	185.0	185.0	178.0	123.6
35	185.0	185.0	185.0	185.0	185.0	185.0	185.0	162.7	113.0
38	185.0	185.0	185.0	185.0	185.0	185.0	176.8	149.9	104.1
41	185.0	185.0	185.0	185.0	185.0	184.4	163.9	138.9	96.5
44	185.0	185.0	185.0	185.0	185.0	171.8	152.7	129.4	89.9
47	185.0	185.0	185.0	185.0	185.0	160.9	143.0	121.2	84.2
50	185.0	185.0	185.0	185.0	185.0	151.2	134.4	113.9	79.1
53	185.0	185.0	185.0	185.0	184.4	142.6	126.8	107.5	74.6
56	185.0	185.0	185.0	185.0	174.5	135.0	120.0	101.7	70.6
59	185.0	185.0	185.0	185.0	165.7	128.1	113.9	96.5	67.0
62	185.0	185.0	185.0	185.0	157.7	121.9	108.4	91.9	63.8
65	185.0	185.0	185.0	177.2	150.4	116.3	103.4	87.6	60.9
68	185.0	185.0	184.0	169.4	143.7	111.2	98.8	83.8	58.2
71	185.0	185.0	176.2	162.3	137.7	106.5	94.6	80.2	55.7
74	185.0	185.0	169.1	155.7	132.1	102.2	90.8	77.0	53.5
77	185.0	185.0	162.5	149.6	126.9	98.2	87.3	74.0	51.4
80	185.0	179.2	156.4	144.0	122.2	94.5	84.0	71.2	49.4
83	185.0	172.7	150.8	138.8	117.8	91.1	81.0	68.6	47.7
86	185.0	166.7	145.5	134.0	113.7	87.9	78.1	66.2	46.0
89	185.0	161.1	140.6	129.4	109.8	84.9	75.5	64.0	44.4
92	185.0	155.8	136.0	125.2	106.2	82.2	73.0	61.9	43.0
95	185.0	150.9	131.7	121.3	102.9	79.6	70.7	60.0	41.6
98	185.0	146.3	127.7	117.6	99.7	77.1	68.6	58.1	40.4
101	185.0	141.9	123.9	114.1	96.8	74.9	66.5	56.4	39.2
104	181.8	137.8	120.3	110.8	94.0	72.7	64.6	54.8	38.0



P.E. SEAL/SIGNATURE/DATE

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CA-0006719
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WINDOWS & DOORS

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 21 OF 60

CLIPPED INTERIOR MULLIONS CHARTS
INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

I-C1/C2-N=8-CONC

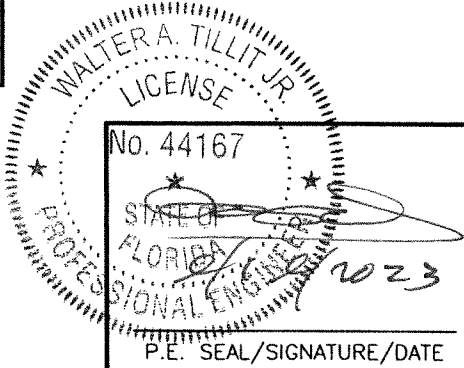
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN POURED CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
29	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	173.8
32	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	157.5
35	185.0	185.0	185.0	185.0	185.0	185.0	185.0	172.8	144.0
38	185.0	185.0	185.0	185.0	185.0	185.0	176.8	159.2	132.6
41	185.0	185.0	185.0	185.0	185.0	184.4	163.9	147.5	122.9
44	185.0	185.0	185.0	185.0	185.0	171.8	152.7	137.5	114.5
47	185.0	185.0	185.0	185.0	185.0	160.9	143.0	128.7	107.2
50	185.0	185.0	185.0	185.0	185.0	151.2	134.4	121.0	100.8
53	185.0	185.0	185.0	185.0	184.4	142.6	126.8	114.1	95.1
56	185.0	185.0	185.0	185.0	174.5	135.0	120.0	108.0	90.0
59	185.0	185.0	185.0	185.0	165.7	128.1	113.9	102.5	85.4
62	185.0	185.0	185.0	185.0	157.7	121.9	108.4	97.5	81.3
65	185.0	185.0	185.0	177.2	150.4	116.3	103.4	93.0	77.5
68	185.0	185.0	184.0	169.4	143.7	111.2	98.8	88.9	74.1
71	185.0	185.0	176.2	162.3	137.7	106.5	94.6	85.2	71.0
74	185.0	185.0	169.1	155.7	132.1	102.2	90.8	81.7	68.1
77	185.0	185.0	162.5	149.6	126.9	98.2	87.3	78.5	65.5
80	185.0	179.2	156.4	144.0	122.2	94.5	84.0	75.6	63.0
83	185.0	172.7	150.8	138.8	117.8	91.1	81.0	72.9	60.7
86	185.0	166.7	145.5	134.0	113.7	87.9	78.1	70.3	58.6
89	185.0	161.1	140.6	129.4	109.8	84.9	75.5	68.0	56.6
92	185.0	155.8	136.0	125.2	106.2	82.2	73.0	65.7	54.8
95	185.0	150.9	131.7	121.3	102.9	79.6	70.7	63.7	53.1
98	185.0	146.3	127.7	117.6	99.7	77.1	68.6	61.7	51.4
101	185.0	141.9	123.9	114.1	96.8	74.9	66.5	59.9	49.9
104	181.8	137.8	120.3	110.8	94.0	72.7	64.6	58.2	48.5

CLIPPED INTERIOR MULLIONS CHARTS
INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIP (C1)

J-C1-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 45° MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	200.0	185.9	111.2
23	200.0	200.0	200.0	200.0	161.6	96.7
26	200.0	200.0	200.0	198.6	143.0	85.5
29	200.0	200.0	200.0	178.1	128.2	76.7
32	200.0	200.0	190.4	161.4	116.2	69.5
35	200.0	200.0	174.1	147.5	106.2	63.5
38	200.0	188.6	160.3	135.9	97.8	58.5
41	200.0	174.8	148.6	126.0	90.7	54.2
44	200.0	162.9	138.5	117.4	84.5	50.5
47	200.0	152.5	129.6	109.9	79.1	47.3
50	189.1	143.4	121.9	103.3	74.4	44.5
53	178.4	135.2	115.0	97.4	70.1	42.0
56	168.9	128.0	108.8	92.2	66.4	39.7
59	160.3	121.5	103.3	87.5	63.0	37.7
62	152.5	115.6	98.3	83.3	60.0	35.9
65	145.5	110.3	93.7	79.4	57.2	34.2
68	139.1	105.4	89.6	75.9	54.7	32.7
71	133.2	101.0	85.8	72.7	52.4	31.3
74	127.8	96.9	82.3	69.8	50.2	30.1
77	122.8	93.1	79.1	67.1	48.3	28.9
80	118.2	89.6	76.2	64.5	46.5	27.8
83	113.9	86.4	73.4	62.2	44.8	26.8
86	110.0	83.3	70.8	60.0	43.2	25.9
89	106.2	80.5	68.5	58.0	41.8	25.0
92	102.8	77.9	66.2	56.1	40.4	24.2
95	99.5	75.5	64.1	54.4	39.1	23.4
98	96.5	73.1	62.2	52.7	37.9	22.7
101	93.6	71.0	60.3	51.1	36.8	22.0
104	90.9	68.9	58.6	49.7	35.7	21.4

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)



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TILLIT TESTING & ENGINEERING COMPANY
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WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

 290 WEST 78 ROAD
HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 22 OF 60

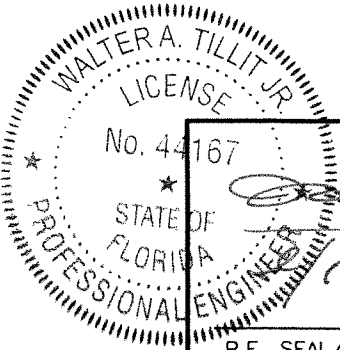
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

A-C1/C2-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 TEK SCREWS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	185.0	185.0	154.2	130.7
23	185.0	176.1	134.1	113.7
26	185.0	155.7	118.7	100.6
29	185.0	139.6	106.4	90.2
32	185.0	126.5	96.4	81.7
35	185.0	115.7	88.1	74.7
38	185.0	106.6	81.2	68.8
41	171.9	98.8	75.2	63.8
44	160.2	92.0	70.1	59.4
47	149.9	86.2	65.6	55.6
50	140.9	81.0	61.7	52.3
53	133.0	76.4	58.2	49.3
56	125.8	72.3	55.1	46.7
59	119.4	68.6	52.3	44.3
62	113.7	65.3	49.8	42.2
65	108.4	62.3	47.5	40.2
68	103.6	59.5	45.4	38.5
71	99.3	57.0	43.4	36.8
74	95.2	54.7	41.7	35.3
77	91.5	52.6	40.1	34.0
80	88.1	50.6	38.6	32.7
83	84.9	48.8	37.2	31.5
86	81.9	47.1	35.9	30.4
89	79.2	45.5	34.7	N/A
92	76.6	44.0	33.5	N/A
95	74.2	42.6	32.5	N/A
98	71.9	41.3	31.5	N/A
101	69.8	40.1	30.5	N/A
104	67.8	38.9	N/A	N/A

B-C1/C2-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	185.0	185.0	185.0	145.5	125.4
23	185.0	185.0	185.0	175.8	126.6	109.0
26	185.0	185.0	183.5	155.5	112.0	96.4
29	185.0	185.0	164.5	139.4	100.4	86.5
32	185.0	185.0	149.1	126.4	91.0	78.4
35	185.0	178.9	136.3	115.5	83.2	71.6
38	185.0	164.8	125.5	106.4	76.6	66.0
41	185.0	152.7	116.4	98.6	71.0	61.2
44	185.0	142.3	108.4	91.9	66.2	57.0
47	185.0	133.2	101.5	86.0	61.9	53.4
50	185.0	125.2	95.4	80.9	58.2	50.2
53	185.0	118.1	90.0	76.3	54.9	47.3
56	175.3	111.8	85.2	72.2	52.0	44.8
59	166.4	106.1	80.9	68.5	49.3	42.5
62	158.3	101.0	76.9	65.2	47.0	40.4
65	151.0	96.3	73.4	62.2	44.8	38.6
68	144.4	92.1	70.2	59.5	42.8	36.9
71	138.3	88.2	67.2	56.9	41.0	35.3
74	132.7	84.6	64.5	54.6	39.3	33.9
77	127.5	81.3	62.0	52.5	37.8	32.6
80	122.7	78.3	59.6	50.5	36.4	31.3
83	118.3	75.4	57.5	48.7	35.1	30.2
86	114.1	72.8	55.5	47.0	33.8	N/A
89	110.3	70.4	53.6	45.4	32.7	N/A
92	106.7	68.1	51.9	43.9	31.6	N/A
95	103.3	65.9	50.2	42.6	30.6	N/A
98	100.2	63.9	48.7	41.3	N/A	N/A
101	97.2	62.0	47.2	40.0	N/A	N/A
104	94.4	60.2	45.9	38.9	N/A	N/A



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23-212

DRAWING No

SHEET 23 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
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2			4		

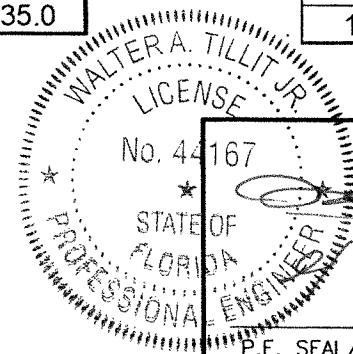
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

C-C1/C2-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	185.0	185.0	185.0	185.0	182.2
23	185.0	185.0	185.0	185.0	183.9	158.4
26	185.0	185.0	185.0	185.0	162.7	140.2
29	185.0	185.0	185.0	185.0	145.9	125.7
32	185.0	185.0	185.0	183.6	132.2	113.9
35	185.0	185.0	185.6	167.9	120.9	104.1
38	185.0	185.0	170.9	154.6	111.3	95.9
41	185.0	181.5	158.4	143.3	103.2	88.9
44	185.0	169.1	147.6	133.5	96.1	82.8
47	185.0	158.3	138.2	125.0	90.0	77.5
50	185.0	148.8	129.9	117.5	84.6	72.9
53	185.0	140.4	122.5	110.9	79.8	68.8
56	175.3	132.9	116.0	104.9	75.5	65.1
59	166.4	126.1	110.1	99.6	71.7	61.8
62	158.3	120.0	104.8	94.8	68.2	58.8
65	151.0	114.5	99.9	90.4	65.1	56.1
68	144.4	109.4	95.5	86.4	62.2	53.6
71	138.3	104.8	91.5	82.8	59.6	51.3
74	132.7	100.6	87.8	79.4	57.2	49.2
77	127.5	96.6	84.3	76.3	54.9	47.3
80	122.7	93.0	81.2	73.4	52.9	45.5
83	118.3	89.7	78.3	70.8	51.0	43.9
86	114.1	86.5	75.5	68.3	49.2	42.4
89	110.3	83.6	73.0	66.0	47.5	40.9
92	106.7	80.9	70.6	63.9	46.0	39.6
95	103.3	78.3	68.4	61.9	44.5	38.4
98	100.2	75.9	66.3	60.0	43.2	37.2
101	97.2	73.7	64.3	58.2	41.9	36.1
104	94.4	71.5	62.5	56.5	40.7	35.0

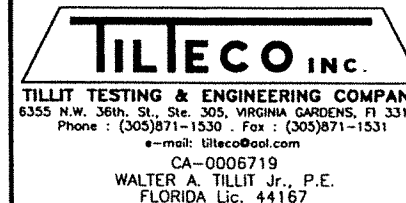
C-C1/C2-N=6-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	185.0	185.0	185.0	185.0	185.0	182.2
23	185.0	185.0	185.0	185.0	183.9	158.4
26	185.0	185.0	185.0	185.0	162.7	140.2
29	185.0	185.0	185.0	185.0	145.9	125.7
32	185.0	185.0	185.0	183.6	132.2	113.9
35	185.0	185.0	185.0	167.9	120.9	104.1
38	185.0	185.0	182.4	154.6	111.3	95.9
41	185.0	185.0	169.1	143.3	103.2	88.9
44	185.0	185.0	157.6	133.5	96.1	82.8
47	185.0	185.0	147.5	125.0	90.0	77.5
50	185.0	182.0	138.7	117.5	84.6	72.9
53	185.0	171.7	130.8	110.9	79.8	68.8
56	185.0	162.5	123.8	104.9	75.5	65.1
59	185.0	154.2	117.5	99.6	71.7	61.8
62	185.0	146.8	111.8	94.8	68.2	58.8
65	185.0	140.0	106.7	90.4	65.1	56.1
68	185.0	133.8	101.9	86.4	62.2	53.6
71	185.0	128.2	97.6	82.8	59.6	51.3
74	185.0	123.0	93.7	79.4	57.2	49.2
77	185.0	118.2	90.0	76.3	54.9	47.3
80	184.1	113.7	86.7	73.4	52.9	45.5
83	177.4	109.6	83.5	70.8	51.0	43.9
86	171.2	105.8	80.6	68.3	49.2	42.4
89	165.4	102.2	77.9	66.0	47.5	40.9
92	160.0	98.9	75.4	63.9	46.0	39.6
95	155.0	95.8	73.0	61.9	44.5	38.4
98	150.3	92.9	70.7	60.0	43.2	37.2
101	145.8	90.1	68.6	58.2	41.9	36.1
104	141.6	87.5	66.7	56.5	40.7	35.0



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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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09/12/2023
DATE

23-212

DRAWING No

SHEET 24 OF 60

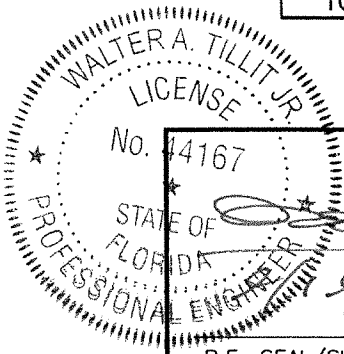
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIPS (C1) & (C2)

D-C1/C2-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	137.4
23	185.0	185.0	185.0	185.0	185.0	119.5
26	185.0	185.0	185.0	185.0	176.7	105.7
29	185.0	185.0	185.0	185.0	158.4	94.8
32	185.0	185.0	185.0	185.0	143.6	85.9
35	185.0	185.0	185.0	170.8	131.2	78.5
38	185.0	185.0	170.9	157.4	120.9	72.3
41	185.0	181.5	158.4	145.8	112.0	67.0
44	185.0	169.1	147.6	135.9	104.4	62.5
47	185.0	158.3	138.2	127.2	97.7	58.5
50	196.3	148.8	129.9	119.6	91.9	55.0
53	185.2	140.4	122.5	112.8	86.7	51.8
56	175.3	132.9	116.0	106.8	82.0	49.1
59	166.4	126.1	110.1	101.3	77.9	46.6
62	158.3	120.0	104.8	96.4	74.1	44.3
65	151.0	114.5	99.9	92.0	70.7	42.3
68	144.4	109.4	95.5	87.9	67.6	40.4
71	138.3	104.8	91.5	84.2	64.7	38.7
74	132.7	100.6	87.8	80.8	62.1	37.1
77	127.5	96.6	84.3	77.7	59.7	35.7
80	122.7	93.0	81.2	74.7	57.4	34.3
83	118.3	89.7	78.3	72.0	55.3	33.1
86	114.1	86.5	75.5	69.5	53.4	32.0
89	110.3	83.6	73.0	67.2	51.6	30.9
92	106.7	80.9	70.6	65.0	49.9	N/A
95	103.3	78.3	68.4	62.9	48.4	N/A
98	100.2	75.9	66.3	61.0	46.9	N/A
101	97.2	73.7	64.3	59.2	45.5	N/A
104	94.4	71.5	62.5	57.5	44.2	N/A

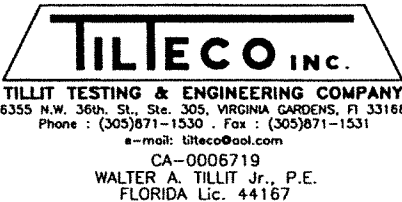
D-C1/C2-N=6-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	137.4
23	185.0	185.0	185.0	185.0	185.0	119.5
26	185.0	185.0	185.0	185.0	176.7	105.7
29	185.0	185.0	185.0	185.0	158.4	94.8
32	185.0	185.0	185.0	185.0	143.6	85.9
35	185.0	185.0	185.0	182.3	131.2	78.5
38	185.0	185.0	185.0	167.9	120.9	72.3
41	185.0	185.0	185.0	155.6	112.0	67.0
44	185.0	185.0	171.1	145.0	104.4	62.5
47	185.0	185.0	160.2	135.8	97.7	58.5
50	185.0	185.0	150.6	127.6	91.9	55.0
53	185.0	185.0	142.0	120.4	86.7	51.8
56	185.0	176.5	134.4	113.9	82.0	49.1
59	185.0	167.5	127.6	108.1	77.9	46.6
62	185.0	159.4	121.4	102.9	74.1	44.3
65	185.0	152.0	115.8	98.2	70.7	42.3
68	185.0	145.3	110.7	93.8	67.6	40.4
71	185.0	139.2	106.0	89.9	64.7	38.7
74	185.0	133.5	101.7	86.2	62.1	37.1
77	185.0	128.3	97.8	82.9	59.7	35.7
80	184.1	123.5	94.1	79.8	57.4	34.3
83	177.4	119.1	90.7	76.9	55.3	33.1
86	171.2	114.9	87.5	74.2	53.4	32.0
89	165.4	111.0	84.6	71.7	51.6	30.9
92	160.0	107.4	81.8	69.4	49.9	N/A
95	155.0	104.0	79.2	67.2	48.4	N/A
98	150.3	100.8	76.8	65.1	46.9	N/A
101	145.8	97.8	74.5	63.2	45.5	N/A
104	141.6	95.0	72.4	61.4	44.2	N/A



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SHEET 25 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
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2			4		

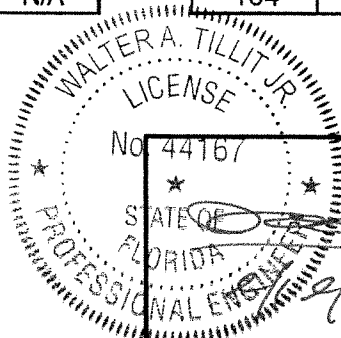
CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIPS (C1) & (C2)

E-C1/C2-N=6-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	156.0	108.3
23	185.0	185.0	185.0	185.0	185.0	185.0	167.4	135.6	94.2
26	185.0	185.0	185.0	185.0	185.0	185.0	148.1	120.0	83.3
29	185.0	185.0	185.0	185.0	185.0	168.1	132.8	107.6	74.7
32	185.0	185.0	185.0	185.0	185.0	152.3	120.3	97.5	67.7
35	185.0	185.0	185.0	185.0	185.0	139.3	110.0	89.1	61.9
38	185.0	185.0	185.0	185.0	185.0	128.3	101.3	82.1	57.0
41	185.0	185.0	185.0	185.0	185.6	118.9	93.9	76.1	52.8
44	185.0	185.0	185.0	185.0	173.0	110.8	87.5	70.9	49.2
47	185.0	185.0	185.0	185.0	161.9	103.7	81.9	66.4	46.1
50	185.0	185.0	185.0	179.4	152.2	97.5	77.0	62.4	43.3
53	185.0	185.0	183.8	169.2	143.6	92.0	72.7	58.9	40.9
56	185.0	185.0	174.0	160.2	135.9	87.0	68.8	55.7	38.7
59	185.0	185.0	165.1	152.0	129.0	82.6	65.3	52.9	36.7
62	185.0	180.0	157.1	144.7	122.7	78.6	62.1	50.3	34.9
65	185.0	171.7	149.9	138.0	117.1	75.0	59.2	48.0	33.3
68	185.0	164.1	143.3	131.9	111.9	71.7	56.6	45.9	31.9
71	185.0	157.2	137.2	126.3	107.2	68.6	54.2	43.9	30.5
74	185.0	150.8	131.7	121.2	102.8	65.9	52.0	42.2	N/A
77	185.0	145.0	126.5	116.5	98.8	63.3	50.0	40.5	N/A
80	184.1	139.5	121.8	112.1	95.1	60.9	48.1	39.0	N/A
83	177.4	134.5	117.4	108.1	91.7	58.7	46.4	37.6	N/A
86	171.2	129.8	113.3	104.3	88.5	56.7	44.8	36.3	N/A
89	165.4	125.4	109.5	100.8	85.5	54.8	43.3	35.0	N/A
92	160.0	121.3	105.9	97.5	82.7	53.0	41.9	33.9	N/A
95	155.0	117.5	102.6	94.4	80.1	51.3	40.5	32.8	N/A
98	150.3	113.9	99.4	91.5	77.7	49.7	39.3	31.8	N/A
101	145.8	110.5	96.5	88.8	75.3	48.3	38.1	30.9	N/A
104	141.6	107.3	93.7	86.2	73.2	46.9	37.0	30.0	N/A

E-C1/C2-N=8-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	156.0	108.3
23	185.0	185.0	185.0	185.0	185.0	185.0	167.4	135.6	94.2
26	185.0	185.0	185.0	185.0	185.0	185.0	148.1	120.0	83.3
29	185.0	185.0	185.0	185.0	185.0	168.1	132.8	107.6	74.7
32	185.0	185.0	185.0	185.0	185.0	152.3	120.3	97.5	67.7
35	185.0	185.0	185.0	185.0	185.0	139.3	110.0	89.1	61.9
38	185.0	185.0	185.0	185.0	185.0	128.3	101.3	82.1	57.0
41	185.0	185.0	185.0	185.0	185.0	118.9	93.9	76.1	52.8
44	185.0	185.0	185.0	185.0	185.0	110.8	87.5	70.9	49.2
47	185.0	185.0	185.0	185.0	173.4	103.7	81.9	66.4	46.1
50	185.0	185.0	185.0	185.0	163.0	97.5	77.0	62.4	43.3
53	185.0	185.0	185.0	185.0	153.7	92.0	72.7	58.9	40.9
56	185.0	185.0	185.0	185.0	145.5	87.0	68.8	55.7	38.7
59	185.0	185.0	185.0	185.0	138.1	82.6	65.3	52.9	36.7
62	185.0	185.0	185.0	182.5	131.4	78.6	62.1	50.3	34.9
65	185.0	185.0	185.0	174.1	125.4	75.0	59.2	48.0	33.3
68	185.0	185.0	185.0	166.4	119.8	71.7	56.6	45.9	31.9
71	185.0	185.0	183.0	159.4	114.8	68.6	54.2	43.9	30.5
74	185.0	185.0	175.5	152.9	110.1	65.9	52.0	42.2	N/A
77	185.0	185.0	168.7	147.0	105.8	63.3	50.0	40.5	N/A
80	185.0	185.0	162.4	141.5	101.8	60.9	48.1	39.0	N/A
83	185.0	179.3	156.5	136.4	98.2	58.7	46.4	37.6	N/A
86	185.0	173.0	151.0	131.6	94.7	56.7	44.8	36.3	N/A
89	185.0	167.2	146.0	127.2	91.5	54.8	43.3	35.0	N/A
92	185.0	161.8	141.2	123.0	88.6	53.0	41.9	33.9	N/A
95	185.0	156.7	136.7	119.1	85.8	51.3	40.5	32.8	N/A
98	185.0	151.9	132.5	115.5	83.1	49.7	39.3	31.8	N/A
101	185.0	147.3	128.6	112.1	80.7	48.3	38.1	30.9	N/A
104	185.0	143.1	124.9	108.8	78.3	46.9	37.0	30.0	N/A



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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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DATE

23-212

DRAWING No

SHEET 26 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE

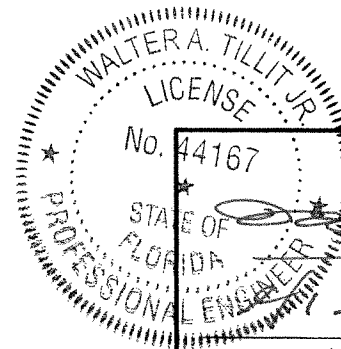
CONNECTED W/ CLIPS (C1) & (C2)

F-C1/C2-N=8-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	172.0
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	152.1
29	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	136.4
32	185.0	185.0	185.0	185.0	185.0	185.0	185.0	178.0	123.6
35	185.0	185.0	185.0	185.0	185.0	185.0	185.0	162.7	113.0
38	185.0	185.0	185.0	185.0	185.0	185.0	183.6	149.9	104.1
41	185.0	185.0	185.0	185.0	185.0	185.0	170.1	138.9	96.5
44	185.0	185.0	185.0	185.0	185.0	178.4	158.5	129.4	89.9
47	185.0	185.0	185.0	185.0	185.0	167.0	148.4	121.2	84.2
50	185.0	185.0	185.0	185.0	185.0	157.0	139.5	113.9	79.1
53	185.0	185.0	185.0	185.0	185.0	148.1	131.6	107.5	74.6
56	185.0	185.0	185.0	185.0	181.2	140.1	124.6	101.7	70.6
59	185.0	185.0	185.0	185.0	172.0	133.0	118.2	96.5	67.0
62	185.0	185.0	185.0	185.0	163.7	126.6	112.5	91.9	63.8
65	185.0	185.0	185.0	184.0	156.1	120.7	107.3	87.6	60.9
68	185.0	185.0	185.0	175.9	149.2	115.4	102.6	83.8	58.2
71	185.0	185.0	183.0	168.4	142.9	110.5	98.3	80.2	55.7
74	185.0	185.0	175.5	161.6	137.1	106.1	94.3	77.0	53.5
77	185.0	185.0	168.7	155.3	131.8	101.9	90.6	74.0	51.4
80	185.0	185.0	162.4	149.5	126.8	98.1	87.2	71.2	49.4
83	185.0	179.3	156.5	144.1	122.3	94.6	84.0	68.6	47.7
86	185.0	173.0	151.0	139.1	118.0	91.3	81.1	66.2	46.0
89	185.0	167.2	146.0	134.4	114.0	88.2	78.4	64.0	44.4
92	185.0	161.8	141.2	130.0	110.3	85.3	75.8	61.9	43.0
95	185.0	156.7	136.7	125.9	106.8	82.6	73.4	60.0	41.6
98	185.0	151.9	132.5	122.0	103.5	80.1	71.2	58.1	40.4
101	185.0	147.3	128.6	118.4	100.5	77.7	69.1	56.4	39.2
104	185.0	143.1	124.9	115.0	97.6	75.5	67.1	54.8	38.0

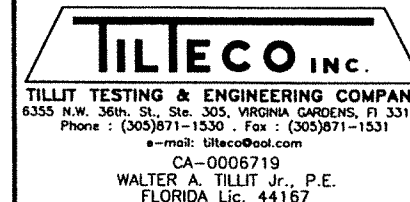
F-C1/C2-N=10-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	172.0
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	152.1
29	185.0	185.0	185.0	185.0	185.0	185.0	185.0	196.4	136.4
32	185.0	185.0	185.0	185.0	185.0	185.0	185.0	178.0	123.6
35	185.0	185.0	185.0	185.0	185.0	185.0	185.0	162.7	113.0
38	185.0	185.0	185.0	185.0	185.0	185.0	185.0	149.9	104.1
41	185.0	185.0	185.0	185.0	185.0	185.0	171.5	138.9	96.5
44	185.0	185.0	185.0	185.0	185.0	185.0	159.8	129.4	89.9
47	185.0	185.0	185.0	185.0	185.0	185.0	149.6	121.2	84.2
50	185.0	185.0	185.0	185.0	185.0	178.0	140.6	113.9	79.1
53	185.0	185.0	185.0	185.0	185.0	167.9	132.7	107.5	74.6
56	185.0	185.0	185.0	185.0	185.0	158.9	125.6	101.7	70.6
59	185.0	185.0	185.0	185.0	185.0	150.8	119.2	96.5	67.0
62	185.0	185.0	185.0	185.0	185.0	143.5	113.4	91.9	63.8
65	185.0	185.0	185.0	185.0	185.0	136.9	108.2	87.6	60.9
68	185.0	185.0	185.0	185.0	185.0	130.9	103.4	83.8	58.2
71	185.0	185.0	185.0	185.0	178.6	125.3	99.0	80.2	55.7
74	185.0	185.0	185.0	185.0	171.4	120.3	95.0	77.0	53.5
77	185.0	185.0	185.0	185.0	164.7	115.6	91.3	74.0	51.4
80	185.0	185.0	185.0	185.0	158.5	111.2	87.9	71.2	49.4
83	185.0	185.0	185.0	180.1	152.8	107.2	84.7	68.6	47.7
86	185.0	185.0	185.0	173.8	147.5	103.5	81.8	66.2	46.0
89	185.0	185.0	182.4	168.0	142.5	100.0	79.0	64.0	44.4
92	185.0	185.0	176.5	162.5	137.9	96.7	76.4	61.9	43.0
95	185.0	185.0	170.9	157.4	133.5	93.7	74.0	60.0	41.6
98	185.0	185.0	165.7	152.5	129.4	90.8	71.8	58.1	40.4
101	185.0	184.2	160.8	148.0	125.6	88.1	69.6	56.4	39.2
104	185.0	178.9	156.1	143.7	122.0	85.6	67.6	54.8	38.0



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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 27 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE

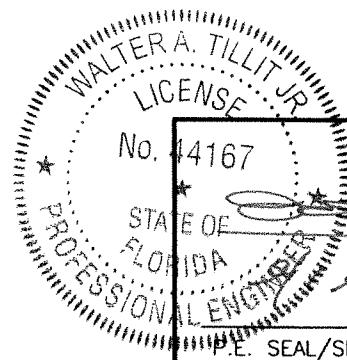
CONNECTED W/ CLIPS (C1) & (C2)

G-C1/C2-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	99.4
23	185.0	185.0	185.0	185.0	180.3	86.4
26	185.0	185.0	185.0	185.0	159.5	76.4
29	185.0	185.0	185.0	198.6	143.0	68.5
32	185.0	185.0	185.0	180.0	129.6	62.1
35	185.0	185.0	185.6	164.5	118.5	56.8
38	185.0	185.0	170.9	151.5	109.1	52.3
41	185.0	185.0	158.4	140.5	101.1	48.5
44	185.0	169.1	147.6	130.9	94.2	45.2
47	185.0	158.3	138.2	122.5	88.2	42.3
50	185.0	148.8	129.9	115.2	82.9	39.7
53	185.0	140.4	122.5	108.7	78.2	37.5
56	175.3	132.9	116.0	102.8	74.0	35.5
59	166.4	126.1	110.1	97.6	70.3	33.7
62	158.3	120.0	104.8	92.9	66.9	32.1
65	151.0	114.5	99.9	88.6	63.8	30.6
68	144.4	109.4	95.5	84.7	61.0	N/A
71	138.3	104.8	91.5	81.1	58.4	N/A
74	132.7	100.6	87.8	77.8	56.0	N/A
77	127.5	96.6	84.3	74.8	53.8	N/A
80	122.7	93.0	81.2	72.0	51.8	N/A
83	118.3	89.7	78.3	69.4	49.9	N/A
86	114.1	86.5	75.5	67.0	48.2	N/A
89	110.3	83.6	73.0	64.7	46.6	N/A
92	106.7	80.9	70.6	62.6	45.1	N/A
95	103.3	78.3	68.4	60.6	43.6	N/A
98	100.2	75.9	66.3	58.8	42.3	N/A
101	97.2	73.7	64.3	57.0	41.0	N/A
104	94.4	71.5	62.5	55.4	39.9	N/A

I-C1/C2-N=10-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
23	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
26	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
29	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
32	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
35	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0
38	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	171.6
41	185.0	185.0	185.0	185.0	185.0	185.0	185.0	185.0	159.0
44	185.0	185.0	185.0	185.0	185.0	185.0	185.0	178.4	148.2
47	185.0	185.0	185.0	185.0	185.0	185.0	185.0	167.0	138.7
50	185.0	185.0	185.0	185.0	185.0	185.0	174.4	157.0	130.4
53	185.0	185.0	185.0	185.0	185.0	185.0	164.5	148.1	123.0
56	185.0	185.0	185.0	185.0	185.0	175.2	155.7	140.1	116.4
59	185.0	185.0	185.0	185.0	185.0	166.3	147.8	133.0	110.5
62	185.0	185.0	185.0	185.0	185.0	158.2	140.6	126.6	105.2
65	185.0	185.0	185.0	185.0	185.0	150.9	134.2	120.7	100.3
68	185.0	185.0	185.0	185.0	185.0	144.3	128.2	115.4	95.9
71	185.0	185.0	185.0	185.0	178.6	138.2	122.8	110.5	91.8
74	185.0	185.0	185.0	185.0	171.4	132.6	117.8	106.1	88.1
77	185.0	185.0	185.0	185.0	164.7	127.4	113.2	101.9	84.7
80	185.0	185.0	185.0	185.0	158.5	122.6	109.0	98.1	81.5
83	185.0	185.0	185.0	180.1	152.8	118.2	105.1	94.6	78.6
86	185.0	185.0	185.0	173.8	147.5	114.1	101.4	91.3	75.8
89	185.0	185.0	182.4	168.0	142.5	110.2	98.0	88.2	73.3
92	185.0	185.0	176.5	162.5	137.9	106.6	94.8	85.3	70.9
95	185.0	185.0	170.9	157.4	133.5	103.3	91.8	82.6	68.6
98	185.0	185.0	165.7	152.5	129.4	100.1	89.0	80.1	66.5
101	185.0	184.2	160.8	148.0	125.6	97.1	86.3	77.7	64.6
104	185.0	178.9	156.1	143.7	122.0	94.3	83.8	75.5	62.7



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 28 OF 60

CLIPPED INTERIOR MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP (C1)

J-C1-N=6-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 45° MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	185.0	185.0	185.0	185.0	185.0	111.2
23	185.0	185.0	185.0	185.0	161.6	96.7
26	185.0	185.0	185.0	185.0	143.0	85.5
29	185.0	185.0	185.0	178.1	128.2	76.7
32	185.0	185.0	185.0	161.4	116.2	69.5
35	185.0	185.0	174.1	147.5	106.2	63.5
38	185.0	185.0	160.3	135.9	97.8	58.5
41	185.0	185.0	148.6	126.0	90.7	54.2
44	185.0	181.8	138.5	117.4	84.5	50.5
47	185.0	170.2	129.6	109.9	79.1	47.3
50	185.0	159.9	121.9	103.3	74.4	44.5
53	185.0	150.9	115.0	97.4	70.1	42.0
56	185.0	142.8	108.8	92.2	66.4	39.7
59	185.0	135.5	103.3	87.5	63.0	37.7
62	185.0	129.0	98.3	83.3	60.0	35.9
65	185.0	123.0	93.7	79.4	57.2	34.2
68	185.0	117.6	89.6	75.9	54.7	32.7
71	185.0	112.6	85.8	72.7	52.4	31.3
74	185.0	108.1	82.3	69.8	50.2	30.1
77	180.7	103.9	79.1	67.1	48.3	N/A
80	174.0	100.0	76.2	64.5	46.5	N/A
83	167.7	96.4	73.4	62.2	44.8	N/A
86	161.8	93.0	70.8	60.0	43.2	N/A
89	156.4	89.9	68.5	58.0	41.8	N/A
92	151.3	86.9	66.2	56.1	40.4	N/A
95	146.5	84.2	64.1	54.4	39.1	N/A
98	142.0	81.6	62.2	52.7	37.9	N/A
101	137.8	79.2	60.3	51.1	36.8	N/A
104	133.8	76.9	58.6	49.7	35.7	N/A

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
09/12/2023
P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

© 2023 TILTECO INC.		SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS		DRAWN BY: W.H.	
TILTECO INC. TILLIT TESTING & ENGINEERING COMPANY 6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166 Phone : (305)871-1530 . Fax : (305)871-1531 e-mail: tilteco@aol.com		 290 WEST 78 ROAD HALEAH, FL. 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com		09/12/2023 DATE	
CA-0006719 WALTER A. TILLIT Jr., P.E. FLORIDA Lic. 44167		23-212 DRAWING No		SHEET 29 OF 60	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED END MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIP C3

A-C3-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	135.5	102.7	89.7	82.5
23	117.8	89.3	78.0	71.8
26	104.2	79.0	69.0	63.5
29	93.5	70.8	61.8	56.9
32	84.7	64.2	56.0	51.6
35	77.4	58.7	51.2	47.2
38	71.3	54.1	47.2	43.4
41	66.1	50.1	43.7	40.3
44	61.6	46.7	40.8	37.5
47	57.7	43.7	38.2	35.1
50	54.2	41.1	35.9	33.0
53	51.1	38.8	33.8	31.1

B-C3-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	158.4	120.1	104.8	96.5	81.9	76.0
23	137.7	104.4	91.1	83.9	71.2	66.1
26	121.8	92.4	80.6	74.2	63.0	58.4
29	109.2	82.8	72.3	66.5	56.5	52.4
32	99.0	75.0	65.5	60.3	51.2	47.5
35	90.5	68.6	59.9	55.1	46.8	43.4
38	83.4	63.2	55.2	50.8	43.1	40.0
41	77.3	58.6	51.1	47.1	39.9	37.1
44	72.0	54.6	47.6	43.9	37.2	34.5
47	67.4	51.1	44.6	41.1	34.8	32.3
50	63.4	48.0	41.9	38.6	32.7	30.4
53	59.8	45.3	39.5	36.4	30.9	28.7

C-C3-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	149.7	113.5	99.0	91.2	77.4	71.8
23	130.2	98.7	86.1	79.3	67.3	62.4
26	115.2	87.3	76.2	70.1	59.5	55.2
29	103.2	78.3	68.3	62.9	53.4	49.5
32	93.6	70.9	61.9	57.0	48.4	44.9
35	85.5	64.8	56.6	52.1	44.2	41.0
38	78.8	59.7	52.1	48.0	40.7	37.8
41	73.0	55.4	48.3	44.5	37.7	35.0
44	68.0	51.6	45.0	41.4	35.2	32.6
47	63.7	48.3	42.1	38.8	32.9	30.6
50	59.9	45.4	39.6	36.5	30.9	28.7
53	56.5	42.8	37.4	34.4	29.2	27.1

C-C3-N=6-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	187.2	141.9	123.9	114.1	96.8	89.8
23	162.8	123.4	107.7	99.2	84.1	78.1
26	144.0	109.2	95.3	87.7	74.4	69.1
29	129.1	97.9	85.4	78.7	66.7	61.9
32	117.0	88.7	77.4	71.3	60.5	56.1
35	107.0	81.1	70.8	65.2	55.3	51.3
38	98.5	74.7	65.2	60.0	50.9	47.3
41	91.3	69.2	60.4	55.6	47.2	43.8
44	85.1	64.5	56.3	51.8	44.0	40.8
47	79.7	60.4	52.7	48.5	41.2	38.2
50	74.9	56.8	49.6	45.6	38.7	35.9
53	70.7	53.6	46.7	43.0	36.5	33.9

D-C3-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	152.4	115.6	100.9	92.9	78.8	60.9
23	132.6	100.5	87.7	80.7	68.5	53.0
26	117.3	88.9	77.6	71.4	60.6	46.9
29	105.1	79.7	69.6	64.0	54.3	42.0
32	95.3	72.2	63.0	58.0	49.2	38.1
35	87.1	66.0	57.6	53.1	45.0	34.8
38	80.2	60.8	53.1	48.9	41.5	32.1
41	74.4	56.4	49.2	45.3	38.4	29.7
44	69.3	52.5	45.8	42.2	35.8	27.7
47	64.9	49.2	42.9	39.5	33.5	25.9
50	61.0	46.2	40.3	37.1	31.5	24.4
53	57.5	43.6	38.1	35.0	29.7	23.0

D-C3-N=6-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ULTRACONS EACH END OF						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	154.4	134.8	124.1	105.3	81.4
23	177.1	134.3	117.2	107.9	91.6	70.8
26	156.7	118.8	103.7	95.5	81.0	62.6
29	140.5	106.5	93.0	85.6	72.6	56.2
32	127.3	96.5	84.2	77.6	65.8	50.9
35	116.4	88.2	77.0	70.9	60.2	46.5
38	107.2	81.3	70.9	65.3	55.4	42.9
41	99.4	75.3	65.8	60.5	51.4	39.7
44	92.6	70.2	61.3	56.4	47.9	37.0
47	86.7	65.7	57.4	52.8	44.8	34.7
50	81.5	61.8	53.9	49.6	42.1	32.6
53	76.9	58.3	50.9	46.8	39.7	30.7

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
19/2023
P.E. SEAL/SIGNATURE/DATE

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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 30 OF 60

CLIPPED END MULLIONS CHARTS INTO WOOD SUBSTRATE

CONNECTED W/ CLIP (C3)

E-C3-N=6-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	180.8	157.8	145.3	123.3	95.3	84.7	76.3	63.6
23	200.0	157.2	137.2	126.3	107.2	82.9	73.7	66.3	55.3
26	183.5	139.1	121.4	111.8	94.8	73.3	65.2	58.7	48.9
29	164.5	124.7	108.8	100.2	85.0	65.8	58.4	52.6	43.8
32	149.1	113.0	98.6	90.8	77.0	59.6	53.0	47.7	39.7
35	136.3	103.3	90.2	83.0	70.4	54.5	48.4	43.6	36.3
38	125.5	95.2	83.1	76.5	64.9	50.2	44.6	40.1	33.5
41	116.3	88.2	77.0	70.9	60.1	46.5	41.3	37.2	31.0
44	108.4	82.2	71.7	66.0	56.0	43.3	38.5	34.7	28.9
47	101.5	76.9	67.2	61.8	52.5	40.6	36.1	32.5	27.0
50	95.4	72.3	63.1	58.1	49.3	38.1	33.9	30.5	25.4
53	90.0	68.2	59.6	54.8	46.5	36.0	32.0	28.8	24.0

E-C3-N=8-WOOD

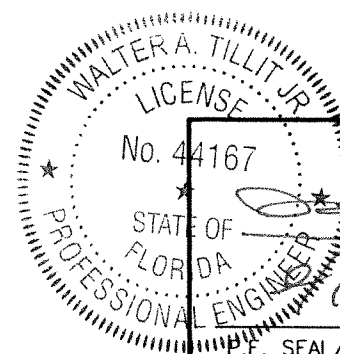
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	198.7	182.9	155.2	120.0	106.7	96.0	80.0
23	200.0	198.0	172.8	159.1	135.0	104.4	92.8	83.5	69.6
26	200.0	175.1	152.8	140.7	119.4	92.3	82.1	73.9	61.6
29	200.0	157.0	137.0	126.2	107.0	82.8	73.6	66.2	55.2
32	187.7	142.3	124.2	114.3	97.0	75.0	66.7	60.0	50.0
35	171.6	130.1	113.5	104.5	88.7	68.6	61.0	54.9	45.7
38	158.1	119.8	104.6	96.3	81.7	63.2	56.2	50.5	42.1
41	146.5	111.0	96.9	89.2	75.7	58.6	52.1	46.8	39.0
44	136.5	103.5	90.3	83.2	70.6	54.6	48.5	43.7	36.4
47	127.8	96.9	84.6	77.8	66.0	51.1	45.4	40.9	34.1
50	120.1	91.1	79.5	73.2	62.1	48.0	42.7	38.4	32.0
53	113.3	85.9	75.0	69.0	58.6	45.3	40.3	36.2	30.2

F-C3-N=8-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	185.7	157.6	121.9	108.3	97.5	81.3
23	200.0	200.0	175.4	161.5	137.0	106.0	94.2	84.8	70.7
26	200.0	177.8	155.2	142.9	121.2	93.8	83.3	75.0	62.5
29	200.0	159.4	139.1	128.1	108.7	84.1	74.7	67.2	56.0
32	190.6	144.4	126.1	116.1	98.5	76.2	67.7	60.9	50.8
35	174.2	132.1	115.3	106.1	90.0	69.6	61.9	55.7	46.4
38	160.5	121.6	106.2	97.7	82.9	64.1	57.0	51.3	42.8
41	148.7	112.7	98.4	90.6	76.9	59.5	52.8	47.6	39.6
44	138.6	105.1	91.7	84.4	71.6	55.4	49.2	44.3	36.9
47	129.7	98.3	85.8	79.0	67.1	51.9	46.1	41.5	34.6
50	122.0	92.4	80.7	74.3	63.0	48.8	43.3	39.0	32.5
53	115.1	87.2	76.1	70.1	59.5	46.0	40.9	36.8	30.7

F-C3-N=10-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	191.9	148.4	131.9	118.7	98.9
23	200.0	200.0	200.0	196.7	166.9	129.1	114.7	103.2	86.0
26	200.0	200.0	189.0	174.0	147.6	114.2	101.5	91.3	76.1
29	200.0	194.1	169.4	156.0	132.3	102.4	91.0	81.9	68.2
32	200.0	175.9	153.5	141.3	119.9	92.8	82.5	74.2	61.8
35	200.0	160.8	140.4	129.2	109.7	84.8	75.4	67.8	56.5
38	195.4	148.1	129.3	119.0	101.0	78.1	69.4	62.5	52.1
41	181.1	137.3	119.8	110.3	93.6	72.4	64.4	57.9	48.3
44	168.8	127.9	111.7	102.8	87.2	67.5	60.0	54.0	45.0
47	158.0	119.8	104.5	96.2	81.7	63.2	56.1	50.5	42.1
50	148.5	112.6	98.3	90.5	76.8	59.4	52.8	47.5	39.6
53	140.1	106.2	92.7	85.3	72.4	56.0	49.8	44.8	37.3



P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.
TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
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WALTER A. TILLIT JR., P.E.
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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

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DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 31 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

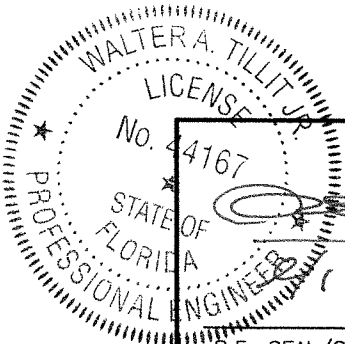
CLIPPED END MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIP C3

G-C3-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	117.2	88.8	77.5	71.4	60.6	46.8
23	101.9	77.3	67.4	62.1	52.7	40.7
26	90.2	68.3	59.6	54.9	46.6	36.0
29	80.8	61.3	53.5	49.2	41.8	32.3
32	73.2	55.5	48.5	44.6	37.9	29.3
35	67.0	50.8	44.3	40.8	34.6	26.8
38	61.7	46.8	40.8	37.6	31.9	24.7
41	57.2	43.3	37.8	34.8	29.5	22.9
44	53.3	40.4	35.2	32.4	27.5	21.3
47	49.9	37.8	33.0	30.4	25.8	19.9
50	46.9	35.5	31.0	28.6	24.2	18.7
53	44.2	33.5	29.3	26.9	22.9	17.7

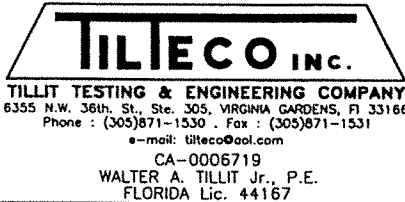
I-C3-N=10-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	177.5	137.3	122.0	109.8	91.5
23	200.0	200.0	197.5	181.9	154.3	119.3	106.1	95.5	79.6
26	200.0	200.0	174.7	160.9	136.5	105.6	93.8	84.5	70.4
29	200.0	179.5	156.7	144.2	122.4	94.7	84.1	75.7	63.1
32	200.0	162.7	142.0	130.7	110.9	85.8	76.3	68.6	57.2
35	196.2	148.7	129.8	119.5	101.4	78.4	69.7	62.7	52.3
38	180.7	137.0	119.6	110.1	93.4	72.2	64.2	57.8	48.2
41	167.5	127.0	110.8	102.0	86.6	67.0	59.5	53.6	44.6
44	156.1	118.3	103.3	95.1	80.7	62.4	55.5	49.9	41.6
47	146.1	110.8	96.7	89.0	75.5	58.4	51.9	46.7	38.9
50	137.3	104.1	90.9	83.7	71.0	54.9	48.8	43.9	36.6
53	129.6	98.2	85.7	78.9	67.0	51.8	46.0	41.4	34.5



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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PH: (954)226-5555/(305)558-8103
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 32 OF 60

CLIPPED END MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIP (C3)

A-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION					
Tributary Width (b)	Mullion Length (L)				
	38.375	50.625	58	63	
20	111.1	84.2	73.5	67.7	
23	96.6	73.2	63.9	58.8	
26	85.4	64.8	56.5	52.0	
29	76.6	58.1	50.7	46.7	
32	69.4	52.6	45.9	42.3	
35	63.5	48.1	42.0	38.7	
38	58.5	44.3	38.7	35.6	
41	54.2	41.1	35.8	33.0	
44	50.5	38.3	33.4	30.8	
47	47.3	35.8	31.3	28.8	
50	44.4	33.7	29.4	27.1	
53	41.9	31.8	27.7	25.5	

B-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	195.3	148.0	129.2	118.9	100.9	93.7
23	169.8	128.7	112.3	103.4	87.8	81.4
26	150.2	113.9	99.4	91.5	77.6	72.0
29	134.7	102.1	89.1	82.0	69.6	64.6
32	122.0	92.5	80.7	74.3	63.1	58.5
35	111.6	84.6	73.8	68.0	57.7	53.5
38	102.8	77.9	68.0	62.6	53.1	49.3
41	95.2	72.2	63.0	58.0	49.2	45.7
44	88.8	67.3	58.7	54.1	45.9	42.6
47	83.1	63.0	55.0	50.6	42.9	39.9
50	78.1	59.2	51.7	47.6	40.4	37.5
53	73.7	55.9	48.8	44.9	38.1	35.3

C-C3-N=4-BLOCK

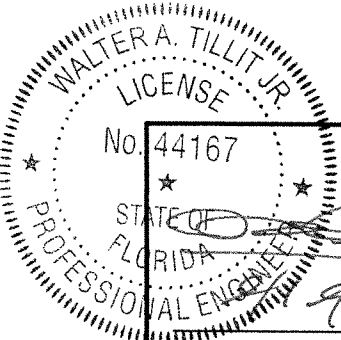
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	184.1	139.5	121.8	112.1	95.1	88.3
23	160.0	121.3	105.9	97.5	82.7	76.8
26	141.6	107.3	93.7	86.2	73.2	67.9
29	126.9	96.2	84.0	77.3	65.6	60.9
32	115.0	87.2	76.1	70.1	59.5	55.2
35	105.2	79.7	69.6	64.1	54.4	50.5
38	96.9	73.4	64.1	59.0	50.1	46.5
41	89.8	68.1	59.4	54.7	46.4	43.1
44	83.7	63.4	55.4	51.0	43.2	40.1
47	78.3	59.4	51.8	47.7	40.5	37.6
50	73.6	55.8	48.7	44.8	38.1	35.3
53	69.5	52.6	46.0	42.3	35.9	33.3

D-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	187.4	142.1	124.0	114.2	96.9	74.9
23	163.0	123.5	107.8	99.3	84.2	65.2
26	144.2	109.3	95.4	87.8	74.5	57.6
29	129.3	98.0	85.5	78.7	66.8	51.7
32	117.1	88.8	77.5	71.4	60.5	46.8
35	107.1	81.2	70.9	65.2	55.4	42.8
38	98.6	74.8	65.3	60.1	51.0	39.4
41	91.4	69.3	60.5	55.7	47.3	36.5
44	85.2	64.6	56.4	51.9	44.0	34.1
47	79.8	60.5	52.8	48.6	41.2	31.9
50	75.0	56.8	49.6	45.7	38.7	30.0
53	70.7	53.6	46.8	43.1	36.6	28.3

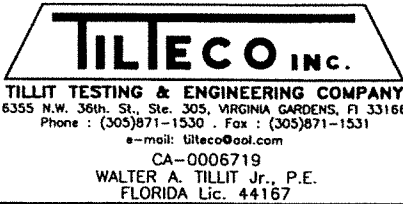
F-C3-N=8-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	189.4	165.4	152.2	129.2	99.9	88.8	79.9	66.6
23	200.0	164.7	143.8	132.4	112.3	86.9	77.2	69.5	57.9
26	192.2	145.7	127.2	117.1	99.4	76.8	68.3	61.5	51.2
29	172.4	130.6	114.0	105.0	89.1	68.9	61.2	55.1	45.9
32	156.2	118.4	103.3	95.1	80.7	62.4	55.5	50.0	41.6
35	142.8	108.3	94.5	87.0	73.8	57.1	50.7	45.7	38.1
38	131.5	99.7	87.0	80.1	68.0	52.6	46.7	42.1	35.1
41	121.9	92.4	80.7	74.3	63.0	48.7	43.3	39.0	32.5
44	113.6	86.1	75.2	69.2	58.7	45.4	40.4	36.3	30.3
47	106.3	80.6	70.4	64.8	55.0	42.5	37.8	34.0	28.3
50	100.0	75.8	66.1	60.9	51.7	40.0	35.5	32.0	26.6
53	94.3	71.5	62.4	57.4	48.7	37.7	33.5	30.2	25.1



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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 33 OF 60

CLIPPED END MULLIONS CHARTS INTO BLOCK SUBSTRATE

CONNECTED W/ CLIP (C3)

E-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	159.3	139.1	128.0	108.6	84.0	74.7	67.2	56.0
23	182.8	138.5	120.9	111.3	94.5	73.1	64.9	58.4	48.7
26	161.7	122.6	107.0	98.5	83.6	64.6	57.4	51.7	43.1
29	144.9	109.9	95.9	88.3	74.9	57.9	51.5	46.4	38.6
32	131.4	99.6	86.9	80.0	67.9	52.5	46.7	42.0	35.0
35	120.1	91.0	79.5	73.2	62.1	48.0	42.7	38.4	32.0
38	110.6	83.9	73.2	67.4	57.2	44.2	39.3	35.4	29.5
41	102.5	77.7	67.8	62.5	53.0	41.0	36.4	32.8	27.3
44	95.5	72.4	63.2	58.2	49.4	38.2	33.9	30.6	25.5
47	89.4	67.8	59.2	54.5	46.2	35.8	31.8	28.6	23.8
50	84.1	63.7	55.6	51.2	43.5	33.6	29.9	26.9	22.4
53	79.3	60.1	52.5	48.3	41.0	31.7	28.2	25.4	21.1

E-C3-N=8-BLOCK

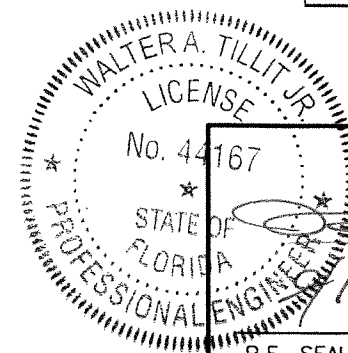
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	186.6	162.9	149.9	127.2	98.4	87.5	78.7	65.6
23	200.0	162.3	141.6	130.4	110.6	85.6	76.1	68.5	57.0
26	189.4	143.5	125.3	115.3	97.9	75.7	67.3	60.6	50.5
29	169.8	128.7	112.3	103.4	87.7	67.9	60.3	54.3	45.2
32	153.9	116.6	101.8	93.7	79.5	61.5	54.7	49.2	41.0
35	140.7	106.6	93.1	85.7	72.7	56.2	50.0	45.0	37.5
38	129.6	98.2	85.7	78.9	67.0	51.8	46.0	41.4	34.5
41	120.1	91.0	79.4	73.1	62.1	48.0	42.7	38.4	32.0
44	111.9	84.8	74.0	68.2	57.8	44.7	39.8	35.8	29.8
47	104.7	79.4	69.3	63.8	54.1	41.9	37.2	33.5	27.9
50	98.5	74.6	65.1	60.0	50.9	39.4	35.0	31.5	26.2
53	92.9	70.4	61.5	56.6	48.0	37.1	33.0	29.7	24.8

G-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	96.1	72.8	63.6	58.5	49.6	38.4
23	83.5	63.3	55.3	50.9	43.2	33.4
26	73.9	56.0	48.9	45.0	38.2	29.5
29	66.3	50.2	43.8	40.4	34.2	26.5
32	60.0	45.5	39.7	36.6	31.0	24.0
35	54.9	41.6	36.3	33.4	28.4	21.9
38	50.6	38.3	33.5	30.8	26.1	20.2
41	46.9	35.5	31.0	28.5	24.2	18.7
44	43.7	33.1	28.9	26.6	22.6	17.5
47	40.9	31.0	27.0	24.9	21.1	16.3
50	38.4	29.1	25.4	23.4	19.9	15.4
53	36.3	27.5	24.0	22.1	18.7	14.5

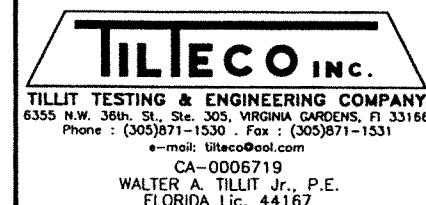
H-C3-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	116.7	88.5	77.2	71.1	60.3	46.7	41.5	37.3	31.1
23	101.5	76.9	67.1	61.8	52.4	40.6	36.1	32.5	27.0
26	89.8	68.0	59.4	54.7	46.4	35.9	31.9	28.7	23.9
29	80.5	61.0	53.3	49.0	41.6	32.2	28.6	25.7	21.4
32	72.9	55.3	48.3	44.4	37.7	29.2	25.9	23.3	19.4
35	66.7	50.5	44.1	40.6	34.5	26.7	23.7	21.3	17.8
38	61.4	46.6	40.6	37.4	31.7	24.6	21.8	19.6	16.4
41	56.9	43.2	37.7	34.7	29.4	22.8	20.2	18.2	15.2
44	53.0	40.2	35.1	32.3	27.4	21.2	18.8	17.0	14.1
47	49.7	37.6	32.9	30.2	25.7	19.9	17.6	15.9	13.2
50	46.7	35.4	30.9	28.4	24.1	18.7	16.6	14.9	12.4
53	44.0	33.4	29.1	26.8	22.8	17.6	15.6	14.1	11.7



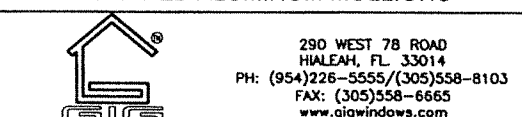
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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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09/12/2023
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23-212

DRAWING No

SHEET 34 OF 60

CLIPPED END MULLIONS CHARTS INTO CONCRETE SUBSTRATE CONNECTED W/ CLIP C3

A-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION					
Tributary Width (b)	Mullion Length (L)				
	38.375	50.625	58	63	
20	200.0	200.0	154.2	130.7	
23	200.0	176.1	134.1	113.7	
26	200.0	155.7	118.7	100.6	
29	200.0	139.6	106.4	90.2	
32	200.0	126.5	96.4	81.7	
35	199.9	115.7	88.1	74.7	
38	184.1	106.6	81.2	68.8	
41	170.7	98.8	75.2	63.8	
44	159.0	92.0	70.1	59.4	
47	148.9	86.2	65.6	55.6	
50	140.0	81.0	61.7	52.3	
53	132.0	76.4	58.2	49.3	

B-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	145.5	125.4
23	200.0	200.0	200.0	175.8	126.6	109.0
26	200.0	200.0	183.5	155.5	112.0	96.4
29	200.0	200.0	164.5	139.4	100.4	86.5
32	200.0	195.7	149.1	126.4	91.0	78.4
35	200.0	178.9	136.3	115.5	83.2	71.6
38	200.0	164.8	125.5	106.4	76.6	66.0
41	200.0	152.7	116.4	98.6	71.0	61.2
44	200.0	142.3	108.4	91.9	66.2	57.0
47	200.0	133.2	101.5	86.0	61.9	53.4
50	200.0	125.2	95.4	80.9	58.2	50.2
53	191.6	118.1	90.0	76.3	54.9	47.3

C-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	199.8	182.2
23	200.0	200.0	200.0	200.0	173.7	158.4
26	200.0	200.0	196.7	181.1	153.7	140.2
29	200.0	200.0	176.4	162.4	137.8	125.7
32	200.0	183.1	159.8	147.2	124.9	113.9
35	200.0	167.4	146.1	134.5	114.2	104.1
38	200.0	154.2	134.6	123.9	105.1	95.9
41	188.5	142.9	124.7	114.8	97.4	88.9
44	175.7	133.2	116.2	107.0	90.8	82.8
47	164.5	124.7	108.8	100.2	85.0	77.5
50	154.6	117.2	102.3	94.2	79.9	72.9
53	145.9	110.6	96.5	88.8	75.4	68.8

D-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	200.0	200.0	137.4
23	200.0	200.0	200.0	200.0	199.7	119.5
26	200.0	200.0	200.0	200.0	176.7	105.7
29	200.0	200.0	200.0	200.0	158.4	94.8
32	200.0	200.0	200.0	185.5	143.6	85.9
35	200.0	200.0	184.2	169.6	131.2	78.5
38	200.0	194.4	169.7	156.2	120.9	72.3
41	200.0	180.2	157.3	144.8	112.0	67.0
44	200.0	167.9	146.6	134.9	104.4	62.5
47	200.0	157.2	137.2	126.3	97.7	58.5
50	194.9	147.8	129.0	118.7	91.9	55.0
53	183.9	139.4	121.7	112.0	86.7	51.8

G-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS IN CONCRETE						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	184.3	156.4	99.4
23	200.0	199.5	174.1	160.3	136.0	86.4
26	200.0	176.4	154.0	141.8	120.3	76.4
29	200.0	158.2	138.1	127.1	107.9	68.5
32	189.1	143.4	125.1	115.2	97.7	62.1
35	172.9	131.1	114.4	105.3	89.4	56.8
38	159.3	120.7	105.4	97.0	82.3	52.3
41	147.6	111.9	97.7	89.9	76.3	48.5
44	137.5	104.3	91.0	83.8	71.1	45.2
47	128.8	97.6	85.2	78.4	66.6	42.3
50	121.0	91.8	80.1	73.7	62.6	39.7
53	114.2	86.6	75.6	69.6	59.0	37.5

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
9/10/23
P.E. SEAL/SIGNATURE/DATE

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY: W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 35 OF 60

CLIPPED END MULLIONS CHARTS INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIP (C3)

E-C3-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	192.6	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	189.9	167.4	135.6	94.2
26	200.0	200.0	200.0	200.0	200.0	168.0	148.1	120.0	83.3
29	200.0	200.0	200.0	200.0	194.8	150.6	132.8	107.6	74.7
32	200.0	200.0	200.0	200.0	176.5	136.5	120.3	97.5	67.7
35	200.0	200.0	200.0	190.2	161.4	124.8	110.0	89.1	61.9
38	200.0	200.0	190.3	175.2	148.6	115.0	101.3	82.1	57.0
41	200.0	200.0	176.4	162.4	137.8	106.6	93.9	76.1	52.8
44	200.0	188.3	164.3	151.3	128.4	99.3	87.5	70.9	49.2
47	200.0	176.3	153.9	141.6	120.2	93.0	81.9	66.4	46.1
50	200.0	165.7	144.6	133.1	113.0	87.4	77.0	62.4	43.3
53	200.0	156.3	136.4	125.6	106.6	82.4	72.7	58.9	40.9

E-C3-N=6-CONC

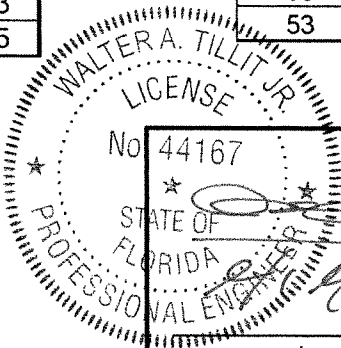
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4"Ø IN ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	192.6	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	200.0	167.4	135.6	94.2
26	200.0	200.0	200.0	200.0	200.0	187.5	148.1	120.0	83.3
29	200.0	200.0	200.0	200.0	200.0	168.1	132.8	107.6	74.7
32	200.0	200.0	200.0	200.0	198.9	152.3	120.3	97.5	67.7
35	200.0	200.0	200.0	200.0	181.9	139.3	110.0	89.1	61.9
38	200.0	200.0	200.0	197.4	167.5	128.3	101.3	82.1	57.0
41	200.0	200.0	198.8	183.0	155.3	118.9	93.9	76.1	52.8
44	200.0	200.0	185.2	170.5	144.7	110.8	87.5	70.9	49.2
47	200.0	198.6	173.4	159.6	135.4	103.7	81.9	66.4	46.1
50	200.0	186.7	163.0	150.0	127.3	97.5	77.0	62.4	43.3
53	200.0	176.2	153.8	141.6	120.1	92.0	72.7	58.9	40.9

F-C3-N=6-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (6) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	198.8	165.7
23	200.0	200.0	200.0	200.0	200.0	200.0	192.1	172.9	144.1
26	200.0	200.0	200.0	200.0	200.0	191.2	169.9	152.9	127.5
29	200.0	200.0	200.0	200.0	200.0	171.4	152.4	137.1	114.3
32	200.0	200.0	200.0	200.0	200.0	155.3	138.1	124.3	103.6
35	200.0	200.0	200.0	200.0	183.6	142.0	126.2	113.6	94.7
38	200.0	200.0	200.0	199.3	169.1	130.8	116.3	104.6	87.2
41	200.0	200.0	200.0	184.7	156.8	121.2	107.8	97.0	80.8
44	200.0	200.0	187.0	172.1	146.1	113.0	100.4	90.4	75.3
47	200.0	200.0	175.1	161.2	136.7	105.8	94.0	84.6	70.5
50	200.0	188.5	164.5	151.5	128.5	99.4	88.4	79.5	66.3
53	200.0	177.8	155.2	142.9	121.3	93.8	83.4	75.0	62.5

F-C3-N=8-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	197.8
23	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	172.0
26	200.0	200.0	200.0	200.0	200.0	200.0	200.0	193.7	152.1
29	200.0	200.0	200.0	200.0	200.0	200.0	192.9	173.6	136.4
32	200.0	200.0	200.0	200.0	200.0	196.7	174.8	157.3	123.6
35	200.0	200.0	200.0	200.0	200.0	179.8	159.8	143.9	113.0
38	200.0	200.0	200.0	200.0	200.0	165.6	147.2	132.5	104.1
41	200.0	200.0	200.0	200.0	198.5	153.5	136.4	122.8	96.5
44	200.0	200.0	200.0	200.0	184.9	143.0	127.1	114.4	89.9
47	200.0	200.0	200.0	200.0	173.1	133.9	119.0	107.1	84.2
50	200.0	200.0	200.0	191.8	162.7	125.9	111.9	100.7	79.1
53	200.0	200.0	196.6	181.0	153.5	118.7	105.6	95.0	74.6



P.E. SEAL/SIGNATURE/DATE

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WALTER A. TILLIT JR., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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REV. NO. DESCRIPTION DATE REV. No. DESCRIPTION DATE
1 OLD 20-270 09/12/23 3
2 4

DRAWN BY: W.H.
09/12/2023 DATE
23-212 DRAWING No
SHEET 36 OF 60

CLIPPED END MULLIONS CHARTS INTO CONCRETE SUBSTRATE

CONNECTED W/ CLIP (C3)

H-C3-N=4-CONC

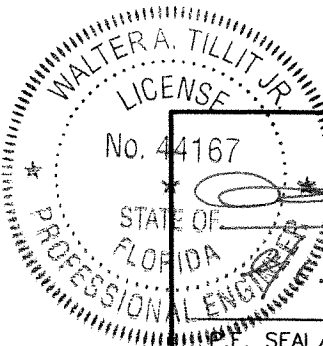
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH
(4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	190.0	146.9	130.6	117.6	98.0
23	200.0	200.0	200.0	194.7	165.2	127.8	113.6	102.2	85.2
26	200.0	200.0	187.1	172.2	146.1	113.0	100.5	90.4	75.4
29	200.0	192.2	167.7	154.4	131.0	101.3	90.1	81.1	67.6
32	200.0	174.2	152.0	140.0	118.7	91.8	81.6	73.5	61.2
35	200.0	159.2	139.0	128.0	108.6	84.0	74.6	67.2	56.0
38	193.5	146.7	128.0	117.9	100.0	77.3	68.7	61.9	51.6
41	179.3	135.9	118.6	109.2	92.7	71.7	63.7	57.3	47.8
44	167.1	126.7	110.6	101.8	86.4	66.8	59.4	53.4	44.5
47	156.4	118.6	103.5	95.3	80.8	62.5	55.6	50.0	41.7
50	147.0	111.5	97.3	89.6	76.0	58.8	52.2	47.0	39.2
53	138.7	105.2	91.8	84.5	71.7	55.5	49.3	44.4	37.0

I-C3-N=8-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH
(8) 1/4"Ø ULTRACONS IN POURED CONCRETE EACH END OF MULLION

Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	195.1
23	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	169.7
26	200.0	200.0	200.0	200.0	200.0	200.0	200.0	180.1	150.1
29	200.0	200.0	200.0	200.0	200.0	200.0	179.4	161.5	134.6
32	200.0	200.0	200.0	200.0	200.0	182.9	162.6	146.4	122.0
35	200.0	200.0	200.0	200.0	200.0	167.3	148.7	133.8	111.5
38	200.0	200.0	200.0	200.0	199.2	154.1	136.9	123.2	102.7
41	200.0	200.0	200.0	200.0	184.6	142.8	126.9	114.2	95.2
44	200.0	200.0	200.0	200.0	172.0	133.1	118.3	106.4	88.7
47	200.0	200.0	200.0	189.8	161.0	124.6	110.7	99.6	83.0
50	200.0	200.0	193.8	178.4	151.4	117.1	104.1	93.7	78.1
53	200.0	200.0	182.8	168.3	142.8	110.5	98.2	88.4	73.6



P.E. SEAL/SIGNATURE/DATE

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212

DRAWING No

SHEET 37 OF 60

CLIPPED END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIP C3

A-C3-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 TEK SCREWS EACH END OF MULLION					
Tributary Width (b)	Mullion Length (L)				
	38.375	50.625	58	63	
20	200.0	200.0	154.2	130.7	
23	200.0	176.1	134.1	113.7	
26	200.0	155.7	118.7	100.6	
29	200.0	139.6	106.4	90.2	
32	200.0	126.5	96.4	81.7	
35	200.0	115.7	88.1	74.7	
38	185.4	106.6	81.2	68.8	
41	171.9	98.8	75.2	63.8	
44	160.2	92.0	70.1	59.4	
47	149.9	86.2	65.6	55.6	
50	140.9	81.0	61.7	52.3	
53	133.0	76.4	58.2	49.3	

B-C3-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4 TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	145.5	125.4
23	200.0	200.0	200.0	175.8	126.6	109.0
26	200.0	200.0	183.5	155.5	112.0	96.4
29	200.0	200.0	164.5	139.4	100.4	86.5
32	200.0	195.7	149.1	126.4	91.0	78.4
35	200.0	178.9	136.3	115.5	83.2	71.6
38	200.0	164.8	125.5	106.4	76.6	66.0
41	200.0	152.7	116.4	98.6	71.0	61.2
44	193.5	142.3	108.4	91.9	66.2	57.0
47	181.1	133.2	101.5	86.0	61.9	53.4
50	170.3	125.2	95.4	80.9	58.2	50.2
53	160.6	118.1	90.0	76.3	54.9	47.3

C-C3-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	200.0	182.2
23	200.0	200.0	200.0	200.0	180.3	158.4
26	200.0	200.0	200.0	188.0	159.5	140.2
29	200.0	200.0	183.1	168.6	143.0	125.7
32	200.0	190.1	165.9	152.8	129.6	113.9
35	200.0	173.8	151.7	139.7	118.5	104.1
38	200.0	160.1	139.7	128.6	109.1	95.9
41	195.7	148.4	129.5	119.2	101.2	88.9
44	182.4	138.3	120.7	111.1	94.3	82.8
47	170.7	129.4	113.0	104.0	88.2	77.5
50	160.5	121.7	106.2	97.8	83.0	72.9
53	151.4	114.8	100.2	92.2	78.3	68.8

C-C3-N=6-STEEL/ALUM.

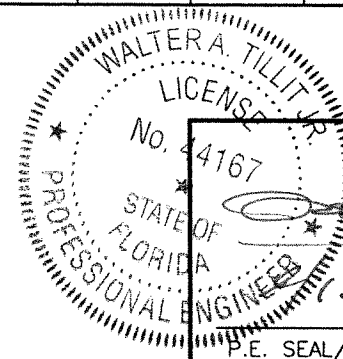
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	200.0	182.2
23	200.0	200.0	200.0	200.0	183.9	158.4
26	200.0	200.0	200.0	200.0	162.7	140.2
29	200.0	200.0	200.0	200.0	145.9	125.7
32	200.0	200.0	200.0	183.6	132.2	113.9
35	200.0	200.0	189.7	167.9	120.9	104.1
38	200.0	200.0	174.8	154.6	111.3	95.9
41	200.0	185.6	162.0	143.3	103.2	88.9
44	200.0	172.9	150.9	133.5	96.1	82.8
47	200.0	161.9	141.3	125.0	90.0	77.5
50	200.0	152.2	132.8	117.5	84.6	72.9
53	189.4	143.6	125.3	110.9	79.8	68.8

G-C3-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	191.3	162.4	99.4
23	200.0	200.0	180.7	166.4	141.2	86.4
26	200.0	183.2	159.9	147.2	124.9	76.4
29	200.0	164.2	143.3	132.0	112.0	68.5
32	196.3	148.8	129.9	119.6	101.5	62.1
35	179.5	136.1	118.8	109.3	92.8	56.8
38	165.3	125.3	109.4	100.7	85.4	52.3
41	153.2	116.2	101.4	93.3	79.2	48.5
44	142.8	108.2	94.5	87.0	73.8	45.2
47	133.7	101.3	88.4	81.4	69.1	42.3
50	125.6	95.2	83.1	76.5	64.9	39.7
53	118.5	89.9	78.4	72.2	61.3	37.5

I-C3-N=10-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
23	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
26	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	188.7
29	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	169.1
32	200.0	200.0	200.0	200.0	200.0	200.0	200.0	183.9	153.3
35	200.0	200.0	200.0	200.0	200.0	200.0	200.0	186.9	140.1
38	200.0	200.0	200.0	200.0	200.0	200.0	193.6	172.1	129.1
41	200.0	200.0	200.0	200.0	200.0	200.0	179.5	159.5	119.6
44	200.0	200.0	200.0	200.0	200.0	200.0	167.2	148.6	111.5
47	200.0	200.0	200.0	200.0	200.0	200.0	156.5	139.1	104.4
50	200.0	200.0	200.0	200.0	190.3	147.2	130.8	117.7	98.1
53	200.0	200.0	200.0	200.0	179.5	138.8	123.4	111.1	92.5



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DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 38 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C3

D-C3-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	200.0	200.0	137.4
23	200.0	200.0	200.0	200.0	183.6	119.5
26	200.0	200.0	200.0	191.5	162.4	105.7
29	200.0	200.0	186.4	171.7	145.6	94.8
32	200.0	193.6	169.0	155.6	132.0	85.9
35	200.0	177.0	154.5	142.2	120.7	78.5
38	200.0	163.0	142.3	131.0	111.1	72.3
41	199.3	151.1	131.9	121.4	103.0	67.0
44	185.7	140.8	122.9	113.1	96.0	62.5
47	173.9	131.8	115.0	105.9	89.9	58.5
50	163.4	123.9	108.1	99.6	84.5	55.0
53	154.2	116.9	102.0	93.9	79.7	51.8

D-C3-N=6-STEEL/ALUM.

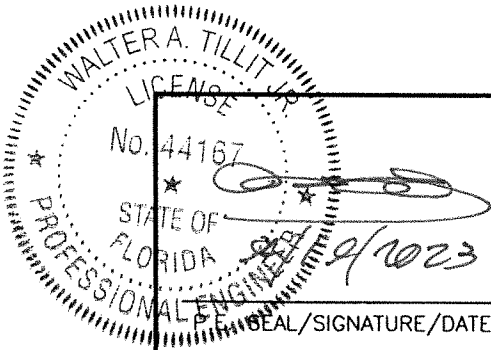
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	200.0	200.0	137.4
23	200.0	200.0	200.0	200.0	199.7	119.5
26	200.0	200.0	200.0	200.0	176.7	105.7
29	200.0	200.0	200.0	200.0	158.4	94.8
32	200.0	200.0	200.0	199.4	143.6	85.9
35	200.0	200.0	200.0	182.3	131.2	78.5
38	200.0	200.0	190.1	167.9	120.9	72.3
41	200.0	200.0	176.2	155.6	112.0	67.0
44	200.0	188.1	164.2	145.0	104.4	62.5
47	200.0	176.1	153.7	135.8	97.7	58.5
50	200.0	165.6	144.5	127.6	91.9	55.0
53	200.0	156.2	136.3	120.4	86.7	51.8

E-C3-N=6-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (6) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	192.6	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	200.0	167.4	135.6	94.2
26	200.0	200.0	200.0	200.0	200.0	187.5	148.1	120.0	83.3
29	200.0	200.0	200.0	200.0	200.0	168.1	132.8	107.6	74.7
32	200.0	200.0	200.0	200.0	200.0	152.3	120.3	97.5	67.7
35	200.0	200.0	200.0	200.0	188.8	139.3	110.0	89.1	61.9
38	200.0	200.0	200.0	200.0	173.9	128.3	101.3	82.1	57.0
41	200.0	200.0	200.0	190.0	161.2	118.9	93.9	76.1	52.8
44	200.0	200.0	192.3	177.0	150.2	110.8	87.5	70.9	49.2
47	200.0	200.0	180.0	165.7	140.6	103.7	81.9	66.4	46.1
50	200.0	193.8	169.2	155.8	132.2	97.5	77.0	62.4	43.3
53	200.0	182.9	159.6	146.9	124.7	92.0	72.7	58.9	40.9

E-C3-N=8-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	192.6	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	200.0	167.4	135.6	94.2
26	200.0	200.0	200.0	200.0	200.0	187.5	148.1	120.0	83.3
29	200.0	200.0	200.0	200.0	200.0	168.1	132.8	107.6	74.7
32	200.0	200.0	200.0	200.0	200.0	152.3	120.3	97.5	67.7
35	200.0	200.0	200.0	200.0	200.0	139.3	110.0	89.1	61.9
38	200.0	200.0	200.0	200.0	200.0	128.3	101.3	82.1	57.0
41	200.0	200.0	200.0	200.0	198.7	118.9	93.9	76.1	52.8
44	200.0	200.0	200.0	200.0	185.2	110.8	87.5	70.9	49.2
47	200.0	200.0	200.0	200.0	173.4	103.7	81.9	66.4	46.1
50	200.0	200.0	200.0	196.1	163.0	97.5	77.0	62.4	43.3
53	200.0	200.0	200.0	185.0	153.7	92.0	72.7	58.9	40.9



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WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 39 OF 60

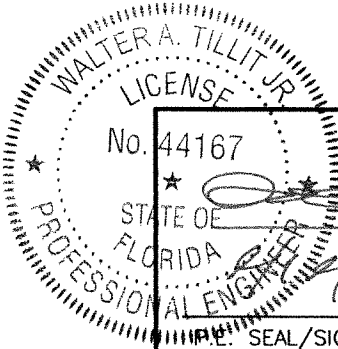
CLIPPED END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C3

F-C3-N=8-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (8) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	197.8
23	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	172.0
26	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	152.1
29	200.0	200.0	200.0	200.0	200.0	200.0	200.0	180.2	136.4
32	200.0	200.0	200.0	200.0	200.0	200.0	181.5	163.3	123.6
35	200.0	200.0	200.0	200.0	200.0	186.7	165.9	149.3	113.0
38	200.0	200.0	200.0	200.0	200.0	171.9	152.8	137.5	104.1
41	200.0	200.0	200.0	200.0	200.0	159.4	141.6	127.5	96.5
44	200.0	200.0	200.0	200.0	192.0	148.5	132.0	118.8	89.9
47	200.0	200.0	200.0	200.0	179.7	139.0	123.6	111.2	84.2
50	200.0	200.0	200.0	199.1	168.9	130.7	116.2	104.5	79.1
53	200.0	200.0	200.0	187.8	159.4	123.3	109.6	98.6	74.6

F-C3-N=10-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (10) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	197.8
23	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	172.0
26	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	152.1
29	200.0	200.0	200.0	200.0	200.0	200.0	200.0	196.4	136.4
32	200.0	200.0	200.0	200.0	200.0	200.0	200.0	178.0	123.6
35	200.0	200.0	200.0	200.0	200.0	200.0	200.0	162.7	113.0
38	200.0	200.0	200.0	200.0	200.0	200.0	185.0	149.9	104.1
41	200.0	200.0	200.0	200.0	200.0	194.0	171.5	138.9	96.5
44	200.0	200.0	200.0	200.0	200.0	180.8	159.8	129.4	89.9
47	200.0	200.0	200.0	200.0	200.0	169.3	149.6	121.2	84.2
50	200.0	200.0	200.0	200.0	200.0	159.1	140.6	113.9	79.1
53	200.0	200.0	200.0	200.0	194.1	150.1	132.7	107.5	74.6



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GIG WINDOWS & DOORS
REV. NO. DESCRIPTION DATE REV. No. DESCRIPTION DATE
1 OLD 20-270 09/12/23 3
2 4

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 40 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE

CONNECTED W/ CLIP (C4)

A-C4-N=2-WOOD

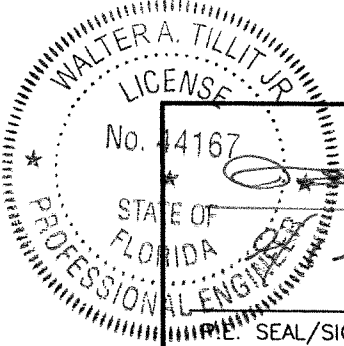
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 UL TRACONS EACH END OF MULLION					
Tributary Width (b)	Mullion Length (L)				
	38.375	50.625	58	63	
20	91.6	69.4	60.6	55.8	
23	79.6	60.4	52.7	48.5	
26	70.4	53.4	46.6	42.9	
29	63.1	47.9	41.8	38.5	
32	57.2	43.4	37.9	34.9	
35	52.3	39.7	34.6	31.9	
38	48.2	36.5	31.9	29.4	
41	44.7	33.9	29.6	27.2	
44	41.6	31.5	27.5	25.4	
47	39.0	29.5	25.8	23.7	
50	36.6	27.8	24.2	22.3	
53	34.6	26.2	22.9	21.0	
56	32.7	24.8	21.6	19.9	
59	31.0	23.5	20.5	18.9	
62	29.5	22.4	19.5	18.0	
65	28.2	21.4	18.6	17.2	
68	26.9	20.4	17.8	16.4	
71	25.8	19.6	17.1	15.7	
74	24.7	18.8	16.4	15.1	
77	23.8	18.0	15.7	14.5	
80	22.9	17.4	15.1	13.9	
83	22.1	16.7	14.6	13.4	
86	21.3	16.1	14.1	13.0	
89	20.6	15.6	13.6	12.5	
92	19.9	15.1	13.2	12.1	
95	19.3	14.6	12.8	11.7	
98	18.7	14.2	12.4	11.4	
101	18.1	13.7	12.0	11.0	
104	17.6	13.3	11.6	10.7	

B-C4-N=2-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 UL TRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	91.6	69.4	60.6	55.8	47.3	43.9
23	79.6	60.4	52.7	48.5	41.1	38.2
26	70.4	53.4	46.6	42.9	36.4	33.8
29	63.1	47.9	41.8	38.5	32.6	30.3
32	57.2	43.4	37.9	34.9	29.6	27.5
35	52.3	39.7	34.6	31.9	27.0	25.1
38	48.2	36.5	31.9	29.4	24.9	23.1
41	44.7	33.9	29.6	27.2	23.1	21.4
44	41.6	31.5	27.5	25.4	21.5	20.0
47	39.0	29.5	25.8	23.7	20.1	18.7
50	36.6	27.8	24.2	22.3	18.9	17.6
53	34.6	26.2	22.9	21.0	17.9	16.6
56	32.7	24.8	21.6	19.9	16.9	15.7
59	31.0	23.5	20.5	18.9	16.0	14.9
62	29.5	22.4	19.5	18.0	15.3	14.2
65	28.2	21.4	18.6	17.2	14.6	13.5
68	26.9	20.4	17.8	16.4	13.9	12.9
71	25.8	19.6	17.1	15.7	13.3	12.4
74	24.7	18.8	16.4	15.1	12.8	11.9
77	23.8	18.0	15.7	14.5	12.3	11.4
80	22.9	17.4	15.1	13.9	11.8	11.0
83	22.1	16.7	14.6	13.4	11.4	10.6
86	21.3	16.1	14.1	13.0	11.0	10.2
89	20.6	15.6	13.6	12.5	10.6	9.9
92	19.9	15.1	13.2	12.1	10.3	9.5
95	19.3	14.6	12.8	11.7	10.0	9.2
98	18.7	14.2	12.4	11.4	9.7	9.0
101	18.1	13.7	12.0	11.0	9.4	8.7
104	17.6	13.3	11.6	10.7	9.1	8.4

C-C4-N=2-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" UL TRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	91.6	69.4	60.6	55.8	47.3	43.9
23	79.6	60.4	52.7	48.5	41.1	38.2
26	70.4	53.4	46.6	42.9	36.4	33.8
29	63.1	47.9	41.8	38.5	32.6	30.3
32	57.2	43.4	37.9	34.9	29.6	27.5
35	52.3	39.7	34.6	31.9	27.0	25.1
38	48.2	36.5	31.9	29.4	24.9	23.1
41	44.7	33.9	29.6	27.2	23.1	21.4
44	41.6	31.5	27.5	25.4	21.5	20.0
47	39.0	29.5	25.8	23.7	20.1	18.7
50	36.6	27.8	24.2	22.3	18.9	17.6
53	34.6	26.2	22.9	21.0	17.9	16.6
56	32.7	24.8	21.6	19.9	16.9	15.7
59	31.0	23.5	20.5	18.9	16.0	14.9
62	29.5	22.4	19.5	18.0	15.3	14.2
65	28.2	21.4	18.6	17.2	14.6	13.5
68	26.9	20.4	17.8	16.4	13.9	12.9
71	25.8	19.6	17.1	15.7	13.3	12.4
74	24.7	18.8	16.4	15.1	12.8	11.9
77	23.8	18.0	15.7	14.5	12.3	11.4
80	22.9	17.4	15.1	13.9	11.8	11.0
83	22.1	16.7	14.6	13.4	11.4	10.6
86	21.3	16.1	14.1	13.0	11.0	10.2
89	20.6	15.6	13.6	12.5	10.6	9.9
92	19.9	15.1	13.2	12.1	10.3	9.5
95	19.3	14.6	12.8	11.7	10.0	9.2
98	18.7	14.2	12.4	11.4	9.7	9.0
101	18.1	13.7	12.0	11.0	9.4	8.7
104	17.6	13.3	11.6	10.7	9.1	8.4



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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY: W.H.
09/12/2023 DATE
23-212
DRAWING No
SHEET 41 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE CONNECTED W/ CLIP (C4)

C-C4-N=3-WOOD

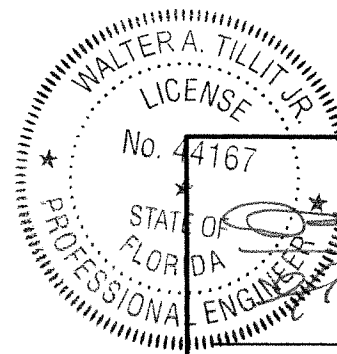
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" x 3/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	137.3	104.1	90.9	83.7	71.0	65.9
23	119.4	90.5	79.0	72.7	61.7	57.3
26	105.6	80.1	69.9	64.4	54.6	50.7
29	94.7	71.8	62.7	57.7	49.0	45.4
32	85.8	65.1	56.8	52.3	44.4	41.2
35	78.5	59.5	51.9	47.8	40.6	37.6
38	72.3	54.8	47.8	44.0	37.4	34.7
41	67.0	50.8	44.3	40.8	34.6	32.1
44	62.4	47.3	41.3	38.0	32.3	29.9
47	58.4	44.3	38.7	35.6	30.2	28.0
50	54.9	41.6	36.3	33.5	28.4	26.4
53	51.8	39.3	34.3	31.6	26.8	24.9
56	49.0	37.2	32.5	29.9	25.4	23.5
59	46.6	35.3	30.8	28.4	24.1	22.3
62	44.3	33.6	29.3	27.0	22.9	21.3
65	42.3	32.0	28.0	25.7	21.8	20.3
68	40.4	30.6	26.7	24.6	20.9	19.4
71	38.7	29.3	25.6	23.6	20.0	18.6
74	37.1	28.1	24.6	22.6	19.2	17.8
77	35.7	27.0	23.6	21.7	18.4	17.1
80	34.3	26.0	22.7	20.9	17.7	16.5
83	33.1	25.1	21.9	20.2	17.1	15.9
86	31.9	24.2	21.1	19.5	16.5	15.3
89	30.9	23.4	20.4	18.8	16.0	14.8
92	29.9	22.6	19.8	18.2	15.4	14.3
95	28.9	21.9	19.1	17.6	14.9	13.9
98	28.0	21.2	18.5	17.1	14.5	13.4
101	27.2	20.6	18.0	16.6	14.1	13.0
104	26.4	20.0	17.5	16.1	13.7	12.7

D-C4-N=2-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	91.6	69.4	60.6	55.8	47.3	36.6
23	79.6	60.4	52.7	48.5	41.1	31.8
26	70.4	53.4	46.6	42.9	36.4	28.2
29	63.1	47.9	41.8	38.5	32.6	25.2
32	57.2	43.4	37.9	34.9	29.6	22.9
35	52.3	39.7	34.6	31.9	27.0	20.9
38	48.2	36.5	31.9	29.4	24.9	19.3
41	44.7	33.9	29.6	27.2	23.1	17.9
44	41.6	31.5	27.5	25.4	21.5	16.6
47	39.0	29.5	25.8	23.7	20.1	15.6
50	36.6	27.8	24.2	22.3	18.9	14.6
53	34.6	26.2	22.9	21.0	17.9	13.8
56	32.7	24.8	21.6	19.9	16.9	13.1
59	31.0	23.5	20.5	18.9	16.0	12.4
62	29.5	22.4	19.5	18.0	15.3	11.8
65	28.2	21.4	18.6	17.2	14.6	11.3
68	26.9	20.4	17.8	16.4	13.9	10.8
71	25.8	19.6	17.1	15.7	13.3	10.3
74	24.7	18.8	16.4	15.1	12.8	9.9
77	23.8	18.0	15.7	14.5	12.3	9.5
80	22.9	17.4	15.1	13.9	11.8	9.2
83	22.1	16.7	14.6	13.4	11.4	8.8
86	21.3	16.1	14.1	13.0	11.0	8.5
89	20.6	15.6	13.6	12.5	10.6	8.2
92	19.9	15.1	13.2	12.1	10.3	8.0
95	19.3	14.6	12.8	11.7	10.0	7.7
98	18.7	14.2	12.4	11.4	9.7	7.5
101	18.1	13.7	12.0	11.0	9.4	7.2
104	17.6	13.3	11.6	10.7	9.1	7.0

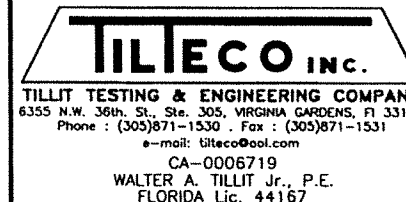
D-C4-N=3-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	137.3	104.1	90.9	83.7	71.0	54.9
23	119.4	90.5	79.0	72.7	61.7	47.7
26	105.6	80.1	69.9	64.4	54.6	42.2
29	94.7	71.8	62.7	57.7	49.0	37.9
32	85.8	65.1	56.8	52.3	44.4	34.3
35	78.5	59.5	51.9	47.8	40.6	31.4
38	72.3	54.8	47.8	44.0	37.4	28.9
41	67.0	50.8	44.3	40.8	34.6	26.8
44	62.4	47.3	41.3	38.0	32.3	25.0
47	58.4	44.3	38.7	35.6	30.2	23.4
50	54.9	41.6	36.3	33.5	28.4	22.0
53	51.8	39.3	34.3	31.6	26.8	20.7
56	49.0	37.2	32.5	29.9	25.4	19.6
59	46.6	35.3	30.8	28.4	24.1	18.6
62	44.3	33.6	29.3	27.0	22.9	17.7
65	42.3	32.0	28.0	25.7	21.8	16.9
68	40.4	30.6	26.7	24.6	20.9	16.1
71	38.7	29.3	25.6	23.6	20.0	15.5
74	37.1	28.1	24.6	22.6	19.2	14.8
77	35.7	27.0	23.6	21.7	18.4	14.3
80	34.3	26.0	22.7	20.9	17.7	13.7
83	33.1	25.1	21.9	20.2	17.1	13.2
86	31.9	24.2	21.1	19.5	16.5	12.8
89	30.9	23.4	20.4	18.8	16.0	12.3
92	29.9	22.6	19.8	18.2	15.4	11.9
95	28.9	21.9	19.1	17.6	14.9	11.6
98	28.0	21.2	18.5	17.1	14.5	11.2
101	27.2	20.6	18.0	16.6	14.1	10.9
104	26.4	20.0	17.5	16.1	13.7	10.6



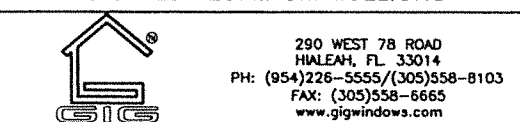
P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 42 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE

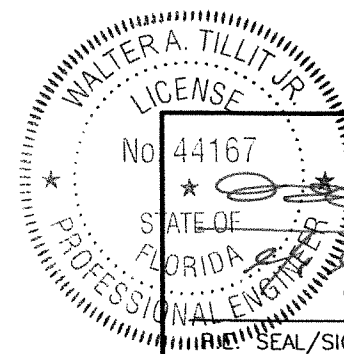
CONNECTED W/ CLIP (C4)

E-C4-N=3-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	137.3	104.1	90.9	83.7	71.0	54.9	48.8	43.9	36.6
23	119.4	90.5	79.0	72.7	61.7	47.7	42.4	38.2	31.8
26	105.6	80.1	69.9	64.4	54.6	42.2	37.5	33.8	28.2
29	94.7	71.8	62.7	57.7	49.0	37.9	33.7	30.3	25.2
32	85.8	65.1	56.8	52.3	44.4	34.3	30.5	27.5	22.9
35	78.5	59.5	51.9	47.8	40.6	31.4	27.9	25.1	20.9
38	72.3	54.8	47.8	44.0	37.4	28.9	25.7	23.1	19.3
41	67.0	50.8	44.3	40.8	34.6	26.8	23.8	21.4	17.9
44	62.4	47.3	41.3	38.0	32.3	25.0	22.2	20.0	16.6
47	58.4	44.3	38.7	35.6	30.2	23.4	20.8	18.7	15.6
50	54.9	41.6	36.3	33.5	28.4	22.0	19.5	17.6	14.6
53	51.8	39.3	34.3	31.6	26.8	20.7	18.4	16.6	13.8
56	49.0	37.2	32.5	29.9	25.4	19.6	17.4	15.7	13.1
59	46.6	35.3	30.8	28.4	24.1	18.6	16.5	14.9	12.4
62	44.3	33.6	29.3	27.0	22.9	17.7	15.7	14.2	11.8
65	42.3	32.0	28.0	25.7	21.8	16.9	15.0	13.5	11.3
68	40.4	30.6	26.7	24.6	20.9	16.1	14.4	12.9	10.8
71	38.7	29.3	25.6	23.6	20.0	15.5	13.7	12.4	10.3
74	37.1	28.1	24.6	22.6	19.2	14.8	13.2	11.9	9.9
77	35.7	27.0	23.6	21.7	18.4	14.3	12.7	11.4	9.5
80	34.3	26.0	22.7	20.9	17.7	13.7	12.2	11.0	9.2
83	33.1	25.1	21.9	20.2	17.1	13.2	11.8	10.6	8.8
86	31.9	24.2	21.1	19.5	16.5	12.8	11.3	10.2	8.5
89	30.9	23.4	20.4	18.8	16.0	12.3	11.0	9.9	8.2
92	29.9	22.6	19.8	18.2	15.4	11.9	10.6	9.5	8.0
95	28.9	21.9	19.1	17.6	14.9	11.6	10.3	9.2	7.7
98	28.0	21.2	18.5	17.1	14.5	11.2	10.0	9.0	7.5
101	27.2	20.6	18.0	16.6	14.1	10.9	9.7	8.7	7.2
104	26.4	20.0	17.5	16.1	13.7	10.6	9.4	8.4	7.0

E-C4-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	183.1	138.8	121.2	111.5	94.6	73.2	65.1	58.6	48.8
23	159.2	120.7	105.4	97.0	82.3	63.7	56.6	50.9	42.4
26	140.9	106.8	93.2	85.8	72.8	56.3	50.1	45.0	37.5
29	126.3	95.7	83.6	76.9	65.3	50.5	44.9	40.4	33.7
32	114.4	86.8	75.7	69.7	59.2	45.8	40.7	36.6	30.5
35	104.6	79.3	69.2	63.7	54.1	41.8	37.2	33.5	27.9
38	96.4	73.1	63.8	58.7	49.8	38.5	34.2	30.8	25.7
41	89.3	67.7	59.1	54.4	46.2	35.7	31.7	28.6	23.8
44	83.2	63.1	55.1	50.7	43.0	33.3	29.6	26.6	22.2
47	77.9	59.1	51.6	47.5	40.3	31.1	27.7	24.9	20.8
50	73.2	55.5	48.5	44.6	37.9	29.3	26.0	23.4	19.5
53	69.1	52.4	45.7	42.1	35.7	27.6	24.6	22.1	18.4
56	65.4	49.6	43.3	39.8	33.8	26.1	23.2	20.9	17.4
59	62.1	47.1	41.1	37.8	32.1	24.8	22.1	19.9	16.5
62	59.1	44.8	39.1	36.0	30.5	23.6	21.0	18.9	15.7
65	56.3	42.7	37.3	34.3	29.1	22.5	20.0	18.0	15.0
68	53.9	40.8	35.6	32.8	27.8	21.5	19.1	17.2	14.4
71	51.6	39.1	34.1	31.4	26.7	20.6	18.3	16.5	13.7
74	49.5	37.5	32.7	30.1	25.6	19.8	17.6	15.8	13.2
77	47.6	36.1	31.5	29.0	24.6	19.0	16.9	15.2	12.7
80	45.8	34.7	30.3	27.9	23.7	18.3	16.3	14.6	12.2
83	44.1	33.4	29.2	26.9	22.8	17.6	15.7	14.1	11.8
86	42.6	32.3	28.2	25.9	22.0	17.0	15.1	13.6	11.3
89	41.2	31.2	27.2	25.1	21.3	16.4	14.6	13.2	11.0
92	39.8	30.2	26.3	24.2	20.6	15.9	14.1	12.7	10.6
95	38.6	29.2	25.5	23.5	19.9	15.4	13.7	12.3	10.3
98	37.4	28.3	24.7	22.8	19.3	14.9	13.3	12.0	10.0
101	36.3	27.5	24.0	22.1	18.7	14.5	12.9	11.6	9.7
104	35.2	26.7	23.3	21.5	18.2	14.1	12.5	11.3	9.4



SEAL/SIGNATURE/DATE

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TILLIT TESTING & ENGINEERING COMPANY
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e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



290 WEST 78 ROAD
HIALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
www.gigwindows.com

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 43 OF 60

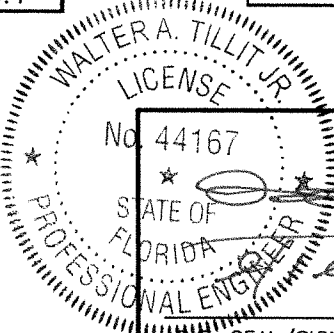
CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIP (C4)

F-C4-N=4-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	183.1	138.8	121.2	111.5	94.6	73.2	65.1	58.6	48.8
23	159.2	120.7	105.4	97.0	82.3	63.7	56.6	50.9	42.4
26	140.9	106.8	93.2	85.8	72.8	56.3	50.1	45.0	37.5
29	126.3	95.7	83.6	76.9	65.3	50.5	44.9	40.4	33.7
32	114.4	86.8	75.7	69.7	59.2	45.8	40.7	36.6	30.5
35	104.6	79.3	69.2	63.7	54.1	41.8	37.2	33.5	27.9
38	96.4	73.1	63.8	58.7	49.8	38.5	34.2	30.8	25.7
41	89.3	67.7	59.1	54.4	46.2	35.7	31.7	28.6	23.8
44	83.2	63.1	55.1	50.7	43.0	33.3	29.6	26.6	22.2
47	77.9	59.1	51.6	47.5	40.3	31.1	27.7	24.9	20.8
50	73.2	55.5	48.5	44.6	37.9	29.3	26.0	23.4	19.5
53	69.1	52.4	45.7	42.1	35.7	27.6	24.6	22.1	18.4
56	65.4	49.6	43.3	39.8	33.8	26.1	23.2	20.9	17.4
59	62.1	47.1	41.1	37.8	32.1	24.8	22.1	19.9	16.5
62	59.1	44.8	39.1	36.0	30.5	23.6	21.0	18.9	15.7
65	56.3	42.7	37.3	34.3	29.1	22.5	20.0	18.0	15.0
68	53.9	40.8	35.6	32.8	27.8	21.5	19.1	17.2	14.4
71	51.6	39.1	34.1	31.4	26.7	20.6	18.3	16.5	13.7
74	49.5	37.5	32.7	30.1	25.6	19.8	17.6	15.8	13.2
77	47.6	36.1	31.5	29.0	24.6	19.0	16.9	15.2	12.7
80	45.8	34.7	30.3	27.9	23.7	18.3	16.3	14.6	12.2
83	44.1	33.4	29.2	26.9	22.8	17.6	15.7	14.1	11.8
86	42.6	32.3	28.2	25.9	22.0	17.0	15.1	13.6	11.3
89	41.2	31.2	27.2	25.1	21.3	16.4	14.6	13.2	11.0
92	39.8	30.2	26.3	24.2	20.6	15.9	14.1	12.7	10.6
95	38.6	29.2	25.5	23.5	19.9	15.4	13.7	12.3	10.3
98	37.4	28.3	24.7	22.8	19.3	14.9	13.3	12.0	10.0
101	36.3	27.5	24.0	22.1	18.7	14.5	12.9	11.6	9.7
104	35.2	26.7	23.3	21.5	18.2	14.1	12.5	11.3	9.4

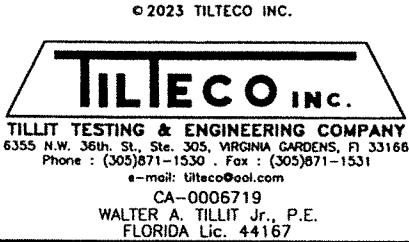
F-C4-N=5-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (5) 1/4" ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	173.5	151.4	139.4	118.3	91.5	81.3	73.2	61.0
23	199.0	150.9	131.7	121.2	102.9	79.6	70.7	63.7	53.0
26	176.1	133.5	116.5	107.3	91.0	70.4	62.6	56.3	46.9
29	157.9	119.7	104.4	96.2	81.6	63.1	56.1	50.5	42.1
32	143.1	108.4	94.7	87.1	73.9	57.2	50.8	45.8	38.1
35	130.8	99.1	86.5	79.7	67.6	52.3	46.5	41.8	34.9
38	120.5	91.3	79.7	73.4	62.3	48.2	42.8	38.5	32.1
41	111.7	84.6	73.9	68.0	57.7	44.6	39.7	35.7	29.8
44	104.0	78.9	68.8	63.4	53.8	41.6	37.0	33.3	27.7
47	97.4	73.8	64.4	59.3	50.3	38.9	34.6	31.1	26.0
50	91.6	69.4	60.6	55.8	47.3	36.6	32.5	29.3	24.4
53	86.4	65.5	57.2	52.6	44.6	34.5	30.7	27.6	23.0
56	81.7	62.0	54.1	49.8	42.3	32.7	29.0	26.1	21.8
59	77.6	58.8	51.3	47.3	40.1	31.0	27.6	24.8	20.7
62	73.8	56.0	48.9	45.0	38.2	29.5	26.2	23.6	19.7
65	70.4	53.4	46.6	42.9	36.4	28.2	25.0	22.5	18.8
68	67.3	51.0	44.5	41.0	34.8	26.9	23.9	21.5	17.9
71	64.5	48.9	42.7	39.3	33.3	25.8	22.9	20.6	17.2
74	61.9	46.9	40.9	37.7	32.0	24.7	22.0	19.8	16.5
77	59.5	45.1	39.3	36.2	30.7	23.8	21.1	19.0	15.8
80	57.2	43.4	37.9	34.9	29.6	22.9	20.3	18.3	15.3
83	55.2	41.8	36.5	33.6	28.5	22.0	19.6	17.6	14.7
86	53.2	40.4	35.2	32.4	27.5	21.3	18.9	17.0	14.2
89	51.4	39.0	34.0	31.3	26.6	20.6	18.3	16.4	13.7
92	49.8	37.7	32.9	30.3	25.7	19.9	17.7	15.9	13.3
95	48.2	36.5	31.9	29.4	24.9	19.3	17.1	15.4	12.8
98	46.7	35.4	30.9	28.5	24.1	18.7	16.6	14.9	12.4
101	45.3	34.4	30.0	27.6	23.4	18.1	16.1	14.5	12.1
104	44.0	33.4	29.1	26.8	22.8	17.6	15.6	14.1	11.7



P.E. SEAL/SIGNATURE/DATE

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)



SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS				DRAWN BY: W.H.	
 290 WEST 78 ROAD HALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com				09/12/2023 DATE	
				23-212 DRAWING No	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		
				SHEET 44 OF 60	

CLIPPED INTERIOR & END MULLIONS CHARTS INTO WOOD SUBSTRATE
CONNECTED W/ CLIP C4

G-C4-N=2-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" ULTRACONS EACH END OF						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	91.6	69.4	60.6	55.8	47.3	36.6
23	79.6	60.4	52.7	48.5	41.1	31.8
26	70.4	53.4	46.6	42.9	36.4	28.2
29	63.1	47.9	41.8	38.5	32.6	25.2
32	57.2	43.4	37.9	34.9	29.6	22.9
35	52.3	39.7	34.6	31.9	27.0	20.9
38	48.2	36.5	31.9	29.4	24.9	19.3
41	44.7	33.9	29.6	27.2	23.1	17.9
44	41.6	31.5	27.5	25.4	21.5	16.6
47	39.0	29.5	25.8	23.7	20.1	15.6
50	36.6	27.8	24.2	22.3	18.9	14.6
53	34.6	26.2	22.9	21.0	17.9	13.8
56	32.7	24.8	21.6	19.9	16.9	13.1
59	31.0	23.5	20.5	18.9	16.0	12.4
62	29.5	22.4	19.5	18.0	15.3	11.8
65	28.2	21.4	18.6	17.2	14.6	11.3
68	26.9	20.4	17.8	16.4	13.9	10.8
71	25.8	19.6	17.1	15.7	13.3	10.3
74	24.7	18.8	16.4	15.1	12.8	9.9
77	23.8	18.0	15.7	14.5	12.3	9.5
80	22.9	17.4	15.1	13.9	11.8	9.2
83	22.1	16.7	14.6	13.4	11.4	8.8
86	21.3	16.1	14.1	13.0	11.0	8.5
89	20.6	15.6	13.6	12.5	10.6	8.2
92	19.9	15.1	13.2	12.1	10.3	8.0
95	19.3	14.6	12.8	11.7	10.0	7.7
98	18.7	14.2	12.4	11.4	9.7	7.5
101	18.1	13.7	12.0	11.0	9.4	7.2
104	17.6	13.3	11.6	10.7	9.1	7.0

I-C4-N=5-WOOD

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (5) 1/4" ELCO ULTRACONS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	173.5	151.4	139.4	118.3	91.5	81.3	73.2	61.0
23	199.0	150.9	131.7	121.2	102.9	79.6	70.7	63.7	53.0
26	176.1	133.5	116.5	107.3	91.0	70.4	62.6	56.3	46.9
29	157.9	119.7	104.4	96.2	81.6	63.1	56.1	50.5	42.1
32	143.1	108.4	94.7	87.1	73.9	57.2	50.8	45.8	38.1
35	130.8	99.1	86.5	79.7	67.6	52.3	46.5	41.8	34.9
38	120.5	91.3	79.7	73.4	62.3	48.2	42.8	38.5	32.1
41	111.7	84.6	73.9	68.0	57.7	44.6	39.7	35.7	29.8
44	104.0	78.9	68.8	63.4	53.8	41.6	37.0	33.3	27.7
47	97.4	73.8	64.4	59.3	50.3	38.9	34.6	31.1	26.0
50	91.6	69.4	60.6	55.8	47.3	36.6	32.5	29.3	24.4
53	86.4	65.5	57.2	52.6	44.6	34.5	30.7	27.6	23.0
56	81.7	62.0	54.1	49.8	42.3	32.7	29.0	26.1	21.8
59	77.6	58.8	51.3	47.3	40.1	31.0	27.6	24.8	20.7
62	73.8	56.0	48.9	45.0	38.2	29.5	26.2	23.6	19.7
65	70.4	53.4	46.6	42.9	36.4	28.2	25.0	22.5	18.8
68	67.3	51.0	44.5	41.0	34.8	26.9	23.9	21.5	17.9
71	64.5	48.9	42.7	39.3	33.3	25.8	22.9	20.6	17.2
74	61.9	46.9	40.9	37.7	32.0	24.7	22.0	19.8	16.5
77	59.5	45.1	39.3	36.2	30.7	23.8	21.1	19.0	15.8
80	57.2	43.4	37.9	34.9	29.6	22.9	20.3	18.3	15.3
83	55.2	41.8	36.5	33.6	28.5	22.0	19.6	17.6	14.7
86	53.2	40.4	35.2	32.4	27.5	21.3	18.9	17.0	14.2
89	51.4	39.0	34.0	31.3	26.6	20.6	18.3	16.4	13.7
92	49.8	37.7	32.9	30.3	25.7	19.9	17.7	15.9	13.3
95	48.2	36.5	31.9	29.4	24.9	19.3	17.1	15.4	12.8
98	46.7	35.4	30.9	28.5	24.1	18.7	16.6	14.9	12.4
101	45.3	34.4	30.0	27.6	23.4	18.1	16.1	14.5	12.1
104	44.0	33.4	29.1	26.8	22.8	17.6	15.6	14.1	11.7

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

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TILTECO INC.

TILLIT TESTING & ENGINEERING COMPANY
6355 N.W. 36th St., Ste. 305, VIRGINIA GARDENS, FL 33166
Phone : (305)871-1530 . Fax : (305)871-1531
e-mail: tilteco@aol.com
CA-0006719
WALTER A. TILLIT JR., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



290 WEST 78 ROAD
HALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 45 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE

CONNECTED W/ CLIP C4

A-C4-N=2-BLOCK

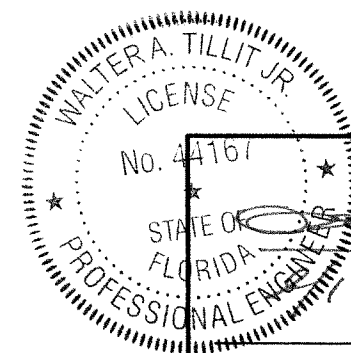
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION					
Tributary Width (b)	Mullion Length (L)				
	38.375	50.625	58	63	
20	75.0	56.9	49.7	45.7	
23	65.3	49.5	43.2	39.8	
26	57.7	43.8	38.2	35.2	
29	51.8	39.2	34.2	31.5	
32	46.9	35.6	31.0	28.6	
35	42.9	32.5	28.4	26.1	
38	39.5	29.9	26.1	24.1	
41	36.6	27.8	24.2	22.3	
44	34.1	25.9	22.6	20.8	
47	31.9	24.2	21.1	19.5	
50	30.0	22.8	19.9	18.3	
53	28.3	21.5	18.7	17.3	
56	26.8	20.3	17.7	16.3	
59	25.4	19.3	16.8	15.5	
62	24.2	18.4	16.0	14.7	
65	23.1	17.5	15.3	14.1	
68	22.1	16.7	14.6	13.4	
71	21.1	16.0	14.0	12.9	
74	20.3	15.4	13.4	12.4	
77	19.5	14.8	12.9	11.9	
80	18.8	14.2	12.4	11.4	
83	18.1	13.7	12.0	11.0	
86	17.5	13.2	11.5	10.6	
89	16.9	12.8	11.2	10.3	
92	16.3	12.4	10.8	9.9	
95	15.8	12.0	10.5	9.6	
98	15.3	11.6	10.1	9.3	
101	14.9	11.3	9.8	9.1	
104	14.4	10.9	9.5	8.8	

B-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION							
Tributary Width (b)	Mullion Length (L)						
	38.375	50.625	58	63	74.25	80	
20	112.6	85.3	74.5	68.6	58.2	54.0	
23	97.9	74.2	64.8	59.6	50.6	47.0	
26	86.6	65.6	57.3	52.7	44.8	41.5	
29	77.6	58.9	51.4	47.3	40.1	37.2	
32	70.4	53.3	46.6	42.9	36.4	33.8	
35	64.3	48.8	42.6	39.2	33.2	30.9	
38	59.2	44.9	39.2	36.1	30.6	28.4	
41	54.9	41.6	36.3	33.4	28.4	26.3	
44	51.2	38.8	33.9	31.2	26.4	24.5	
47	47.9	36.3	31.7	29.2	24.8	23.0	
50	45.0	34.1	29.8	27.4	23.3	21.6	
53	42.5	32.2	28.1	25.9	22.0	20.4	
56	40.2	30.5	26.6	24.5	20.8	19.3	
59	38.2	28.9	25.2	23.2	19.7	18.3	
62	36.3	27.5	24.0	22.1	18.8	17.4	
65	34.6	26.3	22.9	21.1	17.9	16.6	
68	33.1	25.1	21.9	20.2	17.1	15.9	
71	31.7	24.0	21.0	19.3	16.4	15.2	
74	30.4	23.1	20.1	18.5	15.7	14.6	
77	29.2	22.2	19.3	17.8	15.1	14.0	
80	28.1	21.3	18.6	17.1	14.5	13.5	
83	27.1	20.6	17.9	16.5	14.0	13.0	
86	26.2	19.8	17.3	15.9	13.5	12.6	
89	25.3	19.2	16.7	15.4	13.1	12.1	
92	24.5	18.6	16.2	14.9	12.6	11.7	
95	23.7	18.0	15.7	14.4	12.2	11.4	
98	23.0	17.4	15.2	14.0	11.9	11.0	
101	22.3	16.9	14.7	13.6	11.5	10.7	
104	21.6	16.4	14.3	13.2	11.2	10.4	

C-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION							
Tributary Width (b)	Mullion Length (L)						
	38.375	50.625	58	63	74.25	80	
20	112.6	85.3	74.5	68.6	58.2	54.0	
23	97.9	74.2	64.8	59.6	50.6	47.0	
26	86.6	65.6	57.3	52.7	44.8	41.5	
29	77.6	58.9	51.4	47.3	40.1	37.2	
32	70.4	53.3	46.6	42.9	36.4	33.8	
35	64.3	48.8	42.6	39.2	33.2	30.9	
38	59.2	44.9	39.2	36.1	30.6	28.4	
41	54.9	41.6	36.3	33.4	28.4	26.3	
44	51.2	38.8	33.9	31.2	26.4	24.5	
47	47.9	36.3	31.7	29.2	24.8	23.0	
50	45.0	34.1	29.8	27.4	23.3	21.6	
53	42.5	32.2	28.1	25.9	22.0	20.4	
56	40.2	30.5	26.6	24.5	20.8	19.3	
59	38.2	28.9	25.2	23.2	19.7	18.3	
62	36.3	27.5	24.0	22.1	18.8	17.4	
65	34.6	26.3	22.9	21.1	17.9	16.6	
68	33.1	25.1	21.9	20.2	17.1	15.9	
71	31.7	24.0	21.0	19.3	16.4	15.2	
74	30.4	23.1	20.1	18.5	15.7	14.6	
77	29.2	22.2	19.3	17.8	15.1	14.0	
80	28.1	21.3	18.6	17.1	14.5	13.5	
83	27.1	20.6	17.9	16.5	14.0	13.0	
86	26.2	19.8	17.3	15.9	13.5	12.6	
89	25.3	19.2	16.7	15.4	13.1	12.1	
92	24.5	18.6	16.2	14.9	12.6	11.7	
95	23.7	18.0	15.7	14.4	12.2	11.4	
98	23.0	17.4	15.2	14.0	11.9	11.0	
101	22.3	16.9	14.7	13.6	11.5	10.7	
104	21.6	16.4	14.3	13.2	11.2	10.4	



P.E. SEAL/SIGNATURE/DATE

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FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

DRAWN BY:
W.H.

09/12/2023
DATE

23-212

DRAWING No

SHEET 46 OF 60



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www.gigwindows.com

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE

CONNECTED W/ CLIP (C4)

D-C4-N=2-BLOCK

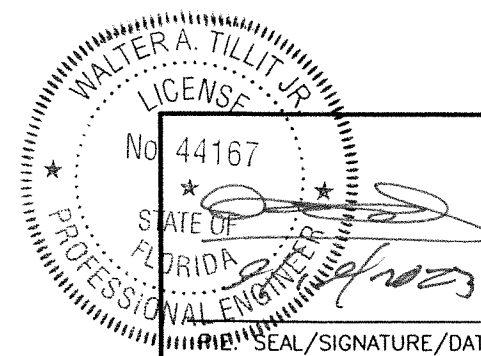
A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	112.6	85.3	74.5	68.6	58.2	45.0
23	97.9	74.2	64.8	59.6	50.6	39.1
26	86.6	65.6	57.3	52.7	44.8	34.6
29	77.6	58.9	51.4	47.3	40.1	31.0
32	70.4	53.3	46.6	42.9	36.4	28.1
35	64.3	48.8	42.6	39.2	33.2	25.7
38	59.2	44.9	39.2	36.1	30.6	23.7
41	54.9	41.6	36.3	33.4	28.4	22.0
44	51.2	38.8	33.9	31.2	26.4	20.5
47	47.9	36.3	31.7	29.2	24.8	19.1
50	45.0	34.1	29.8	27.4	23.3	18.0
53	42.5	32.2	28.1	25.9	22.0	17.0
56	40.2	30.5	26.6	24.5	20.8	16.1
59	38.2	28.9	25.2	23.2	19.7	15.3
62	36.3	27.5	24.0	22.1	18.8	14.5
65	34.6	26.3	22.9	21.1	17.9	13.8
68	33.1	25.1	21.9	20.2	17.1	13.2
71	31.7	24.0	21.0	19.3	16.4	12.7
74	30.4	23.1	20.1	18.5	15.7	12.2
77	29.2	22.2	19.3	17.8	15.1	11.7
80	28.1	21.3	18.6	17.1	14.5	11.3
83	27.1	20.6	17.9	16.5	14.0	10.8
86	26.2	19.8	17.3	15.9	13.5	10.5
89	25.3	19.2	16.7	15.4	13.1	10.1
92	24.5	18.6	16.2	14.9	12.6	9.8
95	23.7	18.0	15.7	14.4	12.2	9.5
98	23.0	17.4	15.2	14.0	11.9	9.2
101	22.3	16.9	14.7	13.6	11.5	8.9
104	21.6	16.4	14.3	13.2	11.2	8.7

F-C4-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	150.1	113.8	99.3	91.4	77.6	60.0	53.3	48.0	40.0
23	130.5	98.9	86.4	79.5	67.5	52.2	46.4	41.7	34.8
26	115.5	87.5	76.4	70.3	59.7	46.2	41.0	36.9	30.8
29	103.5	78.5	68.5	63.1	53.5	41.4	36.8	33.1	27.6
32	93.8	71.1	62.1	57.1	48.5	37.5	33.3	30.0	25.0
35	85.8	65.0	56.7	52.2	44.3	34.3	30.5	27.4	22.9
38	79.0	59.9	52.3	48.1	40.8	31.6	28.1	25.3	21.1
41	73.2	55.5	48.4	44.6	37.8	29.3	26.0	23.4	19.5
44	68.2	51.7	45.1	41.6	35.3	27.3	24.2	21.8	18.2
47	63.9	48.4	42.3	38.9	33.0	25.5	22.7	20.4	17.0
50	60.0	45.5	39.7	36.6	31.0	24.0	21.3	19.2	16.0
53	56.6	42.9	37.5	34.5	29.3	22.6	20.1	18.1	15.1
56	53.6	40.6	35.5	32.7	27.7	21.4	19.0	17.1	14.3
59	50.9	38.6	33.7	31.0	26.3	20.3	18.1	16.3	13.6
62	48.4	36.7	32.0	29.5	25.0	19.4	17.2	15.5	12.9
65	46.2	35.0	30.6	28.1	23.9	18.5	16.4	14.8	12.3
68	44.1	33.5	29.2	26.9	22.8	17.6	15.7	14.1	11.8
71	42.3	32.1	28.0	25.8	21.9	16.9	15.0	13.5	11.3
74	40.6	30.8	26.8	24.7	21.0	16.2	14.4	13.0	10.8
77	39.0	29.6	25.8	23.7	20.1	15.6	13.9	12.5	10.4
80	37.5	28.4	24.8	22.9	19.4	15.0	13.3	12.0	10.0
83	36.2	27.4	23.9	22.0	18.7	14.5	12.9	11.6	9.6
86	34.9	26.5	23.1	21.3	18.0	14.0	12.4	11.2	9.3
89	33.7	25.6	22.3	20.5	17.4	13.5	12.0	10.8	9.0
92	32.6	24.7	21.6	19.9	16.9	13.0	11.6	10.4	8.7
95	31.6	24.0	20.9	19.2	16.3	12.6	11.2	10.1	8.4
98	30.6	23.2	20.3	18.7	15.8	12.2	10.9	9.8	8.2
101	29.7	22.5	19.7	18.1	15.4	11.9	10.6	9.5	7.9
104	28.9	21.9	19.1	17.6	14.9	11.5	10.3	9.2	7.7

G-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	75.0	56.9	49.7	45.7	38.8	30.0
23	65.3	49.5	43.2	39.8	33.7	26.1
26	57.7	43.8	38.2	35.2	29.8	23.1
29	51.8	39.2	34.2	31.5	26.8	20.7
32	46.9	35.6	31.0	28.6	24.2	18.8
35	42.9	32.5	28.4	26.1	22.2	17.1
38	39.5	29.9	26.1	24.1	20.4	15.8
41	36.6	27.8	24.2	22.3	18.9	14.6
44	34.1	25.9	22.6	20.8	17.6	13.6
47	31.9	24.2	21.1	19.5	16.5	12.8
50	30.0	22.8	19.9	18.3	15.5	12.0
53	28.3	21.5	18.7	17.3	14.6	11.3
56	26.8	20.3	17.7	16.3	13.9	10.7
59	25.4	19.3	16.8	15.5	13.1	10.2
62	24.2	18.4	16.0	14.7	12.5	9.7
65	23.1	17.5	15.3	14.1	11.9	9.2
68	22.1	16.7	14.6	13.4	11.4	8.8
71	21.1	16.0	14.0	12.9	10.9	8.5
74	20.3	15.4	13.4	12.4	10.5	8.1
77	19.5	14.8	12.9	11.9	10.1	7.8
80	18.8	14.2	12.4	11.4	9.7	7.5
83	18.1	13.7	12.0	11.0	9.3	7.2
86	17.5	13.2	11.5	10.6	9.0	7.0
89	16.9	12.8	11.2	10.3	8.7	6.7
92	16.3	12.4	10.8	9.9	8.4	6.5
95	15.8	12.0	10.5	9.6	8.2	6.3
98	15.3	11.6	10.1	9.3	7.9	6.1
101	14.9	11.3	9.8	9.1	7.7	5.9
104	14.4	10.9	9.5	8.8	7.5	5.8



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TILTECO INC.

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REV. NO	DESCRIPTION	DATE	REV. NO	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 47 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE

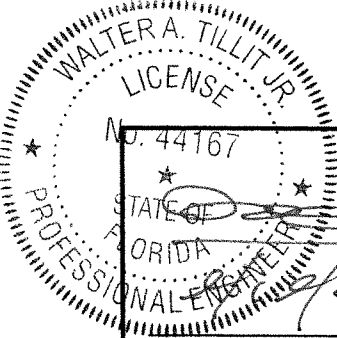
CONNECTED W/ CLIP (C4)

E-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	112.6	85.3	74.5	68.6	58.2	45.0	40.0	36.0	30.0
23	97.9	74.2	64.8	59.6	50.6	39.1	34.8	31.3	26.1
26	86.6	65.6	57.3	52.7	44.8	34.6	30.8	27.7	23.1
29	77.6	58.9	51.4	47.3	40.1	31.0	27.6	24.8	20.7
32	70.4	53.3	46.6	42.9	36.4	28.1	25.0	22.5	18.8
35	64.3	48.8	42.6	39.2	33.2	25.7	22.9	20.6	17.1
38	59.2	44.9	39.2	36.1	30.6	23.7	21.1	18.9	15.8
41	54.9	41.6	36.3	33.4	28.4	22.0	19.5	17.6	14.6
44	51.2	38.8	33.9	31.2	26.4	20.5	18.2	16.4	13.6
47	47.9	36.3	31.7	29.2	24.8	19.1	17.0	15.3	12.8
50	45.0	34.1	29.8	27.4	23.3	18.0	16.0	14.4	12.0
53	42.5	32.2	28.1	25.9	22.0	17.0	15.1	13.6	11.3
56	40.2	30.5	26.6	24.5	20.8	16.1	14.3	12.9	10.7
59	38.2	28.9	25.2	23.2	19.7	15.3	13.6	12.2	10.2
62	36.3	27.5	24.0	22.1	18.8	14.5	12.9	11.6	9.7
65	34.6	26.3	22.9	21.1	17.9	13.8	12.3	11.1	9.2
68	33.1	25.1	21.9	20.2	17.1	13.2	11.8	10.6	8.8
71	31.7	24.0	21.0	19.3	16.4	12.7	11.3	10.1	8.5
74	30.4	23.1	20.1	18.5	15.7	12.2	10.8	9.7	8.1
77	29.2	22.2	19.3	17.8	15.1	11.7	10.4	9.4	7.8
80	28.1	21.3	18.6	17.1	14.5	11.3	10.0	9.0	7.5
83	27.1	20.6	17.9	16.5	14.0	10.8	9.6	8.7	7.2
86	26.2	19.8	17.3	15.9	13.5	10.5	9.3	8.4	7.0
89	25.3	19.2	16.7	15.4	13.1	10.1	9.0	8.1	6.7
92	24.5	18.6	16.2	14.9	12.6	9.8	8.7	7.8	6.5
95	23.7	18.0	15.7	14.4	12.2	9.5	8.4	7.6	6.3
98	23.0	17.4	15.2	14.0	11.9	9.2	8.2	7.3	6.1
101	22.3	16.9	14.7	13.6	11.5	8.9	7.9	7.1	5.9
104	21.6	16.4	14.3	13.2	11.2	8.7	7.7	6.9	5.8

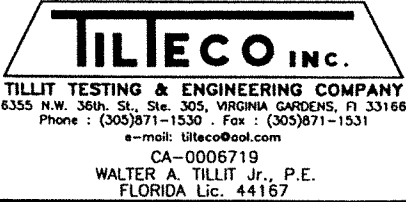
E-C4-N=4-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	150.1	113.8	99.3	91.4	77.6	60.0	53.3	48.0	40.0
23	130.5	98.9	86.4	79.5	67.5	52.2	46.4	41.7	34.8
26	115.5	87.5	76.4	70.3	59.7	46.2	41.0	36.9	30.8
29	103.5	78.5	68.5	63.1	53.5	41.4	36.8	33.1	27.6
32	93.8	71.1	62.1	57.1	48.5	37.5	33.3	30.0	25.0
35	85.8	65.0	56.7	52.2	44.3	34.3	30.5	27.4	22.9
38	79.0	59.9	52.3	48.1	40.8	31.6	28.1	25.3	21.1
41	73.2	55.5	48.4	44.6	37.8	29.3	26.0	23.4	19.5
44	68.2	51.7	45.1	41.6	35.3	27.3	24.2	21.8	18.2
47	63.9	48.4	42.3	38.9	33.0	25.5	22.7	20.4	17.0
50	60.0	45.5	39.7	36.6	31.0	24.0	21.3	19.2	16.0
53	56.6	42.9	37.5	34.5	29.3	22.6	20.1	18.1	15.1
56	53.6	40.6	35.5	32.7	27.7	21.4	19.0	17.1	14.3
59	50.9	38.6	33.7	31.0	26.3	20.3	18.1	16.3	13.6
62	48.4	36.7	32.0	29.5	25.0	19.4	17.2	15.5	12.9
65	46.2	35.0	30.6	28.1	23.9	18.5	16.4	14.8	12.3
68	44.1	33.5	29.2	26.9	22.8	17.6	15.7	14.1	11.8
71	42.3	32.1	28.0	25.8	21.9	16.9	15.0	13.5	11.3
74	40.6	30.8	26.8	24.7	21.0	16.2	14.4	13.0	10.8
77	39.0	29.6	25.8	23.7	20.1	15.6	13.9	12.5	10.4
80	37.5	28.4	24.8	22.9	19.4	15.0	13.3	12.0	10.0
83	36.2	27.4	23.9	22.0	18.7	14.5	12.9	11.6	9.6
86	34.9	26.5	23.1	21.3	18.0	14.0	12.4	11.2	9.3
89	33.7	25.6	22.3	20.5	17.4	13.5	12.0	10.8	9.0
92	32.6	24.7	21.6	19.9	16.9	13.0	11.6	10.4	8.7
95	31.6	24.0	20.9	19.2	16.3	12.6	11.2	10.1	8.4
98	30.6	23.2	20.3	18.7	15.8	12.2	10.9	9.8	8.2
101	29.7	22.5	19.7	18.1	15.4	11.9	10.6	9.5	7.9
104	28.9	21.9	19.1	17.6	14.9	11.5	10.3	9.2	7.7



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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www.gigwindows.com

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

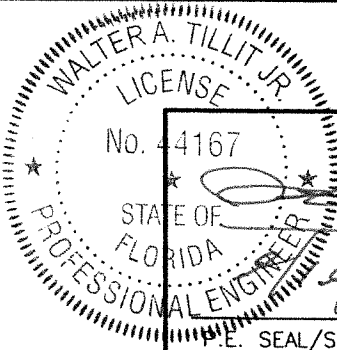
SHEET 48 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR & END MULLIONS CHARTS INTO BLOCK SUBSTRATE
CONNECTED W/ CLIP (C4)

H-C4-N=2-BLOCK

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE BLOCK EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	
20	75.0	56.9	49.7	45.7	38.8	30.0	26.7	24.0	20.0
23	65.3	49.5	43.2	39.8	33.7	26.1	23.2	20.9	17.4
26	57.7	43.8	38.2	35.2	29.8	23.1	20.5	18.5	15.4
29	51.8	39.2	34.2	31.5	26.8	20.7	18.4	16.6	13.8
32	46.9	35.6	31.0	28.6	24.2	18.8	16.7	15.0	12.5
35	42.9	32.5	28.4	26.1	22.2	17.1	15.2	13.7	11.4
38	39.5	29.9	26.1	24.1	20.4	15.8	14.0	12.6	10.5
41	36.6	27.8	24.2	22.3	18.9	14.6	13.0	11.7	9.8
44	34.1	25.9	22.6	20.8	17.6	13.6	12.1	10.9	9.1
47	31.9	24.2	21.1	19.5	16.5	12.8	11.3	10.2	8.5
50	30.0	22.8	19.9	18.3	15.5	12.0	10.7	9.6	8.0
53	28.3	21.5	18.7	17.3	14.6	11.3	10.1	9.1	7.5
56	26.8	20.3	17.7	16.3	13.9	10.7	9.5	8.6	7.1
59	25.4	19.3	16.8	15.5	13.1	10.2	9.0	8.1	6.8
62	24.2	18.4	16.0	14.7	12.5	9.7	8.6	7.7	6.5
65	23.1	17.5	15.3	14.1	11.9	9.2	8.2	7.4	6.2
68	22.1	16.7	14.6	13.4	11.4	8.8	7.8	7.1	5.9
71	21.1	16.0	14.0	12.9	10.9	8.5	7.5	6.8	5.6
74	20.3	15.4	13.4	12.4	10.5	8.1	7.2	6.5	5.4
77	19.5	14.8	12.9	11.9	10.1	7.8	6.9	6.2	5.2
80	18.8	14.2	12.4	11.4	9.7	7.5	6.7	6.0	5.0
83	18.1	13.7	12.0	11.0	9.3	7.2	6.4	5.8	4.8
86	17.5	13.2	11.5	10.6	9.0	7.0	6.2	5.6	4.7
89	16.9	12.8	11.2	10.3	8.7	6.7	6.0	5.4	4.5
92	16.3	12.4	10.8	9.9	8.4	6.5	5.8	5.2	4.3
95	15.8	12.0	10.5	9.6	8.2	6.3	5.6	5.1	4.2
98	15.3	11.6	10.1	9.3	7.9	6.1	5.4	4.9	4.1
101	14.9	11.3	9.8	9.1	7.7	5.9	5.3	4.8	4.0
104	14.4	10.9	9.5	8.8	7.5	5.8	5.1	4.6	3.8



SEAL/SIGNATURE/DATE

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TILLIT TESTING & ENGINEERING COMPANY
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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS					
REV. NO.			DATE		
1			09/12/23		
2					

DRAWN BY:
W.H.
09/12/2023
DATE
23-212
DRAWING No
SHEET 49 OF 60

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIP C4

A-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x 3"x 1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	200.0	179.2	154.2	130.7
23	200.0	155.8	134.1	113.7
26	181.8	137.8	118.7	100.6
29	163.0	123.6	106.4	90.2
32	147.8	112.0	96.4	81.7
35	135.1	102.4	88.1	74.7
38	124.4	94.3	81.2	68.8
41	115.3	87.4	75.2	63.8
44	107.5	81.5	70.1	59.4
47	100.6	76.3	65.6	55.6
50	94.6	71.7	61.7	52.3
53	89.2	67.6	58.2	49.3
56	84.4	64.0	55.1	46.7
59	80.1	60.7	52.3	44.3
62	76.3	57.8	49.8	42.2
65	72.7	55.1	47.5	40.2
68	69.5	52.7	45.4	38.5
71	66.6	50.5	43.4	36.8
74	63.9	48.4	41.7	35.3
77	61.4	46.5	40.1	34.0
80	59.1	44.8	38.6	32.7
83	57.0	43.2	37.2	31.5
86	55.0	41.7	35.9	30.4
89	53.1	40.3	34.7	29.4
92	51.4	39.0	33.5	28.4
95	49.8	37.7	32.5	27.5
98	48.2	36.6	31.5	26.7
101	46.8	35.5	30.5	25.9
104	45.5	34.5	29.7	25.1

B-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	193.7	178.3	145.5	125.4
23	200.0	192.9	168.4	155.0	126.6	109.0
26	200.0	170.7	149.0	137.1	112.0	96.4
29	200.0	153.0	133.6	123.0	100.4	86.5
32	182.9	138.7	121.0	111.4	91.0	78.4
35	167.3	126.8	110.7	101.9	83.2	71.6
38	154.0	116.8	101.9	93.8	76.6	66.0
41	142.8	108.2	94.5	87.0	71.0	61.2
44	133.0	100.8	88.0	81.0	66.2	57.0
47	124.5	94.4	82.4	75.9	61.9	53.4
50	117.1	88.7	77.5	71.3	58.2	50.2
53	110.4	83.7	73.1	67.3	54.9	47.3
56	104.5	79.2	69.2	63.7	52.0	44.8
59	99.2	75.2	65.6	60.4	49.3	42.5
62	94.4	71.6	62.5	57.5	47.0	40.4
65	90.1	68.3	59.6	54.9	44.8	38.6
68	86.1	65.3	57.0	52.4	42.8	36.9
71	82.4	62.5	54.6	50.2	41.0	35.3
74	79.1	60.0	52.3	48.2	39.3	33.9
77	76.0	57.6	50.3	46.3	37.8	32.6
80	73.2	55.5	48.4	44.6	36.4	31.3
83	70.5	53.5	46.7	43.0	35.1	30.2
86	68.1	51.6	45.0	41.5	33.8	29.2
89	65.8	49.9	43.5	40.1	32.7	28.2
92	63.6	48.2	42.1	38.8	31.6	27.3
95	61.6	46.7	40.8	37.5	30.6	26.4
98	59.7	45.3	39.5	36.4	29.7	25.6
101	58.0	43.9	38.3	35.3	28.8	24.8
104	56.3	42.7	37.2	34.3	28.0	24.1

C-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8"x3/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 ULTRACONS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	179.2	156.4	144.0	122.2	113.4
23	200.0	155.8	136.0	125.2	106.2	98.6
26	181.8	137.8	120.3	110.8	94.0	87.2
29	163.0	123.6	107.9	99.3	84.3	78.2
32	147.8	112.0	97.8	90.0	76.4	70.9
35	135.1	102.4	89.4	82.3	69.8	64.8
38	124.4	94.3	82.3	75.8	64.3	59.7
41	115.3	87.4	76.3	70.2	59.6	55.3
44	107.5	81.5	71.1	65.5	55.5	51.5
47	100.6	76.3	66.6	61.3	52.0	48.3
50	94.6	71.7	62.6	57.6	48.9	45.4
53	89.2	67.6	59.0	54.3	46.1	42.8
56	84.4	64.0	55.9	51.4	43.6	40.5
59	80.1	60.7	53.0	48.8	41.4	38.4
62	76.3	57.8	50.5	46.5	39.4	36.6
65	72.7	55.1	48.1	44.3	37.6	34.9
68	69.5	52.7	46.0	42.4	35.9	33.4
71	66.6	50.5	44.1	40.6	34.4	31.9
74	63.9	48.4	42.3	38.9	33.0	30.6
77	61.4	46.5	40.6	37.4	31.7	29.5
80	59.1	44.8	39.1	36.0	30.5	28.4
83	57.0	43.2	37.7	34.7	29.4	27.3
86	55.0	41.7	36.4	33.5	28.4	26.4
89	53.1	40.3	35.1	32.4	27.5	25.5
92	51.4	39.0	34.0	31.3	26.6	24.7
95	49.8	37.7	32.9	30.3	25.7	23.9
98	48.2	36.6	31.9	29.4	24.9	23.1
101	46.8	35.5	31.0	28.5	24.2	22.5
104	45.5	34.5	30.1	27.7	23.5	21.8

WALTER A. TILLIT JR.
LICENSE
No. 44167
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PROFESSIONAL ENGINEER
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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09/12/2023
DATE

23-212
DRAWING No

SHEET 50 OF 60

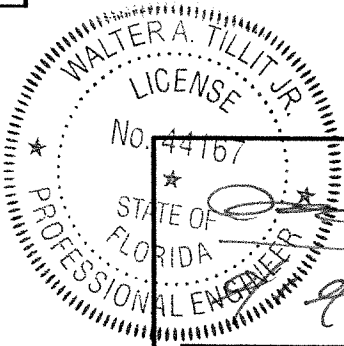
CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIP C4

D-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	193.7	178.3	151.3	117.0
23	200.0	192.9	168.4	155.0	131.5	101.7
26	200.0	170.7	149.0	137.1	116.4	90.0
29	200.0	153.0	133.6	123.0	104.3	80.7
32	182.9	138.7	121.0	111.4	94.5	73.1
35	167.3	126.8	110.7	101.9	86.4	66.9
38	154.0	116.8	101.9	93.8	79.6	61.6
41	142.8	108.2	94.5	87.0	73.8	57.1
44	133.0	100.8	88.0	81.0	68.8	53.2
47	124.5	94.4	82.4	75.9	64.4	49.8
50	117.1	88.7	77.5	71.3	60.5	46.8
53	110.4	83.7	73.1	67.3	57.1	44.2
56	104.5	79.2	69.2	63.7	54.0	41.8
59	99.2	75.2	65.6	60.4	51.3	39.7
62	94.4	71.6	62.5	57.5	48.8	37.7
65	90.1	68.3	59.6	54.9	46.5	36.0
68	86.1	65.3	57.0	52.4	44.5	34.4
71	82.4	62.5	54.6	50.2	42.6	33.0
74	79.1	60.0	52.3	48.2	40.9	31.6
77	76.0	57.6	50.3	46.3	39.3	30.4
80	73.2	55.5	48.4	44.6	37.8	29.3
83	70.5	53.5	46.7	43.0	36.5	28.2
86	68.1	51.6	45.0	41.5	35.2	27.2
89	65.8	49.9	43.5	40.1	34.0	26.3
92	63.6	48.2	42.1	38.8	32.9	25.4
95	61.6	46.7	40.8	37.5	31.8	24.6
98	59.7	45.3	39.5	36.4	30.9	23.9
101	58.0	43.9	38.3	35.3	30.0	23.2
104	56.3	42.7	37.2	34.3	29.1	22.5

G-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	179.2	156.4	144.0	122.2	94.5
23	200.0	155.8	136.0	125.2	106.2	82.2
26	181.8	137.8	120.3	110.8	94.0	72.7
29	163.0	123.6	107.9	99.3	84.3	65.2
32	147.8	112.0	97.8	90.0	76.4	59.1
35	135.1	102.4	89.4	82.3	69.8	54.0
38	124.4	94.3	82.3	75.8	64.3	49.7
41	115.3	87.4	76.3	70.2	59.6	46.1
44	107.5	81.5	71.1	65.5	55.5	43.0
47	100.6	76.3	66.6	61.3	52.0	40.2
50	94.6	71.7	62.6	57.6	48.9	37.8
53	89.2	67.6	59.0	54.3	46.1	35.7
56	84.4	64.0	55.9	51.4	43.6	33.8
59	80.1	60.7	53.0	48.8	41.4	32.0
62	76.3	57.8	50.5	46.5	39.4	30.5
65	72.7	55.1	48.1	44.3	37.6	29.1
68	69.5	52.7	46.0	42.4	35.9	27.8
71	66.6	50.5	44.1	40.6	34.4	26.6
74	63.9	48.4	42.3	38.9	33.0	25.5
77	61.4	46.5	40.6	37.4	31.7	24.5
80	59.1	44.8	39.1	36.0	30.5	23.6
83	57.0	43.2	37.7	34.7	29.4	22.8
86	55.0	41.7	36.4	33.5	28.4	22.0
89	53.1	40.3	35.1	32.4	27.5	21.2
92	51.4	39.0	34.0	31.3	26.6	20.5
95	49.8	37.7	32.9	30.3	25.7	19.9
98	48.2	36.6	31.9	29.4	24.9	19.3
101	46.8	35.5	31.0	28.5	24.2	18.7
104	45.5	34.5	30.1	27.7	23.5	18.2



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TILTECO INC.

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WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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HALEAH, FL 33014
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 51 OF 60

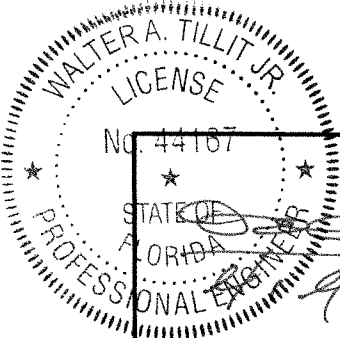
CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE
CONNECTED W/ CLIP C4

E-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	193.7	178.3	151.3	117.0	104.0	93.6	78.0
23	200.0	192.9	168.4	155.0	131.5	101.7	90.4	81.4	67.8
26	200.0	170.7	149.0	137.1	116.4	90.0	80.0	72.0	60.0
29	200.0	153.0	133.6	123.0	104.3	80.7	71.7	64.6	53.8
32	182.9	138.7	121.0	111.4	94.5	73.1	65.0	58.5	48.8
35	167.3	126.8	110.7	101.9	86.4	66.9	59.4	53.5	44.6
38	154.0	116.8	101.9	93.8	79.6	61.6	54.7	49.3	41.1
41	142.8	108.2	94.5	87.0	73.8	57.1	50.7	45.7	38.0
44	133.0	100.8	88.0	81.0	68.8	53.2	47.3	42.5	35.5
47	124.5	94.4	82.4	75.9	64.4	49.8	44.3	39.8	33.2
50	117.1	88.7	77.5	71.3	60.5	46.8	41.6	37.4	31.2
53	110.4	83.7	73.1	67.3	57.1	44.2	39.2	35.3	29.4
56	104.5	79.2	69.2	63.7	54.0	41.8	37.1	33.4	27.9
59	99.2	75.2	65.6	60.4	51.3	39.7	35.3	31.7	26.4
62	94.4	71.6	62.5	57.5	48.8	37.7	33.5	30.2	25.2
65	90.1	68.3	59.6	54.9	46.5	36.0	32.0	28.8	24.0
68	86.1	65.3	57.0	52.4	44.5	34.4	30.6	27.5	22.9
71	82.4	62.5	54.6	50.2	42.6	33.0	29.3	26.4	22.0
74	79.1	60.0	52.3	48.2	40.9	31.6	28.1	25.3	21.1
77	76.0	57.6	50.3	46.3	39.3	30.4	27.0	24.3	20.3
80	73.2	55.5	48.4	44.6	37.8	29.3	26.0	23.4	19.5
83	70.5	53.5	46.7	43.0	36.5	28.2	25.1	22.6	18.8
86	68.1	51.6	45.0	41.5	35.2	27.2	24.2	21.8	18.1
89	65.8	49.9	43.5	40.1	34.0	26.3	23.4	21.0	17.5
92	63.6	48.2	42.1	38.8	32.9	25.4	22.6	20.3	17.0
95	61.6	46.7	40.8	37.5	31.8	24.6	21.9	19.7	16.4
98	59.7	45.3	39.5	36.4	30.9	23.9	21.2	19.1	15.9
101	58.0	43.9	38.3	35.3	30.0	23.2	20.6	18.5	15.4
104	56.3	42.7	37.2	34.3	29.1	22.5	20.0	18.0	15.0

E-C4-N=3-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	183.3	141.8	126.0	113.4	94.5
23	200.0	200.0	200.0	187.8	159.4	123.3	109.6	98.6	82.2
26	200.0	200.0	180.5	166.2	141.0	109.0	96.9	87.2	72.7
29	200.0	185.4	161.8	149.0	126.4	97.8	86.9	78.2	65.2
32	200.0	168.0	146.6	135.0	114.5	88.6	78.8	70.9	59.1
35	200.0	153.6	134.1	123.4	104.7	81.0	72.0	64.8	54.0
38	186.6	141.5	123.5	113.7	96.5	74.6	66.3	59.7	49.7
41	173.0	131.1	114.4	105.4	89.4	69.1	61.5	55.3	46.1
44	161.2	122.2	106.6	98.2	83.3	64.4	57.3	51.5	43.0
47	150.9	114.4	99.8	91.9	78.0	60.3	53.6	48.3	40.2
50	141.8	107.5	93.8	86.4	73.3	56.7	50.4	45.4	37.8
53	133.8	101.4	88.5	81.5	69.2	53.5	47.5	42.8	35.7
56	126.6	96.0	83.8	77.1	65.5	50.6	45.0	40.5	33.8
59	120.2	91.1	79.5	73.2	62.1	48.1	42.7	38.4	32.0
62	114.4	86.7	75.7	69.7	59.1	45.7	40.6	36.6	30.5
65	109.1	82.7	72.2	66.5	56.4	43.6	38.8	34.9	29.1
68	104.3	79.1	69.0	63.5	53.9	41.7	37.1	33.4	27.8
71	99.9	75.7	66.1	60.8	51.6	39.9	35.5	31.9	26.6
74	95.8	72.6	63.4	58.4	49.5	38.3	34.1	30.6	25.5
77	92.1	69.8	60.9	56.1	47.6	36.8	32.7	29.5	24.5
80	88.7	67.2	58.7	54.0	45.8	35.4	31.5	28.4	23.6
83	85.4	64.8	56.5	52.0	44.2	34.2	30.4	27.3	22.8
86	82.5	62.5	54.6	50.2	42.6	33.0	29.3	26.4	22.0
89	79.7	60.4	52.7	48.5	41.2	31.9	28.3	25.5	21.2
92	77.1	58.4	51.0	47.0	39.8	30.8	27.4	24.7	20.5
95	74.7	56.6	49.4	45.5	38.6	29.8	26.5	23.9	19.9
98	72.4	54.9	47.9	44.1	37.4	28.9	25.7	23.1	19.3
101	70.2	53.2	46.5	42.8	36.3	28.1	25.0	22.5	18.7
104	68.2	51.7	45.1	41.5	35.2	27.3	24.2	21.8	18.2



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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 52 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE

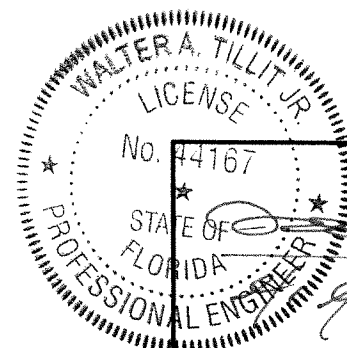
CONNECTED W/ CLIP (C4)

F-C4-N=3-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (3) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	183.3	141.8	126.0	113.4	94.5
23	200.0	200.0	200.0	187.8	159.4	123.3	109.6	98.6	82.2
26	200.0	200.0	180.5	166.2	141.0	109.0	96.9	87.2	72.7
29	200.0	185.4	161.8	149.0	126.4	97.8	86.9	78.2	65.2
32	200.0	168.0	146.6	135.0	114.5	88.6	78.8	70.9	59.1
35	200.0	153.6	134.1	123.4	104.7	81.0	72.0	64.8	54.0
38	186.6	141.5	123.5	113.7	96.5	74.6	66.3	59.7	49.7
41	173.0	131.1	114.4	105.4	89.4	69.1	61.5	55.3	46.1
44	161.2	122.2	106.6	98.2	83.3	64.4	57.3	51.5	43.0
47	150.9	114.4	99.8	91.9	78.0	60.3	53.6	48.3	40.2
50	141.8	107.5	93.8	86.4	73.3	56.7	50.4	45.4	37.8
53	133.8	101.4	88.5	81.5	69.2	53.5	47.5	42.8	35.7
56	126.6	96.0	83.8	77.1	65.5	50.6	45.0	40.5	33.8
59	120.2	91.1	79.5	73.2	62.1	48.1	42.7	38.4	32.0
62	114.4	86.7	75.7	69.7	59.1	45.7	40.6	36.6	30.5
65	109.1	82.7	72.2	66.5	56.4	43.6	38.8	34.9	29.1
68	104.3	79.1	69.0	63.5	53.9	41.7	37.1	33.4	27.8
71	99.9	75.7	66.1	60.8	51.6	39.9	35.5	31.9	26.6
74	95.8	72.6	63.4	58.4	49.5	38.3	34.1	30.6	25.5
77	92.1	69.8	60.9	56.1	47.6	36.8	32.7	29.5	24.5
80	88.7	67.2	58.7	54.0	45.8	35.4	31.5	28.4	23.6
83	85.4	64.8	56.5	52.0	44.2	34.2	30.4	27.3	22.8
86	82.5	62.5	54.6	50.2	42.6	33.0	29.3	26.4	22.0
89	79.7	60.4	52.7	48.5	41.2	31.9	28.3	25.5	21.2
92	77.1	58.4	51.0	47.0	39.8	30.8	27.4	24.7	20.5
95	74.7	56.6	49.4	45.5	38.6	29.8	26.5	23.9	19.9
98	72.4	54.9	47.9	44.1	37.4	28.9	25.7	23.1	19.3
101	70.2	53.2	46.5	42.8	36.3	28.1	25.0	22.5	18.7
104	68.2	51.7	45.1	41.5	35.2	27.3	24.2	21.8	18.2

F-C4-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	189.0	168.0	151.2	126.0
23	200.0	200.0	200.0	200.0	200.0	164.3	146.1	131.5	109.6
26	200.0	200.0	200.0	200.0	188.0	145.4	129.2	116.3	96.9
29	200.0	200.0	200.0	198.6	168.5	130.3	115.9	104.3	86.9
32	200.0	200.0	195.5	180.0	152.7	118.1	105.0	94.5	78.8
35	200.0	200.0	178.8	164.6	139.6	108.0	96.0	86.4	72.0
38	200.0	188.6	164.6	151.6	128.6	99.5	88.4	79.6	66.3
41	200.0	174.8	152.6	140.5	119.2	92.2	82.0	73.8	61.5
44	200.0	162.9	142.2	130.9	111.1	85.9	76.4	68.7	57.3
47	200.0	152.5	133.1	122.6	104.0	80.4	71.5	64.3	53.6
50	189.1	143.4	125.1	115.2	97.7	75.6	67.2	60.5	50.4
53	178.4	135.2	118.0	108.7	92.2	71.3	63.4	57.1	47.5
56	168.9	128.0	111.7	102.9	87.3	67.5	60.0	54.0	45.0
59	160.3	121.5	106.0	97.6	82.8	64.1	56.9	51.3	42.7
62	152.5	115.6	100.9	92.9	78.8	61.0	54.2	48.8	40.6
65	145.5	110.3	96.3	88.6	75.2	58.2	51.7	46.5	38.8
68	139.1	105.4	92.0	84.7	71.9	55.6	49.4	44.5	37.1
71	133.2	101.0	88.1	81.1	68.8	53.2	47.3	42.6	35.5
74	127.8	96.9	84.5	77.8	66.0	51.1	45.4	40.9	34.1
77	122.8	93.1	81.3	74.8	63.5	49.1	43.6	39.3	32.7
80	118.2	89.6	78.2	72.0	61.1	47.3	42.0	37.8	31.5
83	113.9	86.4	75.4	69.4	58.9	45.5	40.5	36.4	30.4
86	110.0	83.3	72.8	67.0	56.8	44.0	39.1	35.2	29.3
89	106.2	80.5	70.3	64.7	54.9	42.5	37.8	34.0	28.3
92	102.8	77.9	68.0	62.6	53.1	41.1	36.5	32.9	27.4
95	99.5	75.5	65.9	60.6	51.4	39.8	35.4	31.8	26.5
98	96.5	73.1	63.8	58.8	49.9	38.6	34.3	30.9	25.7
101	93.6	71.0	61.9	57.0	48.4	37.4	33.3	29.9	25.0
104	90.9	68.9	60.2	55.4	47.0	36.3	32.3	29.1	24.2



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DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 53 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

CLIPPED INTERIOR & END MULLIONS CHARTS INTO CONCRETE SUBSTRATE

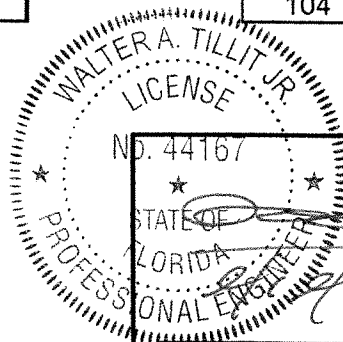
CONNECTED W/ CLIP (C4)

H-C4-N=2-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x4"x1/4" MULLION WITH CLIPS CONNECTED WITH (2) 1/4"Ø ULTRACONS IN CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	179.2	156.4	144.0	122.2	94.5	84.0	75.6	63.0
23	200.0	155.8	136.0	125.2	106.2	82.2	73.0	65.7	54.8
26	181.8	137.8	120.3	110.8	94.0	72.7	64.6	58.2	48.5
29	163.0	123.6	107.9	99.3	84.3	65.2	57.9	52.1	43.4
32	147.8	112.0	97.8	90.0	76.4	59.1	52.5	47.3	39.4
35	135.1	102.4	89.4	82.3	69.8	54.0	48.0	43.2	36.0
38	124.4	94.3	82.3	75.8	64.3	49.7	44.2	39.8	33.2
41	115.3	87.4	76.3	70.2	59.6	46.1	41.0	36.9	30.7
44	107.5	81.5	71.1	65.5	55.5	43.0	38.2	34.4	28.6
47	100.6	76.3	66.6	61.3	52.0	40.2	35.7	32.2	26.8
50	94.6	71.7	62.6	57.6	48.9	37.8	33.6	30.2	25.2
53	89.2	67.6	59.0	54.3	46.1	35.7	31.7	28.5	23.8
56	84.4	64.0	55.9	51.4	43.6	33.8	30.0	27.0	22.5
59	80.1	60.7	53.0	48.8	41.4	32.0	28.5	25.6	21.4
62	76.3	57.8	50.5	46.5	39.4	30.5	27.1	24.4	20.3
65	72.7	55.1	48.1	44.3	37.6	29.1	25.8	23.3	19.4
68	69.5	52.7	46.0	42.4	35.9	27.8	24.7	22.2	18.5
71	66.6	50.5	44.1	40.6	34.4	26.6	23.7	21.3	17.7
74	63.9	48.4	42.3	38.9	33.0	25.5	22.7	20.4	17.0
77	61.4	46.5	40.6	37.4	31.7	24.5	21.8	19.6	16.4
80	59.1	44.8	39.1	36.0	30.5	23.6	21.0	18.9	15.8
83	57.0	43.2	37.7	34.7	29.4	22.8	20.2	18.2	15.2
86	55.0	41.7	36.4	33.5	28.4	22.0	19.5	17.6	14.7
89	53.1	40.3	35.1	32.4	27.5	21.2	18.9	17.0	14.2
92	51.4	39.0	34.0	31.3	26.6	20.5	18.3	16.4	13.7
95	49.8	37.7	32.9	30.3	25.7	19.9	17.7	15.9	13.3
98	48.2	36.6	31.9	29.4	24.9	19.3	17.1	15.4	12.9
101	46.8	35.5	31.0	28.5	24.2	18.7	16.6	15.0	12.5
104	45.5	34.5	30.1	27.7	23.5	18.2	16.2	14.5	12.1

I-C4-N=4-CONC

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"Ø ULTRACONS IN POURED CONCRETE EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	189.0	168.0	151.2	126.0
23	200.0	200.0	200.0	200.0	200.0	164.3	146.1	131.5	109.6
26	200.0	200.0	200.0	200.0	188.0	145.4	129.2	116.3	96.9
29	200.0	200.0	200.0	198.6	168.5	130.3	115.9	104.3	86.9
32	200.0	200.0	195.5	180.0	152.7	118.1	105.0	94.5	78.8
35	200.0	200.0	178.8	164.6	139.6	108.0	96.0	86.4	72.0
38	200.0	188.6	164.6	151.6	128.6	99.5	88.4	79.6	66.3
41	200.0	174.8	152.6	140.5	119.2	92.2	82.0	73.8	61.5
44	200.0	162.9	142.2	130.9	111.1	85.9	76.4	68.7	57.3
47	200.0	152.5	133.1	122.6	104.0	80.4	71.5	64.3	53.6
50	189.1	143.4	125.1	115.2	97.7	75.6	67.2	60.5	50.4
53	178.4	135.2	118.0	108.7	92.2	71.3	63.4	57.1	47.5
56	168.9	128.0	111.7	102.9	87.3	67.5	60.0	54.0	45.0
59	160.3	121.5	106.0	97.6	82.8	64.1	56.9	51.3	42.7
62	152.5	115.6	100.9	92.9	78.8	61.0	54.2	48.8	40.6
65	145.5	110.3	96.3	88.6	75.2	58.2	51.7	46.5	38.8
68	139.1	105.4	92.0	84.7	71.9	55.6	49.4	44.5	37.1
71	133.2	101.0	88.1	81.1	68.8	53.2	47.3	42.6	35.5
74	127.8	96.9	84.5	77.8	66.0	51.1	45.4	40.9	34.1
77	122.8	93.1	81.3	74.8	63.5	49.1	43.6	39.3	32.7
80	118.2	89.6	78.2	72.0	61.1	47.3	42.0	37.8	31.5
83	113.9	86.4	75.4	69.4	58.9	45.5	40.5	36.4	30.4
86	110.0	83.3	72.8	67.0	56.8	44.0	39.1	35.2	29.3
89	106.2	80.5	70.3	64.7	54.9	42.5	37.8	34.0	28.3
92	102.8	77.9	68.0	62.6	53.1	41.1	36.5	32.9	27.4
95	99.5	75.5	65.9	60.6	51.4	39.8	35.4	31.8	26.5
98	96.5	73.1	63.8	58.8	49.9	38.6	34.3	30.9	25.7
101	93.6	71.0	61.9	57.0	48.4	37.4	33.3	29.9	25.0
104	90.9	68.9	60.2	55.4	47.0	36.3	32.3	29.1	24.2



P.E. SEAL/SIGNATURE/DATE

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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS

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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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09/12/2023
DATE

23-212
DRAWING No

SHEET 54 OF 60

CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C4

A-C4-N=2-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 TEK SCREWS EACH END OF MULLION				
Tributary Width (b)	Mullion Length (L)			
	38.375	50.625	58	63
20	200.0	186.0	154.2	130.7
23	200.0	161.8	134.1	113.7
26	188.8	143.1	118.7	100.6
29	169.2	128.3	106.4	90.2
32	153.4	116.3	96.4	81.7
35	140.2	106.3	88.1	74.7
38	129.2	97.9	81.2	68.8
41	119.7	90.7	75.2	63.8
44	111.5	84.6	70.1	59.4
47	104.4	79.2	65.6	55.6
50	98.2	74.4	61.7	52.3
53	92.6	70.2	58.2	49.3
56	87.6	66.4	55.1	46.7
59	83.2	63.1	52.3	44.3
62	79.2	60.0	49.8	42.2
65	75.5	57.2	47.5	40.2
68	72.2	54.7	45.4	38.5
71	69.1	52.4	43.4	36.8
74	66.3	50.3	41.7	35.3
77	63.7	48.3	40.1	34.0
80	61.4	46.5	38.6	32.7
83	59.1	44.8	37.2	31.5
86	57.1	43.3	35.9	30.4
89	55.1	41.8	34.7	29.4
92	53.3	40.4	33.5	28.4
95	51.7	39.2	32.5	27.5
98	50.1	38.0	31.5	26.7
101	48.6	36.8	30.5	25.9
104	47.2	35.8	29.7	25.1

B-C4-N=2-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4 TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	186.0	162.4	149.5	126.8	117.7
23	200.0	161.8	141.2	130.0	110.3	102.4
26	188.8	143.1	124.9	115.0	97.6	90.6
29	169.2	128.3	112.0	103.1	87.5	81.2
32	153.4	116.3	101.5	93.4	79.3	73.6
35	140.2	106.3	92.8	85.4	72.5	67.3
38	129.2	97.9	85.5	78.7	66.8	62.0
41	119.7	90.7	79.2	72.9	61.9	57.4
44	111.5	84.6	73.8	67.9	57.7	53.5
47	104.4	79.2	69.1	63.6	54.0	50.1
50	98.2	74.4	64.9	59.8	50.7	47.1
53	92.6	70.2	61.3	56.4	47.9	44.4
56	87.6	66.4	58.0	53.4	45.3	42.0
59	83.2	63.1	55.0	50.7	43.0	39.9
62	79.2	60.0	52.4	48.2	40.9	38.0
65	75.5	57.2	50.0	46.0	39.0	36.2
68	72.2	54.7	47.8	44.0	37.3	34.6
71	69.1	52.4	45.7	42.1	35.7	33.2
74	66.3	50.3	43.9	40.4	34.3	31.8
77	63.7	48.3	42.2	38.8	32.9	30.6
80	61.4	46.5	40.6	37.4	31.7	29.4
83	59.1	44.8	39.1	36.0	30.6	28.4
86	57.1	43.3	37.8	34.8	29.5	27.4
89	55.1	41.8	36.5	33.6	28.5	26.5
92	53.3	40.4	35.3	32.5	27.6	25.6
95	51.7	39.2	34.2	31.5	26.7	24.8
98	50.1	38.0	33.1	30.5	25.9	24.0
101	48.6	36.8	32.2	29.6	25.1	23.3
104	47.2	35.8	31.2	28.7	24.4	22.6

G-C4-N=2-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 3"x3"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" TEK SCREWS EACH END OF						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	186.0	162.4	149.5	126.8	98.1
23	200.0	161.8	141.2	130.0	110.3	85.3
26	188.8	143.1	124.9	115.0	97.6	75.5
29	169.2	128.3	112.0	103.1	87.5	67.7
32	153.4	116.3	101.5	93.4	79.3	61.3
35	140.2	106.3	92.8	85.4	72.5	56.1
38	129.2	97.9	85.5	78.7	66.8	51.6
41	119.7	90.7	79.2	72.9	61.9	47.9
44	111.5	84.6	73.8	67.9	57.7	44.6
47	104.4	79.2	69.1	63.6	54.0	41.7
50	98.2	74.4	64.9	59.8	50.7	39.2
53	92.6	70.2	61.3	56.4	47.9	37.0
56	87.6	66.4	58.0	53.4	45.3	35.0
59	83.2	63.1	55.0	50.7	43.0	33.3
62	79.2	60.0	52.4	48.2	40.9	31.6
65	75.5	57.2	50.0	46.0	39.0	30.2
68	72.2	54.7	47.8	44.0	37.3	28.9
71	69.1	52.4	45.7	42.1	35.7	27.6
74	66.3	50.3	43.9	40.4	34.3	26.5
77	63.7	48.3	42.2	38.8	32.9	25.5
80	61.4	46.5	40.6	37.4	31.7	24.5
83	59.1	44.8	39.1	36.0	30.6	23.6
86	57.1	43.3	37.8	34.8	29.5	22.8
89	55.1	41.8	36.5	33.6	28.5	22.0
92	53.3	40.4	35.3	32.5	27.6	21.3
95	51.7	39.2	34.2	31.5	26.7	20.7
98	50.1	38.0	33.1	30.5	25.9	20.0
101	48.6	36.8	32.2	29.6	25.1	19.4
104	47.2	35.8	31.2	28.7	24.4	18.9

WALTER A. TILLIT JR.
LICENSE
No. 44167
STATE OF FLORIDA
PROFESSIONAL ENGINEER
P.E. SEAL/SIGNATURE/DATE

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e-mail: tilteco@aol.com
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

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09/12/2023
DATE

23-212
DRAWING No

SHEET 55 OF 60

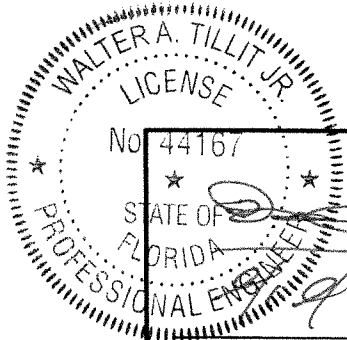
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C4

C-C4-N=2-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	186.0	162.4	149.5	126.8	117.7
23	200.0	161.8	141.2	130.0	110.3	102.4
26	188.8	143.1	124.9	115.0	97.6	90.6
29	169.2	128.3	112.0	103.1	87.5	81.2
32	153.4	116.3	101.5	93.4	79.3	73.6
35	140.2	106.3	92.8	85.4	72.5	67.3
38	129.2	97.9	85.5	78.7	66.8	62.0
41	119.7	90.7	79.2	72.9	61.9	57.4
44	111.5	84.6	73.8	67.9	57.7	53.5
47	104.4	79.2	69.1	63.6	54.0	50.1
50	98.2	74.4	64.9	59.8	50.7	47.1
53	92.6	70.2	61.3	56.4	47.9	44.4
56	87.6	66.4	58.0	53.4	45.3	42.0
59	83.2	63.1	55.0	50.7	43.0	39.9
62	79.2	60.0	52.4	48.2	40.9	38.0
65	75.5	57.2	50.0	46.0	39.0	36.2
68	72.2	54.7	47.8	44.0	37.3	34.6
71	69.1	52.4	45.7	42.1	35.7	33.2
74	66.3	50.3	43.9	40.4	34.3	31.8
77	63.7	48.3	42.2	38.8	32.9	30.6
80	61.4	46.5	40.6	37.4	31.7	29.4
83	59.1	44.8	39.1	36.0	30.6	28.4
86	57.1	43.3	37.8	34.8	29.5	27.4
89	55.1	41.8	36.5	33.6	28.5	26.5
92	53.3	40.4	35.3	32.5	27.6	25.6
95	51.7	39.2	34.2	31.5	26.7	24.8
98	50.1	38.0	33.1	30.5	25.9	24.0
101	48.6	36.8	32.2	29.6	25.1	23.3
104	47.2	35.8	31.2	28.7	24.4	22.6

C-C4-N=3-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 1"x4"x1/8 x 3/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	80
20	200.0	200.0	200.0	200.0	190.3	176.6
23	200.0	200.0	200.0	195.0	165.4	153.5
26	200.0	200.0	187.4	172.5	146.3	135.8
29	200.0	192.4	168.0	154.6	131.2	121.8
32	200.0	174.4	152.2	140.1	118.9	110.4
35	200.0	159.5	139.2	128.1	108.7	100.9
38	193.7	146.9	128.2	118.0	100.1	92.9
41	179.6	136.1	118.8	109.4	92.8	86.1
44	167.3	126.8	110.7	101.9	86.5	80.3
47	156.6	118.7	103.6	95.4	81.0	75.1
50	147.2	111.6	97.4	89.7	76.1	70.6
53	138.9	105.3	91.9	84.6	71.8	66.6
56	131.5	99.7	87.0	80.1	67.9	63.1
59	124.8	94.6	82.6	76.0	64.5	59.9
62	118.7	90.0	78.6	72.3	61.4	57.0
65	113.3	85.9	74.9	69.0	58.5	54.3
68	108.3	82.1	71.6	65.9	56.0	51.9
71	103.7	78.6	68.6	63.2	53.6	49.7
74	99.5	75.4	65.8	60.6	51.4	47.7
77	95.6	72.5	63.3	58.2	49.4	45.9
80	92.0	69.8	60.9	56.1	47.6	44.1
83	88.7	67.2	58.7	54.0	45.8	42.5
86	85.6	64.9	56.6	52.1	44.2	41.1
89	82.7	62.7	54.7	50.4	42.8	39.7
92	80.0	60.7	52.9	48.7	41.4	38.4
95	77.5	58.7	51.3	47.2	40.1	37.2
98	75.1	56.9	49.7	45.8	38.8	36.0
101	72.9	55.3	48.2	44.4	37.7	35.0
104	70.8	53.7	46.8	43.1	36.6	34.0



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23-212
DRAWING No

SHEET 56 OF 60

REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

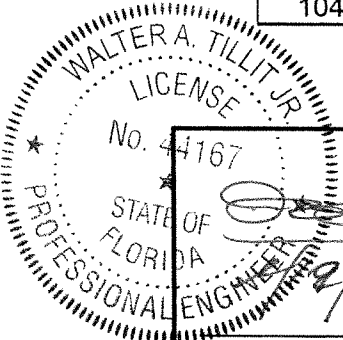
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C4

D-C4-N=2-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (2) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	186.0	162.4	149.5	126.8	98.1
23	200.0	161.8	141.2	130.0	110.3	85.3
26	188.8	143.1	124.9	115.0	97.6	75.5
29	169.2	128.3	112.0	103.1	87.5	67.7
32	153.4	116.3	101.5	93.4	79.3	61.3
35	140.2	106.3	92.8	85.4	72.5	56.1
38	129.2	97.9	85.5	78.7	66.8	51.6
41	119.7	90.7	79.2	72.9	61.9	47.9
44	111.5	84.6	73.8	67.9	57.7	44.6
47	104.4	79.2	69.1	63.6	54.0	41.7
50	98.2	74.4	64.9	59.8	50.7	39.2
53	92.6	70.2	61.3	56.4	47.9	37.0
56	87.6	66.4	58.0	53.4	45.3	35.0
59	83.2	63.1	55.0	50.7	43.0	33.3
62	79.2	60.0	52.4	48.2	40.9	31.6
65	75.5	57.2	50.0	46.0	39.0	30.2
68	72.2	54.7	47.8	44.0	37.3	28.9
71	69.1	52.4	45.7	42.1	35.7	27.6
74	66.3	50.3	43.9	40.4	34.3	26.5
77	63.7	48.3	42.2	38.8	32.9	25.5
80	61.4	46.5	40.6	37.4	31.7	24.5
83	59.1	44.8	39.1	36.0	30.6	23.6
86	57.1	43.3	37.8	34.8	29.5	22.8
89	55.1	41.8	36.5	33.6	28.5	22.0
92	53.3	40.4	35.3	32.5	27.6	21.3
95	51.7	39.2	34.2	31.5	26.7	20.7
98	50.1	38.0	33.1	30.5	25.9	20.0
101	48.6	36.8	32.2	29.6	25.1	19.4
104	47.2	35.8	31.2	28.7	24.4	18.9

D-C4-N=3-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x4"x1/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4" TEK SCREWS EACH END OF MULLION						
Tributary Width (b)	Mullion Length (L)					
	38.375	50.625	58	63	74.25	96
20	200.0	200.0	200.0	200.0	190.3	137.4
23	200.0	200.0	200.0	195.0	165.4	119.5
26	200.0	200.0	187.4	172.5	146.3	105.7
29	200.0	192.4	168.0	154.6	131.2	94.8
32	200.0	174.4	152.2	140.1	118.9	85.9
35	200.0	159.5	139.2	128.1	108.7	78.5
38	193.7	146.9	128.2	118.0	100.1	72.3
41	179.6	136.1	118.8	109.4	92.8	67.0
44	167.3	126.8	110.7	101.9	86.5	62.5
47	156.6	118.7	103.6	95.4	81.0	58.5
50	147.2	111.6	97.4	89.7	76.1	55.0
53	138.9	105.3	91.9	84.6	71.8	51.8
56	131.5	99.7	87.0	80.1	67.9	49.1
59	124.8	94.6	82.6	76.0	64.5	46.6
62	118.7	90.0	78.6	72.3	61.4	44.3
65	113.3	85.9	74.9	69.0	58.5	42.3
68	108.3	82.1	71.6	65.9	56.0	40.4
71	103.7	78.6	68.6	63.2	53.6	38.7
74	99.5	75.4	65.8	60.6	51.4	37.1
77	95.6	72.5	63.3	58.2	49.4	35.7
80	92.0	69.8	60.9	56.1	47.6	34.3
83	88.7	67.2	58.7	54.0	45.8	33.1
86	85.6	64.9	56.6	52.1	44.2	32.0
89	82.7	62.7	54.7	50.4	42.8	30.9
92	80.0	60.7	52.9	48.7	41.4	29.9
95	77.5	58.7	51.3	47.2	40.1	28.9
98	75.1	56.9	49.7	45.8	38.8	28.0
101	72.9	55.3	48.2	44.4	37.7	27.2
104	70.8	53.7	46.8	43.1	36.6	26.4



P.E. SEAL/SIGNATURE/DATE

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CA-0006719
WALTER A. TILLIT Jr., P.E.
FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS


290 WEST 78 ROAD
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PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 57 OF 60

REV. No	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

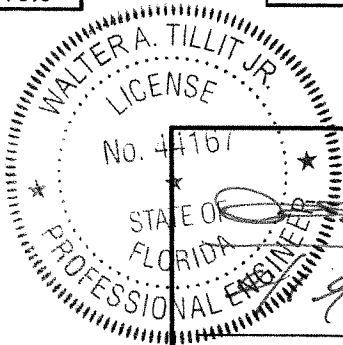
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP C4

E-C4-N=3-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (3) 1/4"TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	190.3	147.2	130.8	117.7	98.1
23	200.0	200.0	200.0	195.0	165.4	128.0	113.7	102.4	85.3
26	200.0	200.0	187.4	172.5	146.3	113.2	100.6	90.6	75.5
29	200.0	192.4	168.0	154.6	131.2	101.5	90.2	81.2	67.7
32	200.0	174.4	152.2	140.1	118.9	92.0	81.8	73.6	61.3
35	200.0	159.5	139.2	128.1	108.7	84.1	74.7	67.3	56.1
38	193.7	146.9	128.2	118.0	100.1	77.4	68.8	62.0	51.6
41	179.6	136.1	118.8	109.4	92.8	71.8	63.8	57.4	47.9
44	167.3	126.8	110.7	101.9	86.5	66.9	59.5	53.5	44.6
47	156.6	118.7	103.6	95.4	81.0	62.6	55.7	50.1	41.7
50	147.2	111.6	97.4	89.7	76.1	58.9	52.3	47.1	39.2
53	138.9	105.3	91.9	84.6	71.8	55.5	49.4	44.4	37.0
56	131.5	99.7	87.0	80.1	67.9	52.6	46.7	42.0	35.0
59	124.8	94.6	82.6	76.0	64.5	49.9	44.3	39.9	33.3
62	118.7	90.0	78.6	72.3	61.4	47.5	42.2	38.0	31.6
65	113.3	85.9	74.9	69.0	58.5	45.3	40.2	36.2	30.2
68	108.3	82.1	71.6	65.9	56.0	43.3	38.5	34.6	28.9
71	103.7	78.6	68.6	63.2	53.6	41.5	36.8	33.2	27.6
74	99.5	75.4	65.8	60.6	51.4	39.8	35.4	31.8	26.5
77	95.6	72.5	63.3	58.2	49.4	38.2	34.0	30.6	25.5
80	92.0	69.8	60.9	56.1	47.6	36.8	32.7	29.4	24.5
83	88.7	67.2	58.7	54.0	45.8	35.5	31.5	28.4	23.6
86	85.6	64.9	56.6	52.1	44.2	34.2	30.4	27.4	22.8
89	82.7	62.7	54.7	50.4	42.8	33.1	29.4	26.5	22.0
92	80.0	60.7	52.9	48.7	41.4	32.0	28.4	25.6	21.3
95	77.5	58.7	51.3	47.2	40.1	31.0	27.5	24.8	20.7
98	75.1	56.9	49.7	45.8	38.8	30.0	26.7	24.0	20.0
101	72.9	55.3	48.2	44.4	37.7	29.1	25.9	23.3	19.4
104	70.8	53.7	46.8	43.1	36.6	28.3	25.2	22.6	18.9

E-C4-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/8" MULLION WITH CLIPS CONNECTED WITH (4) 1/4"TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	196.2	174.4	156.0	108.3
23	200.0	200.0	200.0	200.0	200.0	170.6	151.7	135.6	94.2
26	200.0	200.0	200.0	200.0	195.1	150.9	134.2	120.0	83.3
29	200.0	200.0	200.0	200.0	174.9	135.3	120.3	107.6	74.7
32	200.0	200.0	200.0	186.9	158.5	122.6	109.0	97.5	67.7
35	200.0	200.0	185.6	170.8	145.0	112.1	99.7	89.1	61.9
38	200.0	195.8	170.9	157.4	133.5	103.3	91.8	82.1	57.0
41	200.0	181.5	158.4	145.8	123.7	95.7	85.1	76.1	52.8
44	200.0	169.1	147.6	135.9	115.3	89.2	79.3	70.9	49.2
47	200.0	158.3	138.2	127.2	107.9	83.5	74.2	66.4	46.1
50	196.3	148.8	129.9	119.6	101.5	78.5	69.8	62.4	43.3
53	185.2	140.4	122.5	112.8	95.7	74.0	65.8	58.9	40.9
56	175.3	132.9	116.0	106.8	90.6	70.1	62.3	55.7	38.7
59	166.4	126.1	110.1	101.3	86.0	66.5	59.1	52.9	36.7
62	158.3	120.0	104.8	96.4	81.8	63.3	56.3	50.3	34.9
65	151.0	114.5	99.9	92.0	78.1	60.4	53.7	48.0	33.3
68	144.4	109.4	95.5	87.9	74.6	57.7	51.3	45.9	31.9
71	138.3	104.8	91.5	84.2	71.5	55.3	49.1	43.9	30.5
74	132.7	100.6	87.8	80.8	68.6	53.0	47.1	42.2	29.3
77	127.5	96.6	84.3	77.7	65.9	51.0	45.3	40.5	28.1
80	122.7	93.0	81.2	74.7	63.4	49.1	43.6	39.0	27.1
83	118.3	89.7	78.3	72.0	61.1	47.3	42.0	37.6	26.1
86	114.1	86.5	75.5	69.5	59.0	45.6	40.6	36.3	25.2
89	110.3	83.6	73.0	67.2	57.0	44.1	39.2	35.0	24.3
92	106.7	80.9	70.6	65.0	55.1	42.7	37.9	33.9	23.5
95	103.3	78.3	68.4	62.9	53.4	41.3	36.7	32.8	22.8
98	100.2	75.9	66.3	61.0	51.8	40.0	35.6	31.8	22.1
101	97.2	73.7	64.3	59.2	50.2	38.9	34.5	30.9	21.4
104	94.4	71.5	62.5	57.5	48.8	37.7	33.5	30.0	20.8



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FLORIDA Lic. 44167

FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



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HIALEAH, FL 33014
PH: (954)226-5555/(305)558-8103
FAX: (305)558-6665
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212

DRAWING No

SHEET 58 OF 60

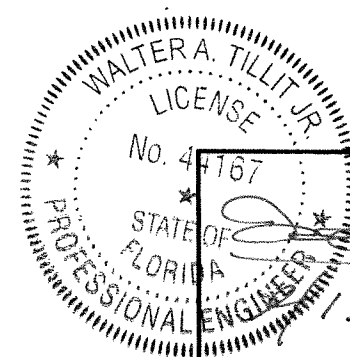
CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE CONNECTED W/ CLIP (C4)

F-C4-N=4-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (4) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	196.2	174.4	157.0	130.8
23	200.0	200.0	200.0	200.0	200.0	170.6	151.7	136.5	113.7
26	200.0	200.0	200.0	200.0	195.1	150.9	134.2	120.7	100.6
29	200.0	200.0	200.0	200.0	174.9	135.3	120.3	108.2	90.2
32	200.0	200.0	200.0	186.9	158.5	122.6	109.0	98.1	81.8
35	200.0	200.0	185.6	170.8	145.0	112.1	99.7	89.7	74.7
38	200.0	195.8	170.9	157.4	133.5	103.3	91.8	82.6	68.8
41	200.0	181.5	158.4	145.8	123.7	95.7	85.1	76.6	63.8
44	200.0	169.1	147.6	135.9	115.3	89.2	79.3	71.3	59.5
47	200.0	158.3	138.2	127.2	107.9	83.5	74.2	66.8	55.7
50	196.3	148.8	129.9	119.6	101.5	78.5	69.8	62.8	52.3
53	185.2	140.4	122.5	112.8	95.7	74.0	65.8	59.2	49.4
56	175.3	132.9	116.0	106.8	90.6	70.1	62.3	56.1	46.7
59	166.4	126.1	110.1	101.3	86.0	66.5	59.1	53.2	44.3
62	158.3	120.0	104.8	96.4	81.8	63.3	56.3	50.6	42.2
65	151.0	114.5	99.9	92.0	78.1	60.4	53.7	48.3	40.2
68	144.4	109.4	95.5	87.9	74.6	57.7	51.3	46.2	38.5
71	138.3	104.8	91.5	84.2	71.5	55.3	49.1	44.2	36.8
74	132.7	100.6	87.8	80.8	68.6	53.0	47.1	42.4	35.4
77	127.5	96.6	84.3	77.7	65.9	51.0	45.3	40.8	34.0
80	122.7	93.0	81.2	74.7	63.4	49.1	43.6	39.2	32.7
83	118.3	89.7	78.3	72.0	61.1	47.3	42.0	37.8	31.5
86	114.1	86.5	75.5	69.5	59.0	45.6	40.6	36.5	30.4
89	110.3	83.6	73.0	67.2	57.0	44.1	39.2	35.3	29.4
92	106.7	80.9	70.6	65.0	55.1	42.7	37.9	34.1	28.4
95	103.3	78.3	68.4	62.9	53.4	41.3	36.7	33.0	27.5
98	100.2	75.9	66.3	61.0	51.8	40.0	35.6	32.0	26.7
101	97.2	73.7	64.3	59.2	50.2	38.9	34.5	31.1	25.9
104	94.4	71.5	62.5	57.5	48.8	37.7	33.5	30.2	25.2

F-C4-N=5-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 2"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (5) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	196.2	163.5
23	200.0	200.0	200.0	200.0	200.0	200.0	189.6	170.6	142.2
26	200.0	200.0	200.0	200.0	200.0	188.7	167.7	150.9	125.8
29	200.0	200.0	200.0	200.0	200.0	169.1	150.3	135.3	112.8
32	200.0	200.0	200.0	200.0	198.2	153.3	136.3	122.6	102.2
35	200.0	200.0	200.0	200.0	181.2	140.1	124.6	112.1	93.4
38	200.0	200.0	200.0	196.7	166.9	129.1	114.7	103.3	86.1
41	200.0	200.0	198.0	182.3	154.7	119.6	106.3	95.7	79.8
44	200.0	200.0	184.5	169.9	144.1	111.5	99.1	89.2	74.3
47	200.0	197.9	172.7	159.0	134.9	104.4	92.8	83.5	69.6
50	200.0	186.0	162.4	149.5	126.8	98.1	87.2	78.5	65.4
53	200.0	175.5	153.2	141.0	119.7	92.5	82.3	74.0	61.7
56	200.0	166.1	145.0	133.5	113.2	87.6	77.9	70.1	58.4
59	200.0	157.6	137.6	126.7	107.5	83.1	73.9	66.5	55.4
62	197.9	150.0	130.9	120.6	102.3	79.1	70.3	63.3	52.7
65	188.8	143.1	124.9	115.0	97.6	75.5	67.1	60.4	50.3
68	180.4	136.8	119.4	109.9	93.3	72.1	64.1	57.7	48.1
71	172.8	131.0	114.3	105.3	89.3	69.1	61.4	55.3	46.1
74	165.8	125.7	109.7	101.0	85.7	66.3	58.9	53.0	44.2
77	159.4	120.8	105.4	97.1	82.4	63.7	56.6	51.0	42.5
80	153.4	116.3	101.5	93.4	79.3	61.3	54.5	49.1	40.9
83	147.8	112.1	97.8	90.1	76.4	59.1	52.5	47.3	39.4
86	142.7	108.2	94.4	86.9	73.7	57.0	50.7	45.6	38.0
89	137.9	104.5	91.2	84.0	71.3	55.1	49.0	44.1	36.7
92	133.4	101.1	88.2	81.2	68.9	53.3	47.4	42.7	35.5
95	129.2	97.9	85.5	78.7	66.8	51.6	45.9	41.3	34.4
98	125.2	94.9	82.8	76.3	64.7	50.1	44.5	40.0	33.4
101	121.5	92.1	80.4	74.0	62.8	48.6	43.2	38.9	32.4
104	118.0	89.4	78.1	71.9	61.0	47.2	41.9	37.7	31.4



P.E. SEAL/SIGNATURE/DATE

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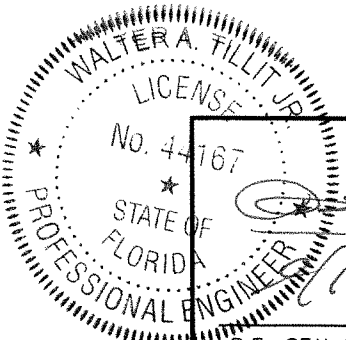
FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT CLIPPED ALUMINUM MULLIONS				DRAWN BY: W.H.	
 290 WEST 78 ROAD HALEAH, FL 33014 PH: (954)226-5555/(305)558-8103 FAX: (305)558-6665 www.gigwindows.com				09/12/2023 DATE	
				23-212 DRAWING No	
REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		
				SHEET 59 OF 60	

CLIPPED INTERIOR & END MULLIONS CHARTS INTO STEEL/ALUMINUM SUBSTRATE
CONNECTED W/ CLIP (C4)

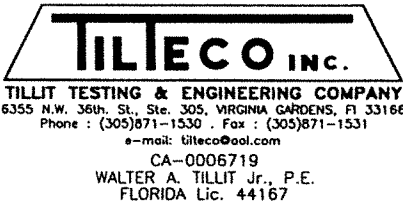
I-C4-N=5-STEEL/ALUM.

A.S.D. DESIGN PRESSURE RATING (p.s.f.) FOR 4"x6"x1/4" MULLION WITH CLIPS CONNECTED WITH (5) 1/4" TEK SCREWS EACH END OF MULLION									
Tributary Width (b)	Mullion Length (L)								
	38.375	50.625	58	63	74.25	96	108	120	144
20	200.0	200.0	200.0	200.0	200.0	200.0	200.0	196.2	163.5
23	200.0	200.0	200.0	200.0	200.0	200.0	189.6	170.6	142.2
26	200.0	200.0	200.0	200.0	200.0	188.7	167.7	150.9	125.8
29	200.0	200.0	200.0	200.0	200.0	169.1	150.3	135.3	112.8
32	200.0	200.0	200.0	200.0	198.2	153.3	136.3	122.6	102.2
35	200.0	200.0	200.0	200.0	181.2	140.1	124.6	112.1	93.4
38	200.0	200.0	200.0	196.7	166.9	129.1	114.7	103.3	86.1
41	200.0	200.0	198.0	182.3	154.7	119.6	106.3	95.7	79.8
44	200.0	200.0	184.5	169.9	144.1	111.5	99.1	89.2	74.3
47	200.0	197.9	172.7	159.0	134.9	104.4	92.8	83.5	69.6
50	200.0	186.0	162.4	149.5	126.8	98.1	87.2	78.5	65.4
53	200.0	175.5	153.2	141.0	119.7	92.5	82.3	74.0	61.7
56	200.0	166.1	145.0	133.5	113.2	87.6	77.9	70.1	58.4
59	200.0	157.6	137.6	126.7	107.5	83.1	73.9	66.5	55.4
62	197.9	150.0	130.9	120.6	102.3	79.1	70.3	63.3	52.7
65	188.8	143.1	124.9	115.0	97.6	75.5	67.1	60.4	50.3
68	180.4	136.8	119.4	109.9	93.3	72.1	64.1	57.7	48.1
71	172.8	131.0	114.3	105.3	89.3	69.1	61.4	55.3	46.1
74	165.8	125.7	109.7	101.0	85.7	66.3	58.9	53.0	44.2
77	159.4	120.8	105.4	97.1	82.4	63.7	56.6	51.0	42.5
80	153.4	116.3	101.5	93.4	79.3	61.3	54.5	49.1	40.9
83	147.8	112.1	97.8	90.1	76.4	59.1	52.5	47.3	39.4
86	142.7	108.2	94.4	86.9	73.7	57.0	50.7	45.6	38.0
89	137.9	104.5	91.2	84.0	71.3	55.1	49.0	44.1	36.7
92	133.4	101.1	88.2	81.2	68.9	53.3	47.4	42.7	35.5
95	129.2	97.9	85.5	78.7	66.8	51.6	45.9	41.3	34.4
98	125.2	94.9	82.8	76.3	64.7	50.1	44.5	40.0	33.4
101	121.5	92.1	80.4	74.0	62.8	48.6	43.2	38.9	32.4
104	118.0	89.4	78.1	71.9	61.0	47.2	41.9	37.7	31.4



P.E. SEAL/SIGNATURE/DATE

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FLORIDA BUILDING CODE (High & Non High Velocity Hurricane Zone)

SERIES 14000 HMMS IMPACT RESISTANT
CLIPPED ALUMINUM MULLIONS



290 WEST 78 ROAD
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REV. NO	DESCRIPTION	DATE	REV. No	DESCRIPTION	DATE
1	OLD 20-270	09/12/23	3		
2			4		

DRAWN BY:
W.H.

09/12/2023
DATE

23-212
DRAWING No

SHEET 60 OF 60